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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: 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 labour 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 services 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, using a combination of national input-output tables, bilateral international trade statistics and data on production factor requirements. This demand-oriented analysis shows that global demand for Europe's products and services has evolved positively in terms of jobs creation and productivity growth in the past decade. 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 increase in the contribution of service sector activities to the global value chain. Europe has managed successfully to increase manufacturing and service sector jobs and raise its share of labour income from high and medium skilled labour, 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. The first theme, ***productivity and growth***, is primarily supply side-oriented, and focuses on a growth decompositions to labour, capital and productivity and unit labour cost analysis (**Section 2**). We provide the latest updates on the changes in sources of economic growth since the 2008/09 crisis hit.

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 projections for the next 10 years (2013-2018 and 2019-2025) which are based on estimates of growth contributions from labour and capital input as well as productivity.

On the basis of this analysis we determine in **Section 5** a possible grouping of economies in Europe as the structural issues that arise from the supply- and demand-side analysis show substantive differences and countries show different trajectories in emerging from the crisis.

Finally, **Section 6** describes four scenarios for Europe's growth performance, which are structured along the supply and demand dimensions, described above. The scenarios will be assessed on their impact on economic growth and its drivers as well as sector structure, cost and income.

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. To understand how the recovery will evolve, who will benefit and what the timing will be, it is important to distinguish between cyclical recession and recovery effects, and the structural impact of the crisis. For this, one should not only look at the most recent changes in growth rates or detect the green shoots of recovery, but also to take a comparative view at the pre- and post-crisis trends in economic growth on a longer-term basis .

Thanks to two datasets that are now being updated and extended on a regular basis, we have recent data series on the latest productivity developments in a comparative perspective. On the basis of the most recent update of *The Conference Board Total Economy Database* (January 2013) and the *EUKLEMS Growth and Productivity Accounts* (November 2012), we can review the impact of the crisis by looking at Europe's growth and productivity performance during the last decade.

We first review the latest macroeconomic output, per capita income and productivity estimates for 2001-2005 and 2006-2011.[3] The latter sub-period is of course strongly affected by the 2008-09 recession, but by including the peak year 2007 and the recovery years 2010 and 2011, it provides a good comparison with the first sub-period. Second, we decompose output growth into the contributions of growth in hours worked, labour composition, capital (both IT and non-IT) and total factor productivity (TFP). Third, TFP growth, in turn, can also be broken down to the sector level, using updated EUKLEMS data, to look at shifts in productivity between the goods sector, market services and non-market services.

Output, per capita income and labour productivity performance

When looking at the impact of the Great Recession on Europe's growth, it is useful to look at aggregate GDP, GDP per capita and labour productivity together to better capture and understand the effects of changes in the labour market. We find that GDP and per capita growth about halved in the aggregate EU-27 between 2001-2005 and 2006-2011 (***Table 1***). In the "old" EU-15, representing the member states before 2004, both GDP growth and GDP per capita growth fell between periods in all economies, except Germany and the Netherlands. For the new member states (EU-12), only Poland (and Malta) saw an increase in GDP growth and GDP per capita growth. Some Central and Eastern European countries were hurt because of their export dependence on the rest of Europe.

The slowdown in labour productivity growth after 2005 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 labour force participation. Underlying the slowdown in productivity growth are stark differences between countries. The biggest declines in labour productivity growth in EU-15 countries between periods were seen in Sweden, Luxembourg and, not surprisingly, in Greece. These productivity declines were related to the large decline in GDP growth in those economies. In Germany, despite a rise in GDP and per capita income growth between 2001-2005 and 2006-2011, labour productivity growth fell by 0.4 percentage points, suggesting strong labour hoarding effects as a result of short-time working programs. In contrast, labour productivity growth increased in Poland between the 2001-2005 and the 2006-2010 periods, which resulted from an expansionary growth process. Spain also saw an acceleration in labour productivity growth, but, in contrast to Poland, it cut hours even more than GDP.

A sources-of-growth analysis

Using a growth accounting framework, ***Tables 2a and 2b*** decompose the growth of aggregate GDP into the contributions of labour, capital and TFP for both sub-periods. On average, hours worked in the "old" EU-15 contributed less to growth from 2006 to 2011 than from 2001 to 2005, although the picture is very mixed between economies. Germany, Sweden and Luxembourg showed the largest gains in hours

[3] While estimates of growth performance in 2012 are available (see http://www.conference-board.org/data/economydatabase/), we take 2011 as the end year as the comparison between the two periods could be affected by the preliminary nature of the 2012 estimates.

worked between periods while, not surprisingly, the "troubled" economies (Greece, Spain, Portugal, Italy and Ireland) showed the weakest labour market performance. On average, hours in the “new” EU-12 countries contributed more to growth in 2006-2011, especially because of a better labour market outcome in Poland and the Slovak Republic. Labour markets in the Baltic States and Hungary were much more severely affected by the crisis.

Capital growth was the main driver of labour productivity growth in the aggregate EU estimates in both sub-periods, 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 but also in the "troubled" economies (including Ireland). Non-ICT capital growth accounted for the largest part of capital growth in the new EU-12 countries in the 2006-2011 period. Ireland maintained a relatively rapid growth in non-ICT capital, probably as a result of the construction boom.

TFP has emerged as the Achilles’ heel of Europe’s growth performance. In the "old" EU-15, all countries had negative TFP growth in 2006-2011, except for Germany, Austria and the Netherlands. In the "new" EU-12, TFP growth remained positive, except in Bulgaria, Hungary and Slovenia, but it was very weak in the Baltic States.

Overall, TFP 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. Beyond the temporary impact from the recession, 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 labour, 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.

A sectoral perspective on the productivity slowdown

To test the hypothesis of negative reallocation effects as a source of the slowdown in aggregate productivity growth in Europe between 2001-2005 and 2006-2010, we look at a breakdown for TFP growth between three major sectors of the economy: 1) goods production, including agriculture, mining and manufacturing; 2) market services, including wholesale and retail trade, transportation and warehousing; among other services; and 3) non-market services, which include community, personal and social services (including education, health care and public administration) and real estate services.[4] So far, industry-level growth accounting results extend to 2010, and could be obtained for the five

[4] Measurement problems with regard to output in non-market services are large and the productivity estimates should therefore be interpreted with caution. Real estate activities are also included with non-market services, as the output measure includes imputed rents on owner-occupied dwellings, making the interpretation of the productivity measure problematic.

largest European economies (France, Germany, Italy, Spain and the United Kingdom) as well as Austria and the Netherlands, 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 from TFP. In the goods sector, TFP growth was positive (except for Italy) during the 2001-2005 period, but weakened during the 2006-2010 period. The biggest decline in goods sector TFP growth occurred in the United Kingdom and, perhaps surprisingly, in Germany. The dynamics, however, were quite different between the two countries. In the UK, most of the decline was due to a decline in output growth since 2006, which was already negative in the earlier half of the decade. In Germany the slowdown in output was much more moderate, and it was primarily the retaining of labour and postponement of investment which created a temporary setback for TFP growth. In 2010, TFP growth in the goods sector in Germany rebounded 13.0 per cent after plummeting 18.7 per cent in 2009. In the UK, TFP fell by only 2.8 per cent in 2009 and showed a moderate recovery of 3.1 per cent in 2010 (Chart 1).

TFP growth was weaker in market services than in goods production in 2001-2005, and the situation worsened in 2006-2010. France and the United Kingdom suffered the largest declines, as inputs did not 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 decent employment growth. However, Germany's TFP growth rate in market services increased from 0.8 per cent per year in 2001-2005 to 1.2 per cent in 2006-2010, recovering from a very weak output growth rate, from 0.3 per cent per year in 2001-2005 to 2.0 per cent in 2006-2010.

In non-market services, TFP growth was zero or negative in all seven European economies for both the 2001-2005 and the 2006-2010 periods. While the measurement of real output in non-market services is fraught with problems, which are only slowly being resolved, it is important to understand the dynamics of change in the sector, which accounts for up to 30 per cent of employment in most European economies. Output growth in non-market services remained relatively stable in most countries between 2001-2005 and 2006-2010, except for Italy and the United Kingdom where it dropped by 1.1 percentage points and 2.1 percentage points per year, respectively. Spain and the UK saw the largest downward adjustments in total hours growth in non-market services, but for all six economies the growth rate remained positive. The fall-off in TFP growth between periods was strongest in the UK. In fact, Spain and Austria saw significant improvements in TFP growth, though the TFP growth rate remained negative in both cases. Non-market services typically show weak productivity growth, as the Baumol "cost-disease" hypothesis in services applies mostly 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 sectoral growth accounts show considerable declines in TFP growth across the board between 2001-05 and 2006-10, so that labour input shifts to less productive activities do not materialize as the main explanation for the slowing trend at the 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 may point to the need for continued structural reforms in labour and product markets. However, ongoing investments in capital, especially in ICT capital, may also signal a drive towards better innovation performance with potential productivity gains in the services sector. One hypothesis may be that stronger intra-European competitiveness is beginning to emerge as a positive source for growth in Europe's market services.

Is the manufacturing sector regaining competitiveness?

As observed above, the 2008/09 recession has impacted the goods sector mostly severely, and the manufacturing sector which involves most tradeables in the economy in particular. However, manufacturing has also shown the fastest recovery in output and productivity since 2010. While productivity is one of the most used measures of long-term economic growth and competitiveness, it does not tell the whole story about short and medium term adjustments in competitiveness, which is measured by labour cost per unit of output. Since the 2008/09 crises erupted, there have also been enormous shifts in relative competitiveness in manufacturing sectors between European economies. **Chart 2** looks at the changes in unit labour cost (ULC) on a quarterly basis in manufacturing since the beginning of the recession, based on the basis of The Conference Board's Unit Labour Cost database:[5]

The chart shows that some of the most troubled economies in Europe have seen the largest declines in manufacturing ULC, pointing at the beginning of an adjustment process in relative competitiveness for these economies (Colijn and van Ark, 2013). Much of the adjustment is still driven by a substantial slowdown or even a decline in compensation per hour but various countries have also seen rapid improvements in labour productivity resulting from large restructuring and layoffs. rather than significant improvements in productivity, but this may still be the start of structural adjustments that will strengthen competitiveness in these economies.

Among the countries with declining ULC, Greece and Ireland were exhibiting declines in compensation per hour which, in the case of Ireland, was combined with a rapid increase in productivity, leading to a decline in ULC of 40 percent in 3.5 years times. In Greece the drop in ULC was more than 25 percent, and in Spain, which showed a very moderate rise in compensation per hour of only 5 percent since 2008, ULC fell by 12.5 percent. Various Central and East European economies, including Estonia, Latvia, Poland and Slovakia were able to combine significant wage rises with even faster productivity growth, pointing at their expansionary growth in manufacturing activity.

