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A New Strategy for the European Periphery

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Jel: F4, F6, H6, L52, O25, P52, R11

Keywords: southern Europe, periphery, economic reforms, globalization, troika, industrial policy

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Content

1. Introduction and outline

The problems in the southern periphery decelerated European recovery after the financial crisis. As world demand then slowed down in 2012, the Eurozone fell back into recession, without having reached the pre-crisis output (in contrast to the US). Unemployment is above 10% again and rising in Europe and about 20% in the southern periphery. Declining dynamics of the world economy together with recession in the Eurozone limit the chances of the periphery to solve their budget as well as competiveness problems. Goals for debt reduction continue to be missed, despite courageous cuts in public expenditure and wages, and partly because of them. The lack of a proactive strategy component and the specific structure of consolidation strategies have aggravated the problems of the periphery and the Eurozone in total.

Over time the periphery countries successfully participated in the European unification process. The three southern countries (Greece, Spain and Portugal) managed to reduce their differences in GDP per head, even if this process was bumpy and interrupted several times. Ireland managed to close the gap and even forge ahead. The northern periphery which had always been richer than the South managed to solve a severe crisis in the nineties; and incomes are once again ahead of the European average. We concentrate in this study on the three southern periphery countries Greece, Spain, Portugal (calling them Periphery 3 or P3), knowing that southern Italy and to a much less extent Ireland share some of the problems.

The problems of the southern periphery were not caused by the introduction of the common currency. However, in the aftermath of the financial crisis, underlying structural problems became highly visible and one traditional quick fix of lost price competitiveness – the devaluation of the currency – was no longer available. In the first phase after the introduction of the Euro interest rates across the Eurozone had converged and the southern periphery could experience historically low nominal interest rates, which after deducting inflation were even lower or negative. Country risks were ignored by the financial markets. Interest sensitive investment soared, further stimulated by European Structural and Regional programs. The increase of the current account deficits stimulated by high domestic demand and insufficient exports of the manufacturing sector was ignored. As the financial crisis hit Europe public and private deficits exploded, partly aggravated by property bubbles and banking crises. Now interest rates for public debt on the international financial markets reacted, pricing in country risks, and thus making government bonds extremely expensive in the periphery. Three countries (Ireland, Greece and Portugal) applied up to mid 2012 for rescue measures; three more were on the verge of doing so (Spain, Cyprus, Italy) in late 2012. All countries which have applied are located at the southern or western periphery of Europe, while countries in the northern periphery had overcome similar private or public deficits in the nineties using a prudent combination of budget cuts, temporary tax increases and taking full advantage of the knowledge society and the globalizing economy.

We report first on the performance of Europe – in the long run and after the financial crisis – and how it reluctantly changed governance and economic policy in stages to cope with low demand and large disequilibria. Then we analyze how the problems of the periphery came about after a period of bumpy but in general successful catching up and what strategy the periphery countries (dominated by the "conditionality" for cheap credits by ECB, Commission and IMF) had to follow to reduce public debt. We analyse the specific problems of the periphery, inter alia the size and structure of manufacturing, deficits in innovation and education, deficits in globalisation and the restructuring of the public sector and the structure of aggregate demand.

We characterize the current reform strategies and their blind spots, specifically the complete lack of a strategy for industrial development. Finally we propose an alternative or at least a complementary strategy for the periphery, specifically to shift the emphasis of reforms towards rebuilding the production base, promoting entry, reforming government and encouraging reform partnerships. We highlight a new form of industrial policy using competition as a driver of change and investing in innovation, education, and globalization. We have to acknowledge that the peripheral countries are different from each other, and each should develop its own vision and a national strategy. Strict conditions for the help offered by the surplus countries is necessary but should be attached to strategies, which are nationally "owned" and build on the strength of the individual countries. Historic experience shows, that the successful catching up and restart of growth is only possible with the peripheral countries or regions "in the driver seat", together with help from the higher tier of government (the EU in this case) and positive spillovers from the centre (the surplus countries).

2. The European Crisis

2.1 Low growth and recession

Europe has fallen back into recession in 2012. GDP stopped growing in late 2011 and decreased slightly (for the EU 27 as well as the Euro zone) in 2012. GDP was still lower in this year than at the start of the crisis in 2008. In contrast GDP in the US expanded in 2012 by 2%, and GDP is higher now than at the start of the crisis. World GDP rose by 3.3% in 2012, less than the year before, but surpassing pre crisis output by 12.3% (2012/2008), China surpassed pre-crisis output in 2012 by 42%.

Unemployment will reach 10.4% in EU 27, more than three percentage points higher than in 2008, matching the peak of 1994 (10.5%), and it is expected to grow further in 2013. In the US unemployment started from 5.8% (2008), then peaked in 2010 with 9.6% and is now falling to 8.2%.

Public deficits in Europe have decreased but were well above 3% in 2012, and debt to GDP ratio is near 90%. Debt rose considerably at first due to the recession and then through discretionary measures. However, it had also been above 60% at the start of the crisis, after

several “good years” in contrast to the principle of an anti cyclical budgeting to lower debt in "good" years. Most European countries consequently are installing "consolidation strategies" to reduce current deficits. Since this was done (i) in parallel in many countries, (ii) without structural changes towards more growth and employment friendly expenditure and tax structures, and (iii) since world economic dynamics slowed down, negative "multipliers" proved higher than expected and recession returned in several European countries. In the US public deficits are even higher. Nevertheless interest rates on government debt in the US are lower than in Europe (the same holds true for Japan and the United Kingdom).

The European economy is competitive if measured by merchandise trade as well as current account balance. Current accounts are balanced in the EU 27 (2012 +0.3%), the same holds true for the trade balance (-0.3%). In the US both are in the red (-3% and -5% of GDP resp.).The world market share of European exports is rather stable (while that of the US is declining and that of BRICs is increasing strongly). The share of technology driven industries in exports is however still lower in Europe than in the US.

Table 1: Growth of GDP in European country groups

	2009	2010	2011	2012	2012/2008	2012/2000
Greece	-3.3	-3.5	-6.9	-4.7	-4.6	0.8
Spain	-3.7	-0.1	0.7	-1.8	-1.2	1.6
Portugal	-2.9	1.4	-1.6	-3.3	-1.6	0.1
Periphery 3 (P3)	**-3.3**	**-0.7**	**-2.6**	**-3.3**	**-2.5**	**0.8**
Ireland	-7.0	-0.4	0.7	0.5	-1.6	2.1
Periphery 4 (P4)	-4.2	-0.7	-1.8	-2.3	-2.3	1.1
Central and Eastern Europe	-8.2	1.6	3.4	1.1	-0.7	3.4
Germany	-5.1	3.7	3.0	0.5	0.5	1.1
Core Europe	-3.6	2.3	2.2	0.1	0.2	1.2
EU 15	**-4.4**	**2.0**	**1.4**	**-1.2**	**-0.6**	**1.0**
EU 27	-4.3	2.0	1.5	0.0	-0.2	1.3
USA	-3.5	3.0	1.7	2.0	0.8	1.6

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Central and Eastern Europe: Czech Republic, Slovakia, Hungary, Poland.
Core Europe: Belgium, Germany, France, Netherlands, Austria. - S: Eurostat (AMECO).

Disequilibria across countries in Europe are large and increasing as far as budgets are concerned, while they are slightly decreasing for the current account position.

- Budget deficits are on average 6% in P3 (Greece, Spain, Portugal); and this is the same value as in 2008 despite all the consolidation programmes; they are below 3% in half of the EU 27. Government debt is higher than GDP in Belgium, Ireland, Greece, Italy and Portugal. For P3 debt to GDP has risen from 75% to 118.5% between 2008 and 2012. Strict

consolidation seems necessary not only in the peripheral countries, but also in Belgium, UK, France, while room for slower consolidation and even some growth promotion programs would exist in the Nordic countries and Germany. Divergence in budget positions seems even to rise.

- While the current account situation of Europe in general is balanced deficits reached on average 13.4% in P3 while at the same time ten countries had surpluses. The current account deficits of the deficit countries have been reduced in the last three years (more by reducing domestic demand, to some extent also by increasing exports). This has been the case specifically for Ireland, which now has a surplus, and barely the case for Greece. The deficit relative to GDP decreased for the P3 countries from 13.4% (2008) to 4.5% (2012). Surplus countries also reduced their surpluses, but to a less extent.

Table 2: Macroeconomic indicators for European country groups

	2000	2008	2009	2010	2011	2012	2012-2008
Unemployment rate							Absolute difference
Periphery 3 (P3)	**9.1**	**9.2**	**12.7**	**14.9**	**17.4**	**19.9**	**10.7**
Periphery 4 (P4)	7.9	8.5	12.5	14.6	16.7	18.5	10.0
Central and Eastern Europe	12.4	6.3	10.1	12.1	11.2	10.9	4.6
Core Europe	6.1	5.8	6.7	6.8	6.3	6.7	0.8
EU 15	**7.9**	**7.2**	**9.2**	**9.6**	**9.7**	**10.4**	**3.2**
EU-27	8.8	7.1	9.0	9.7	9.7	10.3	3.2
USA	4.0	5.8	9.3	9.6	8.9	8.2	2.4
Current account/GDP							
Periphery 3 (P3)	**-9.0**	**-13.4**	**-10.1**	**-8.8**	**-7.3**	**-4.5**	**8.9**
Periphery 4 (P4)	-6.8	-11.4	-8.3	-6.5	-5.4	-3.0	8.5
Central and Eastern Europe	-4.8	-9.8	-0.9	-0.8	-1.2	-1.3	8.4
EU 15	**-0.6**	**-0.4**	**0.0**	**-0.1**	**0.2**	**0.5**	**0.9**
EU-27	1.9	3.0	2.1	2.9	2.8	2.7	-0.3
Core Europe	-0.8	-0.9	-0.2	-0.3	0.0	0.3	1.2
USA	-2.8	-4.8	-3.3	-3.3	-3.2	-3.1	1.6
Budget balance/GDP							
Periphery 3 (P3)	**-2.7**	**-6.0**	**-12.3**	**-9.9**	**-7.3**	**-6.1**	**-0.1**
Periphery 4 (P4)	-0.8	-6.4	-12.7	-15.2	-8.7	-6.7	-0.3
Central and Eastern Europe	-3.7	-2.8	-6.6	-5.6	-3.1	-3.0	-0.2
Core Europe	-0.1	-1.0	-5.2	-5.0	-3.4	-3.2	-2.2
EU 15	**0.7**	**-2.3**	**-6.9**	**-6.6**	**-4.5**	**-3.9**	**-1.5**
EU-27	0.5	-2.4	-6.9	-6.5	-4.5	-3.8	-1.4
USA	1.5	-6.4	-11.5	-10.6	-9.6	-8.3	-1.9
Government debt/GDP							
Periphery 3 (P3)	**70.7**	**74.9**	**88.8**	**99.8**	**113.9**	**118.5**	**43.6**
Periphery 4 (P4)	62.4	67.3	82.9	98.0	112.4	117.9	50.6
Central and Eastern Europe	32.3	26.5	34.7	39.0	40.6	42.8	16.3
Core Europe	69.1	69.3	75.9	79.2	80.5	83.5	14.2
EU 15	**63.2**	**65.0**	**77.2**	**82.9**	**86.2**	**89.2**	**24.2**
EU-27	61.9	62.5	74.8	80.2	83.0	86.2	23.7
USA	55.1	76.5	90.4	99.1	103.5	108.9	32.4

Periphery 3 (P3): Greece, Spain, Portugal.
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Summing up Europe suffers from low growth; this leads to high and rising unemployment, and prevents budget deficits from shrinking. Deficit countries cannot easily boost growth due to budget restrictions; surplus countries do not go for higher investment e.g. for social or ecological innovation due to caution and uncertainty, but also because strategies to boost domestic demand or market opportunities are missing. Deficit countries pay high interest rates for debt since there are no joint credits for the Eurozone (Eurobonds). The surplus countries enjoy extremely low interest rates for sovereign debt but have to spend money on rescue ("umbrella") measures for deficit countries. This reduces optimism and investment in surplus countries and is seen as a drag for the economy and raises political opposition. The extraordinary low interest rates at which they can repay their debts is not seen as an advantage accruing from the problems of the deficits countries. It is taken as windfall profit or a result of the prudence of the own economic strategy.

2.2 Reform strategies so far

Governance reforms on EU level

In the aftermath of the financial crisis Europe had to face the fact that its governance structure fitted neither the needs of a common currency, nor the heterogeneity between the core countries, the periphery and the new member countries. These deficiencies and the inadequate governance structure led to large divergences across countries (e.g. in the current accounts), to the inability of countries to consolidate budgets and follow the Europe 2020 strategy calling for smart, inclusive and sustainable growth. Disequilibria also increased across regions and income groups within countries. The financial markets which had initially thought that government bonds were riskless due to the Eurozone now assess risks differently for each country and they "price in" the possibility of default. This led on the one hand to very high interest rates for countries with large public debt and on the other hand to low or near zero rates for countries with low deficits. The spread made the consolidation strategies of countries with higher deficits impossible and forced them to apply for rescue funds. A downward spiral of lower expenditures, higher taxes and increasing unemployment was the result.

European governance was changed in several directions to cope with the problems.

- The ECB had to take on more responsibilities by refinancing long term operations via banks as well as security market programs for states (buying bonds on the secondary market).
- The fiscal rules were strengthened in the "Six pack" and in the "Two pack" with budgets being examined earlier and more closely in the excessive deficit procedure and making sanctions easier and independent from the country to be sanctioned. Structural budget deficits are capped and "debt brakes" are to be implemented into national law ("Fiscal compact").

- Disequilibria are monitored in the European semester. A macroeconomic imbalance procedure (MIP) is now in place so as to prevent or at least to correct early competitiveness divergences.
- ESFM and ESF were installed to transfer cheaper credits to countries which could not refinance at sensible interest rates on the market. Countries "under the umbrella" have to agree to a reform program (Memorandum of Understanding) proposed and monitored jointly by the ECC, Commission and IMF. The ESF will be able to recapitalize banks, so that sovereign and banking risk can be separated.
- Regulation of the finance sector was improved, installing a community wide regulation body, increasing the capital requirements, even if some defining characteristics of a banking union will work only in 2013 or as late as 2014.

Most of these reforms were "too little too late" and they were often enacted by the council meetings of the head of the states. They partly apply to all members, partly only for Eurozone, partly for a "group of countries" (enhanced cooperation procedure). Usually there are exceptions and side agreements. Rather generally worded "decisions" at the council had later to be transferred into community law. The financial market realized the imperfection of the reforms so that interest rates always increased after some periods of moderation. Since banks could not finance their increasing capital requirements and/or the burden of the bursting property bubble several large banks applied for national help thus increasing government debt, and – if this was no longer feasible – necessitated the applcation for money from the EFSM (Spain).

Budget consolidation without growth component

All periphery countries[1] have applied or are at the verge of applying for rescue operations either for government finance or for banks. In the reform programs ("Memoranda of Understandings") installed by the ECB, the Commission and the IMF (the "troika") the consolidation section in all memoranda is the most dominant one. Reducing government deficits is the overarching goal. Structural reforms in product and labour market, increasing the efficiency of administration and tax collection were additional parts of the Memoranda, but the less stringent, less monitored and they had no deadlines. The importance to shift government expenditure from inefficient outlays to growth or employment supporting categories is missing. Reducing wages was the second most visible strategy; often specifically the lower wages or the minimum wages were reduced. This increased the spread of income distribution and impacted specifically on consumption and poverty. The same focus on aggregates instead of structure holds for taxes in which the increase of value added taxes dominated. Higher value added taxes are a comfortable way to increase revenues but this also increases the burden on consumers and once again those with lower incomes. The result

[1] More exactly Ireland plus all the southern periphery countries. Sweden and Finland had a severe crisis in the nineties.

of increasing taxes and cutting expenditures without attempting to do it in a growth or employment friendly way was that deficits could not be reduced as fast as forecasted, since GNP decreased and unemployment ballooned.

2.3 Vision and long-run reforms

New strategies to be indicated at the June summit

With the June summit of 2012 the strategy was adjusted to some degree. It was declared that the consolidation strategy should be growth oriented, freeing some idle money for investment projects. The necessity to go for a Banking Union was declared, giving the ECB the power to supervise at least large banks. Rules for a bank deposit and a banking resolution scheme are envisaged, but still to be designed and implemented in detail. The commitment was given to keep the Eurozone together and neither to recommend a country to leave nor to speculate about a smaller Eurozone (core Europe or Euro North etc.). The announcement of the ECB to buy government bads of the peripheral countries (if they continued to reform strategies) reduced interest rates even if the commitments were not really defined.

But the reforms should be quicker and start from a well-defined perspective (vision)

Reforms have to start from a vision of the direction in which Europe wants to move. This vision should be based on the Europe 2020 targets of a smart, inclusive and sustainable economy. However, it needs to go beyond that: it should develop a new growth and development strategy which enables a socio-ecological transition to high levels of employment, social inclusion, gender equity and environmental sustainability. The transition to a New Growth Path is to be developed and analysed in the WWWforEurope project, a FP7 research program led by WIFO and done with 32 partners in the years 2012 to 2016.

The cornerstones of such a vision could be a Europe which

- participates in world dynamics with growth driven by innovation and human capital;
- aims at social inclusion, low unemployment and high quality of life
- employs an ecologically sustainable model, where growth is combined with (absolutely) less resources and energy consumption;
- respects the heterogeneity of countries but reduces welfare gaps across countries and individuals;
- plays a role in globalisation, offering a European model to neighbours for cooperation and step by step integration

From vision to changes in governance

Outlining a vision is necessary before a reform program can start for different reasons. First governance structures depends on the vision e.g. a governance structure for a large and open EU with considerable heterogeneity looks different from one for a homogenous bloc of

a few countries[2]. Governance structures for a region which aims at higher growth, lower unemployment, lower income differences, and sustainability looks different from that for a region in which budget consolidation and zero inflation are the core targets etc. Secondly a vision is necessary to get support from the electorate for a period in which reform burdens dominates over its gains.

Given the vision the governance structure has to be adapted. The adaptation process may include two tracks, first short run improvements which enable Europe to set some preconditions for resuming growth and secondly – a medium-term task – the building of institutions and setting of rules which shift Europe to a more dynamic, socially inclusive and sustainable growth path. Four problems have to be tackled:

- Interest rates have to be capped, specifically for countries which started a reform process and need time.
- Fiscal reforms must guarantee that the deficits are reduced according to the strategy agreed.
- The accumulation of sovereign and banking risk has to be eliminated. Banking regulation must be improved and internationalised (taking account of the multi nationality of many large banks). The risks for consumers and firms must be separated from that of investors interested in high and speculative assets (investment and retail banking must be ring fenced).
- Consolidation must be made in a growth and employment friendly way, and the strategies must have an active component reducing downward trends and demand loss as much as possible and fostering social cohesion, growth drivers and ecological sustainability.

For a comprehensive concept of the governance reforms needed see *Aiginger et al*. (2012).

From vision to reform programs

Of course the reforms in deficit countries (countries with twin deficits in public sector and current accounts) cannot wait until the vision is elaborated and the European governance structure is reformed. However, the reforms themselves look different and can be differently communicated to the electorate and Europe in general, if they are consistent with a vision of where Europe wants to go and a vision of what the comparative advantages of the reform countries in the future globalized economy should be.

Up to now countries which could no longer pay the high interest rates markets were setting, applied for help, usually rather abruptly after a period of desperately trying to solve the problems themselves and declaring help as unnecessary. The help was then given after negotiating a "memorandum of understanding" with the troika (EU Commission, ECB, IMF). The conditions of the memoranda were mainly written by the creditors after some discussion with the debtors but in principle top down. The adherence to the reform programs are monitored

[2] *Aiginger* (2010).

regularly by the creditors, which are considered by the deficit countries as outside inspectors interfering into the country's internal affairs.

We will focus on four shortcomings of this process

- The initiatives for the individual country strategies came mainly from the troika. Even if the exact components were discussed and adapted according to the problems of the specific countries the reform goals and the reform process was not designed by the debt country. The troika is in the driving seat, the national government has to report to an outside controller that it did enough to fulfil an agreement not shaped, owned and wanted domestically.
- The reforms do not mention or envisage the specific role the country wants to and is able to play after the period of reforms, let us say in the globalized world of 2030.
- All the adjustment strategies lay the burden of adjustment solely on the debtor countries, and the entire financial burden on the creditors. The alternative would be that the creditor countries - complementary to all important reforms of the debtors - adapt their own course with the double dividend of improving the welfare in the own country (by social and ecological investments, more equal distribution) and reducing cash transfers or guarantees needed by the debtors.
- The current reform strategies mainly focus on aggregates like the total budget deficit, less on structures of taxes and expenditures and not at all on questions of technology transfer or the creation of new firms. The impact of the reforms on the income distribution is widely ignored (with the notable exception of the Portuguese memorandum). Considering structures, distribution, growth and employment effects, and the advantages of fast growing export markets could reduce the austerity effects and increase confidence in the long run advantages of reforms.

