Recent Changes in Europe's Competitive Landscape
How the Sources of Demand and Supply Are Shaping Up*

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Summary

This paper revisits the issue of Europe's growth slowdown, taking into account the latest experiences from the recession and the debt crisis since 2008. From a ***supply side perspective***, using a growth accounting approach, there are virtually no signs of even the beginnings of a reversal in the slowing growth trend, which is primarily driven by a weak productivity performance in most European countries. Recently, low productivity growth has broadened from the services sector to the goods producing sector for most European economies as well. However, the manufacturing sectors have begun to recover from the recession, and the most troubled economies even show signs of improved cost competitiveness. But the manufacturing sector on itself is too small to force an economy-wide reversal in productivity.

From a ***demand perspective***, using a global value chain-type analysis, it turns out that activities contributing directly or indirectly to production for the global market, account for roughly a quarter of jobs as well as a quarter of labor productivity growth in Europe. Manufacturing accounts for a significant share of this, but in many European countries market services have increased their contribution to global value chains, both in terms of job creation as well as productivity.

Projecting growth out to 2025, using ***growth accounting projections***, productivity remains the critical factor for Europe's future growth performance. At the aggregate level demographics will contribute negatively to growth and investment seems maxed out given its historical performance. At the sector level, higher productivity in services for both the domestic and foreign sectors are key to an economy-wide growth revival.

Large differences between individual European countries have emerged. The paper identifies three groups of European economies emerging, including (1) the Germany-led supply chain block (including Austria and much of Central and Eastern Europe), (2) a Mediterranean/France block which is more inwardly focused and strongly dependent of the dynamics of domestic demand, and (3) a Nordic/Benelux/UK/Ireland block with competitive export sectors which include services.

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1. Introduction

While the economic policy agenda in Europe is currently dominated by issues around macroeconomic and financial market imbalances, the need for growth and competitiveness is a longer term issue that remains in need of attention. Even though most European countries currently show considerably slower growth than their long-term trend, suggesting large output gaps, any attempt to recover demand in the short-term will deliver smaller than expected results in the longer term if the trend continues to decelerate.[2] The long-term structural performance should therefore be at least as much a concern as the short-term lack of demand.

Before entering the crisis in 2008/09, the story about the structural weaknesses of Europe's economy was largely told on the basis of a supply side-style analysis, as laid out through the analysis of the EU KLEMS database: a remarkable employment growth in Europe was combined with slow productivity growth, a lack of a contribution of ICT to productivity, and especially strong weakness in productivity growth in the services sector (but comparative strength in manufacturing) and rising cost levels (Van Ark, O'Mahony and Timmer, 2008; Timmer et al. 2010). Recent analysis of the performance of manufacturing productivity and unit labor cost across European member states shows some significant adjustments especially in the most troubled economies in Europe, but more is needed to bring along the large non-tradeable sectors of those economies (Colijn and van Ark, 2012).

Another strand of research that has recently emerged makes it possible to also approach Europe's structural growth performance from a demand perspective. New results from the World Input-Output Database (WIOD), which combine national input-output tables, bilateral international trade statistics and data on production factor requirements, show that global demand for Europe's products and services has evolved positively in terms of jobs created and productivity. For example, between 1995 and 2008 Europe increased its real income obtained from global manufacturing production, not only through more competitive manufacturing activity in Europe, but especially through an increased contribution of services to the global value chain. In contrast to Japan or the United States, the EU's income share from production of goods and services for foreign demand has remained rather stable, suggesting is has benefitted most from the rise of emerging markets. Moreover Europe has succeeded to increase manufacturing and service sector jobs and raise its share of labor income from high and medium skilled labor, in response to its integration in the global value chain (Timmer et al. 2012).

How do we reconcile the traditional story of Europe's slow productivity performance, relative to the newly emerging evidence from the value chain analysis? Has Europe, despite its weak aggregate productivity performance, become more of a stronghold in the global value chain? What does this imply for the performance of the aggregate and the larger domestic sectors? And, how do these patterns evolve between the different economies in Europe?

[2] See below in Section 4 for trend growth estimates by The Conference Board, as well as the Commission's own analysis in *European Economic Forecast*, Autumn 2012, Brussels

To deal with those questions this paper aims to bring together two perspectives, one taking a supply-side perspective and one taking a demand-side focus on the competitive growth performance of Europe and individual countries outlined above:

1) The first theme (***productivity and growth***) is primarily supply side-oriented, and focuses on a growth decompositions to labor, capital and productivity and unit labor cost analysis (**Section 2**). We provide the latest updates show with regard to the performance of the sources-of-growth since the 2008/09 crisis hit.

2) The second theme (***global value chain performance***), which will be developed in **Section 3**, allows a focus on the demand side: how much do European economies contribute to satisfy foreign demand for goods and services vis-à-vis domestic demand? How does it affect job growth and productivity? And, how does this balance play out for competitive strengths.

The supply- and demand analysis will then be brought together in **Section 4**, which looks at growth projections for the next 10 years (2013-2018 and 2019-2025) which are based on estimates of growth contributions from labor and capital input as well as productivity. **Section 5** describes a possible grouping of economies in Europe as they manage their structural issues emerging from the crisis.

2. The drivers of growth from the supply side before and after the Great Recession

Like elsewhere in the advanced world, the recession and financial crisis have significantly affected the comparative growth performance of European economies. It is important, however, to try to distinguish between cyclical recession and recovery effects, and the structural impact of the crisis. On the basis of the latest updates of *The Conference Board Total Economy Database* up to 2011, we can now review the impact of the crisis by looking at two sub-periods, 2001-2005 and 2006-2011. The latter period is of course strongly affected by the recession of 2008-09, but by including the peak year 2007 and the recovery years 2010 and 2011, it provides a reasonable comparison. [Alternatively we could use the 1996-2005 as the comparison period, but the differences would only be starker]

Looking at the aggregate output, per capita income, and productivity performance from 2001-2005 and 2006-2011 (***Table 1***) we find that:

- In the aggregate EU-27, GDP and per capita growth about halved between 2001-2005 and 2006-2011 in the aggregate EU-27.

- In the "old" EU-15, representing the member states before 2004, GDP growth and per capita income growth fell in all economies, except Germany.

- For the new member states (EU-12), only Poland (and Malta) saw an increase in GDP growth and per capita income growth. Some other Central and Eastern European countries were severely hurt because of their export dependence on the rest of Europe.

- The slowdown in labor productivity growth was more moderate than for per capita income, especially in the Euro Area economies, pointing at a drop in the employment/population rate, which has resulted from a combination of higher unemployment and lower participation

- Underlying the slowdown in labor productivity growth are stark differences between countries:
    - The biggest declines in productivity growth rates were seen in Sweden and Luxembourg, related to their strong decline in GDP.
    - In Germany, despite a rise in GDP and per capita income growth between 2001-2005 and 2006-2011, productivity declined by 0.4 percent, suggesting strong labour hoarding effects as a result of shorttime working programs.
    - Poland even increased labor productivity, which resulted from an expansionary growth process in which it grew labor input more strongly than population.
    - Spain also saw an acceleration in productivity growth, but in contrast to Poland it cut hours even stronger than GDP

Tables 2a and 2b decompose the growth of aggregate GDP into the contributions of labor, capital and productivity, using a growth accounting framework, for both sub-periods. The following observations emerge:

- On average, hours worked in the “old” EU-15 contributed less to growth from 2006-2011 than from 2001-2005., although the picture is very mixed between economies. Germany, Sweden and Luxembourg showed the largest gains in hours worked, and not surprisingly the “troubled” economies showed the weakest labor market performance.

- On average, hours in the “new” EU-12 contributed more to growth since 2006-2011, especially because of a better labor market outcome in Poland and the Slovakia. The Baltic States and Hungary labor markets were much more severely affected by the crisis.

- Capital growth is the main driver of labor productivity growth in the aggregate EU estimates, equally split between ICT and non-ICT capital.
    - In the EU-15, the growth contribution of ICT capital has stayed relatively high in most countries, especially in the Nordic countries and in the "troubled" economies (including Ireland).
    - Non-ICT capital growth continued to account for the largest part of capital growth in the new EU-12 countries. Ireland also maintained a relative rapid growth in non-ICT capital, probably as a result of the construction boom.

- Total factor productivity has emerged as the Achilles’ heel of Europe’s growth performance. In the "old" EU-15, negative total factor productivity growth has emerged in most countries, except for Germany, Austria and the Netherlands. In the "new" EU-12, total factor productivity growth remained positive, except for Bulgaria and Hungary, but it was also slow in the Baltic States.

Overall, total factor productivity growth has been the main source behind the slowdown in Europe's growth for all of the past decade, but the problem has become worse during the second half of the 2000s. The continuation of the slowing trend in TFP growth points at a range of possible explanations. It can be a sign of weakening innovation and technological change, but for the TFP growth rate to turn negative, as turned out to be the case for most "old" EU-15 economies, additional explanations are needed. First, it could signal increasing rigidities in labor, product and capital markets, causing increased misallocation of resources to low-productive firms. Second, and related to the first, there might be a negative reallocation effect, with more resources going to the less productive sectors in the economy.