[5] Unit labour cost is measured here as nominal labour compensation relative to real output. Nominal labour compensation refers to the growth of the total wage bill, irrespective of it being the result of a change in the labour force or an increase in wage cost per worker. Real output is the growth in GDP adjusted for changes in inflation. Alternatively, unit labour cost reflects labour compensation per hour worked relative to output per hour worked. Though widely used, unit labour cost should still be interpreted as a partial measure of cost competitiveness as it only deal with labour cost and takes no account of many other costs during production, such as transportation costs, capital or intermediate input costs, etc.

Manufacturing ULC in several of the "stronger" economies in Europe, have increased during the 2008-2012 period, including France, Germany and the United Kingdom. Germany's manufacturing ULC may especially surprise, because of the manufacturing sector's strong export performance. Manufacturing labour productivity even posted a small productivity decline for the 2008-2012 period as a whole, but the timing is important. As noted earlier, Germany has held on to its resources in manufacturing during the 2008/09 recession, which has affected the productivity and cost performance of the sector, at least temporarily. Chart 3 shows a sharp recovery in German manufacturing ULC from 2010 onwards following a significant drop during the 2008/09 recession. It should also be noted that Germany is competing in a high-level segment of the quality range of manufacturing products (especially in automotive and specialized machinery), with an increased demand for skilled labour and specialized inputs with modest scope for increases from an already high productivity level. Also, a large part of lower-cost manufacturing labour for production and assembly has been successfully offshored to Central and East European economies, especially Poland, Czech Republic and Hungary. These advantages do not apply as strongly to the manufacturing sector of France (which has a lower export ratio) or the UK (which has been less successful in exporting into higher growth segments and benefiting less from productivity gains from offshoring than Germany).[6]

Given the recent developments in unit labour costs, it seems that much of the gap in competitiveness trends that has emerged between European countries during the 2000s is quickly adjusting. As **Chart 3** shows, the behavior of ULC growth in the Euro Area has been very diverse. Since 2000, countries like Ireland, Finland, Germany, and Austria have managed to keep labour costs under control, with moderate increase in ULC. The Netherlands also saw a sharp decrease of labour competitiveness around the dot-com recession, but managed to decrease its ULC from 2003 to 2007, bringing it below the initial levels seen in 2000. The majority of the troubled European economies, including Italy, Spain, and Greece, showed must faster increasing ULC during the 2000s, except for Ireland. Since the start of the 2008 global recession, the diverging pattern has been reversed. The increasing ULCs in Germany, Finland and Austria and the declines in Greece, Portugal and Spain have resulted in converging ULC growth rates. The gap has not been entirely closed though. For example, Italy still sees a strong diverging pattern in ULC from the rest of the Euro Area.

The converging pattern in ULC growth provides a possibility for the weaker economies in Europe to regain some strength relative to their most important trading partners in the Euro Area. Now that unit labour costs in the troubled economies are declining and competitiveness is returning, one could expect that signs of recovery in certain aspects of these economies would start to show. For example, some countries have seen a recent recovery in export performance. Among the Western European countries, Spain is rivaling the Netherlands and Germany in export growth since the start of the 2008 global recession. Portugal has exceeded pre-crisis export levels and outperformed all Euro Area countries except for Slovakia in export growth in the since the second quarter of 2011. Long-term, however, when

[6] For an overview of a range of related statistics, including export share of manufacturing production, intra-industry trade, trade in intermediate goods, and offshoring and outsourcing statistics, see OECD (2010), *Measuring Globalisation*, Paris.

considering sustainable economic growth, it is important that the labour productivity gaps between countries narrow as well.[7]

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 well 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 focus on how much employment and productivity in the economy can be related to six sources of demand, distinguishing between the demand for goods, market services and non-market services and divided between foreign and domestic demand. These employment numbers do not only concern workers who directly contribute to the production for exports, but also indirectly through the supply chain.

Employment in goods production related to domestic demand	Employment in market services related to domestic demand	Employment in non-market services related to domestic demand
Employment in goods production related to foreign demand	Employment in market services related to foreign demand	Employment in non-market services related to foreign demand

The bulk of employment in an economy country is dedicated to production for domestic final demand. Only 22-23 percent of EU wide employment relates to production for foreign demand, including demand in other EU countries (**Table 4**). Even in small export oriented economies, the employment share for foreign demand production is at most 40 percent (Ireland). There seems to be a clear distinction between countries where employment activity for foreign demand has become more important (Germany from 23 to 27 percent between 2000 and 2009, Austria from 19 to 26 percent, and Poland from 20 to 28 percent) or stagnated (Spain, Italy, France and the UK). There are very few countries with large declines in the share of employment dedicated to foreign demand, although Bulgaria showed a large decline between 2000 and 2005 (from 32 to 27 percent), but a recovery since Bulgaria entered the EU.

[7] It should be noted, however, that trends in competitiveness should not be confused with the causes of the financial and economic crisis. It the latter case the use of real effective exchange rates would be a better indicator anyway (see Wyplosz, 2013). The only argument made here is that the crisis has triggered adjustments in unit labour costs that may potentially change the competitiveness performance between European economies in a permanent way.

Even though the employment shares in the *goods* sector for foreign production are quite stable over time, there are large differences among economies. Among the "old" EU-15 economies, the share of goods-related employment dedicated to production for foreign demand ranges between less than 5 percent (Greece) up to more than 13 percent (Austria and Germany). France, Spain, Italy and the UK score less than 10 percent of goods-related employment dedicated to production for foreign demand. Except for Greece, the United Kingdom has the lowest share of employment in goods production dedicated to foreign demand (6.7 percent in 2009).

Most of the dynamics in the growth in employment for foreign demand has been with the non-goods sector, which mainly are *market services* as non-market services produce hardly anything for the foreign sector. In the "old" EU-15 the share of employment in *market services* dedicated to production for foreign demand has gradually increased and is on average as large as goods-related employment for foreign production. The differences with foreign-demand related employment in the goods sector are largest for Luxembourg, followed at quite some distance by the Netherlands, Ireland and Belgium. Austria and Germany are among the countries with the largest increases in market services employment for foreign production. In addition to Austria, Denmark and Finland, all Mediterranean countries (except Greece) have a larger share of goods-related employment dedicated to foreign production than market services employment.

Among the "new" EU-12 economies, the share of employment for foreign demand in the *goods* sector 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 14 percent of employment in the goods is dedicated to production for foreign demand. In the new EU-12 most countries have shown significant increases in services employment dedicated to foreign production, and the latter share is now bigger compared to the "old" EU-15 countries (14.9 percent in new EU-12 compared to 11.3 percent in old EU-15 in 2009) .The share of employment in total non-goods employment for foreign production has increased most in Malta, Lithuania, Hungary and Poland.

Overall there has been an increase in the absolute number of works for foreign production and a larger share of those workers are now located in non-goods rather than goods producing industries. 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 5**, 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, but this number was down from 21.2 million workers in 1995. In contrast, the number of workers in non-goods industries involved with foreign production increased from 13.5 million workers in 1995 to 16.5 million in 2008. In contrast, the United States lost workers for foreign production both sectors between 1995 and 2008.

How much difference can a larger share of workers involved in production for foreign demand make for Europe's productivity performance? **Table 5** shows that, across the board, labour productivity of workers dedicated to foreign production is higher than productivity, measured as GDP per person employed (converted at purchasing power parity), of workers dedicated to activities for domestic

production. The differences are especially large in the goods producing sector at an average 13.2 percent higher level of productivity for EU-27 workers dedicated to foreign production. However, even in the market services sector (here, non-market services are excluded) the productivity level for foreign production is on average almost 10 percent higher than for domestic production. This implies that any shift of work from producing for the domestic sector to the foreign sector is positive for aggregate productivity growth.

For the EU-27 as whole the level of productivity for foreign relative to domestic production has remained relatively stable. However, in the "old" EU-15 the productivity gap in the good sector has somewhat increased, especially in the 2000-2005 period. During the 2005-2009 the productivity advantage retracted somewhat, probably as a result of the 2008/09 recession which impacted production for foreign activities more than domestic activities. Germany has been a clear leader in gaining on productivity for foreign production, as it has become deeply integrated with Central and East European countries by offshoring lower-cost production while supporting its own high added-value activities in producing goods for the international market. Between 2000 and 2005 the productivity gap widened from 14 to 23 percent between foreign and domestic goods production activities. Spain is a clear counterexample, as the gap in labour productivity between foreign and domestic goods production activities narrowed.

In Central and Eastern Europe, the gap in productivity levels between production for the foreign and the domestic sector significantly narrowed between 2000 and 2008. This most probably signals a catch-up effect from activities for domestic production benefitting from new technologies and business practices in activities foreign production. For example, in Poland labour productivity for foreign goods production was more than 50 percent higher than that for domestic production in 2000. By 2008 the gap had narrowed to only 25 percent, though still much bigger than in most "old" EU-15 countries.

Table 6 looks at how the six sectors, organized by source of demand, have contributed to labour productivity growth in each of the European economies. Between 2000 and 2008 about 23 percent of labour productivity growth in the EU-27 originated from workers in activities related, directly or indirectly, to foreign demand, 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-27, at 28 percent.

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

In ten of 12 new EU member states (excluding Cyprus and Malta) workers from the goods sector made much larger productivity contributions to foreign demand than workers employed in the non-goods sector. The contribution from foreign demand for goods was especially large for Slovakia, one fifth of aggregate labour productivity growth. Also Estonia and Czech Republic experienced strong productivity contributions from demand for foreign goods.

Despite the higher productivity levels and bigger productivity growth contributions from workers dedicated to producing for foreign demand, foreign demand is not the key differentiator in aggregate economic performance, given its share in the total economy. While from a dynamic perspective there can be important technology and innovation spillovers from involvement in production for the global value chain, the comparative productivity performance in foreign-demand induced doesn't make enough of a difference to offset weaker productivity performance in domestic activities. Also the smaller size of an economy, given it a bigger export exposure as a percentage of GDP, does not seem to make the key difference in performance between economies. Integration in the 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. This issue will be addressed in more detail in Section 5.

4. Projections of Europe's Trend Growth Rates to 2025

Even though projections of productivity growth are complex, because of the need to forecast several variables, including labour, capital and TFP, we have undertaken an effort to do this in order to provide a perspective on the timing of a growth rebound. 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).[8] The projections for the labour 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 labour 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*. Labour composition estimates are based on projections of population by level of education attainment, age and sex (Bonthuis, 2011). Capital and TFP growth are estimated by a system of equations for which we utilize standard statistical measures and economic variables. We estimate three endogenous variables: 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

[8] 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. See van Ark (2013).