3. The specific problems of the peripheral countries

3.1 Catching up was not smooth but it did happen

As peripheral countries we mean Greece, Spain, Portugal and Ireland. While all three are different Ireland is to some extent a very special case. First from its geographical position and its close connection with the UK and US economy, second because of its large share of industry, third because GDP per capita is higher than in EU 15, and fourth for the large share of foreign inward investment (FDI) which leads to Gross National Product deviating from Gross Domestic Product is much more than in other countries. Southern Italy would definitely qualify as a peripheral country of the southern type, but since most statistics are available only for the nation it is usually not treated as periphery. Our strategy therefore is to focus on the three southern peripheral countries Greece, Portugal and Spain (calling them P3), and then add

information on Ireland. If appropriate and available we add also some information about Italy.[3]

Economic geography suggests that integration (modelled as reduced "transport cost" in the widest sense) leads first to the regional concentration of activity in the core and then to decentralization. The second phase is fostered by lower wages and congestion costs in the periphery, both phases are described as a U curve (for concentration first rising and then falling) following *Krugman* (1990). Specifically the sixties and the nineties (plus the first eight years of this century) seem to confirm the deconcentration trend for Europe at the national level[4] (and thus the second phase of the U curve) leading to a substantive catching up for the peripheral countries. All four countries experienced a successful catching up relative to the core and this success encouraged them to join the Eurozone. And the high growth rates were instrumental to the Eurozone accepting the applications despite warnings from OCA theory[5] and those from the empirical finding that the convergence process had been a "bumpy road" (*Aiginger,* 2004). This label came from the fact that first periods of divergence had been experienced before e.g. from 1970 to 1985 in Greece and Spain and second convergence was not extremely smooth. P3 started with a GDP per capita of only 54% of EU 15, closed the gap first up to 78% in 1974, falling back to 72% in 1995 (see figure 1). Then P3 succeeded to outgrow EU 15 again to arrive at surprising 82.5% of EU GDP/capita in 2008. Since then it dropped to 76.7%, a level attained in the early seventies.

If we measure convergence for P4 they started from 57.5% of EU 15 in 1960 and peaked first in 1973 at 74.6%. The relation between P4 and EU 15 was stable then for two decades (see figure 1). In the nineties, the catching up accelerated and peaked at 91.9% in 2008 falling back to 86.5% in 2012.

GDP decreases between 2008 and 2012 in the P3 as well as P4 by approximately 9% (cumulatively over four years).

Let us look at the development of GDP per capita at PPP for individual countries.

- Greece had only 68% of the EU per-capita-income in the sixties; it came nearest to the EU average in 1978 with 93.4%. Thus convergence was relatively strong and lowered the per-capita-income gap to 6%. Then the distance increased up to 29% in 1999. Convergence was then resumed in 1999 and this trend was extended by large infrastructure programs inter alia from the European regional and Structural Funds and for the Olympic Games in 2004. Part of the convergence was due to a larger government sector ("third layer of civil servants", see *Katsoulakis*, 2012). The extent of the public deficit was first hidden even from its own electorate. Since 2008 economic output decreased by

[3] We use unweighted averages about the individual countries since otherwise P3 and P4 would be dominated by the development in Spain.

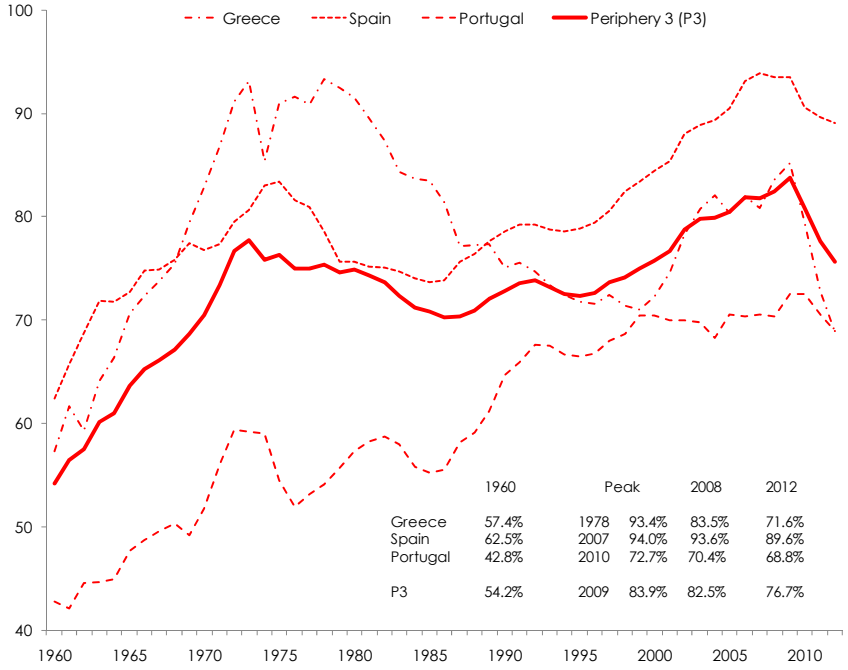
[4] For the regional level see *Firgo – Huber* (2012).

[5] OCA suggests that countries should not be too different and transfers (instruments) mitigating asymmetric shocks had to be available in a currency union.

20%, widening the gap in GDP per capita at PPP again to 30%. This is similar to the gap existing in 1995 (and 1965). It is still smaller than in 1960 (43%).

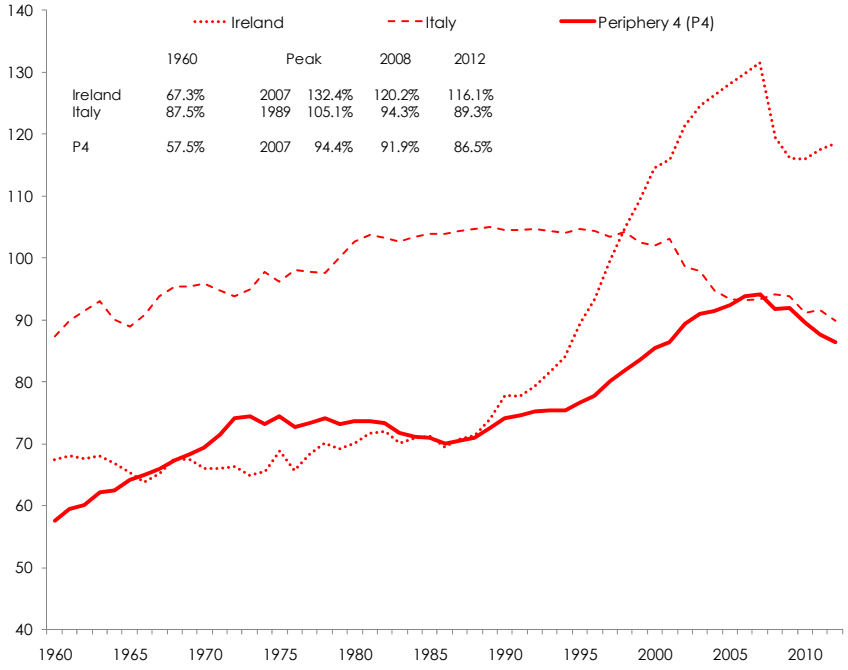
- Spain had 72% of EU-15 per capita income in the sixties, it reached 84% in 1975, and then the relative income dropped to 76% in 1980 before catching up was resumed. The nearest point to the EU average was 94% in 2007 (similar to the closest position in Greece, which happened 1978); since 2008 the output declined by 4% giving an estimate of today's gap of 10%, which is one third of the gap in 1960.
- Portugal started with the lowest relative income (47% relative to EU-15 per capita income) in the sixties; the catching-up process was relatively smooth, but had a period of stagnation or falling slightly back between 1973 and 1985; the nearest point to EU 15 was 72.7% in 2010. Catching up remained moderate between 1995 and 2008. Since 2010 the output declined by 4% giving an estimate of today's gap of 30%, which is half of the distance in 1960 and not so far from its best position in the past.
- Ireland had been considered as a relatively poor country of Europe up to the eighties with a loss of population due to outward migration. Its GDP per capita amounted to 67% of EU 15 in 1960 and there was little progress towards EU-15 average up to the mid eighties. It then started an aggressive policy to attract inward FDI (e.g. by low taxes). Ireland's specific policy was to attract foreign capital primarily in rather advanced industries (IT and pharmaceutical) preventing a possible future "trap" of investing in footloose labour intensive industries later leaving the country if wages had increased. The strategy was successful also due to Ireland's geographical position and English as its mother tongue. The effort to attract foreign capital was connected with a domestic strategy to foster SME´s and to make use of the good educational system. A construction boom was the by product of the dynamics of industry and of increasing wages, but also of the return of Irish people from abroad. It was further fuelled due to the openness for guest workers from Eastern Europe, low interest rates and a booming financial sector. The breakdown of the construction boom together with speculations similar to that in the United Kingdom led to bank failures which cost huge amounts of public money and a jump of public debt, which had been very low before. Ireland started with a gap of GDP per capita in 1960 of 33%, surpassed EU 15 in 1997 and succeeded to increase the relative advantage to 32.4% in 2007. Now GDP per capita is still 16% higher than in EU 15. The alternative measure GNP, which does not contain profits from foreign firms made in Ireland, indicated GNP (Gross National Product)/capita to amount to 64% of that in EU 15 in 1989. Ireland surpassed EU 15 in 2000 according to GNP per capita and today GNP/capita is 94% of that for EU 15.
- Italy is the richest southern economy in Europe with 92% of EU GDP per head in the sixties, it surpassed EU 15 in 1979 and increased its lead up to 105% in 1989, but then fell back to 94% in 2008 and now to 89% (2012; about the same as P4). Since estimates for GDP per capita in the South is 17000 € in 2010 this means that southern Italy has a GDP per capita less than in Greece (2010 € in 2010).

Figure 1: The catching up of southern peripheral countries (P3) relative to EU 15
GDP per capita at PPP



Periphery 3 (P3): Greece, Spain, Portugal (unweighted average). - S: Eurostat (AMECO).

Figure 2: The catching up of Ireland, four peripheral countries (P4) and Italy relative to EU 15
GDP per capita at PPP



Periphery 4 (P4): Greece, Spain, Portugal, Ireland (unweighted average). - S: Eurostat (AMECO).

3.2 Loss of price competitiveness

Catching up in wages but not in productivity

One of the reasons for the negative development of the periphery countries since the start of the crisis is that they gradually had lost price competitiveness before the crisis and therefore accrued deficits in the trade and current account.

Wages increased in P3 between 2000 and 2008 by 3.9% p.a., while they increased in the EU 15 only by 3% and in Germany by1.1%. Catching up of per capita wages is a normal process for countries with low GDP per capita. And nominal wage increases of about 4% were seen as reasonable, since they were much less than experienced in earlier periods with higher inflation.

However, catching up in wages was not accompanied by catching up in productivity. Productivity increased in P3 by 0.9%, the same as in the EU 15 (and in Germany). Consequently unit labour costs increased by 3% in the periphery countries while increasing only by 2% in the EU 15 (and not at all in Germany). This loss of competitiveness for P3 – measured as the increase of unit labour costs – amounted to 0.9% p.a. vs. the EU 15 and of 3% vs. Germany. Accumulated over the period this was 7.1% for P3 vs. the EU 15 and 26.4% vs. Germany.

The loss of competitiveness was approximately similar for each of the three southern countries. The loss was a bit more severe for Spain with unit labour costs rising by more than 3% p.a., here the driving force of rising unit labour costs was the lack of any productivity growth (due to increasing labour force participation and flexible contracts). Greece had some progress in productivity (1.9% vs. 0.9% in EU 15), but allowed extraordinary wage increases of 4.9% per annum). Ireland had large wage increases too, so the unit labour costs increase was the largest of all four countries. Italy had a fall in productivity.

Regaining competitiveness vs. EU but not vs. Germany

Looking at the period since 2008, we see a considerable improvement of the price competitiveness of P3 and Ireland vs. the EU 15. Wages decreased by 0.4% p.a. in P3, and increased by 1.4% in the EU 15. Productivity increase remained meagre with 0.7% p.a. in P3 but was at least slightly above EU 15 (0.2%). Consequently unit labour costs decreased by 1.1% in P3 and increased by 1.2% in the EU 15, giving an improvement of price competitiveness –2.3% annually and –9% cumulatively.

The correction of price competitiveness of P3 in the four years thus was higher than the loss in the eight years before, resulting in a somewhat better position of the periphery countries versus the (unweighted) average of the competitors in EU 15 in 2012 vs. 2000. Across countries this improvement is specifically high in Greece, followed by Portugal and Ireland. All three have now a better cost position relative to productivity than in 2000. Spain had no improvement, but no loss either; Italy has a deterioration of ten points for 2012 relative to 2000.

This improvement of price competitiveness vs. EU 15 is not given relative to Germany. There is an improvement in the last four years too, but it is much less than the deterioration in the eight years before, leading to a position less favourable for the periphery of about 11%. This holds true for all four peripheral countries. Closing the gap vs. Germany by wage restraint looks impossible. Productivity increase for the total twelve years is small and could be accelerated (via technology transfer, FDI etc.).

Summing up

Catching up in wages was not matched by catching up in productivity before the crisis, resulting in lower price competitiveness (of P3, but also Ireland and Italy) versus EU 15. The loss in price competitiveness had been extreme relative to Germany (which pursued a strategy to decrease its wage share in the economy; see *Aiginger – Leoni*, 2011, and *Aiginger*, 2012). Since 2008 wage restraint had been pursued with wages decreasing in absolute terms in P3 and productivity increasing by half a percentage point per annum faster in P3 relative to EU 15. This led to an improvement of unit labour costs for periphery countries since the crisis. This improvement is strong enough to compensate for the loss incurred between 2000 and 2008 for P3 and Ireland vs. the other EU-15 members (unweighted average), but not by far vs. Germany. Productivity is increasing very slowly (in Portugal and P3) or falling (in Greece and Italy), so that the correction of the lost price competitiveness is very limited and asymmetric (with burden on wages).

Policy conclusions

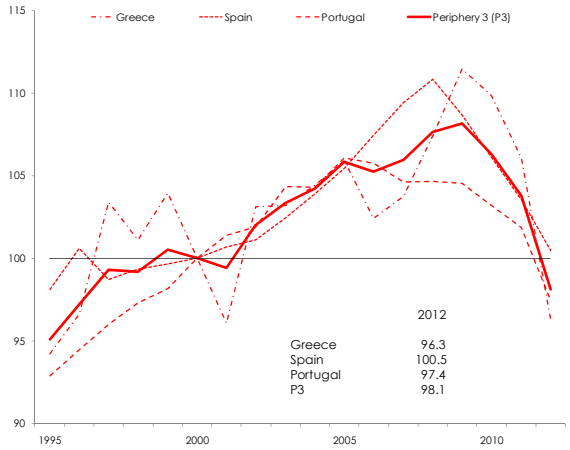
The expected effect of an economic integration is the catching up of wages as well as that of productivity. If the two components grow fast in countries with lower GDP price competitiveness remains as it was at the start. In the P3 (as well as in Italy and Ireland) wages increased faster than in the EU 15 and in the leading countries, but productivity did not.

Catching up in productivity should in general be the dominant strategy to further improve competitiveness and increasing investments, attracting new firms and inward FDI. The absolute level of productivity is still much lower in the southern periphery and the catching up process was very slow in the last decade. Increasing the productivity is in the long run the most promising way to increase exports and attract foreign direct investment, even if this strategy is not easy at a time when production falls and labour potential is heavily underused.

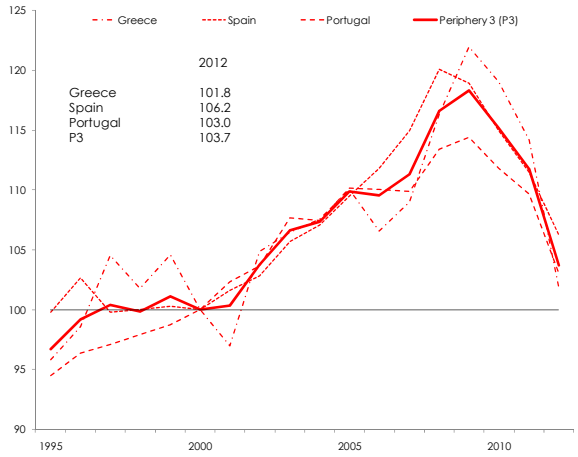
Price competitiveness is still 11 percentage points worse than in 2000 relative to Germany. It looks absolutely impossible to bridge this difference by wage decreases in periphery countries. Boosting productivity via technology transfer or stimulating domestic demand (leading to higher wage increases and/or social and ecological investment in Germany) are necessary components of an adjusted strategy in the periphery.

Figure 3: Unit labour costs in the peripheral countries (P3) vs. EU 15 and vs. Germany

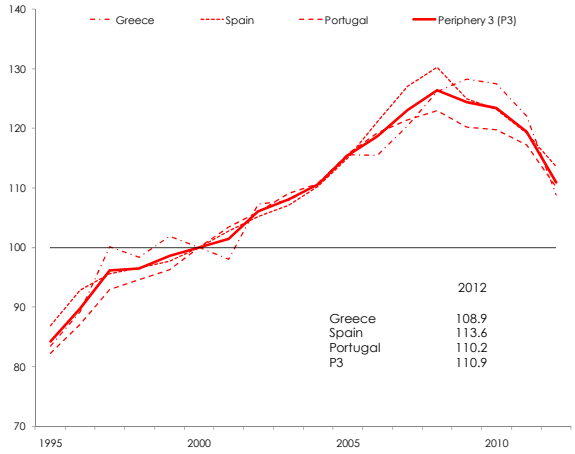
Unweighted average P3 vs. unweighted average EU 15



Unweighted average P3 vs. weighted average EU 15



Unweighted average P3 vs. Germany



Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Central and Eastern Europe: Czech Republic, Slovakia, Hungary, Poland.
Core Europe: Belgium, Germany, France, Netherlands, Austria. - S: Eurostat (AMECO).

Table 3: Price competitiveness of peripheral countries vs. EU 15 and Germany split into wage and productivity component (total economy)

	2000/2008	2008/2012	2000/2012	2000/2008	2008/2012	2000/2012
		ø in % p. a.			Cumulative	
Greece						
Wages/capita	4.9	-2.7	2.3	46.5	-10.5	31.2
Productivity	1.9	-1.2	0.8	16.2	-4.8	10.6
Unit labour costs	2.9	-1.5	1.4	26.2	-6.0	18.6
Spain						
Wages/capita	3.5	1.3	2.8	31.8	5.5	39.0
Productivity	0.2	2.6	1.0	1.3	10.9	12.3
Unit labour costs	3.4	-1.3	1.8	30.2	-5.0	23.8
Portugal						
Wages/capita	3.3	0.0	2.2	30.0	0.2	30.2
Productivity	0.7	0.6	0.7	5.7	2.6	8.5
Unit labour costs	2.6	-0.6	1.5	23.0	-2.4	20.0
Periphery 3 (P3)						
Wages/capita	**3.9**	**-0.4**	**2.4**	**36.1**	**-1.6**	**33.5**
Productivity	**0.9**	**0.7**	**0.8**	**7.7**	**2.9**	**10.5**
Unit labour costs	**3.0**	**-1.1**	**1.6**	**26.4**	**-4.4**	**20.8**
Ireland						
Wages/capita	5.7	-1.7	3.2	56.4	-6.5	46.3
Productivity	1.2	2.3	1.6	10.4	9.5	20.9
Unit labour costs	4.4	-3.9	1.6	41.6	-14.5	21.0
Periphery 4 (P4)						
Wages/capita	4.4	-0.8	2.6	41.2	-2.8	36.7
Productivity	1.0	1.1	1.0	8.4	4.6	13.1
Unit labour costs	3.3	-1.8	1.6	30.2	-7.0	20.9
Italy						
Wages/capita	2.6	1.1	2.1	22.6	4.3	27.9
Productivity	-0.3	-0.5	-0.3	-2.1	-1.9	-4.0
Unit labour costs	2.8	1.6	2.4	25.2	6.3	33.1
Germany						
Wages/capita	1.1	1.9	1.4	8.9	7.9	17.5
Productivity	1.1	-0.2	0.6	8.9	-0.9	7.9
Unit labour costs	0.0	2.2	0.7	0.0	8.9	8.9
Central and Eastern Europe						
Wages/capita	9.8	0.7	6.7	113.9	3.2	122.5
Productivity	3.8	0.9	2.8	34.5	3.9	39.7
Unit labour costs	5.8	-0.2	3.8	58.4	-0.7	58.7
Core Europe						
Wages/capita	2.5	1.8	2.2	21.7	7.4	30.7
Productivity	1.0	-0.1	0.6	7.9	-0.5	7.4
Unit labour costs	2.0	1.2	1.7	18.0	5.0	23.3
EU 15 unweighted						
Wages/capita	**3.0**	**1.4**	**2.4**	**27.0**	**5.8**	**33.7**
Productivity	**0.9**	**0.2**	**0.7**	**7.8**	**1.0**	**8.9**
Unit labour costs	**2.0**	**1.2**	**1.7**	**18.0**	**5.0**	**23.3**
EU 27 weighted						
Wages/capita	**2.4**	**1.8**	**2.2**	**20.4**	**7.4**	**29.3**
Productivity	**1.1**	**0.3**	**0.9**	**9.3**	**1.4**	**10.8**
Unit labour costs	**1.2**	**1.5**	**1.3**	**10.2**	**5.9**	**16.7**
EU 27 unweighted						
Wages/capita	**5.0**	**1.0**	**3.6**	**55.1**	**4.1**	**59.5**
Productivity	**1.9**	**0.3**	**1.3**	**17.0**	**1.3**	**18.5**
Unit labour costs	**3.1**	**0.7**	**2.3**	**29.5**	**2.9**	**32.3**
P3 vs. to EU 15 unweighted						
Wages/capita	*0.9*	*-1.8*	*0.0*	*7.2*	*-7.0*	*-0.2*
Productivity	*0.0*	*0.5*	*0.1*	*-0.1*	*2.0*	*1.5*
Unit labour costs	*0.9*	*-2.3*	*-0.1*	*7.1*	*-9.0*	*-2.0*
P3 vs. to EU 27 weighted						
Wages/capita	*1.5*	*-2.2*	*0.3*	*13.0*	*-8.4*	*3.2*
Productivity	*-0.2*	*0.3*	*0.0*	*-1.5*	*1.5*	*-0.3*
Unit labour costs	*1.7*	*-2.5*	*0.3*	*14.8*	*-9.8*	*3.5*
P3 vs. to EU 27 unweighted						
Wages/capita	*-1.1*	*-1.4*	*-1.1*	*-12.2*	*-5.5*	*-16.3*
Productivity	*-0.9*	*0.4*	*-0.5*	*-8.0*	*1.6*	*-6.8*
Unit labour costs	*-0.1*	*-1.8*	*-0.7*	*-2.4*	*-7.2*	*-8.7*
P3 vs. to Germany						
Wages/capita	*2.8*	*-2.3*	*1.1*	*25.0*	*-8.8*	*13.6*
Productivity	*-0.1*	*0.9*	*0.2*	*-1.0*	*3.9*	*2.4*
Unit labour costs	*3.0*	*-3.2*	*0.9*	*26.4*	*-12.3*	*10.9*

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Core Europe: Belgium, Germany, France, Netherlands, Austria. - S: Eurostat (AMECO).