To test the latter hypothesis, we look at a breakdown for total factor productivity growth between three major sectors of the economy: 1) goods production, including agriculture, mining and manufacturing; 2) market services, including all service sectors, except for 3) non-market services which includes community, personal and social services (including education, health care and public administration) and real estate activities. So far, industry-level growth accounting results extended to 2009, could be obtained for the five largest economies (France, Germany, Italy, Spain and the United Kingdom) as well as Austria using the updated EU KLEMS database (November 2012), with additional updates for 2010 by the authors.

Tables 3a and 3b show that most differences in growth performance across sectors come down to total factor productivity:

- In the goods sector, TFP growth which was mostly positive (except for Italy) for 2001-2005, but it weakened further during the 2006-2010 period. The biggest decline in total factor productivity occurred in the goods sector of the United Kingdom and, perhaps surprisingly, Germany. The dynamics, however, were quite different between the two countries. In the UK most of the decline was due to a further decline in output in the goods sector since 2006, which was already negative in the earlier half of the decade. In the Germany the slowdown in output was much more moderate, and it was primarily the retaining of labor and even investment which created a temporary setback on productivity. Indeed the estimates for 2010 show a significant recovery in Germany's TFP performance in the goods sector, from -18.7% in 2009 to 13.0% in 2010. In the UK, TFP fell by only 2.8% in 2009 and showed a moderate recovery of 3.1% in 2010.

- In market services, TFP growth was weaker than in goods production from 2001-2005, and the situation worsened from 2006-2010. France and the United Kingdom suffered the largest declines, as inputs didn't adjust as much for the rapid decline in market services output. The latter results align with recent evidence in the United Kingdom of slow productivity growth, despite a decent growth in employment. However, Germany increased TFP growth rates in market services by 50 percent from 2006-2010, recovering from a very weak output growth rate, from 0.3 percent in 2001-2005 to 2 percent in 2006-2010.

- In non-market services, TFP growth was zero or negative in all six economies for both the 2001-2005 and the 2006-2010 periods. While the measurement of growth in non-market services is fraught with problems, which are only moderately improving, it is important to understand the dynamics of change as the sector accounts for a significant share of the economy to 30 percent of employment in most European economies. The output growth in non-market services has remained relatively stable in most countries since 2006, except for Italy and the United Kingdom where it dropped by more than 1 percentage point. Spain and the UK saw the largest downward adjustments employment growth in non-market services, but for all six economies employment growth in non-market services remained positive. The decline in productivity was strongest in the UK. In fact Spain and Austria saw significant improvements in TFP growth, though the TFP growth rates remained negative in both cases. Non-market services typically show weak productivity growth, as the Baumol "cost-disease" hypothesis in services applies most to non-market services. However, the potential for technology applications, as attested by the relatively strong continued increases in ICT capital, and presumed cost savings in non-market services remains strong.

Overall, the supply-side growth picture is one of considerable declines in productivity growth across the board, so that shifts to less productive activities don't materialize as they main explanation for the slowing trend at aggregate level. Services – and especially non-market services – posted most of the negative TFP growth rates throughout the period. Slow productivity growth in services partly results from slower adjustments and misallocations of inputs, which requires the need for continued structural reforms in labor and product markets. However, the ongoing investments in capital in services, especially in ICT capital, may also signal a drive towards better innovation performance with potential productivity gains in the sector. One hypothesis may be that stronger international competitiveness may have emerged as a positive source for growth in Europe's market services.

However, the crisis has also impacted on the goods sector, especially on the productivity performance of the manufacturing sector since 2006. Manufacturing in European economies was hard hit by the crisis, but also shows most of the recovery in output and productivity since 2010. **Chart 1** looks at the changes in unit labor cost (ULC) on a quarterly basis in manufacturing, the most tradeable sector of the economy, since the beginning of the recession, based on the basis of The Conference Board's Unit Labor Cost database:

- Some of the most troubled economies in Europe have seen some of the largest declines in manufacturing ULC, pointing at the beginning of an adjustment process in relative competitiveness for these economies. Much of the adjustment is currently driven by large drops in compensation rather than significant improvements in productivity, but this may still be the start of observable structural adjustments in these economies (Colijn and van Ark, 2012).

- Poland is one of the few cases where the rapid decline in unit labor cost, as a result of stronger productivity growth, beyond the declines in labor compensation.

- Manufacturing labor cost in several of the "stronger" economies in Europe, have increased during the 2006-2010, including France and Germany. Germany's result may surprise, because of the manufacturing sector's strong export performance. It should be noted, however, that Germany is competing in a higher-level segment of the quality range of manufacturing products (especially in automotive and specialized machinery), with an increased demand for skilled labor and specialized inputs with modest scope for increases from an already high productivity level. Also, as noted earlier, Germany has held on to its resources in manufacturing during the crisis, which has affected the productivity and cost performance of the sector, at least temporarily.

When looking the non-tradeable sector of the economy, the performance of productivity relative to compensation is much weaker (**Chart 2**):

- Despite declines in labor compensation, there are very few countries (only some Baltic states and Spain) with falling cost per unit of output in services.

- Other Central and East European economies, as well as Ireland, show large increases in unit labor cost due to weak service sector performance.

In sum, there are signals of not only weakening productivity but also falling competitiveness in Europe since the emergence of the recession. There are some early signs of structural adjustments in the goods sector of the most troubled economies, but the sector is obviously too small to produce an economy-wide reversal in productivity.

3. Demand from the Global Value Chain for Manufacturing Products

To understand the growth potential for Europe, the focus in this section shifts to how the demand for Europe's products and services have emerged, both from domestic as foreign demand. A series of new metrics derived from the WIOD (World Input Output Database) makes it possible to allocate the creation of employment and output to different sources of demand.

For the demand decomposition in this section we identify six sources of demand, divided between foreign and domestic demand, and distinguishing between the demand for goods, market services and non-market services. Activities for foreign demand relate to both direct demand (exports) and indirect demand (domestic production that is used for production for foreign demand).

The vast majority of employment in a country, up to three quarters of total employment in Europe, is dedicated to production activities for domestic final demand. This is even true for smaller, export oriented economies. **Table 4** reports the share of employment related to activities that produce for foreign demand of goods and market services:

- On average, the share of employment on behalf of production for foreign demand, ranges between 20 and 30 percent of total employment. There seems to be a clear distinction between countries where employment activity for foreign demand has become more important (Germany and Poland), stagnated (Spain and Italy), or declined (France and the UK).

- Among the "old" EU-15 economies, the share of employment dedicated to production for foreign demand of *goods* ranges between less than 5 percent (Greece) up to more than 13 percent (Austria and Germany). Also France, Spain, Italy and the UK score less than 10 percent in terms of exposure to foreign demand for *goods*.

- In the old EU-15 the share of employment dedicated to production for foreign demand for *market services* has gradually increased and is higher than employment for foreign goods production (12.8% vs. 9.6% in 2009). The differences are largest for Belgium, Luxembourg and the United Kingdom, but also the Netherlands and Germany score higher on employment for foreign market services than foreign goods demand. In contrast the Nordic economies but also Italy and Portugal have more employment dedicated to foreign goods demand.

- Among the "new" EU-12 economies, the share of employment for foreign *goods* demand is general higher than in the old EU-15. In Bulgaria, Czech Republic, Slovakia and Slovenia, the employment share is 20 percent or more, but even in a large economy like Poland more than 17 percent of employment is dedicated to production for foreign goods demand.

- In the new EU-12 most countries have less employment dedicated to foreign *market services* demand, with a few exceptions (including Slovakia and Lithuania which have strong transportation industries).

Overall there is a move of foreign-demand based production activities from the goods sector to services, which points at the increased role of Europe's services sector in the global supply chain. The change in share is especially strong in the UK, whereas the share of foreign goods-oriented-activities has declined, whereas employment for foreign market services has increased, much related to Britain's stronghold in financial services. Only Germany has seen a parallel increase in the share of employment in goods and services employment for foreign demand.

The impact of the contribution of Europe's services sector to global production is striking, also in relation to other major non-European advanced economies. According to **Chart 4**, about 18.5 million manufacturing workers in the "old" EU-15 member states were directly or indirectly involved in producing goods for the global economy. In addition, another 14.5 million American workers in other sectors, most of them with jobs in the service sector, also contributed to global output. Strikingly, while the EU-15 kept its job contribution to the global chain more or less stable at around 35 million jobs, the United States still saw a decline in its total job contribution to global manufacturing—from 20 million jobs in 1995 to 16 million in 2008— as it failed to add more service sector jobs induced by foreign demand.

But how much difference can a better performance of Europe's foreign oriented production activities make for higher productivity at aggregate level? **Table 5** looks at the level of comparative productivity performance of the different sectors related to foreign and domestic demand relative to the average productivity level for the economy as a whole. The table shows that:

- Generally, export activities have higher labor productivity levels than domestic activities in the same sector. This implies that any shift from domestic to export activities is positive for aggregate productivity growth.

- Productivity in the foreign exposed sector is clearly increasing faster relative to the domestic sector of the economy, which possibly indicates a specialization effects within the value chain. Germany is a clear example of this, as it has become deeply integrated with Central and East European countries to support own Germany's high added-value activities in producing goods for the international market. Spain is a clear counterexample, as labor productivity in activities related to exports declined more than those in domestic demand.

Table 6 looks at how the six sectors, organized by source of demand, have contributed to labor productivity growth in each of the European economies:

- Between 2000 and 2008 about 23 percent of labor productivity growth in the EU-27 originated from activities related, directly or indirectly, to foreign demand for goods and market services, slightly less than the share of employment dedicated to those activities (compare Table 4). In the old EU-15 the contribution of those activities is slightly smaller at 22 percent, and for the new EU-15 it is slightly higher than the average contribution in the EU at 28 percent.