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).[9] 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 sources for all individual European countries included in the Global Economic Outlook for 2013-2018 and 2019-2025 are given in **Tables 7a and 7b.**

Together the charts and tables show that the growth performance in the EU-27 has experienced an ongoing slowing trend, which shows no sign of significant acceleration over the next decade relative to the current growth trend. A breakdown into the old EU-15 and the new EU-12 shows that the difference in the long term growth trend for the two regions will remain more or less the same at 1.1-1.2 percent for the "old" EU15 compared to 1.8 percent for the "new" EU-12 (**Chart 4a)**.

Among the large "old" EU economies various key differences emerge (**Chart 4b**). Germany has picked up on growth since the mid-2000s, as a result of major reforms in labour and product markets that supported a better performance in market services. In addition, 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 growth rates of working age population (when compared to, for example, France), Germany shows the strongest performance based on faster TFP growth, which allows for more productive investment. However, in the long term, Germany will ultimately converge to the trend growth rate of the Euro Area as a whole at 1.3 per cent from 2019-2025 (**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. However, Spain already saw large productivity declines especially in services, providing early signs of the unsustainability of its growth model. In addition, the country was hit much harder by the crisis that the other major European economies. Eventually, however, Spain is expected to recover its trend growth to 1.7 per cent for the period 2019-2025, helped by slightly more positive population growth effects — in contrast to most other Mediterranean economies including France — and potential for investment in ICT. However, Spain's projections do not show a rebound in TFP growth, similar to other Mediterranean economies including France. Strikingly, the United Kingdom also fails to rebound in terms of TFP growth..

The smaller economies in the "old" EU-15 also show large differences in growth trends (**Chart 4c**). For example, the Irish economy has shown most growth volatility, as it benefited during the 1990s from the

[9] For 2013, we rely largely on forecasts for GDP and employment, including assumptions on the growth in hours per person employed, whereas we developed a growth accounting projection model for the medium-term.

accession to the EU, its specialisation in producing high-tech IT equipment, and reforming the domestic labour 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 per cent. In contrast the economies of the Netherlands and Sweden will recover to long term growth trends of 1.5-1.7 per cent, while Austria settles at a lower growth trend of only 0.7 per cent due to a greater decline in its working age population and slower projected TFP growth.

In Central and Eastern Europe, most economies will be able to generate higher TFP growth than the EU-15, despite sizeable negative effects from slower population growth on the economies' labour forces (**Table 4d**). Competitive advantages in the foreign sector of the economy and structural changes in the domestic sector will continue to generate higher productivity growth. The three large countries in the new EU-12 (Czech Republic, Hungary and Poland) 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, has shown a different timing and level in its growth path than the Czech Republic and Hungary. 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 (at 1.5 percent from 2019-2025) than the Czech Republic and Hungary (both at 2.4 percent), because of the smaller size of the foreign sector and the lower level of education.

5. Is a Multi-Tiered Europe Emerging?

Now that we have analyzed the supply- and demand-side sources of growth in Europe, what can we conclude about the differences in growth performance between countries within the region? The traditional viewpoint has been that the various countries in the region are developing along a continuum characterized by differences in catch-up potential for growth, with the South- and Central- and Eastern-European countries growing faster than the countries in the northwestern part of Europe. Indeed the intra-European catch-up model has worked well in understanding Europe's growth during most of the 1980s and 1990s when the new member states from the Mediterranean (Greece, Spain, Portugal) as well as Ireland showed rapid catch-up growth. A similar catch-up was realized by most of the new member states from Central and Eastern Europe which became a member in 2004.

Can this traditional perspective on growth in Europe be upheld when looking at the developments over the past decade, or do we see some new grouping of countries in the region emerging, which are not just related to catch-up potential but to other demand- and supply characteristics of their growth models. Obviously any grouping of countries is determined by the definition of the key characteristics of the model, and hampered by the limited availability of information.

Some key supply- and demand-side factors from the analysis in this paper can be related to (1) the potential to create sustainable (total factor) productivity growth even when at or close to the innovation frontier, (2) the demographic characteristics of each country, (3) the capabilities to invest in tangible and

intangible assets, including innovation, etc.), and (4) the nature of intra-European and global interaction through trade and offshoring. We may – tentatively – organize the EU-27 countries in four groups on the basis of those supply side factors (**Table 8a**) and demand side factors (**Table 8b**):

- *Integrated value chain: 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 important change in its structural performance compared to other major European economies during the first decade of the 2000s. Notably Germany has successfully exploited her strength in producing for global manufacturing, significant reforms in labour 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 dampen the drop in productivity (despite a temporary decline in manufacturing TFP). The main negative factor for this group is the weak outlook for demographic growth for the rest of this decade and the beginning of the next. However, this downside growth effect may be largely offset by higher investment rates and faster TFP growth (**Table 8a**). On the demand side, Germany has increased its engagement in producing for the global market, and overtook many of the smaller open economies, both from the perspective of jobs creation as well as productivity performance in producing for foreign demand. 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 (**Table 8b**).

- *Inward looking: the Mediterranean group*

  At the other extreme, the structural issues in European economies have come most clearly to the forefront in the Mediterranean economies, which includes France. 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, which arose well before the 2008/09 recession, and related lack of reforms in service sectors holding back productivity growth. The demographic dynamics in this group are slightly less negative than in the Germany/CEE group, but the dynamics of investment and productivity are not benefitting from this. France has been less severely hit by the crisis, largely because of sufficient policy leverage to cushion the domestic sector of the economy (**Table 8a**). However, the demand side characteristics of the group or more comparable with other Mediterranean economies than with other countries. All these economies show the lowest exposure to the global economy, including relatively low shares of direct and indirect activity related to foreign demand for goods and services and low

contributions in terms of levels and growth of productivity producing-effects for the private sector (**Table 8b**).

- *Global niche players: an arc of small economies in northwestern Europe (Nordic/Baltic/Benelux/Ireland)*

  While the third grouping of countries looks more heterogeneous than the first two groups, the countries included here have some characteristics making them different from the other two groups. Most economies are relatively small and therefore have sizeable and competitive sectors, including manufacturing or service sector industries with specific competitive advantages, such as the ICT in Ireland, Estonia, Finland and Sweden, and the transport and logistics sector in Belgium, Denmark and the Netherlands. By the end of the first half of the previous decade many countries had proceeded relatively far with labour 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. This group showed stronger output and productivity growth performance than the Germany/CEE group in the 2001-2005 period. However, they have been less successful in offsetting the immediate effects of the recession than, for example, Germany (**Table 8a**). Most countries have strong trade advantages in specifically defined sectors, and their productivity contributions are especially large in service sectors that are exposed to foreign demand. However, there is not the type of supply chain between those countries that is as clearly integrated as the Germany/CEE group for the goods sector. Still, most countries in this group have larger foreign sectors than the Mediterranean group or the UK. (**Table 8b**). The growth outlook for this group is somewhat weaker than for the Germany/CEE group as investment and TFP growth are projected to grow somewhat more slowly than in the first group

- *The deindustrialisation model: the United Kingdom*

  The United Kingdom does not easily fit in any of the three groups identified above, as many of its characteristics align with either the Mediterranean group or the small country group in Northwestern Europe. The most important characteristic of the UK economy is that it has shown the signs of one of the most deindustrialized economies in the world, with a range of services activities that isn't really making up for the smaller impact of growth from manufacturing. During the 2001-2005 period the United Kingdom's growth characteristics were quite comparable with those of other smaller northwestern European economies. The UK economy has undergone significant reforms relatively early by making its labour market more efficient and strengthening its productivity performance. During the second half of the decade, economic growth in Britain – in part under the influence of the 2008/09 recession – developed more like that of the Mediterranean economies, especially in terms of weak growth in the labour market (**Table 8a**). On the demand-side, the British economy showed the lowest share of employment dedicated to foreign production, which even dropped for the goods sector and larger productivity contributions from production for the domestic market rather than for foreign

production. Compared to, for example, Germany, the UK has been less successful in exporting into higher growth segments and benefiting less from productivity gains from offshoring and lower investment in ICT (**Table 8b**). Also the financial services sector, which contributed significantly to output and productivity growth during the earlier part of the decade, added significantly to the productivity slowdown since 2006. Despite better demographic performance, the UK growth projections are about half of what they are for the Germany/CEE and Small Economies groups, in particularly driven by slower TFP growth

It is difficult to predict whether those groups will shape up even more clearly over the next decade or so and create greater divergence among European economies in the medium-term. Much will depend on the realisation 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 or domestic growth dynamics. 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.

6. A Scenario Approach to Europe's Growth Performance

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 as a whole (EU-27) is in need of substantially faster growth than the projected 1.1-1.2 percent. 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 several economies 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.[10]

As the crisis lingers on, the long term growth trend of the European economy (the "speed limit")comes under threat under the influence of erosion in the growth drivers: higher structural unemployment, permanent scrapping of capacity and unutilized technologies and innovations.[11] This risk is especially high for Europe, as it has seen a remarkable employment growth in the decade before the recession, but a weak outlook for population growth, together slow productivity growth, lack of ICT contribution to productivity growth, weakness in productivity growth in service sector and rising cost levels, doesn't bode well for the future growth performance of the economy. The good news is that global demand for

[10] See, for example, the Commission's *European Economic Forecast*, Autumn 2012, Brussels

[11] See, for example, Haltmaier (2012) and van Ark (2012).

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. For example, the stronger performance of the Germany/CEE group and the overall increase in service sector employment producing for foreign production are important sources of growth. However, the foreign sector of Europe's economies cannot remedy the substantial structural problems in the much larger domestic sectors of the economy.

In the light of those trends, and the analysis in previous sections on the decomposition of the growth drivers from a demand and supply perspective, where is Europe heading? A scenario-based analysis may be appropriate for this purpose, looking at the key dimensions that will define change in Europe's growth performance and the possible outcomes in terms of growth performance. The purpose of those scenarios is not to attach any probability to the possible outcome, but to gauge the possible "states" Europe can find itself in 10 years' time, allowing for a policy debate on the optimal path to generate the best results and reduce the risk of ending up in an undesirable "state".