3.3 Deficits in trade and current accounts

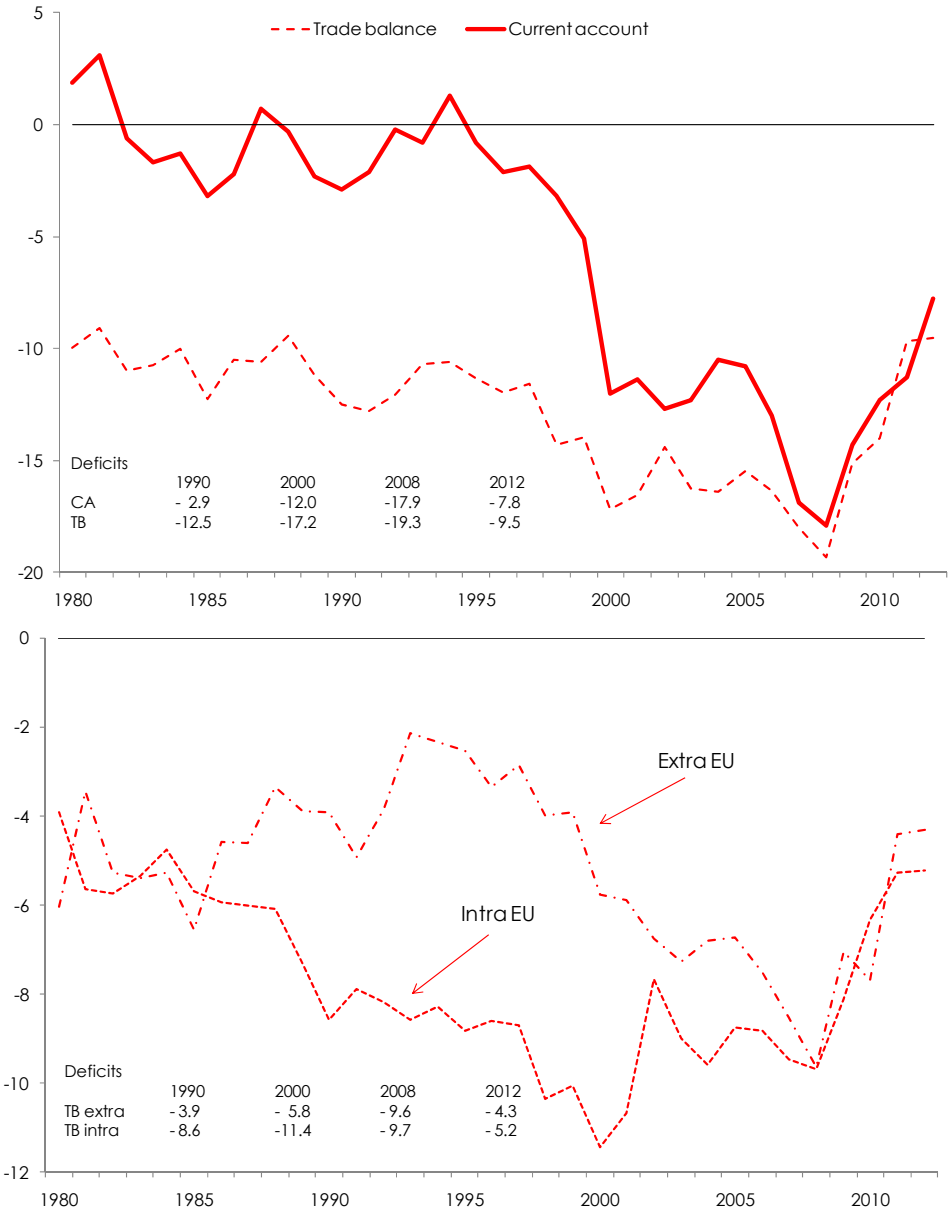
Deficits in current account as well as trade balances were the consequence of the decreasing price competitiveness, specifically the meagre catching up process in productivity.

The deficit in the current account of P3 increased from 4.2% in 1990, to 8.9% in 2000 and then to 13.4% in 2008. It is highest in Greece with 18% of GDP in 2008 (up from only 3% in 1990, with the increase divided between the nineties and the first 8 years of this century). The deficit in the current account balance climaxed at 12.6% in Portugal and 9.6% in Spain.

The trade deficits are rather similar to current account deficits, on average 1-2 percentage points higher (where the difference is brought by tourism, other services have trade deficits too). In Portugal trade deficits are higher for intra EU trade, in Spain from extra EU trade, in Greece both trade deficits for intra and extra EU trade were the same. The increase of trade deficits from 2000 to 2008 originates in Greece and Spain from extra EU trade, in Portugal from intra trade. This indicates that specifically Greece and Spain failed to make gains from globalisation. Portugal reduced its extra EU deficit from 4.2% of GDP to 3.6% by increasing its extra EU exports from 3.8% to 5.8%). Extra EU exports relative to GDP is lowest and declined from 3.5% to 2.7% in Greece, an extremely low value for a country at the periphery in a fast growing neighbourhood. The extra EU exports are twice as high relative to GDP in Portugal and Spain (in the latter without any increase between 2000 and 2008).

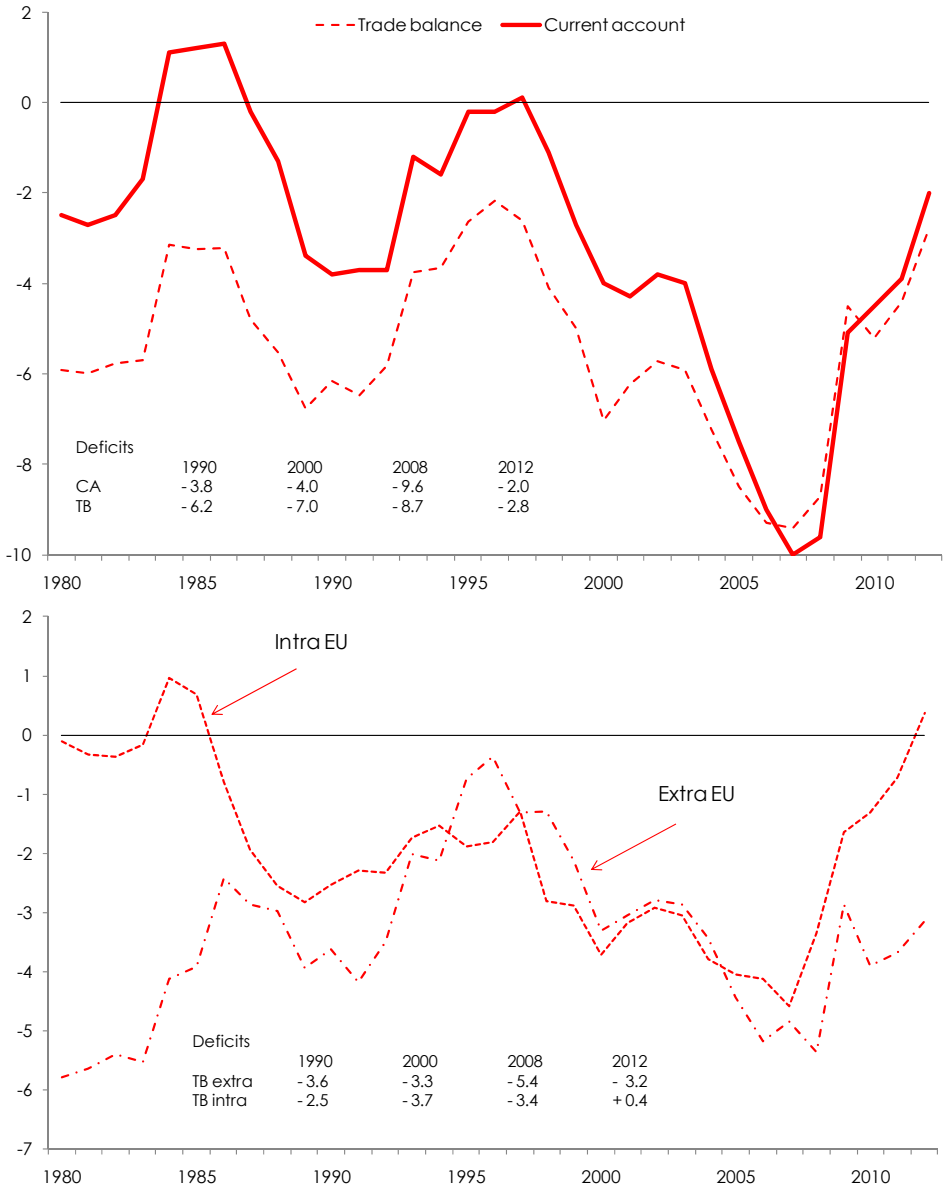
The peripheral countries have no common history of large deficits in the current account balance. Greece had a surplus in the early eighties and in 1994; the average deficit between 1980 and 1995 amounted to 0.7%. Similarly Spain had a surplus in the eighties and in 1997, and an average deficit between 1980 and 1995 of 1.6%. Only Portugal had never had a surplus, with an average deficit of 7.3% between 1980 and 1995 (the deficit being partly the consequence of high growth). Consequently P3 had never had a surplus, but deficit was low in 1986 and 1996 (–0.9% resp. –1.5% of GDP).

Figure 4: Current account relative to GDP; Greece



S: Eurostat (AMECO), European Commission.

Figure 5: Current account relative to GDP; Spain

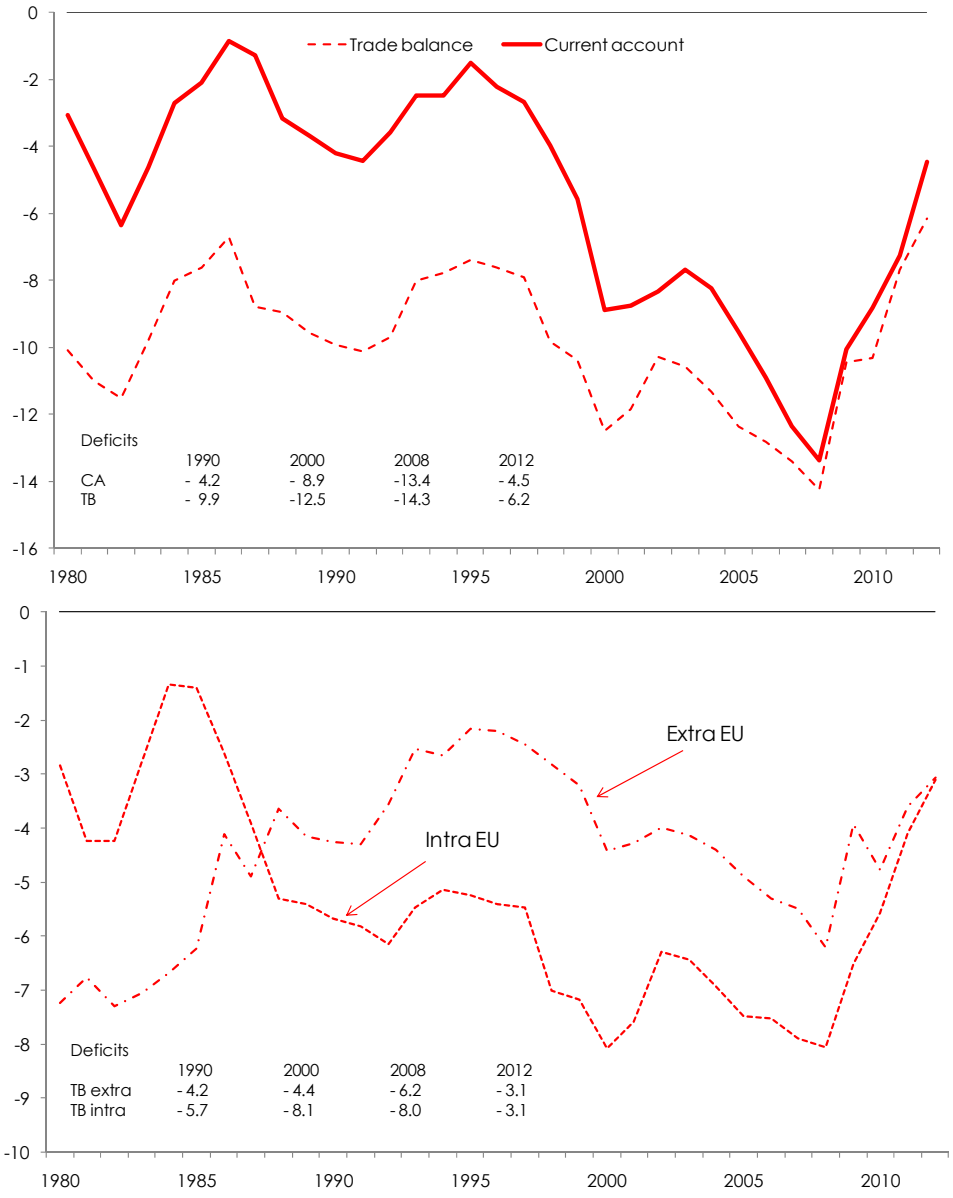


S: Eurostat (AMECO), European Commission.

Figure 6: Current account relative to GDP; Portugal

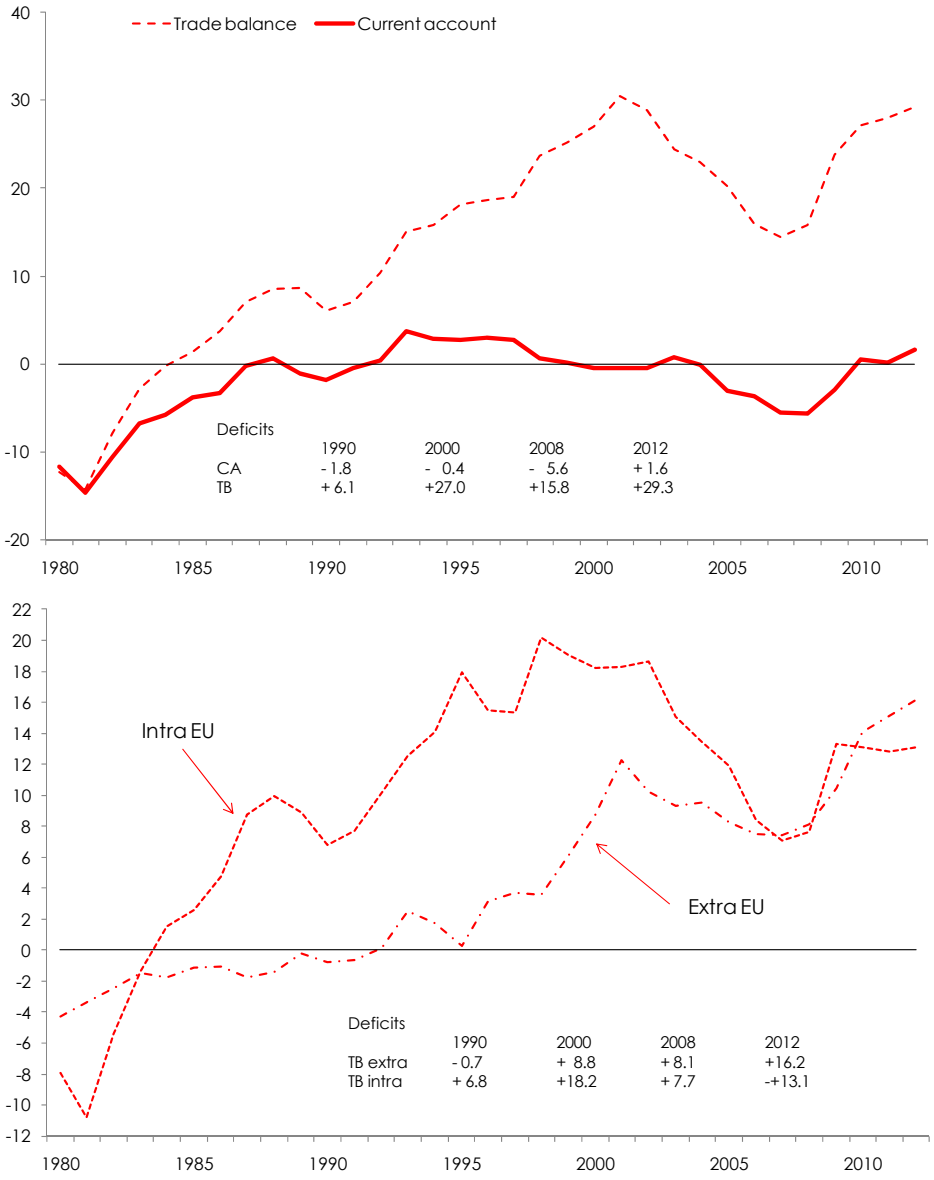
S: Eurostat (AMECO), European Commission.

Figure 7: Current account relative to GDP; Periphery 3



S: Eurostat (AMECO), European Commission.

Figure 8: Current account relative to GDP; Ireland



S: Eurostat (AMECO), European Commission.

Ireland had a balanced current account in 2000, but accrued a deficit of 5.6% in 2008. The trade balance is highly positive but declining up to 2007 – specifically the large surplus via EU countries - the balance vs. extra EU trade remained positive (with exports and imports relative to GDP declining in parallel). The current account balance for the P4 therefore increased from 3.6% from 1990 to 6.8% 2000 and further to 11.4% of GDP in 2008, with deficits higher in intra trade, but rising in both trade categories.

Italy has no problem in its current account balance, though its deficit increased slightly from 0.2% in 2000 to 2.9% in 2008, intra trade is positive and slightly increasing, extra trade is responsible for the deficit.