- In seven out of the 15 old EU-countries, the labor productivity contributions from foreign demand for market services are bigger than that for foreign goods. In particular Luxembourg, Belgium and the United Kingdom experienced much larger productivity contributions from market services. In Germany, foreign demand for goods accounted for 15 percent of labor productivity growth closely trailed by market services at 12 percent. Among domestic demand, the largest labor productivity contributions were accounted for by market services.

- Ten of 12 new EU member states (excluding Cyprus and Malta) experienced much larger productivity contributions from foreign demand for goods than for market services. The contribution from foreign demand for goods was especially large for Slovakia, one fifth of aggregate labor productivity growth. Also Estonia and Czech Republic experienced strong productivity contributions from demand for foreign goods.

Despite the better productivity performance for goods and services production induced by foreign demand, it is hard to see that foreign demand is the key differentiator in aggregate economic performance, given its share in the total economy. From a dynamic perspective there can be important spillovers from export oriented activity, but the comparative productivity performance in foreign-demand induced doesn't make enough of a difference to domestic-induced demand induced activity.

Also smaller size of an economy does not seem to make the key difference. Integration in a global value chain, as is the case for Germany and Poland (and other Central and East European economies) could be a more dynamic source of growth, and a possible cause of further divergence for those countries, relative to the growth performance in more domestic-oriented economies like France, Italy and Spain.

4. Projections of Europe's trend growth to 2025

Using a supply-side based growth accounting projection model, GDP trend growth for the European economies can be projected using *The Conference Global Economic Outlook* (Chen et al, 2012). The projections cover the period 2013-2025, with separate projections for the medium term (2013-2018) and for the long term (2019-2025).[3] The projections for the labor and capital inputs use the framework as developed in Jorgenson, Ho and Stiroh (2005) and Jorgenson and Vu (2008), but with several improvements especially for the estimation of capital services and total factor productivity.

For labor quantity the measures are primarily based on projections for the working age population (age of 15-64) from the *International Data Base of the U.S. Census Bureau*. For labor composition estimates are based on projections of population by level of education attainment, age and sex (Bonthuis, 2011). Capital and productivity growth are estimated by a system of equations for which we utilize some standard statistical measures and some economic variables. We estimate three endogenous variables: total factor productivity (TFP) growth, the savings rate, and capital services growth. The savings rate is an important addition, because it is closely related to investment capital that determines the growth of capital services. All other variables are either exogenous or predetermined. The regression approach to measure capital services and TFP growth also makes it possible to include the link to several demand-side related variables, such as trade openness, and the share of the manufacturing and services sectors in the economy.

The trend growth rates that are obtained from this exercise are adjusted for possible deviations between actual and potential output for the period 2013-2018 (see Chen et al. 2012). A smoothed version of trend GDP growth, using a Hodrick-Prescott filter, is provided in **Charts 4a-4d** for the EU regions as well as some individual key economies. A full breakdown by major growth source for all individual countries included in the Global Economic Outlook is given in **Tables 7a and 7b.**:

- Together the charts and tables show that the growth performance in Europe as a whole (EU-27 plus Switzerland and Norway) has experienced an ongoing slowing trend, which shows no sign of significant acceleration over the next decade relative to the current growth trend.

[3] The November 2012 version of the outlook covers 55 major economies across 11 global regions, including 33 advanced economies (the United States, Europe, Japan and other advanced economies) and 22 emerging and developing economies.

- A breakdown into the old EU-15 and the new EU-12 shows that after a strong divergence in growth performance during the 1990s and 2000s, the long term growth trend for the two regions will gradually converge from a growth difference in 1.5 percentage point today to 1 percentage point in the next few years to eventually a difference of just over 0.5 percentage point by 2025 (**Chart 4a)**.

- Among the large old-EU economies various key differences emerge (**Chart 4b**):

    - Germany has picked up on trend since the mid-2000s, as result of major reforms in labor and product markets that supported a better performance in market services. Germany, experienced an upside on trend growth during the 1990s as a result of reunification between East and West Germany. Trend growth then slowed as the domestic economy seriously suffered from lack of reforms. However, the labor market reforms of the early 2000s and the strong performance of Germany's manufacturing sector helped the country to accelerate the trend since the mid-2000s, and effective cyclical policies during the recession helped to sustain the advantage. Despite offsetting effects from weaker demographics (when compared to France), Germany shows the strongest performance based on faster TFP growth which allows for more productive investment. However, in the long term, Germany – which is not helped by strong demographics – will ultimately converge to trend growth similar to Italy and the UK of 1.1 to 1.3 percent (**Table 7b**).

    - During the late 1990s Spain and the UK showed trend growth advantages over the other large economies in old EU-15, related to convergence (in Spain) and restructuring (in the UK). During the 2000s both countries gradually began to return to the old EU-15 growth average. Spain saw large productivity declines especially in services. In addition, Spain was hit much harder by the crisis. Eventually, however, Spain will be able to recover its trend growth to around 2 percent by the beginning of the next decade, helped by slightly more positive demographic effects - in contrast to most other Mediterranean economies and France – and potential for investment in ICT (**Table 7b**). However, all Mediterranean countries are projected to fail to recover total factor productivity growth. Strikingly the United Kingdom also fails to recover total factor productivity growth, despite higher projected capital growth than, for example, France.

    - The low result for France results from weak capital and TFP growth performance, which can be traced to low depreciation (signaling low innovation) and a relatively small tradeable manufacturing sector. In addition, TFP growth is negatively impacted by France's low exposure to international trade. Hence demand factors play a strong role in France's underperformance. Eventually trend growth in France will be dropping off to only about 0.25 per cent.

- The smaller economies show equally large differences in growth trend (**Chart 4c**).
    - The Irish economy has shown most growth volatility as it benefited during the 1990s from the accession to the EU, its specialization in producing high-tech IT equipment, and reforming the domestic labor and product markets. Despite the recession, Ireland is likely to retain many of those growth strengths in the coming decade returning the economy to a trend growth of about 3 percent.
    - In contrast the economies of the Netherlands and Sweden will recover to long term growth trends of 1.6-1.7 percent, while Austria settles at a lower growth trend of only 0.6 percent due to a weaker demographic trend and slower projected TFP growth.
- In Central and Eastern Europe, most economies will be able to generate higher total factor productivity growth than the old EU, despite a greater negative effect from slower population growth on the economies' labor forces. Competitive advantages in the foreign sector of the economy and structural changes in the domestic sector will continue to generate higher productivity growth (**Table 7a**).
    - The three large countries in the new EU-12 have all seen a significant acceleration in growth trend during the 1990s and 2000s, following the collapse of the socialist planned economies and the accession to the European Union.
    - However, Poland which is the largest economy in the new EU-12, with an originally larger and less developed economy, has shown a different timing and level in its growth path than Czech Republic and Hungary (**Chart 4d**). Poland has benefited more from catching-up effects given its low starting level and it has benefited from a strong increase in its integration of the value chain with Germany, both in manufacturing as well as in services (transportation). In the longer term, however, Poland is likely to settle at a slower growth trend than Czech Republic and Hungary as the smaller size of the foreign sector and the lower level of education hurt trend growth in the long run.

5. Is a multi-tiered Europe emerging?

In the light of the diverse trends described in the previous section, and the analysis on the decomposition of the growth drivers from a demand and supply perspective, where is Europe heading? The region has a range of major problems on its plate, which are currently being resolved in succession. The immediate urgency is to create greater macroeconomic and financial market stability in order to support a better foundation for sustainable growth. On the demand side there is room for short term demand recovery as output gaps in Europe remain relatively large, and these gaps are not closing rapidly in the aftermath of the crisis and the current austerity programs that many governments are implementing.

As the crisis lingers on, the long term growth trend of the European economy comes under threat under the influence of erosion in the growth drivers: higher structural unemployment, permanent scrapping of capacity and unutilized technologies and innovations. This risk is especially high for Europe, as it has seen a remarkable employment growth in the decade before the recession, but together slow productivity growth, lack of ICT contribution to productivity, weakness in productivity growth in service sector (but strong in manufacturing) and rising cost levels. The analysis of the recession impact shows that the weaknesses remain, or worsen, and the more successful growth drivers are also under threat. The good news is that the global demand for EU products and services has continued to evolve, and improved the competitive position in the global supply chain due to strength in manufacturing production and services. However, the foreign sector of Europe's economies cannot remedy the substantial structural problems in the domestic sectors.

The ways the short and long-term issues are being tackled have affected countries within Europe different and have contributed to the divergent economic prospects within Europe. Looking at the evidence from this paper, we may – tentatively – see three groups of countries emerging within Europe:

1) *A Germany-led supply chain group, including Austria and much of Central and Eastern Europe*

   It is clear from both the supply- and demand-side analysis in this paper that Germany has undergone a very different structural performance than other major European economies. Notably Germany has successfully exploited her strength in producing for global manufacturing, significant reforms in labor and product markets that supported a better performance in market services, as well as deliberate short-term policy action which was aimed at retaining employment during the recession. All of this helped the German economy to grow output and per capita income since 2006, and reduce the drop in labor productivity (despite a temporary decline in manufacturing TFP). On the demand side, Germany has continued and increased its engagement in the producing for the global market more than in the other large European economies, both from the perspective of jobs as well as productivity. In particular Germany's engagement with economies in Central and Eastern Europe (as well as Austria) has helped to create an optimal supply chain, benefitting the economies' strengths from a cost and innovation perspective. Most Central and East European countries have grown their contribution for the foreign sectors of the economy. Even Poland, which still has the largest domestic sector, has grown its foreign engagement in an impressive way.