The two key dimensions that shape the scenarios for Europe are directly related to the supply-side and demand side variables discussed in this paper:

1) Supply side dimension: ***investment in core capabilities***

   The main challenge and uncertainty on this dimension is whether European countries will have the means to direct investment to the sources of growth that are most crucial to raise productivity and competitiveness. For example will Europe be able to recover employment growth (despite weak demographic trends), strengthen the skill base of the labour force in the light of the challenge of the latest trends in technology and innovation, invest in high-return capital (ICT) and increase TFP growth. For example, will the emergence of new IT technology cloud computing and big data) and the convergence with other areas of technology (for example in bio sciences) strengthen the growth potential of European firms. Will entrepreneurship be sufficiently enabled to tackle those new challenges? Will the education system adapt to the new challenges of technology and innovation, both in terms of development and applications? Will Europe realize reforms in labour, product and capital markets to allow for allocations of resources to its most productive uses, if possible in a single-market environment to generate scale advantages for growth?

2) The demand side: ***global demand for goods and services***

   The most important new contribution in this paper is the explicit role for the development of global demand and how this will impact on the ability of European economies to allocate more resources to producing for foreign demand, which tends to generate higher productivity levels and faster productivity growth. The demand advantages emerge in part from effective creation of global supply chains, such as is in the Germany in which each country benefits from its comparative advantage in the value chain, whether this is relatively low cost labour, highly-skilled workers or an effective innovation system. Other demand advantages The sum of the

parts from global supply chain are the mois likely better and internal EU demand for goods and services be low as a result from prolonged effects of working out sovereign debt crises in the US and the EU, slowing emerging markets, and reduced global economic growth to 3% per year, or will growth-oriented policies lead to robust growth in the US (3%) and EU (2%), continued growth strength in the emerging economies (in turn stimulating exports from the US and the EU) leading to global economic growth of 4% or more?.

The key drivers that define the scenarios below are:

- The recent changes in productivity, the contributors to productivity growth (ICT, non-ICT, and improved skill composition of the labour force) and unit labour costs (Section 2)
- Job creation and productivity from global value chain activity in manufacturing and services production (Section 3)
- The growth projection based on factor inputs (labour, capital and total factor productivity)

The chart below depicts the two key dimensions as well as the identification of four growth scenarios:

1.A. "Global Powerhouse"

Benefiting from global growth, Europe strengthens its growth base as a result of investments in new technology and appropriate skill sets. Reaping benefits of single market integration, greater entrepreneurship emerges which together with stronger competition in the global economy, causes faster reallocation of resources to the most productive activities in the economies. Convergence in terms of economic performance sets in, as weakest economies obtain the greatest results from structural reforms and benefit most from the larger scale growth opportunities. Growth for the EU as a whole may accelerate to 2% per year or beyond in the medium term.

2.A "Stuck in the middle"

Weaker global growth limits the opportunities to benefit from the greater investment in technology, innovation and skills. However, an integrated single market can still help to create stronger domestic growth performance, support mobility of resources across the Union and create some potential productivity gains, providing an upside potential to about 1.5% growth. Differences in growth performance among European countries will depend on the degree to which economic strengths between economies can be leveraged through single market integration.

1. Robust global demand

B. Atrophying capabilities	***1.B Lost opportunity*** EU-27 cannot take full advantage of global growth, as markets for foreign production remain fragmented GDP growth trend is about 1-1.5% Divergence among country groups to take advantage of robust global demand	***1.A Global powerhouse*** EU-27 develops as integrated market, benefiting from economies' competitive strengths GDP growth trend moves up to 2% or beyond Convergence among countries as they benefit from stronger economic integration
	2.B Double Loss EU-27 does not have capabilities to counter slow global growth trend by strengthening EU-internal performance GDP growth trend drops below 1% Underperformance spreads across the Union even to currently stronger economies	***2.A Stuck in the Middle*** EU-27 uses stronger capabilities to counter slow global growth trend by strengthening EU-internal performance GDP growth trend is about 1-1.5% Internal differences in growth performance depend on single market performance

A. Strengthening capabilities

2. Slow global demand

2.B "Double Loss"

Slow growth of global demand combined with lack of drive towards a stronger growth potential creates a vicious cycle whereby an underperforming production system holds back demand, investment and growth. Growth for the EU as a whole drops to less than 1 percent.

1.B. "Lost opportunity"

Despite a recovery in global demand, the lack of internal growth capabilities, together with a fragmented EU market, reduces the benefits of increased global growth. Europe loses out to other knowledge economies, and remains on a slow growth track. Significant divergence between countries occurs as weak capabilities provide no incentive to leverage futher single market integration. Growth stays at between 1 and 1.5% per year.

The chart below summarizes the growth effects as they may emerge from the scenarios for the different country groups that were developed in Section 5, taking together the supply- and demand characteristics for each group.

Scenario / Country Group	1.A: Global Powerhouse (strong global demand, strong capabilities)	2.A Stuck in the Middle (weak global demand, strong capabilities)	2.B Double Loss (weak global demand, weak capabilities)	1.B: Lost Opportunity (strong global demand, weak capabilities)
Integrated Value Chain (Germany/ Core CEE)	**+++**	**++**	**+**	**++**
Inward Looking (Mediterranean)	**0**	**-**	**---**	**--**
Global Niche Players (small NW European economies)	**++**	**+**	-	**+**
Deindustralisation Model (UK)	**+**	**0**	**--**	**-**

7. Concluding Remarks on the Medium-Term Outlook for Europe

It is difficult to predict at this time where the European economy is heading in the medium-term in terms of economic growth. The scenarios only provide a framework to observe the opportunities and discuss the necessary policy actions to move beyond the projected 1-1.5% growth performance out to 2025, and to avoid a scenario with even slower growth. But no probability can be assigned to any specific outcome.

As the EU as a whole is relatively open to the rest of the world, the outlook is relatively sensitive to global demand. If the global economy experiences a strong growth rebound in the coming years and the financial crisis impacts on the real economy in Europe ebb away, demand may become a key factor in strengthening Europe's economic growth performance. Especially if European businesses and governments succeed to strengthen investment in their capabilities, including technology, innovation and skills, the chances of climbing the value chain and benefiting from each individual economy's competitive advantages in part of the global supply chain will significantly increase.

However, it may also be possible that global demand stays weak especially if the benefits of global trade and capital flows are insufficiently exploited so that growth effects for individual regions in the world remain subdued. In this case European economies will likely experience slower growth across the board especially when the investment and reform agendas are not being realized. Competitiveness will become more of a battle with winner-takes-all outcomes in segmented markets.

Single market integration may moderate the negative growth impact from slow global demand in the medium-term, as Europe itself can still generate scale advantages despite its slower internal dynamics. Without a stronger single market integration, scale advantages within the EU will be limited, and individual economies may perform differently depending on their different degrees of integration in the value chain. Indeed various blocks of countries may emerge as suggested in our analysis. For example, growth may remain on the positive side of the spectrum 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 capture some positive demand effects from abroad on the basis of their competitive advantages in global niche markets. However, Mediterranean economies will remain more dependent on their slow growing domestic economy.

However, if global and domestic economies recover in combination with a successful reform and growth agenda, growth may accelerate to 2 percent or more driven by productivity growth and employment growth in new innovative and more productive sectors of the economy.

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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*	*0.9*
Euro Area	*1.6*	*0.9*	*1.1*	*0.6*	*1.1*	*0.9*
EU-15	*1.8*	*0.8*	*1.3*	*0.5*	*1.3*	*0.8*
Sweden	2.7	2.0	2.5	1.9	2.9	0.6
Luxembourg	3.6	1.9	2.2	0.7	1.7	-0.8
Germany	0.6	1.7	0.5	1.9	1.4	1.0
Austria	1.7	1.6	1.5	1.6	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	1.3	2.4	1.1	2.2	0.7
France	1.6	0.8	1.0	0.2	1.4	0.7
Spain	3.3	0.8	1.7	-0.3	0.5	1.5
Ireland	5.0	0.7	3.1	-1.1	2.5	2.7
United Kingdom	3.0	0.6	2.5	0.0	2.5	0.7
Portugal	0.8	0.2	0.4	-0.1	0.9	1.1
Denmark	1.3	0.2	0.9	-0.1	1.2	0.3
Italy	1.0	-0.1	0.6	-0.6	0.2	0.1
Greece	4.0	-1.1	3.8	-1.2	2.5	0.1
EU-12	*4.2*	*3.1*	*4.4*	*3.3*	*4.5*	*2.5*
Poland	3.1	4.7	3.1	4.7	2.1	2.6
Slovak Republic	4.9	4.5	4.8	4.4	4.8	3.3
Romania	5.7	2.7	6.0	2.9	9.0	2.7
Bulgaria	5.5	2.6	6.5	3.5	3.7	3.1
Czech Republic	4.1	2.6	4.2	2.7	4.7	2.0
Lithuania	7.8	2.2	8.1	2.5	6.6	3.2
Cyprus	3.2	2.1	1.3	0.4	1.0	1.0
Malta	1.3	2.0	0.8	1.6	1.6	0.6
Estonia	7.2	1.8	7.9	2.5	5.7	2.7
Slovenia	3.6	1.7	3.6	1.8	3.4	1.6
Latvia	8.2	0.7	9.0	1.4	7.0	5.1
Hungary	4.2	0.2	4.4	0.3	4.9	0.8
Note: countries are ranked on the basis of their GDP growth in 2006-2011						
Source: The Conference Board, Total Economy Database, January 2013						

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

Average growth of 2001-2005		from		Labour productivity contributions from			
	Growth rate of GDP	Hours worked	Labour productivity	Labour composition	ICT capital per hour	Non-ICT capital per hour	Total Factor Productivity 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	0.3	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	1.3	0.3
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	0.4
Netherlands	1.3	-0.3	1.6	0.5	0.4	0.4	0.3
Belgium	1.6	1.0	0.6	0.2	0.3	0.4	-0.4
Finland	2.6	0.4	2.2	0.2	0.6	0.4	1.0
France	1.6	0.2	1.4	0.2	0.2	0.9	0.1
Spain	3.2	2.8	0.5	0.6	0.2	0.6	-0.8
Ireland	4.9	2.4	2.5	0.5	0.6	1.5	-0.1
United Kingdom	2.9	0.5	2.4	0.5	0.6	0.5	0.7
Portugal	0.8	0.0	0.9	1.0	0.6	0.9	-1.7
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	0.9	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
Romania	5.6	-3.0	8.6	0.3	2.6	-0.8	6.5
Bulgaria	5.3	1.7	3.6	0.3	1.3	3.3	-1.4
Czech Republic	4.0	-0.6	4.6	0.4	0.6	1.9	1.7
Lithuania	7.5	1.1	6.4	0.1	0.0	1.5	4.7
Cyprus	3.2	2.2	1.0	0.4	0.0	-0.3	0.9
Malta	1.3	0.2	1.1	0.3	0.0	0.2	0.7
Estonia	6.9	1.3	5.6	0.1	0.0	2.1	3.4
Slovenia	3.6	0.2	3.4	0.8	0.6	1.4	0.6
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, January 2013