Table 4: External position of the three peripheral countries (relative to GDP)

	1990	2000	2008	2012	2008-2000	2012-2008
Greece						
Intra EU exports of goods	5.8	5.8	5.0	6.0	-0.7	0.9
Intra EU imports of goods	14.4	17.2	14.7	11.2	-2.5	-3.5
Intra EU trade balance of goods	*-8.6*	*-11.4*	*-9.7*	*-5.2*	*1.8*	*4.5*
Extra EU exports of goods	2.8	3.5	2.7	5.9	-0.9	3.2
Extra EU imports of goods	6.8	9.3	12.3	10.2	3.0	-2.1
Extra EU trade balance of goods	*-3.9*	*-5.8*	*-9.6*	*-4.3*	*-3.9*	*5.3*
Total trade balance of goods	**-12.5**	**-17.2**	**-19.3**	**-9.5**	**-2.1**	**9.8**
Current account	**-2.9**	**-12.0**	**-17.9**	**-7.8**	**-5.9**	**10.1**
Spain						
Intra EU exports of goods	7.5	14.5	12.2	13.5	-2.2	1.3
Intra EU imports of goods	10.1	18.2	15.6	13.1	-2.6	-2.4
Intra EU trade balance of goods	*-2.5*	*-3.7*	*-3.4*	*0.4*	*0.4*	*3.7*
Extra EU exports of goods	3.1	5.3	5.4	7.6	0.0	2.2
Extra EU imports of goods	6.8	8.7	10.7	10.7	2.1	0.0
Extra EU trade balance of goods	*-3.6*	*-3.3*	*-5.4*	*-3.2*	*-2.0*	*2.2*
Total trade balance of goods	**-6.2**	**-7.0**	**-8.7**	**-2.8**	**-1.7**	**5.9**
Current account	**-3.8**	**-4.0**	**-9.6**	**-2.0**	**-5.6**	**7.6**
Portugal						
Intra EU exports	16.7	16.9	16.8	19.5	-0.1	2.7
Intra EU imports	22.6	26.0	27.9	24.0	1.9	-3.9
Intra EU trade balance	*-5.9*	*-9.1*	*-11.1*	*-4.5*	*-2.0*	*6.6*
Extra EU exports	4.3	3.8	5.8	7.2	2.0	1.4
Extra EU imports	9.5	8.0	9.4	8.9	1.4	-0.5
Extra EU trade balance	*-5.2*	*-4.2*	*-3.6*	*-1.7*	*0.6*	*1.9*
Total trade balance	**-11.1**	**-13.3**	**-14.7**	**-6.2**	**-1.5**	**8.5**
Current account	**-5.9**	**-10.7**	**-12.6**	**-3.6**	**-1.9**	**9.0**
Periphery 3 (P3)						
Intra EU exports of goods	10.0	12.4	11.4	13.0	-1.0	1.6
Intra EU imports of goods	15.7	20.5	19.4	16.1	-1.0	-3.3
Intra EU trade balance of goods	*-5.7*	*-8.1*	*-8.0*	*-3.1*	*0.0*	*4.9*
Extra EU exports of goods	3.4	4.2	4.6	6.9	0.4	2.3
Extra EU imports of goods	7.7	8.7	10.8	9.9	2.2	-0.9
Extra EU trade balance of goods	*-4.2*	*-4.4*	*-6.2*	*-3.1*	*-1.8*	*3.2*
Total trade balance of goods	**-9.9**	**-12.5**	**-14.3**	**-6.2**	**-1.8**	**8.1**
Current account	**-4.2**	**-8.9**	**-13.4**	**-4.5**	**-4.5**	**8.9**

Periphery 3 (P3): Greece, Spain, Portugal.
S: Eurostat (AMECO).

Between 2008 and 2012 a considerable improvement was achieved. The current account deficit of the three southern periphery countries returned to 4.5% from 13.4% in 2008. The current account balance thus improved by 9 percentage points, the deficit is now lower than in 2000, nearly back to its 1990 level. The progress stems from the trade balance, and here

more from the intra EU than the extra EU part (4.9 points vs. 3.2 points) and a little bit more from reducing imports than from increasing exports. Imports decreased by 4.2 points of GDP while exports increased by 3.9 percentage points between 2008 and 2012.

Improvement was strongest in Greece (by 10 points), but it also has the highest remaining deficit in its current account (7.8%). It originated from the trade balance (9.5 points), divided equally between intra and extra trade, the import ratio of goods were reduced by 5.6 points. The export ratio increased by 4.1%, but we have to keep in mind that GDP fell by more than 20%. In absolute figures exports (of goods and services) in 2012 were still below 2008 levels (53.2 bill € vs. 56.2 bill €).

The second largest improvement occurred in Portugal which reduced its current account deficit to 3.6%, this is much less than in 1990 (5.9%). Given Portugal's history of current account deficits this is a remarkable performance (the second smallest deficit since 1980). Intra trade was the origin of the improvement between 2008 and 2010 (in the long run extra trade is steadily closing its deficit), and import shares decreased slightly faster (4.4 points) than exports 4.1 points.

Table 5: External position of four peripheral countries, Ireland and Italy

	1990	2000	2008	2012	2008-2000	2012-2008
Ireland						
Intra EU exports of goods	38.1	51.3	29.8	34.0	-21.4	4.2
Intra EU imports of goods	31.3	33.1	22.2	21.0	-10.9	-1.2
Intra EU trade balance of goods	*6.8*	*18.2*	*7.7*	*13.1*	*-10.5*	*5.4*
Extra EU exports of goods	10.9	27.9	17.7	25.8	-10.2	8.1
Extra EU imports of goods	11.7	19.1	9.5	9.6	-9.6	0.0
Extra EU trade balance of goods	*-0.7*	*8.8*	*8.1*	*16.2*	*-0.7*	*8.1*
Total trade balance of goods	**6.1**	**27.0**	**15.8**	**29.3**	**-11.2**	**13.5**
Current account	**-1.8**	**-0.4**	**-5.6**	**1.6**	**-5.2**	**7.2**
Periphery 4 (P4)						
Intra EU exports of goods	17.0	22.1	16.0	18.3	-6.1	2.3
Intra EU imports of goods	19.6	23.6	20.1	17.3	-3.5	-2.8
Intra EU trade balance of goods	*-2.6*	*-1.5*	*-4.1*	*0.9*	*-2.6*	*5.1*
Extra EU exports of goods	5.3	10.2	7.9	11.6	-2.3	3.7
Extra EU imports of goods	8.7	11.3	10.5	9.8	-0.8	-0.7
Extra EU trade balance of goods	*-3.4*	*-1.1*	*-2.6*	*1.8*	*-1.5*	*4.4*
Total trade balance of goods	**-5.9**	**-2.6**	**-6.7**	**2.7**	**-4.1**	**9.4**
Current account	**-3.6**	**-6.8**	**-11.4**	**-3.0**	**-4.7**	**8.5**
Italy						
Intra EU exports of goods	9.3	13.4	13.8	13.7	0.4	-0.1
Intra EU imports of goods	9.8	13.2	13.3	13.5	0.1	0.3
Intra EU trade balance of goods	*-0.5*	*0.2*	*0.5*	*0.2*	*0.3*	*-0.4*
Extra EU exports of goods	5.6	8.4	9.6	11.2	1.3	1.6
Extra EU imports of goods	6.1	8.4	11.0	11.9	2.6	0.9
Extra EU trade balance of goods	*-0.5*	*-0.1*	*-1.4*	*-0.7*	*-1.3*	*0.6*
Total trade balance of goods	**-1.0**	**0.2**	**-0.8**	**-0.6**	**-1.0**	**0.2**
Current account	**-1.5**	**-0.2**	**-2.9**	**-2.2**	**-2.7**	**0.7**

Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
S: Eurostat (AMECO).

Spain is now near to a balanced current account (-2%), intra EU trade has dramatically improved now yielding a small surplus, while extra trade remains in a deficit with a smaller improvement.

Ireland has switched its deficit into a surplus of 1.6% relative to GDP, doubling its already large extra EU trade surplus form 8% to 16% of GDP (reducing imports as well as boosting exports). Intra trade also improves by 5.4 points, with the lions share on the export side. Ireland is successfully "exporting out of the crisis", using its periphery position for reaping the benefits of globalisation.

Tourism

For tourism in periphery countries the last decade was a "lost decade". The surplus of P3 decreased from 3.8% of GDP in 2000 to 2.8% in 2008, thus reversing the increase which had occurred since 1995. Only a miniscule improvement is seen since 2008 with imports as well as exports "improving" by 0.1%. Spain decreased its export surplus from 4.1 percentage points of GDP to 2.6, falling back also relative to its 1995 surplus. The disappointment comes from incomes accrued by tourism and it continued up to 2011. All southern countries are losing market shares relative to Turkey as well as to some Central and northern European destinations (e.g. in former East Germany).

Tourism incomes from abroad decreased strongly relative to GDP also in Greece (from 7.2% to 5.1%; after a positive development in the nineties) and the negative trend continues after 2008. Portugal is slowly but steadily increasing its income from tourism (from 4% 1995 to 4.75% 2011) and could keep its positive balance and even increase it slightly since 2008. Ireland shares the negative development in tourism with the P3 reducing its surplus by one third up to 2008 with small improvements since. In Ireland exports are declining relative to growing GDP from 3.4% to 2.2%.

Central and Eastern Europe has slightly declining shares of tourism exports, the core countries are able to increase their rather low share by city tourism.

Receipts per night from international tourists is low in Greece and Spain (192 € resp. 179 €) as compared to 348 € in EU 15, falling in Greece since 2006, in Portugal it is higher with a distinct upward trend. Receipts per tourist and night are lower by one third (than in EU 15) in Ireland. Portugal comes nearest to EU 15 with 298 €/night (relative to 348 €/night in the EU 15). In Greece receipts per person and night decreased between 2000 and 2010, they are increasing in Spain, Portugal and Ireland; in all countries faster than in the EU 15, but with remaining gaps between 48% and 14%.

Summing up, net tourism income (called net exports in the statistics) make up for 2.8% of GDP in 2008 for the three periphery countries declining from 3.8% in 2000 and after a small decline in 2009 and 2010 reaches about 3% 2011. Gross tourism income (4.2% in 2011; 5.4% in 2000) is only about one percentage point higher than in EU 27 and two points higher than in EU 15 and lower than for example in Austria (5.2%). Given the potential of these countries from their

climate, history and geography tourism as a source of net income is definitely much smaller than it could be.

Table 6: Tourism: lost decade for periphery

	1995	2000	2008	2011	2008-2000	2011-2008
Greece						
Exports in % of GDP	2.8	7.2	5.1	4.9	-2.1	-0.2
Imports in % of GDP	0.9	3.6	1.2	1.1	-2.4	-0.1
Tourism balance in % of GDP	1.9	3.7	4.0	3.9	0.3	-0.1
International receipts per night in EUR (2010)		210.2		192.4		
Spain						
Exports in % of GDP	4.2	5.1	3.9	4.0	-1.2	0.1
Imports in % of GDP	0.7	1.0	1.3	1.1	0.3	-0.1
Tourism balance in % of GDP	3.4	4.1	2.6	2.5	-1.5	-0.1
International receipts per night in EUR (2010)		138.3		179.2		
Portugal						
Exports in % of GDP	4.1	4.5	4.4	4.7	-0.1	0.4
Imports in % of GDP	1.8	1.9	1.7	1.7	-0.2	0.0
Tourism balance in % of GDP	2.3	2.6	2.6	3.0	0.1	0.4
International receipts per night in EUR (2010)		220.7		297.7		
Periphery 3 (P3)						
Exports in % of GDP	**3.9**	**5.4**	**4.1**	**4.2**	**-1.2**	**0.1**
Imports in % of GDP	**0.9**	**1.5**	**1.3**	**1.2**	**-0.2**	**-0.1**
Tourism balance in % of GDP	**3.0**	**3.8**	**2.8**	**3.0**	**-1.0**	**0.2**
International receipts per night in EUR (2010)		**189.7**		**224.9**		
Ireland						
Exports in % of GDP	3.4	2.7	2.4	2.2	-0.3	-0.2
Imports in % of GDP	3.1	2.6	4.0	3.6	1.4	-0.4
Tourism balance in % of GDP	0.3	0.1	-1.5	-1.3	-1.6	0.2
International receipts per night in EUR (2006)		136.6		197.7		
Periphery 4 (P4)						
Exports in % of GDP	3.9	5.1	4.0	4.0	-1.1	0.1
Imports in % of GDP	1.1	1.6	1.6	1.4	-0.1	-0.2
Tourism balance in % of GDP	2.8	3.4	2.4	2.6	-1.1	0.2
International receipts per night in EUR (2010)		176.4		218.1		
Italy						
Exports in % of GDP	2.8	2.5	2.0	1.9	-0.5	-0.1
Imports in % of GDP	1.4	1.4	1.3	1.3	-0.1	0.0
Tourism balance in % of GDP	1.4	1.1	0.7	0.6	-0.4	0.0
International receipts per night in EUR (2010)		212.6		175.7		
EU 15						
Exports in % of GDP	**1.9**	**2.2**	**2.1**	**2.1**	**-0.2**	**0.0**
Imports in % of GDP	**1.9**	**2.3**	**2.1**	**2.0**	**-0.2**	**-0.1**
Tourism balance in % of GDP	**0.0**	**-0.1**	**-0.1**	**0.1**	**0.0**	**0.1**
International receipts per night in EUR (2010)		**302.4**		**347.6**		

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
S: Eurostat (AMECO).

Summing up: external balances

Summing up, we have to acknowledge that – while budget deficits had always been monitored by the commission and the analysts – the current account balances were to some extent disregarded up to the financial crisis. This may partly be explained by the optimism of some economists and integration experts that current account deficits were less important in a currency union (since no national reserves were needed to pay them). Maybe they were also undervalued since the accruing trade deficit was thought to be the result of good cyclical developments and the catching up process of the peripheral countries. Wage increases beyond productivity were seen as a welcomed part of the catching-up process, and the nominal increases in wages were not seen as extraordinary, since in inflation history they had been higher in the past. The absence of the inadequate catching up of productivity (in parallel to that of wages) in periphery countries was totally ignored.

Between 2008 and 2012 price competitiveness in P3 and Ireland was restored – the decrease in relative unit values between 2000 and 2012 is larger than the increase in the eight years before for the EU 15 (without Germany). This happened primarily via wage restraint, not via productivity catching up which should be much faster given the low productivity level. Differences relative to Germany in price competitiveness persist and cannot be compensated for by further wage restraint.

Looking at trade balances the periphery countries had made considerable progress since 2008 to eliminate accrued deficit. Both trade deficits as well as current account deficits were halved between 2008 and 2012 and are much lower relative to GDP than in 2000. This was partly due to shrinking imports due to declining production and consumption, but exports increased nearly as much as imports fell. This result may look too optimistic if imports rise in any recovery again and the "necessity to export" at low prices may decrease. Trade is the main source of the deficits up to 2008 and of the improvements since.

Missed opportunities exist for extra EU exports which are far below their potential, given the geographical position of the countries (with the exception of Ireland which demonstrates how to use its position in the globalizing world). Tourism plays a rather minor role and net exports are declining relative to GDP. They could be a source of much higher revenues; net revenues (the balance of exports minus imports) relative to GDP fell between 2000 and 2011 by nearly one percentage point.

3.4 Small and declining manufacturing sector

Declining shares with the exception of Ireland

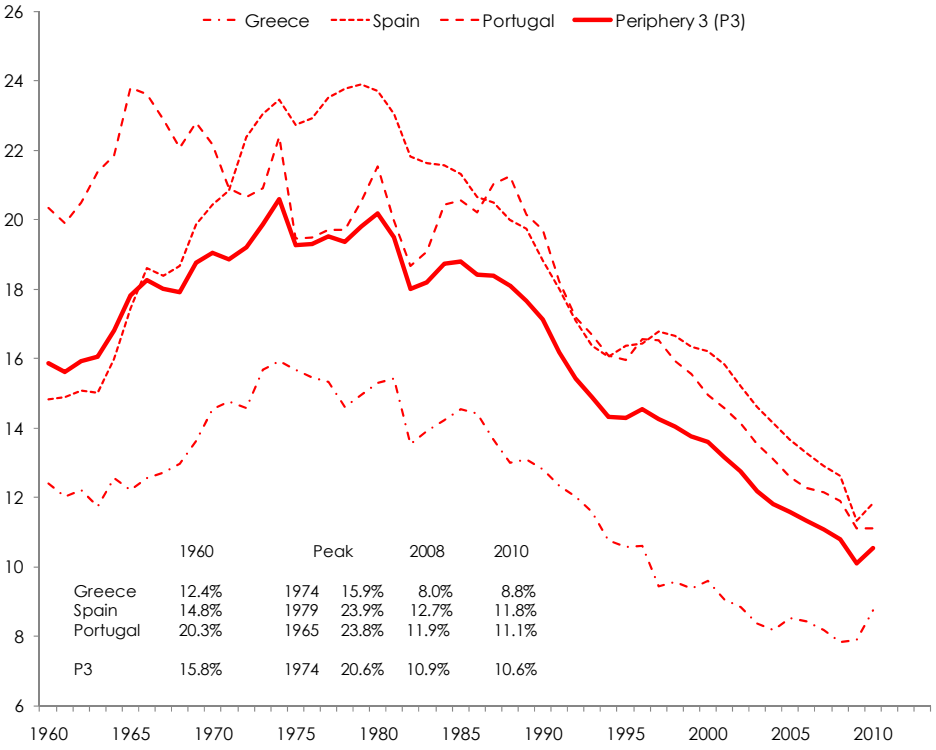
The three southern peripheral countries have a small and since 1975 rapidly declining share of manufacturing. Manufacturing made up about 16% of GDP in 1960, then increased up to a climax of 20% in 1975, since that it declines practically from year to year and is about 10% in 2010, (measured in nominal terms).

The trends are rather similar in the periphery countries, with still a lower share in Greece. Here manufacturing increased from 12% in the sixties to a peak of 15.9% in 1974, and the share is now oscillating between 8% and 9%.

If measured in nominal terms, Greece has now the smallest share with 9% of GDP (2007 as well as 2010), it had 11% in 1995, 9.6% in 2000. The share of manufacturing of GDP had climaxed at 16% in 1974.

Spain had a share of manufacturing of only 12% in 2010, but had had 16% as late as 2000, with a rather stable level of 20% in the eighties. The seventies were the heyday of the manufacturing sector; it had increased from 15% in the early sixties to a maximum of 23% in 1974 at that time surpassing the share of manufacturing in EU 15.

Figure 9: Share of manufacturing in nominal GDP; southern peripheral countries (P3)



Periphery 3 (P3): Greece, Spain, Portugal.
S: Eurostat (AMECO).

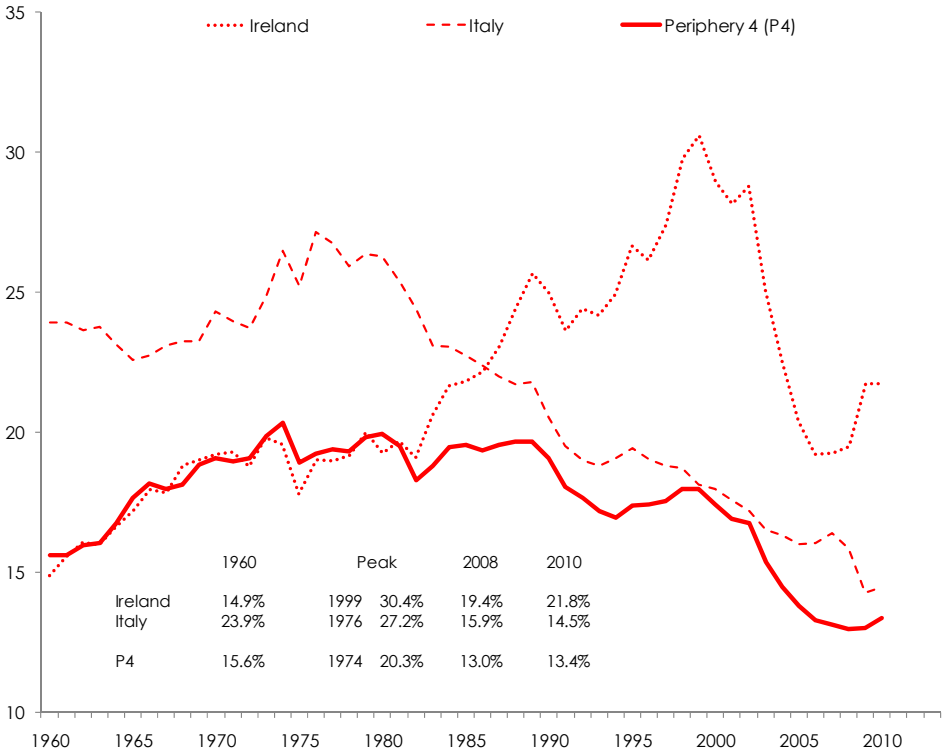
Portugal had less fluctuation and a rather stable share of 20% throughout the seventies and eighties. It fell to 15% in 2000 and declined further to 11% 2008. This implies that an already small share fell by nearly one quarter within a decade and that manufacturing relative to GDP is only half of the share in the seventies and eighties.

For EU 15 the share fell by approximately two percentage points each decade and is now 13%. Ireland is an outstanding exception: its share is now 22%, this is a rather strong decline

from 2000 (29%) specifically up to 2007, with a revival since that time. Ireland had started with 15% in the sixties; it then rose to 25% in 1990 and a climax of 30% in 1999.

Italy resembles the Spanish development, it had a large manufacturing sector of about 25% up to the early eighties, it fell to 18% in 2000 and then to 14.5%, not much above EU-15 average.

Figure 10: Share of manufacturing in nominal GDP; Ireland, four peripheral countries (P4) and Italy relative to EU 15



Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
S: Eurostat (AMECO).

At constant prices the manufacturing share in EU 15 is rather stable moving in the range of between 13% and 16%. There was a small decline since 2000 (from 15% to 13% which happened partly up to 2007 and partly thereafter). The ranking between the peripheral countries is the same as in nominal terms, the lowest sector is in Greece with 7.8% (with a decline from 9.2% since 2000), somewhat higher in Spain (11.4% down from 15.2%) and Portugal 11.7% down from 13.2% in 2000. In P3 therefore the share of manufacturing in real terms decreased from 12.5% (2000) to 10.7% 2008 (for EU 15 from 15% to 14.5%). In Ireland it is stable at 21%, in Italy 16% down from 17%.