2) *A Mediterranean group, including France*

   The structural issues in European economies have come most clearly to the forefront in the Mediterranean economies. The sovereign debt and banking crises of Greece, Italy, Portugal and Spain all have their own causes and dynamics, but in all cases they can be largely traced back to structural weaknesses in those economies, including the weakest productivity growth rates, lack of reforms in service sectors holding back productivity growth, and relatively low shares of direct and indirect activity related to foreign demand for goods and services. France has been

less severely hit by the crisis, largely because of sufficient policy leverage to cushion the domestic sector of the economy. However, of all countries in this group, France's trend growth projections are weakest due to lack of industries that respond to foreign demand in terms of jobs or productivity. Of all countries in this group, France has the lowest trend growth projections if it continues under current policy regimes.

3) *A Nordic/Benelux/UK/Ireland group*

While this third grouping of countries looks more heterogeneous, the countries included here have some characteristics making them different from the other two groups. Except for the United Kingdom, most economies are relatively small and therefore have sizeable and competitive sectors. However, there is not a supply chain in those countries that is as clearly integrated as the Germany/CEE group. Most countries in this group have larger foreign sectors than the Mediterranean group, but have been less successful in offsetting the immediate effects of the recession than the Germany/CEE group. Except for differences with the other two groups of countries, there are also some commonalities. For example, most countries have proceeded relatively far with labor and product market reforms as reflected in their stronger service sector productivity performance, and were out of the barn with this earlier than Germany or France (even though the UK has seen significant weakening in services since the middle of the decade), and many have also begun to tackle productivity problems in the non-market sectors of the economy.

It is difficult to predict whether those group will take clearer shape and create greater divergence among European economies are heading in the medium-term. Much will depend on the realization of policies that will potentially drive market integration and scale advantages, which are probably the most important sources of a growth bonus beyond the individual economies' performance. Without a stronger single European market, especially in services, scale advantages may be limited, and countries may rely more strongly on their own global supply chains. For example, growth may remain substantial in Germany and the Central and Eastern European economies, as they continue to benefit from strong demand from outside the EU. Smaller open economies as well as the UK, may individually also capture more demand from abroad on the basis of their comparative advantages. Finally, France, Italy, Spain and other smaller economies in the Mediterranean will remain more dependent on reforms that are overdue form domestic economies.

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Table 1: GDP, Per Capita Income and Labour Productivity Growth, %, 2001-2011

	GDP		GDP/capita		GDP/hour	
	2001-2005	2006-2011	2001-2005	2006-2011	2001-2005	2006-2011
EU-27	*2.0*	*1.1*	*1.7*	*0.8*	*1.7*	*1.0*
Euro Area	*1.6*	*0.9*	*1.1*	*0.5*	*1.0*	*0.9*
EU-15	*1.8*	*0.8*	*1.3*	*0.4*	*1.3*	*0.9*
Sweden	2.7	1.9	2.5	1.8	2.9	0.6
Luxembourg	3.6	1.8	2.2	0.6	1.7	-0.6
Germany	0.6	1.6	0.5	1.8	1.4	1.0
Austria	1.7	1.6	1.5	1.5	1.5	1.4
Netherlands	1.3	1.3	0.9	1.0	1.6	0.6
Belgium	1.6	1.3	1.4	1.2	0.6	0.4
Finland	2.6	1.1	2.4	1.0	2.3	0.3
France	1.6	0.8	1.0	0.2	1.4	0.7
Spain	3.3	0.8	1.7	-0.4	0.5	1.5
United Kingdom	3.0	0.6	2.5	0.0	2.5	1.0
Portugal	0.8	0.1	0.4	-0.2	0.9	1.0
Ireland	4.9	0.0	3.0	-1.7	2.4	2.1
Denmark	1.3	0.0	0.9	-0.3	1.2	0.1
Italy	1.0	-0.1	0.6	-0.7	0.2	0.1
Greece	4.0	-1.0	3.8	-1.1	2.5	0.4
EU-12	*4.1*	*3.0*	*4.3*	*3.2*	*4.4*	*2.5*
Poland	3.1	4.6	3.1	4.7	2.1	2.7
Slovak Republic	4.9	4.4	4.8	4.3	4.8	3.2
Bulgaria	5.5	2.5	6.5	3.4	3.7	3.1
Czech Republic	4.1	2.5	4.1	2.6	4.7	2.5
Romania	5.7	2.5	6.0	2.7	8.9	2.5
Malta	0.9	2.2	0.5	1.8	0.7	0.9
Cyprus	3.2	2.1	1.3	0.3	1.0	1.0
Lithuania	7.8	1.8	8.1	2.1	6.6	3.0
Slovenia	3.6	1.6	3.6	1.7	3.4	1.8
Estonia	7.2	1.2	7.9	1.9	5.7	2.4
Latvia	8.2	0.3	9.0	1.0	7.0	5.1
Hungary	4.2	0.1	4.4	0.2	4.9	0.7

Note: countries are ranked on the basis of their GDP growth in 2006-2011

Source: The Conference Board, Total Economy Database, September 2012 update

Table 2a: Growth Contributions by Supply-Side Sources of Growth, %, 2001-2005

Average growth of 2006-2011		from		Labour productivity contributions from			
	Growth rate of GDP	Hours worked	Labour productivity	Labour composition	ICT capital per hour	Non-ICT capital per hour	MFP growth
	1 = 2+3	2	3=4+5+6+7	4	5	6	7
EU-27	2.0	0.4	1.6	0.3	0.4	0.6	0.3
Euro Area	1.6	0.4	1.1	0.3	0.4	0.6	-0.1
EU-15	1.8	0.4	1.3	0.3	0.4	0.6	0.1
Sweden	2.7	-0.2	2.9	0.3	0.3	0.7	1.6
Luxembourg	3.5	1.8	1.7	0.2	0.0	1.4	0.2
Germany	0.6	-0.8	1.4	0.1	0.4	0.3	0.5
Austria	1.7	0.2	1.5	0.3	0.3	0.4	0.5
Netherlands	1.3	-0.3	1.6	0.5	0.4	0.4	0.2
Belgium	1.6	1.0	0.6	0.2	0.3	0.4	-0.4
Finland	2.6	0.3	2.3	0.2	0.7	0.3	1.0
France	1.6	0.2	1.4	0.2	0.4	0.9	-0.1
Spain	3.2	2.8	0.5	0.6	0.2	0.5	-0.8
United Kingdom	2.9	0.5	2.4	0.5	0.6	0.5	0.9
Portugal	0.8	0.0	0.9	1.0	0.6	0.9	-1.7
Ireland	4.8	2.4	2.4	0.5	0.6	1.5	-0.1
Denmark	1.2	0.0	1.2	0.2	0.6	0.4	0.1
Italy	1.0	0.8	0.2	0.2	0.1	0.6	-0.7
Greece	4.0	1.5	2.4	0.8	0.5	1.4	-0.2
EU-12	4.1	0.0	4.1	0.4	1.1	0.8	1.8
Poland	3.0	1.0	2.1	0.3	0.6	0.5	0.7
Slovak Republic	4.8	0.1	4.7	0.2	0.9	0.7	2.9
Bulgaria	5.3	1.7	3.6	0.3	1.3	3.2	-1.3
Czech Republic	4.0	-0.6	4.6	0.4	0.6	1.7	1.9
Romania	5.6	-3.0	8.6	0.3	2.6	-0.8	6.5
Malta	0.9	0.2	0.7	0.3	0.0	0.2	0.3
Cyprus	3.2	2.2	1.0	0.4	0.0	-0.3	0.9
Lithuania	7.5	1.1	6.4	0.1	0.0	1.9	4.3
Slovenia	3.6	0.2	3.4	0.8	0.6	1.4	0.6
Estonia	6.9	1.3	5.6	0.1	0.0	2.1	3.4
Latvia	7.9	1.2	6.8	0.1	0.0	3.6	3.0
Hungary	4.1	-0.7	4.8	0.7	1.6	1.2	1.2

Note: countries are ranked on the basis of their GDP growth in 2006-2011 (see Table 2b)