Table 2b: Growth Contributions by Supply-Side Sources of Growth, log 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	Total Factor Productivity growth
	1 = 2+3	2	3=4+5+6+7	4	5	6	7
EU-27	1.1	0.2	0.9	0.1	0.3	0.6	-0.1
Euro Area	0.9	0.1	0.8	0.1	0.2	0.6	-0.2
EU-15	0.8	0.1	0.7	0.1	0.2	0.6	-0.2
Sweden	1.9	1.3	0.6	0.1	0.3	0.4	-0.2
Luxembourg	1.8	2.6	-0.8	0.2	0.0	0.8	-1.8
Germany	1.6	0.6	1.0	0.1	0.2	0.2	0.5
Austria	1.6	0.2	1.4	0.0	0.2	0.3	0.8
Netherlands	1.3	0.7	0.6	0.1	0.1	0.2	0.2
Belgium	1.3	0.9	0.4	0.2	0.3	0.4	-0.5
Finland	1.1	0.5	0.7	0.2	0.8	0.2	-0.5
France	0.8	0.1	0.7	0.2	0.1	0.9	-0.5
Spain	0.8	-0.7	1.5	0.3	0.3	1.4	-0.5
Ireland	0.6	-2.1	2.7	0.2	0.9	2.1	-0.6
United Kingdom	0.6	0.0	0.6	0.1	0.2	0.6	-0.3
Portugal	0.2	-0.9	1.1	0.6	0.9	0.4	-0.9
Denmark	0.2	-0.1	0.2	0.1	0.8	0.1	-0.7
Italy	-0.1	-0.2	0.1	0.1	0.1	0.4	-0.5
Greece	-1.2	-1.2	0.0	0.4	1.6	0.5	-2.4
EU-12	3.0	0.7	2.4	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
Romania	2.5	-0.1	2.6	0.3	0.1	0.7	1.5
Bulgaria	2.5	-0.5	3.0	0.4	1.6	4.0	-2.9
Czech Republic	2.5	0.6	2.0	0.1	0.2	1.5	0.1
Lithuania	1.8	-1.2	3.0	0.2	0.0	2.6	0.3
Cyprus	2.1	1.1	1.0	0.4	0.0	0.5	0.1
Malta	2.0	1.4	0.6	0.2	0.0	-0.3	0.7
Estonia	1.4	-1.2	2.6	0.2	0.0	2.0	0.4
Slovenia	1.6	0.1	1.5	0.3	0.7	0.8	-0.3
Latvia	0.2	-4.6	4.8	0.1	0.0	4.6	0.0
Hungary	0.1	-0.6	0.8	0.2	1.6	0.4	-1.6

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

Source: The Conference Board, Total Economy Database, January 2013

Table 3a: Growth Contributions by Major Sector of Production, 2001-2005, in log growth

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
Netherlands						
Goods	0.9	-1.5	0.6	0.2	-0.2	1.9
Market Services	2.2	-0.5	0.5	0.4	0.1	1.7
Non-Market Services	1.2	0.8	0.4	0.4	0.7	-1.1
Aggregate 7 EU Countries						
Goods	0.5	-1.5	0.3	0.1	0.1	1.5
Market Services	2.2	0.5	0.3	0.4	0.6	0.5
Non-Market Services	1.9	1.1	0.2	0.3	0.7	-0.5

Note: Non-market services includes Community, Social and Personal Services and Real Estate

Sources: EU KLEMS Database, update November 2012; with updates by the authors to include 2010.

Table 3b: Growth Contributions by Major Sector of Production, 2006-2010, in log growth

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
Netherlands						
Goods	1.1	-0.6	0.1	0.1	0.1	1.4
Market Services	1.4	0.1	0.3	0.2	0.1	0.6
Non-Market Services	1.6	1.3	0.0	0.2	0.5	-0.4
Aggregate 7 EU Countries						
Goods	-0.5	-1.7	0.3	0.1	0.1	0.7
Market Services	0.8	-0.1	0.4	0.2	0.5	0.0
Non-Market Services	1.2	0.7	0.3	0.2	0.7	-0.6

Note: Non-market services includes Community, Social and Personal Services and Real Estate

Sources: EU KLEMS Database, update November 2012; with updates by the authors to include 2010.

Table 4: Employment Share in Goods and Non-Goods Sectors in Producing for Foreign Demand, 2000-2009 (proportion of total employment in each sector)

	Employment Share in Goods Sector for Foreign Demand as % of Total Employment			Employment Share in Non-Goods Sector for Foreign Demand as % of Total Employment		
	2000	2005	2009	2000	2005	2009
EU-27	0.113	0.113	0.112	0.107	0.112	0.117
EU-15	0.107	0.106	0.105	0.107	0.109	0.113
Luxembourg	0.122	0.119	0.121	0.346	0.358	0.392
Ireland	0.180	0.172	0.162	0.223	0.196	0.240
Belgium	0.150	0.150	0.147	0.234	0.209	0.220
Netherlands	0.125	0.118	0.119	0.210	0.202	0.208
Sweden	0.137	0.136	0.132	0.149	0.153	0.165
Denmark	0.145	0.145	0.142	0.138	0.127	0.136
Germany	0.122	0.127	0.130	0.105	0.136	0.141
Austria	0.141	0.137	0.141	0.049	0.081	0.118
Finland	0.158	0.155	0.148	0.119	0.101	0.104
Portugal	0.132	0.127	0.127	0.072	0.073	0.073
Italy	0.111	0.111	0.107	0.086	0.085	0.082
United Kingdom	0.074	0.071	0.067	0.100	0.094	0.109
France	0.092	0.092	0.090	0.098	0.087	0.077
Spain	0.096	0.096	0.094	0.078	0.068	0.065
Greece	0.045	0.045	0.039	0.054	0.047	0.049
EU-12	0.165	0.168	0.172	0.108	0.137	0.149
Czech Republic	0.205	0.210	0.205	0.165	0.186	0.189
Malta	0.127	0.133	0.136	0.192	0.212	0.256
Slovakia	0.208	0.203	0.200	0.162	0.182	0.189
Hungary	0.174	0.179	0.179	0.156	0.158	0.209
Estonia	0.231	0.227	0.206	0.169	0.158	0.168
Slovenia	0.235	0.244	0.234	0.110	0.117	0.123
Bulgaria	0.198	0.185	0.206	0.122	0.090	0.142
Lithuania	0.156	0.162	0.163	0.105	0.115	0.159
Latvia	0.147	0.147	0.147	0.142	0.130	0.163
Poland	0.134	0.142	0.144	0.071	0.127	0.137
Romania	0.156	0.150	0.177	0.062	0.091	0.063
Cyprus	0.070	0.072	0.068	0.114	0.123	0.104

Note: Employment shares relate to all activities that serve production of goods or services for final demand; countries are ranked on the combined share of employment for foreign demand (goods and services) in total employment in 2009

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

Table 5: Relative Productivity Levels from Employment in Goods Sector and Market Services for Foreign Demand versus Domestic Demand Activities, 2000-2009 (Domestic Demand = 1.000)

	Productivity level from Workers in Goods Sector Producing for Foreign Demand Relative to Domestic Demand				Productivity level from Workers in Market Services Producing for Foreign Demand Relative to Domestic Demand		
	2000	2005	2009		2000	2005	2009
EU-27	1.135	1.147	1.132		1.097	1.103	1.099
EU-15	1.112	1.139	1.131		1.105	1.110	1.106
Luxembourg	1.044	1.043	1.111		2.030	2.059	1.982
Ireland	2.031	1.853	1.781		1.392	1.570	1.677
Belgium	1.109	1.074	1.031		1.045	1.081	1.041
Netherlands	1.090	1.180	1.130		1.025	1.013	0.985
Sweden	1.123	1.192	1.131		1.085	1.083	1.059
Denmark	1.081	1.158	1.136		1.138	1.177	1.008
Germany	1.141	1.229	1.211		1.120	1.123	1.131
Austria	1.025	1.013	0.985		1.135	1.172	1.122
Finland	1.228	1.257	1.163		1.043	1.052	1.053
Portugal	1.176	1.218	1.274		1.219	1.148	1.109
Italy	1.050	1.059	1.072		1.059	1.044	1.032
United Kingdom	1.105	1.123	1.141		1.120	1.111	1.142
France	1.098	1.111	1.101		1.063	1.071	1.061
Spain	1.074	1.061	1.027		1.108	1.055	1.026
Greece	1.061	0.988	1.126		1.302	1.706	1.756
EU-12	1.319	1.207	1.144		1.027	1.042	1.040
Czech Republic	0.982	0.964	1.013		1.000	0.985	0.949
Malta	1.014	0.991	1.052		1.140	1.120	1.080
Slovakia	1.025	1.033	0.832		1.045	0.941	0.890
Hungary	1.224	1.263	1.171		1.068	1.053	1.103
Estonia	0.952	0.824	0.871		1.297	1.237	1.282
Slovenia	1.387	1.603	1.577		1.052	1.036	1.025
Bulgaria	1.152	1.207	1.101		1.215	1.146	1.138
Lithuania	1.195	1.143	1.010		1.118	1.235	1.235
Latvia	1.192	1.194	1.097		1.165	1.333	1.049
Poland	1.547	1.317	1.247		0.974	1.022	1.037
Romania	1.477	1.210	1.133		1.006	1.056	1.054
Cyprus	0.907	0.921	0.954		1.034	0.950	1.047

Note: Labour productivity is measured as output per person employed. Countries are ranked on the combined share of employment for foreign demand (goods and services) in total employment in 2009 (see Table 4).