Summing up the share of manufacturing in nominal terms decreased for P3 from 17% (1990) to 14% (2000) and then further up to 11% (in all three countries the share is now less than half of the peak value). The lowest share has always been and is now in Greece (9%), but the

share of manufacturing is not much higher in Portugal (10%) and Spain (11%). Ireland is the notable exception with a share of 22%, much higher than the EU 15 (13%). The same trend for the share of manufacturing as well as for the country hierarchy is seen in real terms.

Interest sensitive, domestic industries (non tradables)

Interest rates were historically low in Europe, and specifically in the peripheral countries (which had a tradition of higher inflation). The former spread of nominal interest rates across countries stopped after the introduction of the Euro. Unexperienced low real interest rates (sometimes negative ones) in peripheral countries lead to a boom in interest sensitive industries (non tradables) like construction, housing and finance. The shift from tradable to non tradables (including physical infrastructure) was further supported by the European Regional and Structural Funds, which made up for several percentage points of GDP in peripheral countries. The funds were used primarily for building roads, highways, airports, again in the construction sector. Programs to encourage small firms, tradable services, innovation or the service sector or manufacturing were the exception. Together with high private investment in housing, the loosening of lending standards and innovative financial products this led to a boom in construction and property prices in several countries. Credit booms, high GDP and consumption growth and deficits in current accounts are now assessed as the main determinants of country differences in the depth of the financial crisis across countries (*Aiginger*, 2011).

We measure the structural shift towards non tradables, by data on the sectors housing, construction and finance. The share of these sectors together of GDP rose for EU 15 relative to GDP between 2000 and 2008 by 2.3 percentage point of GDP. The shift was on average somewhat less for periphery countries, but with large differences.

In Greece only the housing sector increased its share from 11.4% to 12.2%, it is already larger than in the EU 15. The financial sector as well as construction decreased and in 2008 were lower than in EU 15.

In Spain all three sectors increased their shares in GDP, together totally about five points. Construction relative to GDP rose from 10.3% (2000) to 13.6% (2008) and is the largest in EU 15. The financial sector increased its share to 5.4% and is as large as in EU 15; housing is rising but smaller than in EU 15.

In Portugal the financial sector increased from 5.6% to 7.7%. The share of housing is increasing, that of the construction sector decreasing (but higher than in EU 15).

Ireland had a housing boom and its financial sector exploded from an already high 7.4% to 10.3% (the highest in EU 15).

Since 2008 the construction sector fell by two points for P3 (stronger in Spain followed by Greece), and the financial sector fell by more than one point in Portugal and Spain (remaining constant at its lower share in Greece). Housing increased its share in GDP from

8.5% to 10.2% between 2000 and 2011. In Ireland construction lost sharply and housing slightly, while the financial sector kept its record high.

Thus a construction and housing boom occurred in Spain and in Ireland, but not in Portugal or Greece. The financial sector increased in Spain and in Portugal and especially in Ireland.

Table 7: Sectoral shift to "non-tradables"

	2000	2008	2010	2011	2008-2000	2010-2008	2011-2008
	Shares in % of GDP				Absolute change		
Greece							
Construction	7.2	6.0	5.3	4.5	-1.2	-0.7	-1.5
Financial sector	5.6	4.4	4.4	4.5	-1.2	0.0	0.1
Housing	11.4	12.2	12.9	13.8	0.8	0.7	1.6
Sum of three sectors	24.2	22.6	22.6	22.8	-1.6	0.0	0.2
Spain							
Construction	10.3	13.6	10.9	10.1	3.3	-2.7	-3.5
Financial sector	4.6	5.4	4.6	4.2	0.8	-0.8	-1.2
Housing	6.2	6.9	7.3	7.7	0.7	0.4	0.8
Sum of three sectors	21.1	25.9	22.8	22.0	4.8	-3.1	-3.9
Portugal							
Construction	8.2	7.3	6.7	6.3	-0.9	-0.6	-1.0
Financial sector	5.6	7.7	6.5	6.5	2.1	-1.2	-1.2
Housing	7.8	8.3	8.6	9.0	0.5	0.3	0.7
Sum of three sectors	21.6	23.3	21.8	21.8	1.7	-1.5	-1.5
Periphery 3 (P3)							
Construction	**8.6**	**9.0**	**7.6**	**7.0**	**0.4**	**-1.3**	**-2.0**
Financial sector	**5.3**	**5.8**	**5.2**	**5.1**	**0.6**	**-0.7**	**-0.8**
Housing	**8.5**	**9.1**	**9.6**	**10.2**	**0.7**	**0.5**	**1.0**
Sum of three sectors	**22.3**	**23.9**	**22.4**	**22.2**	**1.6**	**-1.5**	**-1.7**
Ireland							
Construction	7.2	7.2	3.2	3.2	0.0	-4.0	-4.0
Financial sector	7.4	10.3	10.4	10.4	2.9	0.1	0.1
Housing	7.0	9.0	7.8	7.8	2.0	-1.2	-1.2
Sum of three sectors	21.6	26.5	21.4	21.4	4.9	-5.1	-5.1
Periphery 4 (P4)							
Construction	8.2	8.5	6.5	6.0	0.3	-2.0	-2.5
Financial sector	5.8	7.0	6.5	6.4	1.2	-0.5	-0.6
Housing	8.1	9.1	9.2	9.6	1.0	0.0	0.5
Sum of three sectors	20.6	20.0	20.8	20.4	-0.6	0.8	0.4
EU 15							
Construction	**5.9**	**6.8**	**6.3**	**6.2**	**0.9**	**-0.5**	**-0.6**
Financial sector	**4.9**	**5.4**	**6.0**	**5.8**	**0.5**	**0.6**	**0.4**
Housing	**9.8**	**10.7**	**10.5**	**10.6**	**0.9**	**-0.2**	**-0.1**
Sum of three sectors	**20.6**	**22.9**	**22.8**	**22.6**	**2.3**	**-0.1**	**-0.3**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
S: EUKLEMS.

3.5 Decreasing flows and insufficient dynamics of inward FDI

Foreign investment is a crucial instrument of technology transfer and was to a large extent responsible for the catching up of the periphery countries up to 2000.

The **stock** of inward investment relative to GDP in the P3 countries increased from 6.7% in 1980 to 10.8% in 1990 and then doubled to 21.8% in 2000. It reached its maximum of 35.9% in 2007 and since then declined to 32.3% in 2011. This increase was faster than for EU 15 (in which inward stock increased from 17% in 1980 to 39% in 2000 and 54.5% in 2008, but its share of GDP is much lower. The highest shares of FDI relative to GDP are in core countries (66% of GDP).

The highest share of FDI stocks/GDP is reached in Portugal with a maximum of 49.8% in 2007 (it is now 45.7%). Spain started in the eighties with very little foreign investment stock (2.3%) but has now reached 42.1%, which is even slightly higher than before the crisis started. Greece had its maximum share in the eighties with a ratio of up to 18%, which fell below 10% in the nineties, recovered to 17% in 2007, to drop to 9.2% in 2011, well below investment stocks in GDP in the eighties.

In Ireland inward investment stock had been well above GDP in the eighties and then again around 2000. It fell to 71% before the crisis started, then recovered to 112%.

Since 2008 the share of inward stock to GDP is further increasing in Spain and Portugal, but dropping from its already low position in Greece (from 11.2 percentage points to 9.2%.

The Eastern and Central European Countries started in 1993 with a share (6%) half that of P3 but have shares larger than 50% of GDP since 2006; annual figures since the start of the crisis are volatile, with a decreasing trend. Core European countries have the highest share of inward FDI stock at 69%, dropping for one year in 2008, but then recovering.

Inward **flows** in FDI were only 0.8 percentage of GDP for P3 in 1980, they increased to 4.5% in 2000, but then declined until 2009 to 2.7%. Between 2008 and 20111 it further declined to 2.3%. In Greece inward flows are fluctuating at a meagre 1% of GDP all the time, and then halved from 2008 to 2011. Spain and Portugal which started at a lower rate in 1990 reached a share of about 5 % in 2000, which was then reduced even before the crisis, since then it has further decreased in Spain but recovered slightly in Portugal.

Inward FDI flows are now much higher in central and eastern European countries and they increased to 5.9% of GDP in 2008, they are half of that ratio in 2011. Inward stocks in Central and Eastern European countries amounted to 52% in 2011 (as compared to 32.3 in P3).

Summing up inward investment was a crucial part of the catching up process of periphery countries. This source weakened even before the crisis. FDI flows halved between 2000 and 2008 in P3 (stocks increased relative to GDP but less dynamic). At the same time FDI stocks and flows increased strongly in eastern and central European countries (stocks from 28% to 52% of GDP, overtaking the P3 in the late nineties as far as shares in GDP were concerned). Greece always had a much lower share of inward FDI than Portugal or Spain, and this source of technology transfer has further decreased since 2008, so that inward FDIs are practically nonexistent (stocks 9% of GDP, flows 0.6 in 2011 as compared to 64% respectively 5% in EU 15).

Portugal and Spain have inward investment stocks at half of GDP which dried up in Spain more than in Portugal.

Table 8: Inward FDI flows and stocks in country groups

	1980	1990	2000	2008	2011	2008-2000	2011-2008
Inward FDI flows			In % of GDP				
Greece	1.2	1.1	0.9	1.3	0.6	0.4	-0.7
Spain	0.7	2.6	6.8	4.8	2.0	-2.0	-2.9
Portugal	0.5	3.7	5.7	1.9	4.3	-3.8	2.5
Periphery 3 (P3)	**0.8**	**2.5**	**4.5**	**2.7**	**2.3**	**-1.8**	**-0.4**
Ireland	1.3	1.3	26.4	-6.2	6.0	-32.7	12.3
Periphery 4 (P4)	0.9	2.2	9.9	0.4	3.2	-9.5	2.8
Central and Eastern Europe	*–*	*–*	*5.6*	*5.9*	*2.8*	*0.3*	*-3.2*
Core Europe	0.6	1.9	14.6	8.6	5.1	-6.0	-3.5
EU 15	**0.7**	**1.7**	**11.4**	**5.0**	**5.2**	**-6.4**	**0.2**
Inward FDI stocks							
Greece	8.3	6.0	11.1	11.2	9.2	0.1	-2.0
Spain	2.3	12.7	26.9	36.9	42.1	10.0	5.1
Portugal	9.5	13.6	27.4	39.7	45.7	12.3	6.0
Periphery 3 (P3)	**6.7**	**10.8**	**21.8**	**29.3**	**32.3**	**7.5**	**3.0**
Ireland	165.4	78.9	130.3	71.4	112.0	-58.9	40.6
Periphery 4 (P4)	46.3	27.8	48.9	39.8	52.2	-9.1	12.4
Central and Eastern Europe	*–*	*–*	*27.7*	*47.1*	*51.8*	*19.3*	*4.8*
Core Europe	5.8	14.6	41.4	65.7	69.4	24.3	3.7
EU 15	**16.9**	**16.1**	**39.1**	**54.5**	**63.8**	**15.4**	**9.3**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Central and Eastern Europe: Czech Republic, Slovakia, Hungary, Poland.
Core Europe: Belgium, Germany, France, Netherlands, Austria. - S: Eurostat (AMECO).

4. Structure of manufacturing and exports

4.1 Production: structure and change

Structure of manufacturing according to factor inputs

Peripheral countries (specifically P3) have a very different industry structure when compared to EU 15.

- Labour intensive sectors produce 18.6% of value added in the EU 15 (2007); the share for the three southern countries is 24%, ranging between 22% and 23% in Greece and Spain and 27.5% in Portugal. It is only 5% in Ireland.
- Technology driven sectors produce 21.7% in EU 15, but only 9% in the three southern peripheral countries, ranging from 6.5% in Greece to 11.6% in Spain. Ireland is quite different again with 30.3%.

- All have a large marketing driven sector (including food). Here the dominant country is Greece with 36.7%, and it is 25.3% in Portugal as well as in Spain. In Ireland it is 28.9%, in the EU 15 20.7%.
- The capital intensive sector is somewhat larger than in the EU 15, namely in the range of 15% to 17%, while it is 13.7% in the EU 15, in Ireland the capital intensive sector is twice as high relatively than in the EU 15.

Table 9: Value added shares of sectors in total manufacturing: Greece

	2000	2007	2007-2000	2000	2007
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	19.7	17.5	-2.2	-4.8	-7.9
Labour intensive industries	15.4	22.4	7.0	-2.5	3.9
Capital intensive industries	22.8	16.8	-6.1	8.4	3.1
Marketing driven industries	34.1	36.8	2.7	12.4	16.1
Technology driven industries	8.0	6.5	-1.5	-13.7	-15.2
According to labour skills					
Low skills	57.7	45.7	-11.9	28.9	17.1
Medium skill/Blue collar workers	11.9	18.9	7.1	-11.0	-6.1
Medium skill/White collar workers	24.7	28.6	3.9	-7.3	0.3
High skills	5.7	6.7	1.0	-10.6	-11.3
According to price or quality competition					
High RQE	31.7	25.5	-6.2	-5.3	-12.7
Medium RQE	33.7	44.4	10.7	-3.3	8.2
Low RQE	34.6	30.1	-4.4	8.6	4.5

S: Eurostat (SBS).

Table 10: Value added shares of sectors in total manufacturing: Spain

	2000	2007	2007-2000	2000	2007
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	22.2	23.3	1.1	-2.3	-2.1
Labour intensive industries	22.3	22.6	0.3	4.4	4.0
Capital intensive industries	17.4	17.2	-0.3	3.1	3.5
Marketing driven industries	25.0	25.3	0.3	3.4	4.6
Technology driven industries	13.0	11.6	-1.5	-8.6	-10.1
According to labour skills					
Low skills	48.8	47.6	-1.3	20.0	18.9
Medium skill/Blue collar workers	18.3	19.8	1.5	-4.6	-5.2
Medium skill/White collar workers	25.3	25.0	-0.2	-6.7	-3.3
High skills	7.6	7.6	0.0	-8.7	-10.4
According to price or quality competition					
High RQE	33.3	32.6	-0.7	-3.7	-5.6
Medium RQE	37.0	36.8	-0.2	-0.1	0.6
Low RQE	29.8	30.6	0.9	3.8	5.0

S: Eurostat (SBS).

Table 11: Value added shares of sectors in total manufacturing: Portugal

	2000	2007	2007-2000	2000	2007
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	21.2	22.4	1.2	-3.3	-3.0
Labour intensive industries	29.0	27.5	-1.4	11.1	8.9
Capital intensive industries	15.6	15.1	-0.5	1.2	1.4
Marketing driven industries	23.9	25.3	1.4	2.2	4.6
Technology driven industries	10.4	9.7	-0.7	-11.2	-11.9
According to labour skills					
Low skills	44.8	41.5	-3.3	16.0	12.9
Medium skill/Blue collar workers	22.6	24.0	1.5	-0.4	-1.0
Medium skill/White collar workers	24.4	24.5	0.1	-7.6	-3.9
High skills	8.3	10.0	1.7	-8.0	-8.0
According to price or quality competition					
High RQE	32.6	33.1	0.5	-4.4	-5.1
Medium RQE	39.4	37.4	-2.0	2.4	1.2
Low RQE	28.0	29.5	1.6	2.0	3.9

S: Eurostat (SBS).

Table 12: Value added shares of sectors in total manufacturing: three periphery countries (P3)

	2000	2007	2007-2000	2000	2007
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	21.0	21.1	0.0	-3.4	-4.3
Labour intensive industries	22.2	24.2	2.0	4.3	5.6
Capital intensive industries	18.6	16.4	-2.3	4.3	2.7
Marketing driven industries	27.7	29.1	1.5	6.0	8.5
Technology driven industries	10.5	9.3	-1.2	-11.2	-12.4
According to labour skills					
Low skills	18.7	22.6	3.9	-10.1	-6.0
Medium skill/Blue collar workers	5.5	6.2	0.7	-17.4	-18.8
Medium skill/White collar workers	57.9	54.1	-3.8	25.9	25.8
High skills	17.9	17.0	-0.8	1.6	-1.0
According to price or quality competition					
High RQE	27.5	29.9	2.4	-9.5	-8.3
Medium RQE	37.2	36.6	-0.6	0.2	0.4
Low RQE	35.3	33.5	-1.8	9.4	7.9

Periphery 3 (P3): Greece, Spain, Portugal.
S: Eurostat (SBS).

Table 13: Value added shares of sectors in total manufacturing: Ireland

	2000	2007	2007-2000	2000	2007
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	8.9	8.9	0.0	-15.6	-16.5
Labour intensive industries	4.9	5.5	0.6	-13.0	-13.1
Capital intensive industries	28.0	26.5	-1.5	13.6	12.8
Marketing driven industries	26.5	28.9	2.4	4.8	8.2
Technology driven industries	31.8	30.3	-1.5	10.1	8.6
According to labour skills					
Low skills	37.9	33.8	-4.1	9.1	5.2
Medium skill/Blue collar workers	18.6	23.4	4.9	-4.4	-1.6
Medium skill/White collar workers	33.1	30.1	-3.0	1.1	1.7
High skills	10.5	12.7	2.2	-5.8	-5.3
According to price or quality competition					
High RQE	29.3	37.7	8.3	-7.7	-0.5
Medium RQE	40.2	36.4	-3.8	3.2	0.2
Low RQE	30.5	25.9	-4.6	4.5	0.3

S: Eurostat (SBS).

Structure of manufacturing and change according to skill intensity

The three southern peripheral counties have a large share of low skill industries and a smaller share of high skill sectors. The highest low wage sector in value added is in Greece and Portugal (45.7% resp. 44.8%), in Spain it is 38.5%, and Ireland has a share of 22.8%, which is lower than the EU 15 (28.6%). It had decreased strongly in Greece and Ireland between 1995 and 2007 (-10.8, -9%), and by less 3% in Spain (-3.1%) and Portugal (-4%), for the former group this was more than in EU 15 (5.2%), for the latter less.

The share of high skill industry is 6.7% in Greece, 8.3% in Portugal and 10% in Spain, the EU average amounted to 18%, Ireland had 17%. The share of this sector remained constant in Spain and Greece and increased by 1.8 percentage points in Spain. This increases the distance to the EU-15 figures, in which high skill industries increased their share by 5.3 points. Ireland came down by 5.5%, losing its lead vs. EU 15 in this sector. Medium skill sectors increased their share in Greece (at the cost of low skill sectors).

Disappointing structural change

As far as change is concerned, the share of labour intensive sectors in value added increased in Greece between 1995 and 2007, while that of technology driven industries decreased. The specialization in marketing driven industries increased, while the share of capital intensive industries plummeted. Portugal slowly upgraded its structure by lowering labour intensive industries and increasing marketing driven industries, with little change in the share of the others. Spain also increased the share of labour intensive industries and reduced

that of technology driven industries. Ireland reduced its already very small labour intensive sector, and by and large kept it extraordinary share of technology driven industries. It reduced its share of marketing driven industries and increased that of capital intensive industries, thus keeping its strong inter-industry upgrading on track.

4.2 Exports: structure and change

The periphery countries had losses in exports of labour intensive industries, which were compensated for by relative increases in capital intensive sectors while the deficit in technology driven industries, which was already large in 2000, widened even further.

The breakdown of the former stronghold of labour intensive industries is specifically to be seen in Greece and Portugal. In Greece labour intensive industries had an export share of 20.7% in 2000, which plummeted to 7.6% in 2011, a sector which was larger than in EU 15 altogether by 10 percentage points now has approximately the same share as EU 15. In Portugal the share fell from 27.1% to 16.6%. The industries responsible for this downward trend are all kinds of textile industries (from wearing apparel to footwear). The loss of labour intensive sectors was statistically compensated for the P3 countries in general by a rising share in the capital intensive sector which increased from 33.7% to 52.7 % in Greece and from 16.6%to 29.2% in Portugal.

The share of technology driven industries which was below average in 2000 decreased from 12.0% to 9.9% in Greece and from 22.8% to 17.1% in Portugal (22 points resp., now 15 points below the EU average). The share of marketing driven industries (food) is declining in Greece and increasing in Portugal.

Table 14: Export shares of sectors in total exports: Greece

	2000	2011	2011-2000	2000	2011
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	13.3	13.1	-0.2	-7.9	-8.6
Labour intensive industries	20.7	7.6	-13.1	10.5	-0.7
Capital intensive industries	33.7	52.7	19.0	14.2	27.6
Marketing driven industries	20.3	16.8	-3.5	8.1	3.9
Technology driven industries	12.0	9.9	-2.2	-24.8	-22.2
According to labour skills					
Low skills	54.7	39.1	-15.6	31.5	13.5
Medium skill/Blue collar workers	5.7	5.1	-0.6	-15.1	-14.0
Medium skill/White collar workers	31.2	47.3	16.1	-1.4	15.5
High skills	8.4	8.5	0.1	-15.0	-15.0
According to price or quality competition					
High RQE	33.8	20.5	-13.3	-13.7	-26.7
Medium RQE	32.3	47.7	15.4	4.0	21.5
Low RQE	33.9	31.8	-2.1	9.7	5.1

S: Eurostat.