Source: The Conference Board, Total Economy Database, September 2012 update

Table 2b: Growth Contributions by Supply-Side Sources of Growth, %, 2006-2011

Average growth of 2006-2011		from		Labour productivity contributions from			
	Growth rate of GDP	Hours worked	Labour productivity	Labour composition	ICT capital per hour	Non-ICT capital per hour	MFP growth
	1 = 2+3	2	3=4+5+6+7	4	5	6	7
EU-27	1.1	0.1	1.0	0.1	0.5	0.5	-0.2
Euro Area	0.9	0.1	0.8	0.1	0.5	0.4	-0.2
EU-15	0.8	0.1	0.8	0.1	0.5	0.4	-0.2
Sweden	1.9	1.3	0.6	0.1	0.3	0.4	-0.3
Luxembourg	1.8	2.4	-0.6	0.2	0.0	1.0	-1.7
Germany	1.6	0.6	1.0	0.1	0.1	0.2	0.6
Austria	1.6	0.2	1.4	0.0	0.2	0.3	0.8
Netherlands	1.3	0.7	0.6	0.1	0.2	0.2	0.1
Belgium	1.3	0.9	0.4	0.2	0.3	0.4	-0.5
Finland	1.1	0.8	0.3	0.2	0.7	0.2	-0.7
France	0.8	0.1	0.7	0.2	0.4	0.8	-0.6
Spain	0.8	-0.7	1.5	0.3	0.8	1.1	-0.7
United Kingdom	0.6	-0.3	0.9	0.1	0.4	0.6	-0.2
Portugal	0.1	-0.9	1.0	0.6	0.9	0.4	-0.9
Ireland	0.0	-2.1	2.1	0.2	0.9	2.1	-1.0
Denmark	0.0	-0.1	0.1	0.1	0.8	0.1	-0.8
Italy	-0.1	-0.2	0.1	0.1	0.3	0.3	-0.6
Greece	-1.0	-1.3	0.4	0.3	5.6	-3.5	-2.1
EU-12	3.0	0.6	2.5	0.2	0.6	1.3	0.4
Poland	4.5	1.9	2.6	0.1	0.4	1.1	1.0
Slovak Republic	4.3	1.1	3.2	0.1	1.0	0.3	1.8
Bulgaria	2.5	-0.5	3.0	0.4	1.6	3.9	-2.9
Czech Republic	2.5	0.0	2.5	0.1	0.3	1.4	0.7
Romania	2.5	-0.1	2.5	0.3	0.1	0.7	1.4
Malta	2.2	1.4	0.9	0.2	0.0	-0.3	1.0
Cyprus	2.0	1.1	1.0	0.4	0.0	0.5	0.1
Lithuania	1.8	-1.2	3.0	0.2	0.0	2.8	0.0
Slovenia	1.6	-0.2	1.8	0.3	0.8	0.8	-0.1
Estonia	1.2	-1.2	2.4	0.2	0.0	2.0	0.2
Latvia	0.3	-4.6	4.9	0.1	0.0	4.6	0.1
Hungary	0.1	-0.6	0.7	0.2	1.6	0.4	-1.5

Note: countries are ranked on the basis of their GDP growth in 2006-2011

Source: The Conference Board, Total Economy Database, September 2012 update

Table 3a: Growth Contributions by Major Sector of Production, 2001-2005, in %						
2001-2005	GDP	Hours	Labor Compo-sition	Non-ICT Capital	ICT Capital	Total Factor Productivity Growth
Austria						
Goods	1.8	-0.8	0.5	0.2	-0.2	2.1
Market Services	1.7	-0.1	0.2	0.4	0.1	1.0
Non-Market Services	2.0	1.1	0.2	0.3	1.1	-0.8
France						
Goods	0.8	-1.7	0.5	0.1	0.1	1.7
Market Services	2.2	0.7	0.2	0.2	0.5	0.6
Non-Market Services	1.3	0.4	0.2	0.3	0.8	-0.4
Germany						
Goods	1.5	-1.6	0.3	0.1	0.0	2.7
Market Services	0.3	-1.2	0.2	0.2	0.2	0.8
Non-Market Services	1.2	0.4	0.2	0.3	0.6	-0.4
Italy						
Goods	-0.4	-0.6	0.3	0.1	0.4	-0.6
Market Services	1.5	0.8	0.2	0.1	1.0	-0.7
Non-Market Services	1.4	0.8	0.2	0.3	0.9	-0.8
Spain						
Goods	0.4	-0.8	0.3	0.2	0.6	0.2
Market Services	4.3	2.1	0.2	0.5	2.1	-0.6
Non-Market Services	3.2	3.1	0.3	0.4	1.5	-2.0
United Kingdom						
Goods	-0.9	-3.2	0.2	0.1	-0.4	2.3
Market Services	3.7	0.5	0.2	0.9	0.8	1.3
Non-Market Services	3.4	2.1	0.1	0.5	0.7	0.0
Aggregate 6 EU Countries						
Goods	0.5	-1.5	0.3	0.1	0.1	1.5
Market Services	2.2	0.5	0.2	0.4	0.6	0.4
Non-Market Services	1.9	1.1	0.2	0.3	0.7	-0.5
Note: Non-market services includs Community, Social and Personal Services						
Sources: EU KLEMS Database, update November 2012.						

Table 3b: Growth Contributions by Major Sector of Production, 2006-2010, in %						
2006-2010	GDP	Hours	Labor Compo-sition	Non-ICT Capital	ICT Capital	Total Factor Productivity Growth
Austria						
Goods	1.1	-1.1	0.2	0.1	0.0	1.9
Market Services	0.9	0.0	0.2	0.2	0.1	0.2
Non-Market Services	1.8	0.5	0.3	0.2	0.8	-0.1
France						
Goods	-0.8	-2.0	0.5	0.1	0.2	0.5
Market Services	0.6	0.5	0.4	0.1	0.4	-0.9
Non-Market Services	1.1	0.3	0.3	0.1	0.8	-0.5
Germany						
Goods	0.8	-0.7	0.6	0.1	0.1	0.7
Market Services	2.0	0.1	0.2	0.2	0.3	1.2
Non-Market Services	1.0	0.8	0.2	0.2	0.6	-0.8
Italy						
Goods	-1.6	-1.6	0.3	0.0	0.2	-0.5
Market Services	-0.1	0.0	0.2	0.1	0.5	-0.9
Non-Market Services	0.3	0.4	0.2	0.1	0.4	-0.8
Spain						
Goods	-2.0	-3.0	0.2	0.1	0.4	0.2
Market Services	0.7	-1.0	0.2	0.2	1.5	-0.2
Non-Market Services	2.8	1.9	0.1	0.2	1.4	-0.8
United Kingdom						
Goods	-2.6	-2.4	0.0	0.0	-0.2	-0.1
Market Services	0.0	-0.3	0.5	0.2	0.6	-1.1
Non-Market Services	1.3	0.6	0.4	0.2	0.7	-0.6
Aggregate 6 EU Countries						
Goods	-0.7	-1.8	0.3	0.1	0.1	0.6
Market Services	0.7	-0.1	0.4	0.2	0.5	-0.1
Non-Market Services	1.2	0.7	0.3	0.2	0.7	-0.6
Note: Non-market services includs Community, Social and Personal Services						
Sources: EU KLEMS Database, update November 2012; with updates by the authors to include 2010.						

Table 4: Employment Share from Foreign Demand for Goods and Services, proportion of Total Employment

	Employment Share From Foreign Demand for Goods			Employment Share From Foreign Demand for Market Services		
	2000	2005	2009	2000	2005	2009
EU-27	0.118	0.115	0.112	0.139	0.143	0.150
EU-15	0.107	0.100	0.096	0.114	0.122	0.128
Luxembourg	0.122	0.112	0.105	0.173	0.201	0.265
Belgium	0.150	0.136	0.126	0.194	0.179	0.195
Austria	0.136	0.143	0.132	0.149	0.170	0.173
Germany	0.122	0.132	0.134	0.129	0.157	0.163
Netherlands	0.125	0.111	0.108	0.118	0.129	0.138
Ireland	0.180	0.145	0.124	0.050	0.056	0.070
Denmark	0.145	0.127	0.120	0.058	0.060	0.074
Sweden	0.137	0.127	0.117	0.041	0.047	0.059
United Kingdom	0.074	0.058	0.057	0.105	0.107	0.118
Finland	0.158	0.135	0.121	0.040	0.044	0.051
Italy	0.111	0.106	0.102	0.058	0.066	0.070
Spain	0.096	0.086	0.075	0.097	0.094	0.097
Portugal	0.132	0.122	0.113	0.033	0.044	0.051
France	0.092	0.082	0.074	0.092	0.092	0.091
Greece	0.045	0.036	0.033	0.048	0.053	0.053
EU-12	0.163	0.180	0.179	0.052	0.060	0.073
Slovakia	0.208	0.206	0.199	0.176	0.195	0.204
Lithuania	0.156	0.145	0.154	0.154	0.180	0.212
Poland	0.134	0.176	0.173	0.104	0.121	0.137
Slovenia	0.235	0.230	0.210	0.063	0.082	0.096
Estonia	0.231	0.228	0.197	0.092	0.090	0.103
Czech Republic	0.205	0.231	0.219	0.061	0.066	0.072
Bulgaria	0.198	0.170	0.208	0.013	0.010	0.015
Hungary	0.174	0.175	0.188	0.011	0.011	0.013
Romania	0.156	0.165	0.156	0.019	0.021	0.024
Malta	0.127	0.127	0.105	0.019	0.024	0.034
Latvia	0.147	0.134	0.127	0.008	0.009	0.011
Cyprus	0.070	0.047	0.056	0.018	0.028	0.023

Note: Employment shares relate to all activities that serve production of goods or services for final demand; countries are ranked on the combinedshare of employment for foreign demand (goods and services) in total employment

Source: World Input-Output Database (WIOD), Timmer et al. (2012).