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

Table 6: Growth in Productivity by Source of Demand, logarithmic change, 2000-2008

	% of Productivity Growth Contribution from Workers Producing for Foreign Demand			% of Productivity Growth Contribution from Workers Producing for Domestic Demand			Log growth of labour productivity 2000-2008
	Goods Sector	Non-Goods Sector	Total	Goods Sector	Non-Goods Sector	Total	
EU-27	12%	12%	23%	14%	63%	77%	0.690
EU-15	10%	12%	22%	9%	69%	78%	0.655
Luxembourg	9%	40%	49%	1%	50%	51%	0.743
Ireland	12%	29%	40%	6%	53%	60%	0.822
Belgium	12%	25%	37%	3%	60%	63%	0.704
Netherlands	14%	21%	35%	3%	62%	65%	0.741
Sweden	13%	17%	30%	6%	64%	70%	0.622
Denmark	14%	14%	28%	5%	67%	72%	0.692
Germany	15%	13%	28%	9%	63%	72%	0.602
Austria	15%	16%	31%	10%	59%	69%	0.680
Finland	15%	13%	27%	9%	63%	73%	0.714
Portugal	14%	7%	21%	16%	63%	79%	0.728
Italy	11%	9%	19%	13%	68%	81%	0.638
United Kingdom	7%	12%	19%	7%	75%	81%	0.559
France	7%	10%	17%	8%	75%	83%	0.704
Spain	8%	8%	16%	12%	72%	84%	0.791
Greece	4%	8%	12%	22%	66%	88%	0.841
EU-12	18%	11%	29%	29%	43%	71%	1.214
Czech Republic	21%	17%	39%	10%	51%	61%	1.271
Malta	12%	20%	32%	7%	61%	68%	0.676
Slovakia	21%	17%	38%	10%	52%	62%	1.442
Hungary	19%	17%	37%	16%	47%	63%	1.209
Estonia	22%	17%	39%	7%	54%	61%	1.281
Slovenia	25%	13%	38%	13%	49%	62%	0.894
Bulgaria	21%	12%	33%	21%	46%	67%	1.090
Lithuania	16%	12%	28%	20%	51%	72%	1.324
Latvia	14%	13%	27%	15%	58%	73%	1.251
Poland	16%	8%	24%	32%	44%	76%	1.049
Romania	15%	6%	21%	48%	31%	79%	1.751
Cyprus	5%	12%	17%	9%	74%	83%	0.702

Note: Labour productivity is measured as output per person employed; growth is measured as logarthimic change between 2000-2008 weighted at average employment shares for 2000 and 2008. Countries are ranked on the combined share of employment for foreign demand (goods and services) in total employment in 2009 (see

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

Table 7a: Growth Projections by Supply-Side Sources of Growth, log growth rate, 2013-2018

		GDP contribution from			
	Growth rate of GDP	Persons employed	Labour composition	Capital	Total Factor Produc-tivity
	1	2	3	4	6
EU-27	1.1	-0.1	0.1	0.9	0.2
Euro Area	1.1	-0.1	0.1	0.9	0.2
EU-15	1.1	-0.1	0.1	0.9	0.1
Sweden	1.9	-0.2	0.1	1.5	0.5
Luxembourg	2.2	0.4	0.1	1.1	0.6
Germany	1.6	-0.3	0.1	1.3	0.6
Austria	1.1	-0.2	0.1	1.1	0.2
Netherlands	1.0	0.0	0.0	0.6	0.3
Belgium	1.4	-0.2	0.2	1.0	0.4
Finland	0.9	-0.5	0.2	1.1	0.2
France	0.9	-0.1	0.1	0.8	0.0
Spain	0.8	0.1	0.1	0.5	0.1
Ireland	2.5	0.4	0.1	1.5	0.5
United Kingdom	0.8	0.1	0.2	0.7	-0.1
Portugal	0.8	0.0	0.3	0.5	0.1
Denmark	1.6	0.0	0.1	1.2	0.3
Italy	0.5	0.0	0.0	0.5	0.0
Greece	-0.4	0.0	-0.1	-0.3	0.0
EU-12, of which	1.8	-0.4	0.1	1.4	0.7
Poland	1.9	-0.4	0.1	1.5	0.6
Czech Republic	1.9	-0.5	0.1	1.3	1.0
Malta	0.7	0.3	0.1	0.2	0.2
Cyprus	1.9	-0.3	0.2	1.1	0.9
Hungary	1.8	-0.3	0.2	1.2	0.8

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

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

Table 7b: Growth Projections by Supply-Side Sources of Growth, log growth rate, 2019-2025

		GDP contribution from			
	Growth rate of GDP	Persons employed	Labour composition	Capital	Total Factor Produc-tivity
	1	2	3	4	6
EU-27	1.2	-0.2	0.1	1.1	0.2
Euro Area	1.3	-0.2	0.2	1.1	0.2
EU-15	1.2	-0.1	0.1	1.0	0.2
Sweden	1.7	-0.1	0.1	1.3	0.4
Luxembourg	2.4	0.4	0.1	0.9	1.0
Germany	1.3	-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	-0.4	0.2	1.0	0.4
Finland	0.9	-0.4	0.2	0.9	0.2
France	1.0	0.0	0.2	0.9	0.0
Spain	1.7	0.3	0.3	1.1	0.0
Ireland	3.0	0.5	0.1	1.9	0.5
United Kingdom	0.8	0.2	0.1	0.7	-0.1
Portugal	1.5	-0.1	0.6	0.9	0.1
Denmark	1.3	-0.1	0.1	1.1	0.3
Italy	0.9	-0.1	0.1	1.0	-0.1
Greece	1.5	-0.2	0.3	1.2	0.2
EU-12, of which	1.8	-0.5	0.1	1.5	0.7
Poland	1.5	-0.5	0.1	1.4	0.5
Czech Republic	2.4	-0.4	0.1	1.5	1.2
Malta	1.5	0.4	0.2	0.6	0.4
Cyprus	1.8	-0.3	0.2	1.1	0.8
Hungary	2.4	-0.5	0.2	1.5	1.1

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

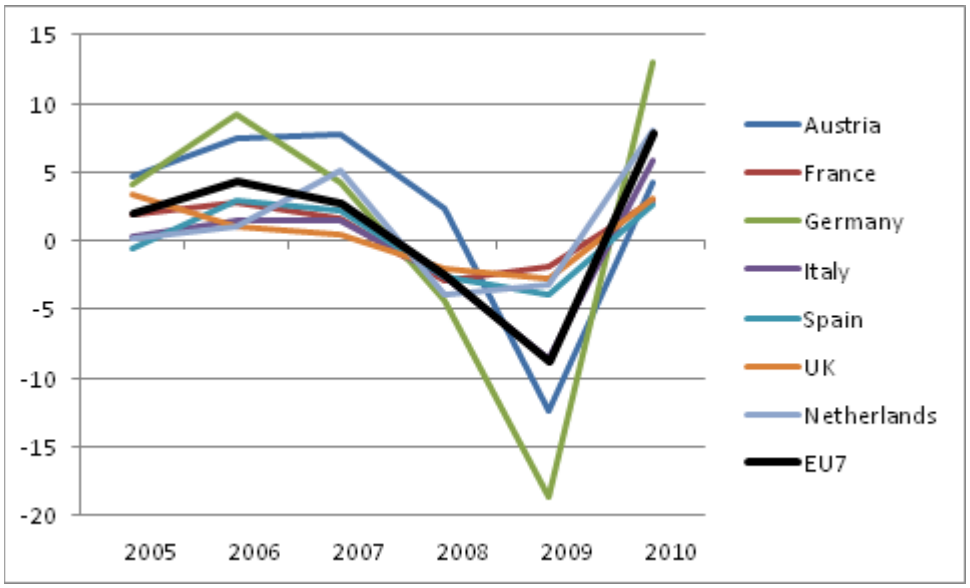
Source: The Conference Board, Global Economic Outlook 2013; Chen et al. (2012)

Table 8a: Summary of Supply-Side Factor Key Groupings					
	Integrated Value Chain (Germany and Core CEE)	Inward Looking (Mediter-ranean)	Global Niche Players (Nordic/ Baltic/Benelux / Ireland)	Deindustria-lisation Model (United Kingdom)	All EU-27
GDP growth rate (%)	1.8	1.9	2.4	3.0	2.0
2001-2005					
2006-2011	2.2	0.4	1.3	0.6	1.1
GDP/capita growth rate (%)	1.8	1.2	2.0	2.5	1.7
2001-2005					
2006-2011	2.3	-0.3	1.0	0.0	0.8
GDP/hour growth rate (%_	2.3	0.8	2.0	2.5	1.7
2001-2005					
2006-2011	1.5	0.7	0.9	0.7	0.9
Growth rate of GDP, 2001-05 (log)	1.7	1.9	2.4	2.9	2.1
of which					
Hours worked	-0.5	1.0	0.4	0.5	0.4
Labour productivity	2.2	0.8	2.0	2.4	1.7
LP decomposition	0.0	0.0	0.0	0.0	0.0
Labour composition	0.2	0.4	0.3	0.5	0.3
ICT capital per hour	0.6	0.2	0.4	0.6	0.4
Non-ICT capital per hour	0.5	0.7	0.7	0.5	0.6
TFP growth	0.9	-0.5	0.6	0.7	0.3
Growth rate of GDP, 2006-11 (log)	2.1	0.4	1.2	0.6	1.1
of which					
Hours worked	0.7	-0.3	0.4	0.0	0.2
Labour productivity	1.4	0.6	0.8	0.6	0.9
LP decomposition	0.0	0.0	0.0	0.0	0.0
Labour composition	0.1	0.2	0.1	0.1	0.1
ICT capital per hour	0.3	0.3	0.4	0.2	0.3
Non-ICT capital per hour	0.5	0.8	0.6	0.6	0.7
TFP growth	0.5	-0.6	-0.3	-0.3	-0.2
Continued on next page					

Table 8a: Summary of Supply-Side Factor Key Groupings (continued)					
	Integrated Value Chain (Germany and Core CEE)	Inward Looking (Mediter-ranean)	Global Niche Players (Nordic/ Baltic/Benelux / Ireland)	Deindustria-lisation Model (United Kingdom)	All EU-27
Growth projections for GDP, 2013-2018 (log)	1.7	0.7	1.5	0.8	1.1
of which					
Persons employed	-0.3	0.0	-0.1	0.1	-0.1
Labour composition	0.1	0.1	0.1	0.2	0.1
Capital	1.3	0.6	1.0	0.7	0.9
Total Factor Productivity	0.6	0.0	0.4	-0.1	0.2
Growth projections for GDP, 2019-2025 (log)	1.4	1.2	1.6	0.8	1.2
of which					
Persons employed	-0.5	0.0	-0.1	0.2	-0.1
Labour composition	0.1	0.2	0.1	0.1	0.1
Capital	1.2	1.0	1.1	0.7	1.0
Total Factor Productivity	0.6	0.0	0.4	-0.1	0.2
"Integrated value chain" includes Germany, Austria, Poland, Czech Republic, Hungary, Slovakia, Slovenia, Romania and Bulgaria; "Inward looking" includes France, Greece, Italy, Spain, Portugal, Cyprus and Malta; "Global Niche Players" include Finland, Sweden, Denmark, Netherlands, Belgium, Luxembourg, Ireland, Estonia, Latvia and Lithuania.					
Source: Tables 1, 2 and 7					