Table 15: Export shares of sectors in total exports: Spain

	2000	2011	2011-2000	2000	2011
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	18.1	18.7	0.6	-3.1	-3.0
Labour intensive industries	10.5	10.3	-0.2	0.2	2.1
Capital intensive industries	23.5	28.0	4.4	4.0	2.9
Marketing driven industries	15.8	16.0	0.3	3.6	3.2
Technology driven industries	32.1	27.0	-5.2	-4.7	-5.2
According to labour skills					
Low skills	28.7	32.9	4.1	5.5	7.3
Medium skill/Blue collar workers	34.5	27.2	-7.3	13.7	8.1
Medium skill/White collar workers	25.1	26.5	1.4	-7.5	-5.4
High skills	11.7	13.5	1.8	-11.8	-10.0
According to price or quality competition					
High RQE	48.0	44.0	-4.0	0.5	-3.2
Medium RQE	25.6	25.8	0.2	-2.7	-0.4
Low RQE	26.4	30.2	3.8	2.2	3.6

S: Eurostat.

Table 16: Export shares of sectors in total exports: Portugal

	2000	2011	2011-2000	2000	2011
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	18.4	20.8	2.3	-2.8	-0.9
Labour intensive industries	27.1	16.6	-10.5	16.9	8.4
Capital intensive industries	16.6	29.2	12.6	-2.9	4.1
Marketing driven industries	15.0	16.4	1.4	2.8	3.5
Technology driven industries	22.8	17.1	-5.7	-14.1	-15.1
According to labour skills					
Low skills	40.7	38.9	-1.8	17.5	13.3
Medium skill/Blue collar workers	24.5	24.0	-0.4	3.7	5.0
Medium skill/White collar workers	28.0	29.8	1.8	-4.6	-2.0
High skills	6.8	7.3	0.5	-16.6	-16.3
According to price or quality competition					
High RQE	43.9	37.5	-6.4	-3.6	-9.7
Medium RQE	23.3	26.8	3.5	-5.0	0.7
Low RQE	32.8	35.7	2.9	8.6	9.1

S: Eurostat.

Table 17: Export shares of sectors in total exports: three peripheral countries (P3)

	2000	2011	2011-2000	2000	2011
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	17.8	18.6	0.8	-3.4	-3.1
Labour intensive industries	14.0	11.1	-3.0	3.8	2.9
Capital intensive industries	23.1	30.1	7.0	3.6	5.0
Marketing driven industries	16.0	16.2	0.2	3.8	3.3
Technology driven industries	29.1	24.1	-5.1	-7.7	-8.1
According to labour skills					
Low skills	32.6	34.3	1.7	9.4	8.7
Medium skill/Blue collar workers	30.8	24.9	-5.8	10.0	5.9
Medium skill/White collar workers	26.0	28.6	2.6	-6.6	-3.2
High skills	10.6	12.1	1.5	-12.8	-11.4
According to price or quality competition					
High RQE	46.3	41.1	-5.2	-1.2	-6.1
Medium RQE	25.7	27.7	2.0	-2.6	1.5
Low RQE	28.0	31.2	3.2	3.8	4.6

S: Eurostat.

Table 18: Export shares of sectors in total exports: Ireland

	2000	2011	2011-2000	2000	2011
	Share in %		Absolute change	vs. EU 15	
According to factor input					
Mainstream industries	5.4	4.5	-0.9	-15.8	-17.1
Labour intensive industries	2.5	1.5	-1.0	-7.8	-6.7
Capital intensive industries	22.3	19.1	-3.1	2.8	-6.0
Marketing driven industries	11.6	11.7	0.1	-0.6	-1.1
Technology driven industries	58.2	63.1	4.9	21.3	31.0
According to labour skills					
Low skills	12.1	12.8	0.7	-11.1	-12.8
Medium skill/Blue collar workers	2.5	2.0	-0.6	-18.3	-17.1
Medium skill/White collar workers	47.7	41.1	-6.6	15.1	9.3
High skills	37.7	44.1	6.5	14.2	20.6
According to price or quality competition					
High RQE	31.2	63.0	31.9	-16.3	15.8
Medium RQE	42.3	16.8	-25.6	14.1	-9.4
Low RQE	26.5	20.2	-6.3	2.3	-6.5

S: Eurostat.

In Spain the structure of exports is more similar to the EU average. The share of technology driven sectors is decreasing too but from 32% to 27%, the share of capital intensive industries is increasing as in the other countries.

For P3 the technology driven sector is low and decreasing, the former stronghold of labour intensive industries is losing shares in exports. Periphery countries are increasing their specialization in capital intensive industries.

Low skill sectors are somewhat increasing their higher share in P3, with the difference to the EU slightly decreasing. The high skill industries increase their share a little bit, bringing with it only a minor effect and with the difference to the EU average only slightly being reduced. Negative specialization in industries in which quality competition dominates is increasing, as the higher share of price sensitive industries is increasing.

Ireland exports follow a completely different track. The labour intensive industries are practically absent in the export market making up only 2.5% in 2000 falling to 1.5% in 2011. Technology driven industries which have made up already more than half of the exports are further rising to a share of 63%, this is double as much as in EU 15. Capital intensive industries are decreasing their share and are now below the EU average. While marketing driven industries are stable and similar to the EU 15. High skill industries and those where quality competition dominates increase; medium skill categories lose shares in exports as do industries in which prices dominate.

Thus the structural change is moving in very different direction. While the share of exports in technology driven industries is falling even if it started from low position in the southern countries it is increasing despite an excellent initial value in Ireland. Shares of labour intensive sectors are shrinking, from low to nothing in Ireland, while high shares in Portugal and Greece decrease due to the competition of newly industrialized countries. Capital intensive sectors make up the difference in Greece and Portugal. In Ireland an already excellent structure of exports was increased, with Ireland being able to substitute low domestic demand into high quality exports.

4.3 Summing up

The structural composition of production in the periphery countries is not favourable for growth, it is changing slowly and not in the right direction. Technology driven industries are smaller than in EU 15 and declining in all three P3 countries. Marketing driven industries are somewhat higher (specifically food industry) but not increasing market shares, thus indicating lost chances of higher processing and quality. Labour intensive industries have a higher share in all three and are increasing in Greece, constant in Spain and decreasing in Portugal as far as production is concerned, as far as exports are concerned this sector drops dramatically. In Greece and Portugal capital intensive sectors have a rather high share (basic industries) and are losing shares in production, but are gaining shares in exports (in mirror image to the drops of labour intensive products). In general structural change is much larger in exports, but do not seem to be the result of positive specializations but of market trends impacting more on exports and less on production.

5. Innovation, regulation, aggregate demand

Low pressure for change

The southern periphery countries are underinvesting in R&D and underperforming in innovation in general. They have a stricter regulation of product and labour markets. Empirical literature suggests that this is a disadvantageous combination if a country reaches a medium level of development. Innovation depends positively on competition, specifically risky innovations need a climate were business start-ups are easy and incumbents cannot prevent entry. Consumption share in GDP is much higher in Greece and Portugal than in EU 15.

Ireland is increasing its innovation performance reaching and surpassing EU-15 average in several aspects. It is one of the least regulated countries in Europe in both product and labour markets and has an Anglo-Saxon style socioeconomic model. Consumption share is lower than in EU 15.

Innovation outlays and performance

R&D expenditures in P3 are one third of the EU-15 average in 2000, with the lowest share in Greece (0.62) and the highest in Spain (0.91), in Portugal the share doubles up to 2010, the increase for Spain is also rather encouraging and stronger than in EU 15. In Greece R&D fell even relative to a decreasing GDP. Indicators summarized in the broader European Innovation Score Board show that all three countries fall into the third group according to innovation performance (after the leaders and the followers). They made nearly no progress over the last three years. The distance in the indicator human resources is less than for others, the number of innovators is larger in Greece and Portugal than for EU, which may characterize the large number of micro firms, which never take off to become small or medium sized firms.

Ireland is the shining exception. While the first boom in manufacturing built on FDI and thus on imported technology, Ireland had a specific policy to induce firms to do research or at least development in Ireland and to connect the foreign investors with indigenous firms and the Irish development agencies encouraged the investors to connect with local firms. The R&D ratio increased between 2000 and 2010 from 1.12% to 1.79% of GDP, which is very near to the France and UK ratio (R&D/GDP in Ireland had been 0.83% in 1990). The innovation index is higher even relative to the EU-15 average showing the broad upgrading of the Irish innovation system; and human resources excel relative to EU 15.

Table 19: R & D expenditures and innovation performance

	R&D expenditures			Innovation index		Firm investments		Human resources		Innovators	
	2000	2010	2010			Scoreboard index 2011					
	In % of GDP		Rank		Rank		Rank		Rank		Rank
Greece	0.62	0.58	26	0.34	20	0.22	27	0.48	19	0.67	6
Spain	0.91	1.39	16	0.41	18	0.25	24	0.44	24	0.33	18
Portugal	0.75	1.59	14	0.44	16	0.32	19	0.45	22	0.72	3
Periphery 3 (P3)	**0.76**	**1.19**	**19**	**0.40**	**18**	**0.27**	**23**	**0.45**	**22**	**0.58**	**9**
Ireland	1.12	1.79	10	0.58	10	0.53	6	0.77	3	0.45	16
Periphery 4 (P4)	0.85	1.34	17	0.44	16	0.33	19	0.53	17	0.54	11
EU 15	**1.91**	**2.09**		**0.54**		**0.44**		**0.56**		**0.51**	

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Central and Eastern Europe: Czech Republic, Slovakia, Hungary, Poland.
Core Europe: Belgium, Germany, France, Netherlands, Austria.

S: Eurostat; INNOVATION UNION SCOREBOARD 2011.

Table 20: PISA Rankings

	Overall reading scale	On the mathematics scale	On the science scale
Greece	483	466	470
Spain	481	483	488
Portugal	489	487	493
Periphery 3 (P3)	**484**	**479**	**484**
EU 15	**494**	**498**	**502**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Central and Eastern Europe: Czech Republic, Slovakia, Hungary, Poland.
Core Europe: Belgium, Germany, France, Netherlands, Austria.

S: OECD Programme for International Student Assessment 2009.

Regulation

Greece is the country with the strictest *product market* regulation. The OECD's index was 3 in 1998 and fell to 2.4, but this is still much more and a slightly increasingly distance vs. EU 15. In Portugal and Spain product markets were strictly regulated in 1998 and are now more liberal, partly slightly, partly more regulated than EU15. Ireland kept its status as a low regulated country. State control as well as state ownership is very high in Greece and Portugal (2008), while it is below average in Spain (and Ireland).

Table 21: Product market regulation

	Overall product market regulation			State control of business enterprises			Public ownership		
	1998	2008	Ranking 2008	1998	2008	Ranking 2008	1998	2008	Ranking 2008
	Indices from 0 to 6								
Greece	3.0	2.4	15	4.8	3.8	15	4.6	4.0	14
Spain	2.5	1.0	4	3.7	1.6	4	3.7	2.2	4
Portugal	2.2	1.4	11	3.9	2.7	14	4.3	3.7	13
Periphery 3 (P3)	**2.6**	**1.6**	**10**	**4.2**	**2.7**	**11**	**0.0**	**3.3**	**10**
Ireland	1.6	0.9	2	3.0	1.3	1	3.4	2.2	3
Periphery 4 (P4)	2.4	1.4	8	3.9	2.3	9	0.0	3.0	9
EU 15	**2.1**	**1.3**		**3.2**	**2.1**		**0.0**	**3.0**	

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.

S: OECD Indicators of Product Market Regulation Homepage: http://www.oecd.org/eco/pmr.

Table 22: Labour market regulation

	Overall regulation			Regulation of regular contracts			Regulation on temporary contracts		
	2000	2008	2008	2000	2008	2008	2000	2008	2008
	Indices from 0 to 6		Rank	Indices from 0 to 6		Rank	Indices from 0 to 6		Rank
Greece	3.5	2.7	17	2.3	2.3	9	4.8	3.1	4
Spain	2.9	3.0	18	2.6	2.5	11	3.3	3.5	3
Portugal	3.7	3.2	20	4.3	4.2	21	3.0	2.1	6
Periphery 3 (P3)	**3.4**	**3.0**	**18**	**3.1**	**3.0**	**14**	**3.7**	**2.9**	**4**
Ireland	0.9	1.1	2	1.6	1.6	2	0.3	0.6	19
Periphery 4 (P4)	2.8	2.5	14	2.7	2.6	11	2.8	2.3	8
Italy	2.5	1.9	7	1.8	1.8	5	3.3	2.0	7
EU 15	**2.1**	**2.2**		**2.2**	**2.3**		**2.0**	**2.0**	

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.

S: OECD Indicators on Employment Protection - annual time series data 1985-2008.

All three southern periphery countries have strict regulation of their *labour markets* with an average index of 3 (vs. 2.2 for EU 15). Labour market regulation was loosened between 2000 and 2008 in Greece and Portugal, while it remained constant in Spain according to the OECD Regulation index– and despite the dual labour market which came into existence. Dismissing people with regular employment contracts are very difficult in Portugal. Temporary contracts are very strongly regulated in Greece and even more in Spain in 2008, less so in Portugal. If the "bifurcation" of labour markets (strong regulation for regular contracts, low regulation for temporary contracts) can be measured by different scores in the OECD index duality is strongest in Portugal, while in Greece and Spain temporary contracts are highly

regulated (relative to other countries). A caveat is that the data refer to 2008, and regulation has changed since then. Ireland has the second least regulated labour market in Europe.

Aggregate demand

The three southern periphery countries have a share of consumption in GDP larger than in EU. This is extreme in Greece in 2000 (69.9%; more than ten percentage points above EU average) and the consumption share reached 75% in 2012. Consumption relative to GDP is now 17 percentage points above EU 15. The consumption share in Spain is relatively stable and near average, in Portugal it is increasing and the difference to the EU is less than ten points. Ireland on the other hand has a low share of consumption which decreased a little bit towards the start of the crisis and has fallen since then.

Higher shares of consumption are "compensated" for by lower shares of exports. Exports in the wider sense (including services) were 28% in P3 (in 2000 as well as in 2008). This was 7% and 12% respectively less than in EU 15. The deficit declined slightly up to 2012 (32%).

The investment share in all four countries is now lower than for the EU 15, in the first eight years of this century it was higher (boosted by public and EU programs); this was the case including 2008.

Table 23: Share of consumption and investment

	Investment			Private consumption			Exports in a broader sense		
	2000	2008	2012	2000	2008	2012	2000	2008	2012
				In % of GDP					
Greece	22.5	22.1	13.8	69.9	72.6	75.0	25.7	24.1	26.2
Spain	25.8	28.7	20.4	59.7	57.2	58.5	29.1	26.5	31.9
Portugal	27.7	22.5	16.6	63.6	66.8	66.0	28.9	32.4	38.2
Periphery 3 (P3)	**25.3**	**24.4**	**17.0**	**64.4**	**65.6**	**66.5**	**27.9**	**27.7**	**32.1**
Ireland	23.1	21.9	9.5	48.6	51.2	48.9	97.3	83.4	108.5
Periphery 4 (P4)	24.8	23.8	15.1	60.5	62.0	62.1	45.3	41.6	51.2
EU 15	**20.5**	**20.7**	**18.2**	**58.5**	**57.0**	**58.1**	**35.4**	**40.2**	**43.3**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.

S: Eurostat (AMECO).

Government expenditure relative the GDP was slightly less than for the EU 15 (it is lower for countries with lower income per head), it has increased on average by three percentage points between 2000 and 2008. It did not fall between 2008 and 2012 (in fact it decreased by less than 1 point in Greece and increased in Portugal and Spain). In Ireland the government share jumped up between 2000 and 2008 from 31.2% to 42.8% and has increased since then without reaching the EU average to 44.1%.

Tax rates relative to GDP are lower in all four countries than in the EU 15 with decreasing shares before the crisis in Greece and Spain and Ireland, and with a slightly increasing trend in Portugal.

Table 24: Public sectors: expenditure and taxes

	Expenditure			Taxes		
	2000	2008	2012	2000	2008	2012
	In % of GDP					
Greece	47.1	50.6	49.7	43.3	40.7	42.4
Spain	39.2	41.5	42.4	38.2	37.0	36.0
Portugal	41.6	44.8	47.7	38.3	41.1	43.0
Periphery 3 (P3)	**42.6**	**45.6**	**46.6**	**40.0**	**39.6**	**40.5**
Ireland	31.2	42.8	44.1	35.9	35.5	35.8
Periphery 4 (P4)	39.8	44.9	46.0	39.0	38.6	39.3
EU 15	**44.9**	**47.6**	**49.7**	**45.6**	**45.2**	**45.8**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.

S: Eurostat (AMECO).

Table 25: Budget balance and public debt

	Balance			Debt		
	2000	2008	2012	2000	2008	2012
	In % of GDP					
Greece	-3.8	-9.9	-7.3	104.4	113.0	160.6
Spain	-1.0	-4.5	-6.4	59.4	40.2	80.9
Portugal	-3.3	-3.7	-4.7	48.4	71.6	113.9
Periphery 3 (P3)	**-2.7**	**-6.0**	**-6.1**	**70.7**	**74.9**	**118.5**
Ireland	4.7	-7.3	-8.3	37.5	44.2	116.1
Periphery 4 (P4)	-0.8	-6.4	-6.7	62.4	67.3	117.9
EU 15	**0.7**	**-2.3**	**-3.9**	**63.2**	**65.0**	**89.2**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.

S: Eurostat (AMECO).

6. Neighbours, globalisation and military sector

Periphery countries have a rather small share of exports to their neighbour countries. This is easy to explain if there is only one direct neighbour such is the case with Ireland and Portugal. But it is also very low for Greece at only 17.8%, although it shares borders with four countries. If we take the unweighted average of the individual EU-15 countries to their neighbours the Greek export share is 13% lower than for the unweighted EU average (31.5%). Greece was unable to increase its share of exports to its neighbours even as these started to grow fast such as Turkey and Bulgaria. Neither did Greece make use of being a potential first mover in Macedonia. Ireland shifted away its export structure from the UK, mainly to other European countries.

Table 26: Export shares to neighbours and BRICs in % of total exports

	Neighbours			BRICs		
	2000	2011	2011-2000	2000	2011	2011-2000
	Share in %		Absolute change	Share in %		Absolute change
Greece[1]	15.9	17.8	1.9	3.2	3.1	-0.1
Spain[2]	28.2	26.2	-2.1	2.2	4.4	2.2
Portugal[3]	19.3	25.1	5.8	1.1	2.8	1.7
Periphery 3 (P3)	**21.1**	**23.0**	**1.9**	**2.2**	**3.4**	**1.2**
Ireland[4]	19.9	16.2	-3.8	0.8	2.8	2.0
Periphery 4 (P4)	20.8	21.3	0.5	1.8	3.2	1.4
Core Europe	46.2	46.4	0.3	2.8	6.5	3.7
Italy[5]	19.0	20.6	1.6	3.2	7.4	4.2
Germany[6]	39.2	41.8	2.5	3.9	10.2	6.4
EU 15 (unweighted average)	**31.0**	**31.5**	**0.5**	**2.9**	**6.0**	**3.1**

Periphery 3 (P3): Greece, Spain, Portugal. – Periphery 4 (P4): Greece, Spain, Portugal, Ireland. – Core Europe: Belgium, Germany, France, Netherlands, Austria. – Neighbours: [1] Albania, Bulgaria, Macedonia, Turkey. – [2] Andorra, France, Portugal. – [3] Spain. – [4] United Kingdom. – [5] France, Austria, San Marino, Switzerland, Slovenia, the Vatican. – [6] Belgium, Denmark, France, Luxembourg, Netherlands, Austria, Poland, Switzerland, Czech Republic. – S: DOT, IFS.

Table 27: Export shares to neighbours and BRICs in % of GDP

	Neighbours			BRICs		
	2000	2011	2011-2000	2000	2011	2011-2000
	% of GDP		Absolute change	% of GDP		Absolute change
Greece[1]	1.8	2.5	0.7	0.4	0.4	0.1
Spain[2]	5.3	5.3	0.1	0.4	0.9	0.5
Portugal[3]	3.8	6.2	2.3	0.2	0.7	0.5
Periphery 3 (P3)	**3.6**	**4.7**	**1.0**	**0.3**	**0.7**	**0.3**
Ireland[4]	15.6	8.9	-6.7	0.6	1.5	0.9
Periphery 4 (P4)	6.6	5.7	-0.9	0.4	0.9	0.5
Core Europe	21.2	25.0	3.8	1.1	3.0	1.9
Italy[5]	4.1	4.8	0.8	0.7	1.7	1.0
Germany[6]	11.4	16.1	4.7	1.1	4.0	2.8
EU 15 (unweighted average)	**13.3**	**14.8**	**1.5**	**0.8**	**1.9**	**1.1**

Periphery 3 (P3): Greece, Spain, Portugal. –Periphery 4 (P4): Greece, Spain, Portugal, Ireland. – Core Europe: Belgium, Germany, France, Netherlands, Austria. – Neighbours: [1] Albania, Bulgaria, Macedonia, Turkey. – [2] Andorra, France, Portugal. – [3] Spain. – [4] United Kingdom. – [5] France, Austria, San Marino, Switzerland, Slovenia, the Vatican. – [6] Belgium, Denmark, France, Luxembourg, Netherlands, Austria, Poland, Switzerland, Czech Republic. – S: DOT, IFS.