Table 5: Relative Productivity Levels from Production for Foreign Demand for Goods and Services, Total Economy = 1.000

	Relative Productivity level for Foreign Demand for Goods			Relative Productivity level for Foreign Demand for Market Services		
	2000	2005	2009	2000	2005	2009
EU-27	1.019	0.983	0.900	1.067	1.067	1.048
EU-15	1.125	1.111	1.018	1.043	1.053	1.045
Luxembourg	0.861	0.740	0.608	1.279	1.293	1.258
Belgium	1.156	1.124	1.019	0.960	1.018	0.986
Austria	1.061	1.069	1.021	1.062	1.012	1.020
Germany	1.111	1.175	1.031	0.986	0.970	0.993
Netherlands	1.285	1.362	1.316	0.933	0.947	0.932
Ireland	1.673	1.447	1.654	0.991	1.204	1.113
Denmark	1.118	1.168	1.092	1.043	1.066	0.901
Sweden	1.176	1.208	1.095	1.043	1.075	1.043
United Kingdom	1.380	1.371	1.346	1.090	1.135	1.182
Finland	1.242	1.232	1.064	0.974	0.974	0.980
Italy	0.930	0.877	0.814	1.022	0.984	0.971
Spain	0.986	0.928	0.868	1.019	0.982	0.976
Portugal	0.701	0.663	0.682	1.271	1.168	1.126
France	1.043	0.976	0.839	0.993	0.991	0.988
Greece	0.665	0.622	0.682	1.312	1.626	1.593
EU-12	0.819	0.849	0.812	1.326	1.275	1.208
Slovakia	0.948	0.977	0.883	1.076	1.008	0.972
Lithuania	0.788	0.872	0.775	1.374	1.388	1.236
Poland	0.750	0.755	0.784	1.479	1.401	1.303
Slovenia	0.830	0.863	0.821	1.108	1.090	1.041
Estonia	0.753	0.708	0.710	1.196	1.273	1.237
Czech Republic	0.946	0.945	0.877	1.002	0.996	0.992
Bulgaria	0.781	0.770	0.682	1.378	1.340	1.252
Hungary	0.873	0.946	0.893	1.107	1.020	1.052
Romania	0.766	0.717	0.701	1.819	1.464	1.362
Malta	1.094	0.960	0.989	1.093	1.060	0.982
Latvia	0.642	0.660	0.624	1.392	1.453	1.098
Cyprus	0.723	0.741	0.642	0.974	0.868	0.948

Note: Labour productivity is measured as output per person employed

Source: World Input-Output Database (WIOD), Timmer et al. (2012).

Table 6: Growth in Productivity by Source of Demand, logarithmic change, 2000-2008							
	Foreign Demand for Goods	Foreign Demand for Market Services	Foreign Demand for Non-Market Services	Domestic Demand for Goods	Domestic Demand for Market Services	Domestic Demand for Non-Market Services	Total Demand
EU-27	0.080	0.078	0.004	0.095	0.261	0.171	0.690
EU-15	0.068	0.075	0.004	0.059	0.271	0.178	0.655
Luxembourg	0.067	0.294	0.003	0.009	0.236	0.135	0.743
Belgium	0.088	0.171	0.002	0.018	0.222	0.203	0.704
Austria	0.101	0.104	0.002	0.069	0.253	0.150	0.680
Germany	0.091	0.072	0.003	0.057	0.230	0.149	0.602
Netherlands	0.105	0.146	0.009	0.024	0.264	0.194	0.741
Ireland	0.098	0.229	0.006	0.053	0.259	0.177	0.822
Denmark	0.098	0.092	0.003	0.033	0.241	0.226	0.692
Sweden	0.079	0.100	0.006	0.040	0.203	0.195	0.622
United Kingdom	0.037	0.063	0.004	0.037	0.266	0.152	0.559
Finland	0.105	0.084	0.007	0.065	0.236	0.216	0.714
Italy	0.067	0.053	0.002	0.082	0.249	0.185	0.638
Spain	0.065	0.058	0.004	0.098	0.406	0.160	0.791
Portugal	0.100	0.052	0.003	0.118	0.302	0.153	0.728
France	0.052	0.064	0.004	0.053	0.297	0.234	0.704
Greece	0.031	0.065	0.003	0.184	0.376	0.183	0.841
EU-12	0.218	0.127	0.006	0.346	0.310	0.206	1.214
Slovakia	0.305	0.228	0.013	0.144	0.475	0.276	1.442
Lithuania	0.212	0.158	0.006	0.268	0.373	0.308	1.324
Poland	0.170	0.080	0.005	0.332	0.273	0.190	1.049
Slovenia	0.221	0.109	0.009	0.116	0.312	0.127	0.894
Estonia	0.277	0.209	0.010	0.093	0.458	0.234	1.281
Czech Republic	0.271	0.207	0.013	0.129	0.436	0.215	1.271
Bulgaria	0.227	0.129	0.007	0.228	0.258	0.241	1.090
Hungary	0.235	0.194	0.013	0.195	0.326	0.246	1.209
Romania	0.267	0.109	0.000	0.832	0.354	0.189	1.751
Malta	0.078	0.131	0.007	0.045	0.207	0.209	0.676
Latvia	0.169	0.152	0.014	0.190	0.422	0.304	1.251
Cyprus	0.038	0.079	0.003	0.062	0.339	0.180	0.702
Note: logarthimic change in change between 2000-2008 weighted at average employment shares for 2000 and 2008							
Source: World Input-Output Database (WIOD), Timmer et al. (2012).							

Table 7a: Growth Projections by Supply-Side Sources of Growth, %, 2013-2018

2013-2018		GDP contribution from			
	Growth rate of GDP	Persons employed	Labour composition	Capital	Total Factor Produc-tivity
	1	2	3	4	6
*Europe**	1.2	-0.1	0.1	0.9	0.2
Euro Area	1.1	-0.1	0.1	0.8	0.2
EU-15					
Sweden	1.7	-0.2	0.1	1.3	0.4
Luxembourg	2.5	0.4	0.1	1.3	0.7
Germany	1.8	-0.3	0.1	1.4	0.6
Austria	1.1	-0.2	0.1	1.1	0.2
Netherlands	1.4	0.0	0.1	0.9	0.4
Belgium	1.5	-0.2	0.2	1.1	0.4
Finland	1.0	-0.5	0.2	1.1	0.2
France	0.2	-0.1	0.2	0.2	0.0
Spain	1.2	0.2	0.2	0.8	0.1
United Kingdom	0.9	0.1	0.1	0.8	-0.1
Portugal	0.9	0.0	0.3	0.5	0.1
Ireland	2.7	0.4	0.1	1.7	0.5
Denmark	1.6	0.0	0.1	1.2	0.3
Italy	0.6	0.0	0.0	0.6	0.0
Greece	0.4	0.0	0.1	0.3	0.0
EU-12, of which					
Poland	1.9	-0.4	0.1	1.6	0.6
Czech Republic	1.9	-0.5	0.1	1.2	1.0
Malta	2.0	-0.3	0.2	1.2	0.9
Cyprus	1.2	0.4	0.1	0.4	0.3
Hungary	1.8	-0.3	0.2	1.2	0.8
Norway	1.5	0.0	0.1	1.1	0.2
Switzerland	1.9	0.3	0.1	1.2	0.3

Note: Europe includes EU-27 as well as Norway and Switzerland. Countries are ranked on the basis of their GDP growth in 2006-2011 (see Table 2a)

Source: The Conference Board, Global Economic Outlook 2013; Chen et al. (2012)

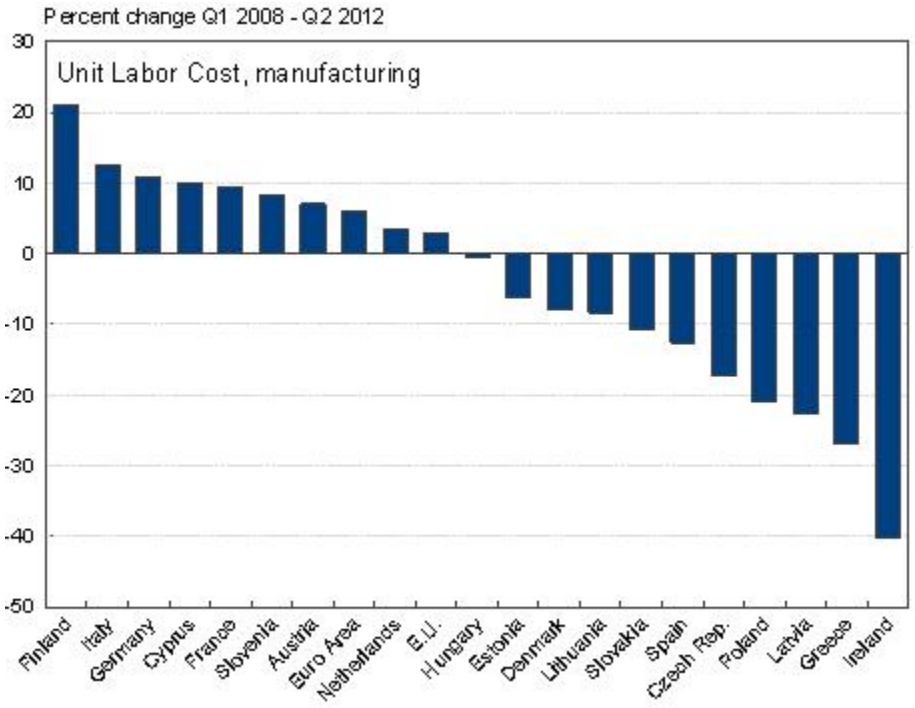
Table 7b: Growth Projections by Supply-Side Sources of Growth, %, 2019-2025