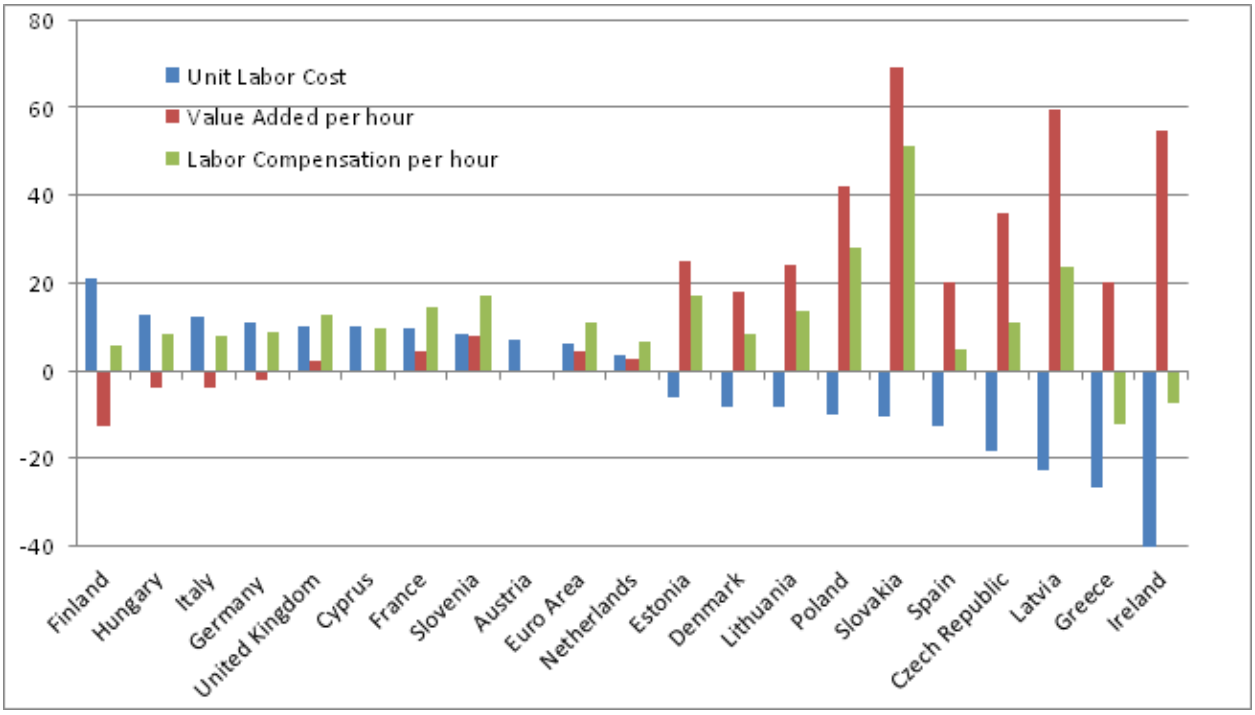
Table 8b: Summary of Demand-Side Factor Key Groupings					
	Integrated Value Chain (Germany and Core CEE)	Inward Looking (Mediter-ranean)	Global Niche Players (Nordic/ Baltic/Benelux / Ireland)	Deindustria-lisation Model (United Kingdom)	All EU-27
Employment Share in Goods					
2000	0.138	0.098	0.143	0.074	0.113
2005	0.141	0.098	0.140	0.071	0.113
2009	0.144	0.095	0.137	0.067	0.112
Employment Share in Non-					
2000	0.101	0.086	0.188	0.100	0.107
2005	0.132	0.080	0.177	0.094	0.112
2009	0.141	0.075	0.190	0.109	0.117
Productivity level from Workers					
2000	1.196	1.078	1.191	1.105	1.135
2005	1.212	1.080	1.216	1.123	1.147
2009	1.178	1.082	1.163	1.141	1.132
Productivity level from Workers					
2000	1.088	1.091	1.108	1.120	1.097
2005	1.096	1.094	1.135	1.111	1.103
2009	1.098	1.081	1.102	1.142	1.099
% of Productivity Growth					
Goods Sector	16%	9%	13%	7%	0.12
Non-Goods Sector	12%	9%	20%	12%	0.12
Total	28%	17%	34%	19%	0.23
% of Productivity Growth					
Goods Sector	15%	11%	5%	7%	0.14
Non-Goods Sector	57%	71%	61%	75%	0.63
Total	72%	83%	66%	81%	0.77
Log growth of labour productivity	0.81	0.71	0.74	0.56	0.69
"Integrated value chain" includes Germany, Austria, Poland, Czech Republic, Hungary, Slovakia, Slovenia, Romania and Bulgaria; "Inward looking" includes France, Greece, Italy, Spain, Portugal, Cyprus and Malta; "Global Niche Players" include Finland, Sweden, Denmark, Netherlands, Belgium, Luxembourg, Ireland, Estonia, Latvia and Lithuania.					
Source: Tables 1, 2 and 7					

Chart 1: TFP Growth in the Goods Sector in Select European Countries, 2005-2010, in %



Source: EU KLEMS Database, update November 2012; with updates by the authors to include 2010.

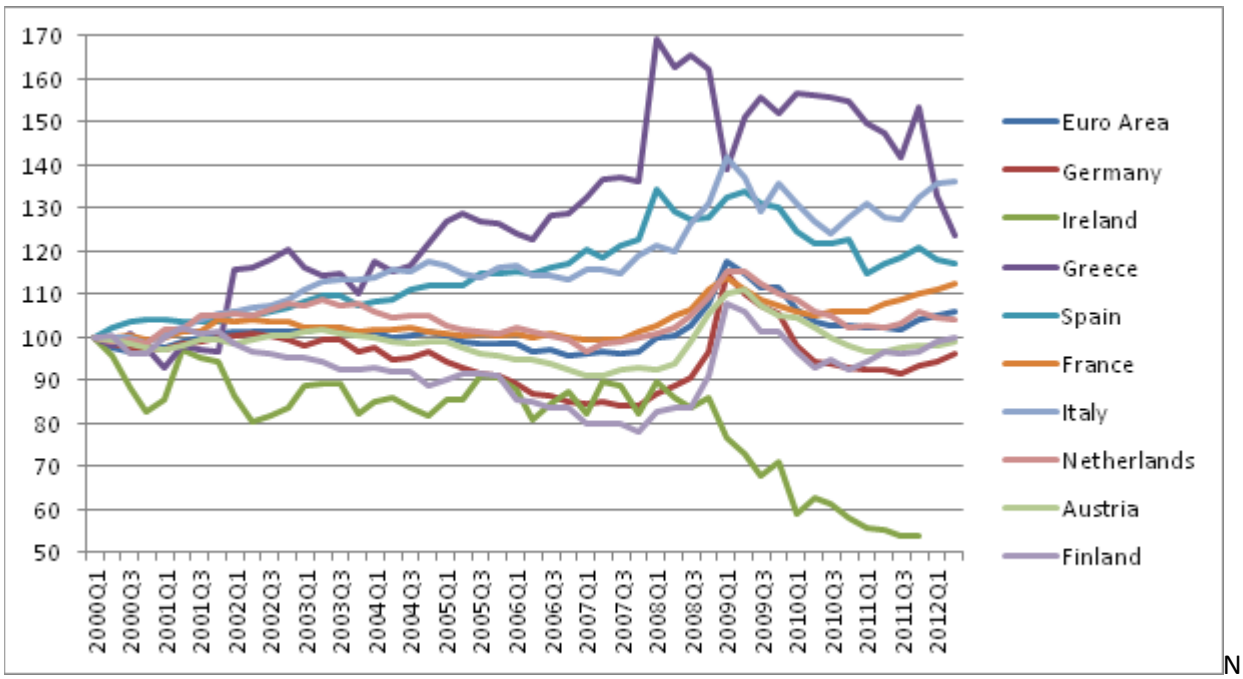
Chart 2: Unit Labour Cost, Labour Productivity, and Labour Compensation per Hour in Manufacturing, 1st Quarter 2008 to 2nd Quarter 2012, %



Note: Measures for non-Euro Area economies are in national currency. Data for Ireland is Q1 2008-Q4 2011, data for Cyprus is Q1 2008-Q1 2012

Source: Eurostat, National Accounts; Colijn and van Ark (2013)

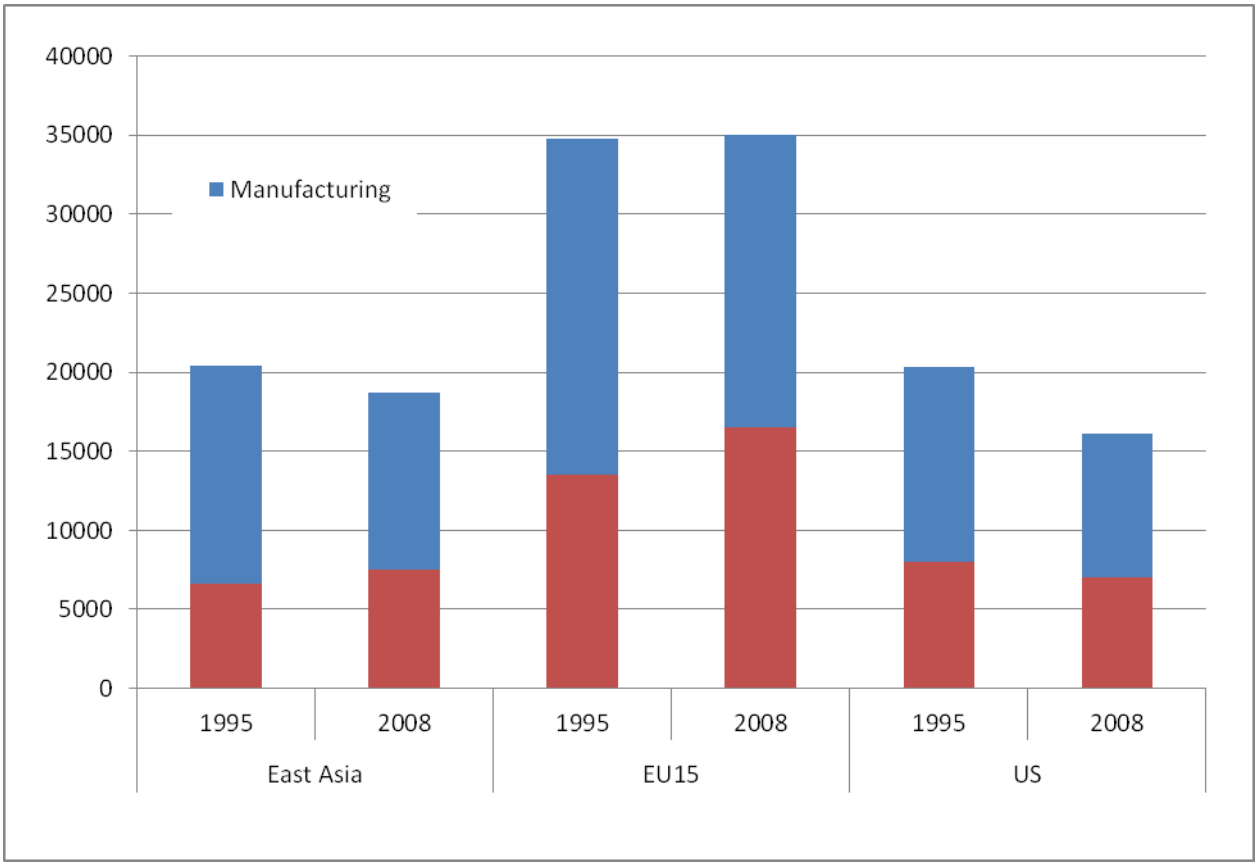
Chart 3: Unit Labour Cost in Manufacturing, 1st Quarter 2008 to 2nd Quarter 2012, %in Services, % change between Q1 2008 and Q4 2011



Note: Measures for non-Euro Area economies are in national currency. Data for Ireland go up to Q4 2011.