Globalisation

Periphery countries did not use the advantage of globalization despite being located by the sea and despite a history of global trade connections. We demonstrate this by analysing the exports to BRIC countries. Exports to BRICs increased from only 2.2% to 3.4%, while the same ratios for EU 15 were 2.9% and 6%; some inroads were made by Spain (from 2.2% to 4.4%) and Portugal (from 1.1% to 2.8%) while Greece's export share to BRICs even fell slightly, and is now half of that of the EU. Ireland succeeded in tripling its share to BRICS, which however still remains tiny (2.8%) showing that subsidiaries of foreign firms produce for European (or North American) destinations.

The southern periphery countries are critical towards the benefits of globalization. Asked whether globalisation is a chance for higher growth Greece is the most sceptical country in the EU 27 with just 42% supporting this hypothesis. Portugal is the third most sceptical country, Italy is sixth and Spain the seventh. Only Ireland assesses globalization as a chance. 60% take a favourable view of globalisation, this ratio is higher than that for the EU, but still low, given the boost the Irish economy had from foreign direct investment. The negative attitude to globalisation – be it the cause of or the result of the disappointing development – is a very important fact to be analysed and discussed given that the four periphery countries are indeed bridges between Europe and the non- European countries. Such bridges can be a great opportunity, if economic policy and knowledge and capabilities can make an active use of globalization. Of course periphery countries can also be the harbour by which imports from other countries or unwanted migrants can enter Europe.

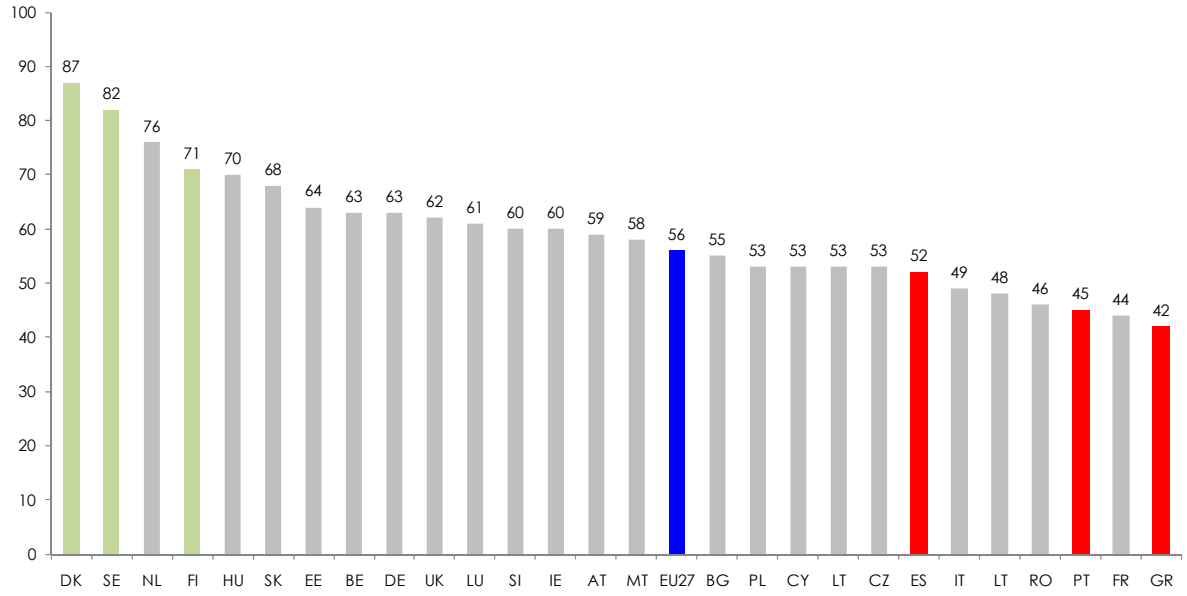
Consequently an economic policy and a political discussion which address the globalization issue are of the highest importance for the periphery countries. Globalisation cannot be prevented in the long run, but it can either harm domestic firms and sectors or enable them to export or invest in more dynamic countries, thus stimulating the peripheral economies. The countries with a positive attitude – Denmark, Sweden, the Netherlands and Finland – also border the sea, and have much higher wages than the periphery countries but they use their organisational and technological knowledge to profit and grow via globalisation.

The military sector

The share of military expenses is, to a certain degree, connected to the difference between enjoying globalisation and assessing it as a threat. Greece, Portugal and Italy are among the five countries with the highest military spending in relation to GDP with 2.3%, 2.1% and 1.7%. Ireland has rather low military expenditure. In P3 military expenditure reached 1.8% of GDP, as compared to 1.5% for EU 15. The share has only decreased in the southern periphery countries by 0.2 percentage points between 2000 and 2008 and another 0.2 points since that.

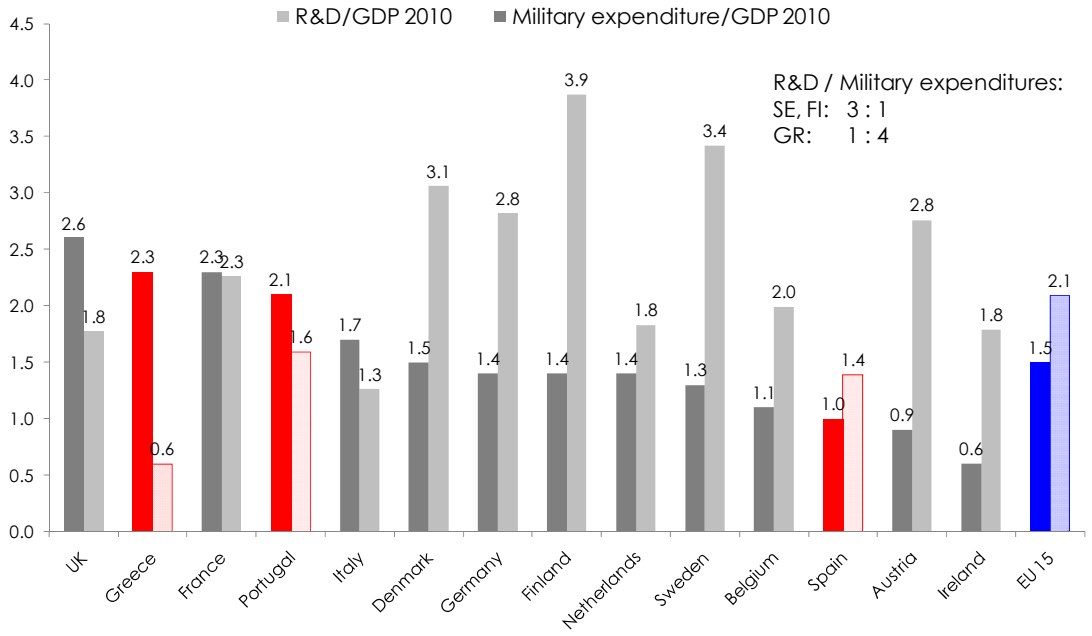
In Greece, Portugal and Italy military expenses are furthermore much higher than R&D expenditure.

Figure 11: Attitude to globalisation: Globalisation is an opportunity for economic growth



S: Eurobarometer.

Figure 12: Military expenditures relative to GDP and to R&D expenditures



Remark: Ranked according to (falling) ratio of military expenditures relative to GDP.
S: Eurostat, SIPRI Military Expenditure Database.

7. Current reform strategies in the peripheral countries

The reform strategies in the deficit countries were enacted after a looming problem became intolerable, where the last push into action came either from a banking crisis, a property bubble or from public deficits exploding. The crisis – often twin crises of public debt and current account deficits – then led to rising interest rates for government bonds. All countries first tried to solve the problems internally, but then applied reluctantly for help. The conditions of the access to low interest credit were formulated by the ECB, the Commission and the IMF in so called "Memoranda of Understanding"; these have been discussed with, but not really shaped by national governments. They were then pushed through national parliaments using emergency procedures, arguing that this was the only way to prevent insolvency and that the conditions were unalterable and dictated by the "troika".

The content of the "Memorandum of Understanding"

Reading the various Memoranda reveals that they are rather broad. They contain not only deficit reduction goals but also reforms of labour market regulation, wages and pension schemes, competition laws and licensing procedures, privatisation etc. Many of the reforms called for in the Memorandum had also been reflected in the national reform strategies which countries had to provide for the Europe 2020 strategy and which were evaluated by the European Commission in the European Semester.

However there are important blind spots in the memoranda:

- There are nearly no references to the importance of research and development, of the need to make better use or upgrade education and lifelong learning.
- Strategies to boost exports or to make use of the chances of globalisation are absent in the Memorandum despite low export ratios.
- No strategy is called for to make the ports more efficient and turn the southern countries into hubs for trade with fast growing regions or to use the European periphery as an entry point for Asian or South American firms into Europe (by special zones, less administration).
- Policy measures to boost alternative energy and to save imports of coal and gasoline are neglected.
- Changes in the expenditure structure from expenditure into the past (high pensions and military expenditure) to those addressing the extremely high youth unemployment are very rare and not dominant. In the Greek memorandum the more intensive use of structural funds or money from the European Investment Bank is mentioned but without targets and deadlines. Military spending and specifically imports of new weapons are not criticised.
- There is no call for a new industrial policy or investment to be shifted from infrastructure to production (e.g. creation of firms).
- No emphasis is put on SME clusters, innovation, education and lifelong learning.

- Distributional questions such as high levels of unemployment or rising poverty are not addressed even though they risk damaging human capital in the long run; neither is the reintegration of young people in the employment process. Gender inequality and its negative impact on employment is neglected.

Even if the memoranda address issues of promoting growth there are no quantitative targets for these goals. Growth promoting measures include product market reforms (reduction of restriction, fast track investment authorization, elimination of barriers for investment and business starts). No qualitative goals are set for the volume of projects to be financed from structural funds or EIB, no goals are set for employment to be generated by new firms or inward FDI. All quantitative goals refer only to cuts in expenditure (and raising revenues, including privatisation receipts)

Not surprisingly the attention of governments and the media concentrated on the issues of cutting deficits and wages. These two strategy elements are the most visible ones and they are monitored specifically closely. Thus the passive and restrictive parts are in effect dominating. This reduces business and consumer confidence and long run investment.[6]

Vision based and nationally "owned"

Alternatively a reform strategy should be based on an analysis which addresses the specific problems of a country, its comparative and competitive advantages and its weaknesses. Based on these analyses a vision should be developed as to how the country should look like in 2030, embedded in a globalized world, given the resources and trends in social, ecological, health system, and demography.

The actions to follow the vision should be planned in the country, even if it is important to coordinate them with European policy and the strategies of other member countries. The consolidation of budgets and the cuts in wages and pensions – if needed – should be seen as a necessary condition in a strategy which finally brings higher living standards, and the attainment of other goals beyond GDP. The vision and the strategy to achieve this have to be "owned" nationally, but in line with Europe 2020 goals and coordinated with the troika. This vision then directs/dictates where expenditure needs to be cut, which taxes need to be raised and where to invest into the long-term growth in a period of tough budget discipline. A strategy developed in the country, well communicated, and containing a pro active component (which however makes deeper cuts necessary in other fields), will be considered as fair. It will foster confidence and limit the short run negative effects of consolidation and the downward spiral which can start from consolidation.

[6] The Portuguese memorandum raises distributional questions directly. It clearly recommends distinguishing between cuts of low and high wages, of low and high pensions. It advocates an increase of property taxes, and the elimination of tax exemptions specifically those effecting high income.

Table 28: Pensions, health and life expectancy

	Public pensions gross as % of GDP	Net pension replacement rates	Health care spending as % of GDP AWG reference scenario	Life expectancy at 65 - Men	Life expectancy at 65 - Women
Greece	13.6	110.3	6.5	17.9	20.2
Spain	10.1	84.5	6.5	17.1	20.4
Portugal	12.5	65.5	7.2	18.2	22.1
Periphery 3 (P3)	**12.1**	**86.8**	**6.7**	**17.7**	**20.9**
Ireland	7.5	40.8	7.3	16.8	20.0
Periphery 4 (P4)	10.9	75.3	6.9	17.5	20.7
EU 15	**12.2**	**74.4**	**7.3**	**17.8**	**21.4**

Three peripheral countries: Greece, Spain, Portugal.
Four peripheral countries: Greece, Spain, Portugal, Ireland.

S: European Commission: The 2012 Ageing Report, 2012; OECD: Pensions at a glance 2011.

Blind spots of the current strategy in detail

In the current reform programs the following issues absent or underrepresented.

Industrial policy

No memorandum mentions industrial policy. There is no proposal to foster or upgrade existing clusters, no creation of industrial or software parks, no definition of industries in which countries could have specific chances. No critique is provided of the fact that European Structural Funds have one the one hand financed infrastructure (roads, airports) without supporting their use and the creation of employment. There are a few measures to increase innovation and education. If these fields are mentioned at all, the paragraphs address the need to cut expenditure and to investigate efficiency (and mention the financial restrictions). We will address industrial policy in periphery countries in the next section.

Structure of taxes and expenditure

Taxes tend to reduce economic activity, but there are large differences depending on the type of tax. This is well reflected in all analyses of the OECD and IMF, but not emphasized enough in the Memoranda. The same holds true for expenditure. Some of them are crucial for future growth or for today's employment, others have a high import content, and decrease economic activity (administrative hurdles for investment, overregulation, bureaucracy, delay in decision).

Advantages of globalization

Economic growth in BRICS and other non European countries is much faster than European growth. This gives the countries at the periphery the chance to raise exports and to attract

direct investment. They could develop into export hubs for Europe and serve as an entry haven for firms in rapidly growing countries. Specifically the Black Sea area is a booming region, Africa has started to grow (and is seen as the continent of the next century), South America has overcome its problems of the nineties and also has high growth. Instead of enjoying these opportunities the attitude to globalization is negative in southern European countries, stemming from the experience that the low wage sectors have shifted. This is not addressed in the reform programs.

Energy saving and alternative energies

Periphery countries are importing oil and have low energy efficiency. The use of solar and wind energy has started, but increasing energy efficiency or developing into a pilot lab for alternative energy found no place in the reform programs. There are positive examples in Portugal, which has special programs for electric cars and has a very high share of renewable energy (22.5% in 2010). By contrast Greece despite its chances for solar and wind energy, has a disappointing share of only 7.5% (the EU average is 9.9%). According to environmental indicators (Yale´s environmental protection index) Portugal is ranked 19th, Spain as 25th and Greece as 71st. Among EU 15 the first two take middle positions, Greece is definitely at the end of the European countries (together with Belgium). All three countries have very low resource productivity and high emissions of fine particles. As far as the share of renewable energy is concerned, Portugal has a high share of 22%, but Greece is lower at7.5% and Spain is at 11.6%.

Table 29: Environmental indicators

	Resource productivity			Energy consumption			Share of renewable energies			Share of gas and oil imports		
	2000	2009	2009-2000	2000	2010	2010-2000	2000	2010	2010-2000	2000	2010	2010-2000
	Euro per kilo		Change in %	Terajoule per capita		Change in %	In %		Absolute change	In % of GDP		Change in %
Greece	1.03	1.23	19.4	0.109	0.107	-1.6	5.0	7.5	2.5	3.5	4.4	26.3
Spain	1.12	1.47	31.3	0.130	0.119	-8.5	5.6	11.6	6.0	2.5	3.1	25.8
Portugal	0.78	0.76	-2.6	0.103	0.096	-7.0	15.0	22.5	7.5	2.4	3.7	51.4
Periphery 3 (P3)	**0.98**	**1.15**	**18.1**	**0.114**	**0.107**	**-5.8**	**8.5**	**13.8**	**5.3**	**2.8**	**3.8**	**33.4**
Ireland	0.78	0.73	-6.4	0.158	0.142	-10.4	1.6	4.4	2.7	0.9	1.5	61.1
Periphery 4 (P4)	0.93	1.05	12.9	0.125	0.116	-7.3	6.8	11.5	4.7	2.3	3.2	36.2
Germany	1.50	1.84	22.7	0.175	0.172	-1.8	2.6	9.7	7.0	1.5	2.4	53.5
Core Europe	1.70	2.13	24.9	0.190	0.195	2.7	6.8	10.3	3.4	2.4	3.5	43.2
EU 15	**1.53**	**1.88**	**22.9**	**0.163**	**0.156**	**-4.1**	**5.6**	**9.9**	**4.3**	**1.8**	**2.8**	**52.6**

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Core Europe: Belgium, Germany, France, Netherlands, Austria.

S: Eurostat.

Leading the stage in environmental affairs could improve tourism income, provide employment and increase welfare and a country's reputation. For technologies on the verge of efficiency the southern countries could become pilot countries for learning and motivation.

Fishing is carried out as an industrialized technology, depleting resources and reducing employment as well as tourism income.

Lack of quantity and quality of tourism

Periphery countries have a strong position in tourism. However the share of income stemming from tourism is stagnating or *shrinking and the receipts per night are lower than in other European* countries. The periphery countries are losing market shares in tourism, specifically to northern European countries and to Turkey. The season could be widened, recreation combined with sport and culture, health activities, rehabilitation, and creative centres. In the ageing European society periphery countries could offer part time or full time housing/living arrangements with gradually increasing care elements for older people.

Social innovations

To some extent institutions, personal relations, and communication cultures differ in the periphery from other European countries. This is often criticised as being equivalent to lower efficiency and an inadequate working attitude. But on the other hand their social values and structure could be seen as a viable and desirable alternative to some negative features of industrialized countries like burn out, isolation, anonymity, and strict delineations between work and leisure. Social innovations in general and those which deal with the conflict between efficiency and human aspirations could offer employment opportunities.

Privatisation

Privatization is part of the memoranda, but little is said about how to make it advantageous for the periphery countries. Privatizing a company already in a poor shape and doing this in a severe recession without any perspective of when it might end, is difficult and will only bring low revenues. What is important is first to restructure the companies, to change management and business culture and to define their long run strategy. Some experiences of successful privatizations (e.g. in Austria in the nineties) could be useful to shape the style of privatisation. It could start by selling a small share to private owners (large enough to foster change, low enough to limit opposition). The partial owner should not be selected according to the maximum offer (which is small anyway due to the dire conditions of companies) but to the firm offering the best development perspectives, the best management capabilities or resources. Only after successful restructuring, should the remaining parts be sold (either to the minority shareholder or it should be placed at the stock market, sometimes with a minority share for employees).

Distribution questions, tax evasion, privileges

In all periphery countries wage dispersion and poverty is rather high. The poverty rate is 20.4% on average in the three periphery countries in the mid 2000s as compared to 16.4% in EU 15. The difference between the P3 and the EU 15 became somewhat smaller and poverty

declined by 0.4 percentage points since the nineties.[7] The poverty rate is highest in Ireland and has increased, as it did in Spain. It is 19.6% in Greece and 20.1% in Portugal (in both cases with a falling trend since the 90s.

The Gini coefficient which shows high values for a large dispersion of personal incomes is higher than in EU 15 in all four countries (*Aiginger*, 2012); it is increasing in Portugal, and slightly decreasing in the pre-crisis period in the others.

The wage shares are lower than in EU 15. The gap of ten percentage points existing in the nineties was reduced to 3.5 points (between 1995 and 2007). This put the catching up of wages in the periphery countries in a new light. The reduction of minimum wages is required in the memoranda of understanding e.g. of Greece despite the fact that the economic evidence of the possible negative effect on employment is unclear. Higher taxes on property, taxing persons who shift their money into other countries or at least asking for proof that the money shifted abroad has been taxed is absent. The troika never protests (and even suggests) at the idea of raising value added tax, which is regressive (a larger burden relative to income for the lower segment). Broadening the tax base by cutting privileges for specific professions, the church, the military are not addressed (on the individual level they are). Shifting a larger part of the consolidation effort burden to high income/high wealth persons would increase the acceptance of the program. Such a shift would also reduce the loss of aggregate demand relative to the money saved.

Table 30: Income distribution in periphery countries

	GINI			Poverty rate			Wage share		
	1995	2005	2005	Mid 90s	Mid 2000s	Mid 2000s	1995	2007	2007
			Rank			Rank			Rank
Greece	0.336	0.321	18	21.7	19.6	19	40.9	47.7	24
Spain	0.371	0.319	17	18.6	21.0	23	62.1	65.6	12
Portugal	0.354	0.385	25	22.1	20.7	22	66.0	73.1	2
Periphery 3 (P3)	**0.354**	**0.342**	**20**	**20.8**	**20.4**	**21**	**56.4**	**62.1**	**13**
Ireland	0.331	0.314	15	20.7	22.0	25	64.5	61.6	18
Periphery 4 (P4)	0.348	0.335	19	20.8	20.8	22	58.4	62.0	14
Italy	0.309	0.352	23	21.8	19.7	20	56.3	57.6	20
Germany	0.251	0.285	12	12.7	14.7	10	71.8	63.3	16
Core Europe	0.267	0.279	10	14.7	14.4	9	69.9	66.0	11
EU 15	**0.284**	**0.295**		**16.1**	**16.4**		**66.2**	**65.6**	

Periphery 3 (P3): Greece, Spain, Portugal.
Periphery 4 (P4): Greece, Spain, Portugal, Ireland.
Core Europe: Belgium, Germany, France, Netherlands, Austria.
Ranks: Among 27 EU countries (low rank = low poverty and income dispersion and high wage share).