2019-2025		GDP contribution from			
	Growth rate of GDP	Persons employed	Labour composition	Capital	Total Factor Produc-tivity
	1	2	3	4	6
*Europe**	1.2	-0.2	0.1	1.0	0.2
Euro Area	1.1	-0.2	0.2	0.9	0.2
EU-15					
Sweden	1.7	-0.1	0.1	1.3	0.4
Luxembourg	2.3	0.4	0.1	0.9	0.9
Germany	1.2	-0.6	0.1	1.2	0.5
Austria	0.7	-0.4	0.1	0.9	0.1
Netherlands	1.5	-0.1	0.1	1.0	0.5
Belgium	1.3	1.3	1.3	1.3	1.3
Finland	0.8	-0.4	0.2	0.9	0.1
France	0.3	0.0	0.2	0.2	0.0
Spain	1.7	0.3	0.3	1.1	0.1
United Kingdom	1.1	0.1	0.1	1.0	-0.1
Portugal	1.5	-0.1	0.6	0.9	0.1
Ireland	3.0	0.5	0.1	1.9	0.5
Denmark	1.4	-0.1	0.1	1.1	0.3
Italy	0.9	-0.1	0.1	1.0	0.0
Greece	1.4	-0.2	0.3	1.2	0.2
EU-12, of which					
Poland	1.5	-0.5	0.1	1.4	0.5
Czech Republic	2.3	-0.4	0.1	1.4	1.2
Malta	1.8	-0.3	0.2	1.1	0.8
Cyprus	1.5	0.4	0.2	0.6	0.4
Hungary	2.4	-0.5	0.2	1.6	1.1
Norway	1.2	-0.1	0.1	0.9	0.3
Switzerland	1.7	0.1	0.1	1.1	0.3

Note: Europe includes EU-27 as well as Norway and Switzerland. Countries are ranked on the basis of their GDP growth in 2006-2011 (see Table 2a)

Source: The Conference Board, Global Economic Outlook 2013; Chen et al. (2012)

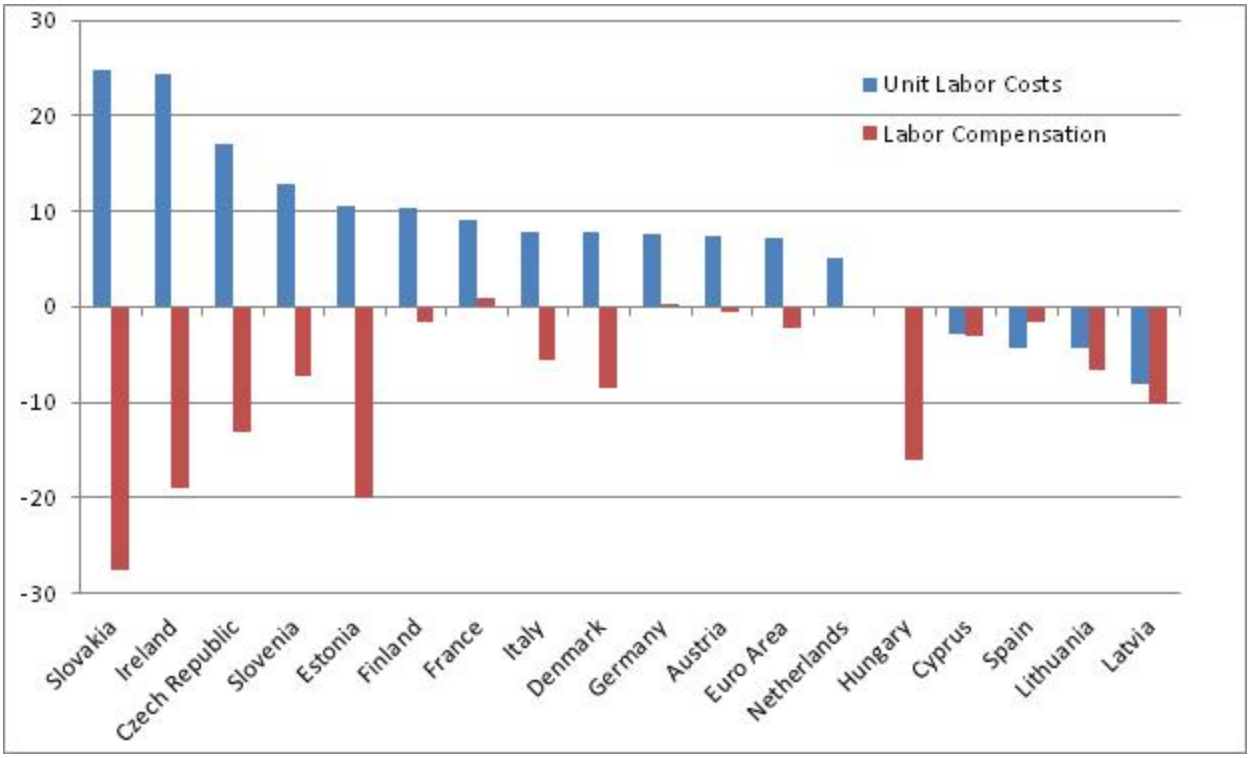
Chart 1: Changes in Unit Labor Cost in Manufacturing, %



Note: Unit Labor Cost in national currency

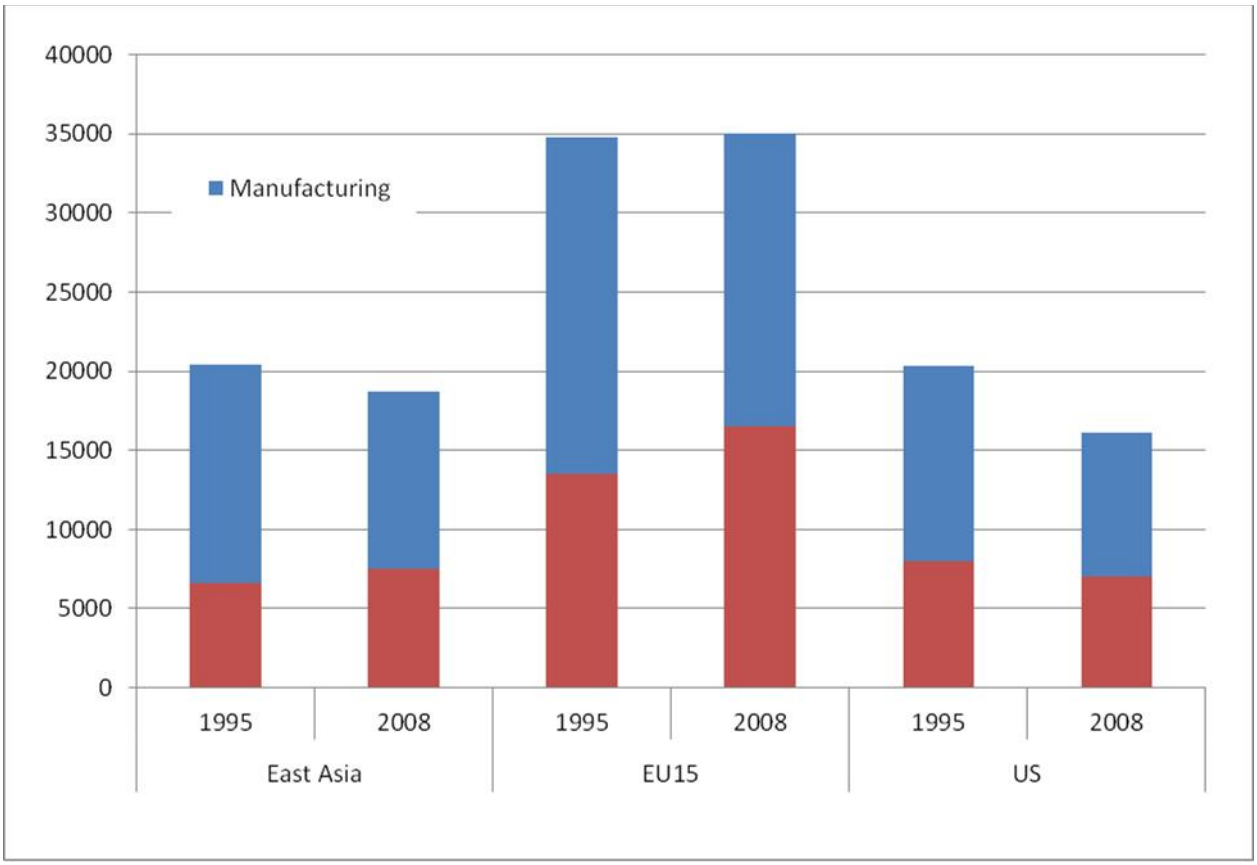
Source: Colijn and van Ark, 2012, The Conference Board, updated.

Chart 2: Changes in Labor Compensation and Unit Labor Cost in Services, % change between Q1 2008 and Q4 2011



Note: data for Denmark, the Euro Area, Ireland and the Netherlands are for Q3 2011
Source: Colijn and van Ark, 2012, The Conference Board, updated.

Chart 3: Number of workers in manufacturing and non-manufacturing contributing to global production of manufacturing products (000s)



Note: East Asia includes Japan, South Korea, Taiwan, Singapore and Hong Kong. EU-15 includes fifteen member countries before 2004.

Source: World Input-Output Database (WIOD), Timmer et al. (2012).