Source: Eurostat, National Accounts; Colijn and van Ark (2013).

Chart 4: Number of workers in manufacturing and non-manufacturing contributing to global production of manufacturing products (000s)



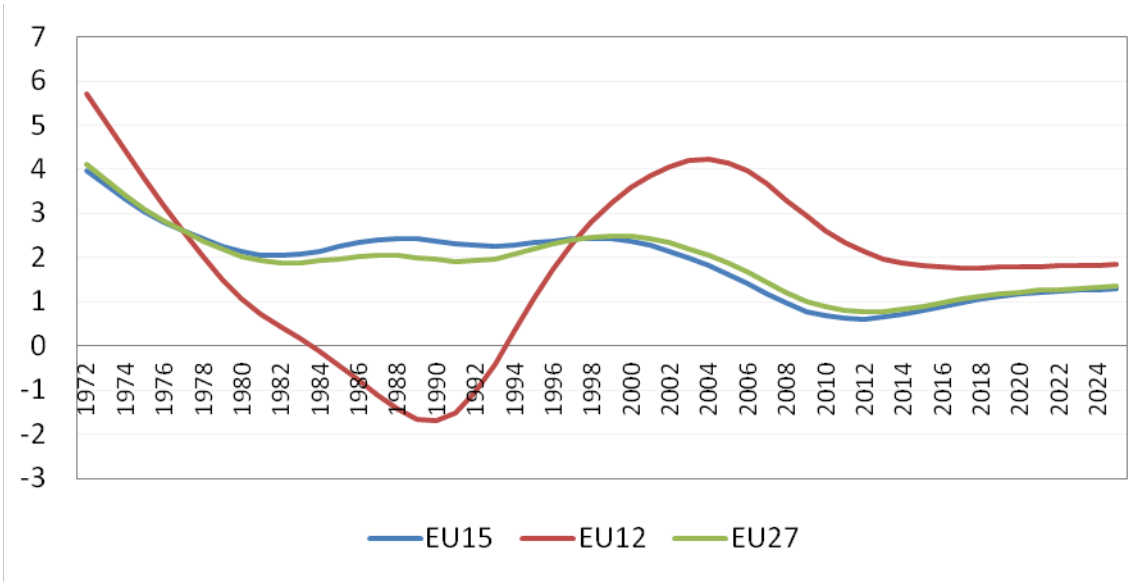
Note: East Asia includes Japan, South Korea, Taiwan, Singapore and Hong Kong. EU-15 includes fifteen member countries before 2004.

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

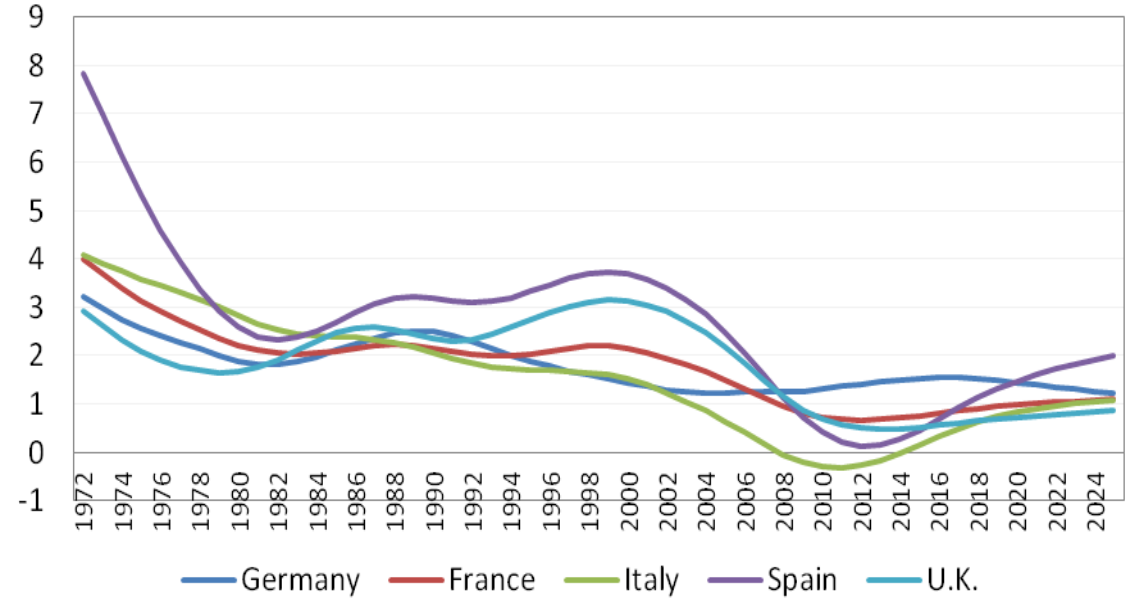


Chart 4c: Small old EU-15 economies: Austria, Ireland, Netherlands and Sweden

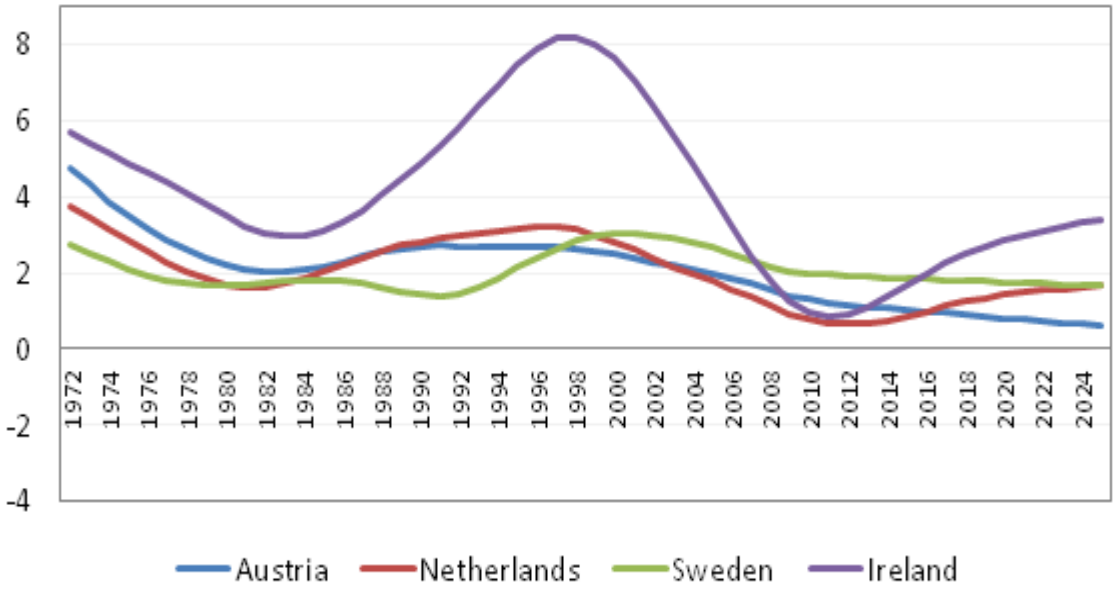
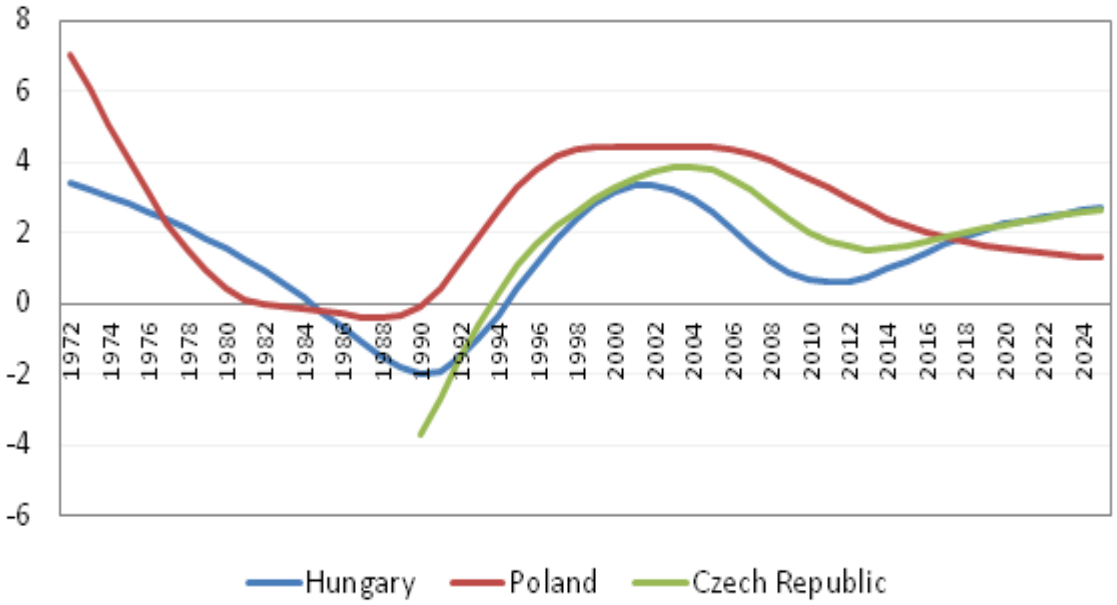


Chart 4d: Large new EU-12 economies: Czech Republic, Hungary and Poland



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).

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