Chart 4: Long term growth trend of GDP growth, %

Chart 4a: EU-27, old EU-15 and new EU-12

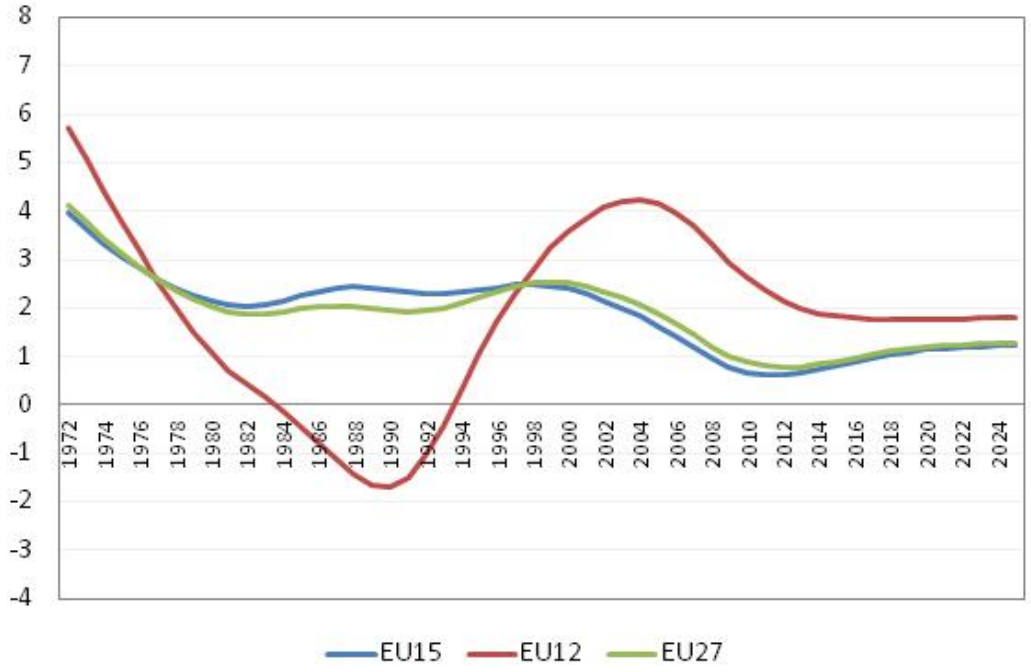


Chart 4b: Large old EU-15 economies: Germany, France, Italy, Spain and United Kingdom

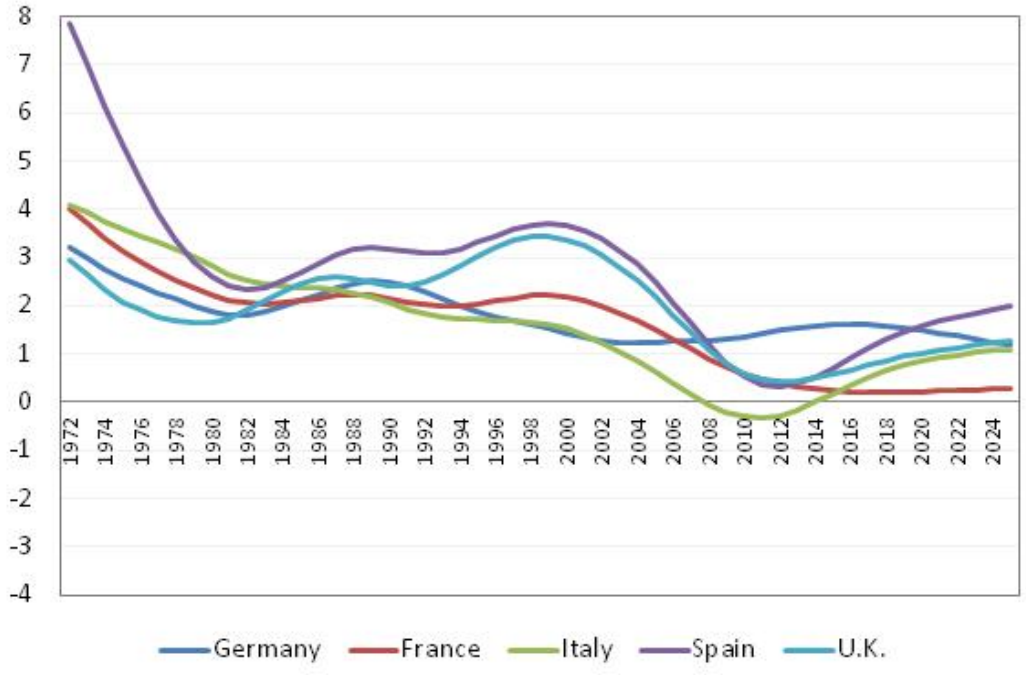


Chart 4c: Small old EU-15 economies: Austria, Ireland, Netherlands and Sweden

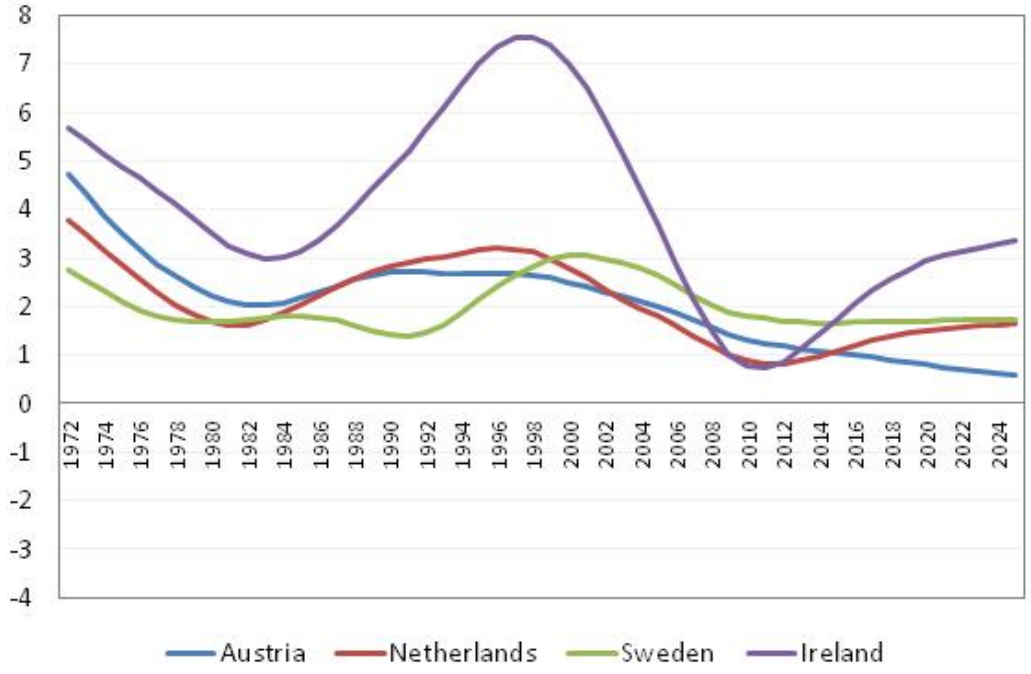
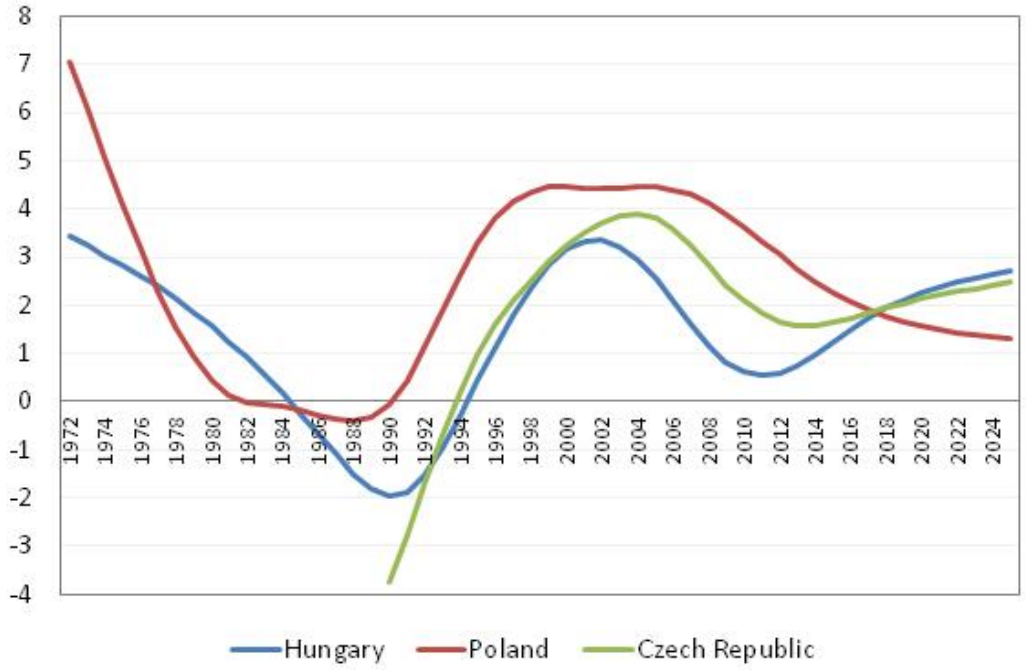


Chart 4d: Large new EU-12 economies: Czech Republic, Hungary and Poland



Note: The series in these charts are smoother by using a Hodrick-Prescott filter
Source: The Conference Board Global Economic Outlook 2012, Chen et al. (2012).