S: Eurostat (AMECO); OECD; The Standardized World Income Inequality Database.

[7] Data available up to "mid nineties", poverty then increased during the crisis.

Table 31: Gender: High education, low participation of females

	Overall rank within EU 15	Enrolment in tertiary education			Labour force participation			Women in ministerial positions		
		Female	Male	Diff.	Female	Male %	Diff.	Female	Male	Diff.
Greece	14	94	85	9	55	79	-24	6	94	-88
Spain	10	81	66	15	63	82	-19	31	69	-38
Portugal	11	68	57	11	69	79	-10	18	82	-64
P3	**12**	**81**	**69**	**12**	**62**	**80**	**-18**	**18**	**82**	**-63**
EU-15	**8**	**75**	**60**	**15**	**67**	**80**	**-13**	**30**	**70**	**-40**

Three peripheral countries: Greece, Spain, Portugal.
S: World Economic Forum, The Global Gender Gap Report 2012.

Gender differences

The southern European countries can be characterized politically by the dominance of elites and networks which have often existed for decades if not longer. Young people are not strongly represented in the economic and social process, the same holds true for females. Gender inequality is one of the problems which limit reforms and a future oriented solution. Rankings exist which highlight the general problem.

In the Gender Ranking (The Global Gender Gap Report 2012) Greece is ranked as 82th, Portugal as 47th and Spain as 26th. Taking the EU-15 countries alone, the three countries take ranks of 14, 11, and 10 respectively.

The overall best rank of Spain reveals very different assessments in the categories. Spain is ranked as the best country as regards the gender gap in education, as the share of females in secondary and tertiary education exceeds that of men (probably due to male dominance in migration). Another positive feature is the involvement of women in parliament, and in ministerial positions and as head of the state. Wage inequality is ranked 116th among 135 countries, the second highest in EU 15. Labour force participation is 82% for men 63% for women, men dominate the professions and technical jobs.

Portugal has a rather balanced participation in the labour market between men and women (which historically came from the necessity to use female labour, due to the military obligations of men in Africa). Portugal takes first place as regards the enrolment in secondary and tertiary education and women also slightly lead in technical and professional jobs. Wage equality is low (position 73 in total sample, 11 in EU 15.There are few women in ministerial positions, illiteracy is much higher for women.

While there are some spots of gender equality in Spain and Portugal, in Greece the only bright spot is the levels of attainment in secondary and tertiary education. Labour force participation is biased towards men (79% to 55%); wage equality is low, professional and technical workers are male. Specifically dominated by men is the political and legislative

process, 85% of parliamentary members are male, 88% of ministers, 73% of legislators and semi officials and managers are all male.

The overall result for P3 is easy to interpret. While the participation of women in tertiary education is higher for women (81%) than for men (69%; difference +12%), participation in the labour market is lower (62% vs. 80%; difference -18), as is their participation in ministerial positions (28 vs. 72; difference -44). There is a potential for gender equality, since women dominate in secondary and tertiary education, but it is underused in work, in higher positions and in the political process. Increasing the share of women would break down the traditional reform resistant structure quite effectively, especially the higher the level of education of the woman.

8. The case for a new industrial policy

8.1 Past failures, renewed interest, systemic character

The content: past diversity and failures

Industrial Policy had been implemented in Europe differently over time and across countries.

As far as the time-line is concerned Industrial Policy started with the Community for Iron and Steel. Then for a long time Industrial Policy remained primarily a national policy, which initially had a more sectoral approach (French style, large project, national champions), then there came a period of horizontal policies for competitiveness (German style, general "measures" not discriminating between sectors). The EU followed mainly the horizontal approach, after the first treaty failed to mention Industrial Policy at all. It then even looked in the nineties as if industrial policy was a dying breed (*Aiginger*, 2007), but it then re-emerged in a "matrix type" approach. This was mainly horizontal but acknowledging that horizontal measures impacted differently across sectors and needed to be complemented by sector specific measures. This developed into an "Integrated Industrial Policy" (*EU Communications*, 2010) which addressed issues of globalisation and climate change and tentatively gave a list of sectors of specific importance for Europe.

As far as instruments of industrial policy are concerned empirical analyses of previous strategies reveal that countries relying on state aid and regulation as main instruments of industrial policy had inferior macroeconomic performance (as measured by a set of indicators on economic dynamics, employment and the stability of the economy), while countries focusing on an industrial policy based on promoting positive externalities had superior macroeconomic results (*Aiginger – Sieber*, 2006). A group of Scandinavian countries (Sweden, Finland, Denmark) invested heavily into R&D and education and specifically focused on ICT industries implemented an industrial policy with the goal of promoting a knowledge driven economy. These Nordic countries could be the benchmark for a future-

oriented industrial and innovation policy since they achieved the best a bundle of economic goals (income, social inclusion and research; see *Aiginger – Sieber*, 2006). [8]

Renewed interest in industrial policy

The renewed interest in industrial policy emerged due to different challenges and disappointments.

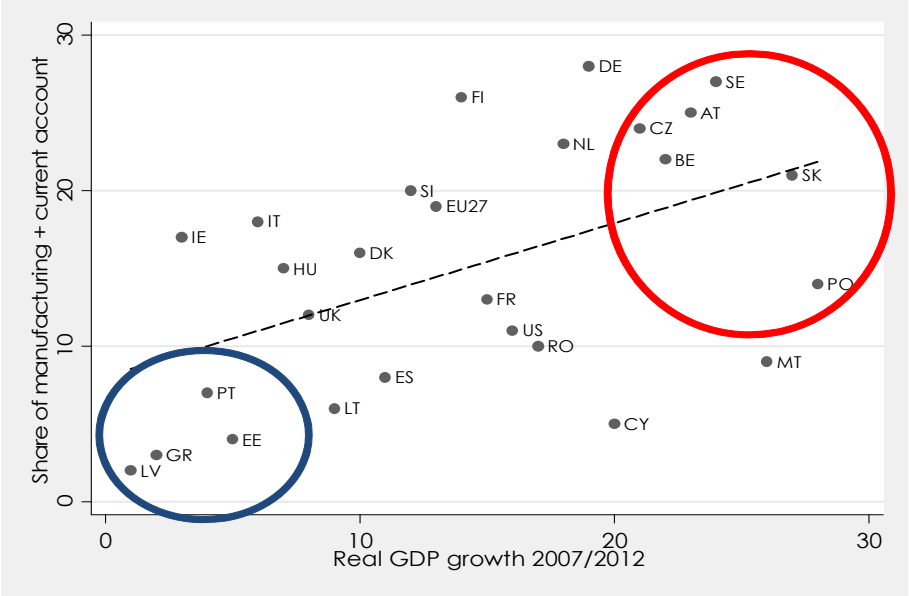
- One reason for the renewed interest is the increasing competitive pressure from emerging countries (globalization), and the inroads made by countries specifically from Asia on the world market (with high exports to industrialized countries). In Asia the manufacturing sector has a high priority. Governments proactively set goals, provide industrial zones and parks, and support their (Asian style) industrial policy.
- A second reason necessitating a renewed look at industrial policy specifically in Europe was the persistent technology lead of the US, and the inability of Europe to achieve the so-called Lisbon Agenda goals e.g. raising research and development expenditure to 3% of GDP.
- But the call for a new industrial policy was raised also in the US. Here it was specifically fuelled by the large and increasing trade deficits in general and with specifically with China. Without an industrial base, relying on the exports of services alone, analysts think that trade and current account deficits cannot be narrowed.
- Industrial policy was further encouraged during the recent financial crisis. First empirical evidence shows that countries were more hit by the crisis *the lower the manufacturing base had been*, the more this sector had been eroded in the past and the larger the current account deficit had been at the start of the crisis (*Aiginger*, 2011). In Greece the industrial sector had declined from 11% (2000) to 7%, and the current account deficit reached 15% of GDP (2008). Similar developments in Portugal, Spain and Latvia exist. In Ireland, the share of manufacturing also declined before the crisis started, but from a much higher level, and it recovered strongly after 2008. Countries with a large and stable industrial base and positive current accounts like Sweden and Austria had less deep declines in GDP[9].
- Last but not least Industrial Policy is spurred on by pressing new challenges and societal needs. This holds true for technological solutions to environmental problems, climate change, and resource shortages (peak oil), but also for health issues and ageing.

[8] French style policy focusing on priority sectors or "Grand projects" had some successes (Airbus, Ariane) but many failures too (Minitel, French Google). Southern European countries had experienced a period of successful catching up to the European average but forgot to invest into the innovation and education system. They did not upgrade their industrial base, but kept a very large military sector. The five countries with the largest share of military spending relative to GDP have now large trade deficits, indicating that synergies between the military sector and the civil technology sector have ceased to exist. Military expenditure prevent civil innovation capacities.

[9] Budget deficits and debt/GDP ratio were far less able to explain country differences during the crisis.

Figure 13: Depth of the crisis vs. industrial base

Ranks for performance and industrial base



Remark: industrial base = share of manufacturing/GDP 2007 plus share of current account; the sum is ranked (low rank = 1); output performance = change in real GDP growth (lowest rate = 1).– Source: Eurostat (AMECO).

Elements of a new industrial policy

The renaissance of industrial policy after a period of less importance will and should not be a mere resurrection of the old industrial policy including its past failures. It needs to be broader and greener, and it should have less focus on specific firms and be better interlinked with other policies and societal goals.[10]

The following elements seem to be characteristic of the new approach:

- Industrial policy should be a state of mind .... create a climate of cooperation between government and the private sector .... a discovery process .... generate positive spillovers to other sectors and <u>not</u> be based on purely financial incentives .... not picking winners (*Rodrik*, 2011).
- It should rebalance the economy away from the financial sector and towards non financial sectors such as manufacturing (*Johnson*, 2009b).
- It should target activities and broad sectors, never firms; new activities not preventing exit .... follow markets instead of lead them.
- Diversify economies and create new comparative advantages; stimulate exports not prevent imports.

[10] See *Rodrik* (2011), *Johnson* (2009), *Grossschädel* (2012), *Aghion* (2011).

- Being pro-competitive instead of being the adversary of competition policy. Industrial policy should not protect national profits (as older industrial policy was often criticised as doing).
- Interventions should happen where the government has a lasting interest (not only short run goals like retaliation or rescuing of employees in distressed regions or because it is in the depths of a recession); it has to be connected with societal needs. Winners of industrial policy should be the society not the firm (see *Aghion* et al., 2011; *Rodrik, 2008, 2011*).
- The state is an important source of new technologies; procurement policy should actively promote innovation, specifically innovation also in a non technical direction i.e. social innovation and ecological innovation. The vision of an entrepreneurial state pushing new generic technologies may be a little bit overoptimistic, but government decisions are important if big changes in technology or society should happen, because of path dependency(*Mazzucato*, 2011).
- Industrial policy is necessary to prevent "lock in" situations in the sense of investing in old technologies. Producers of "dirty products" tend to innovate in "dirty programs". In a nutshell *Agion et al*. (2011) claim that new research follows old paradigms and firms invest where they had been strong in the past. The task of industrial policy is to prevent conservative path dependent decisions.
- Industrial policy should no longer be an isolated policy. It has already merged with innovation policy .... it has to build up and be supported by education policy. It has to be systemic, pushed by competition, pulled by beyond GDP goals (*Aiginger*, 2012).
- There should be benchmarks and criteria for success and failure which depend on productivity and exports; if goals are not attained with policy support, subsidisation should end according to clear predefined rules.

Of course there are caveats. Procurement policy with specific goals can result in protectionism in disguise. "Following the market" versus "concentration on new activities" can be a trade off; enforcing exports can be an argument for preventing imports with some mercantilist background etc. And we know that firms will behave strategically and lobby for the public support, overstate current and future advantages for society etc.

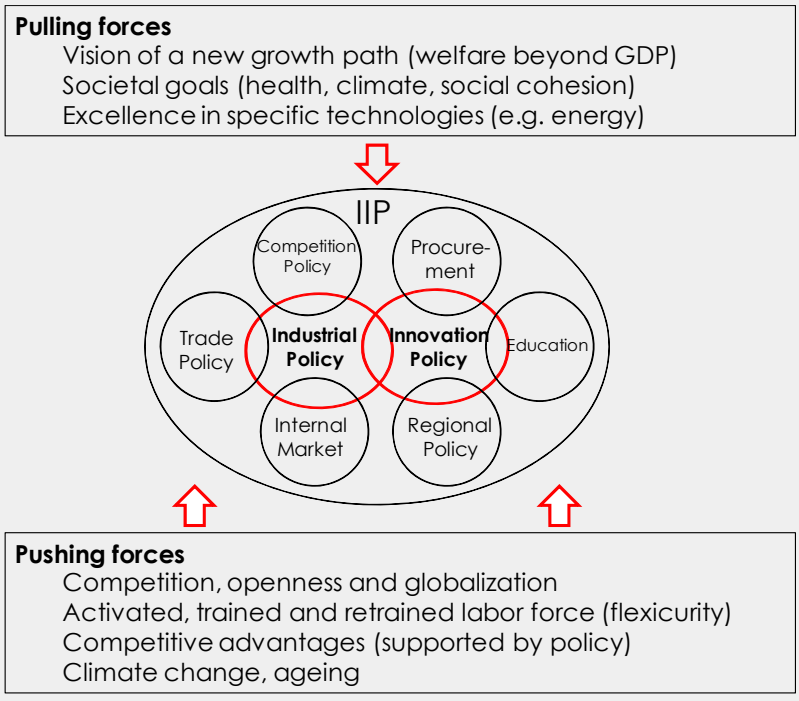
Whatever the new features are, and however different it can actually be made from previous policy, currently there is a positive mood towards the development of a new industrial policy. The discussion is going on in the US, in the UK and of course in France (and here with an open anti globalisation spin). The European Commission is going for an Integrated Industrial Policy, the IMF and the World Bank suggest it for developing countries.

Box: A systemic industrial policy: Driven by vision, pushed by competition and openness (Aiginger, 2012)

A future oriented Industrial Policy has to start from the challenges revealed by globalisation and those in the financial crisis. It has to be based on research and education, and industrial policy merges with innovation policy. It has to encompass small as well as large firms, and promote close relations between firms and universities and cooperation between firms and universities (clusters); the education policy needs to be able to provide equal opportunities at the outset as well as to promote lifelong learning. Innovation systems are superior if they actively draw from the common international knowledge pool, thus integrating international researchers and also migrants and newcomers are important. The manufacturing sector remains competitive if an economy is open to imports and inward FDI so that it can make use of the division of labour along the value chain. A new industrial and innovation policy fosters competition and grasps the advantages of globalization. An eagerness to understand different cultures, languages and business attitudes is essential.

Industrial policy has to be systemic in the sense that it needs to be derived from the goals of a society. If the welfare function of the European citizen gives a large weight to rising incomes, more social inclusion (less wage dispersion), regional equilibria, a stable financial system and sustainability, then industrial policy has to promote these goals e.g. shifting innovation towards social and ecological innovation, while keeping competitiveness and the potential for rising incomes. And industrial policy should make use of those forces which promote change, and foster higher incomes, such as competition and globalisation. Thus a Systemic Industrial Policy is pulled by vision and pushed by competition (see figure 9).

Figure 14: The Systemic Industrial and Innovation Policy (SIIP) in a nutshell



Elements of a Systemic Industrial and Innovation Policy

Summarising, in the context of the sweeping changes needed in Europe the *systemic character* of Industrial Policy becomes ever more important. Industrial Policy has to be consistent with the answers we give to the three overarching questions for the future of Europe.

- It has to be consistent with Europe's endeavour to be a *large open Europe* including the south and open to its neighbours-.It has to promote manufacturing specifically in areas with a small industrial base and a large current account deficit (e.g. Greece and Portugal).
- It has to promote the *change from a low road strategy* (and is the main driver of that transition) *to a high road strategy* by promoting excellence in education, technology, universities.
- SIIP has to follow the *vision of a new European Model (growth path)*, with smart growth, more social inclusion and the highest level of sustainability. A SIIP is no standalone policy, no national policy but a driver of change towards Europe 2020.

8.2 The specific need for an industrial policy in the periphery

A surprising feature of the renewal of industrial policy is that this discussion is lively in highly industrialized countries (US, United Kingdom, France); it is existent in the policy recommendations of international organisations for developing countries (World Bank etc.) but it is next to nonexistent in or in the discussions surrounding the southern periphery countries. No single sentence about industrial policy exists in the Memoranda of Understanding, and very few attempts to formulize an industrial strategy exist in the countries themselves before and after the crisis.

Many of the arguments which lead to a renaissance of industrial policy in industrialized countries specifically apply to the periphery. The share of the manufacturing sector is decreasing rapidly and is now below 10%. Services and specifically high value added services are unable to fill the gap today or in the near future. This results in a negative current account balance. But some arguments specifically support the use of industrial policy in the European southern periphery.

- For periphery countries there is the danger of a dynamically wrong specialization in industries in which competition is defined predominantly by low labour costs. Given today's competitive advantage the southern periphery would specialize in low wage industries. This has happened in the past (see high share of apparel and shoe industry). But then new low cost competitors came up (from Eastern Europe and Asia) and substituted exports from southern Europe. New low wage competitors are expected to enter the market permanently over the next few years; maybe from the Black Sea Area, Central Asia, Africa, India or South America. Industrial policy must help to upgrade existing low skill industries and to induce firms and foreign investors to invest only in niches

in which a country with European wages can compete in the medium and long run (preventing the "development trap" an argument stressed in development economics).

- Periphery countries have deficits in innovation, in education and training. These activities are crucial for the competitiveness even of medium income countries, and are necessary for the constant upgrading of existing firms. The innovation system in the wider sense is shaped by government even in advanced countries and specifically in the southern periphery.
- Periphery countries were unable over the past 10 years to close the technology gap towards the core countries. They need much higher Inward Foreign Direct Investment, which has to be supported by Industrial Policy.
- The high share of expenditure on the past (pensions, military), the high statutory taxes (which lead to medium tax receipts due to a large informal sector and low tax compliance) is a problem for new firms and foreign investors.
- These problems have to be compensated for using fast track procedures and subsidies in the short run (and eliminated in the medium run).
- Infrastructure is all important for the growth in a medium income country. While investment in highways were strong, the complementary investment in industry or software parks and the restructuring of the ports has been neglected
- Competition laws and licensing are rather restrictive, insiders are often privileged against newcomers, labour laws are restrictive for permanent contracts (and often don't provide enough security for irregular contracts to motivate training).
- Housing is dominated by private ownership and built in the informal sector, the first lowering mobility (as compared to rented houses) the second making use of traditional instead of energy saving techniques.
- New technologies inter alia alternative energies are heavily subsidized in other countries, and many firms leading in these technologies use their home market for the phase in which unit costs are decreasing up to the point when the new technologies become viable without subsidies. China is entering as a competitor for standard parts for new technologies. Southern Europe would be an excellent region for testing and innovating technologies using sun and wind, but investment is low, few firms exist, and consumers are not demanding excellent techniques (see Porter's argument of sophisticated consumers being a driving force).

9. Country specific development (with specific focus on manufacturing)

It is never correct that a country or region does not have an industrial policy. First even countries which claim not to have one, or which have no explicit concept, do in practice exercise some implicit industrial policy. Implicit industrial policies are reflected in the structure of taxes, regulation and subsidization, in legal rules for entry and competition, in the reaction of governments to firms running into problems and by tackling industries and activities with

positive or negative externalities. We claim that there is no explicit strategy, written down, known and shared by economic policy actors, which shapes the size, development and to some extent even the structure of the manufacturing sector and related services. In this respect no industrial policy exists in Greece, Spain, Portugal, or southern Italy. It exists and is embedded in development plans in Ireland.

Spain: nearest to EU-15 average, without changing to new competitive strengths

Spain is the largest periphery country, the nearest in GDP per capita relative to the EU-15 average. Spain had a rather stable budget performance before the crisis, and its banking sector was seen as prudently run and regulated inter alia with cyclically varying asset requirements. It had a huge property bubble (with a construction sector producing 13 % of GDP – about double of European average) and its banking system consists of two tiers, the top one tier with large world players and the second one with mainly regional players. A strong push for high growth came from infrastructure inter alia through structural funds, another from the decentralisation which had been part of the Spanish strategy over the last decade. Problems stem specifically from the banking sector, which itself suffered from the housing bubble bursting. What is surprising is that the problems of the banking sector climaxed in the fifth year after the crisis started. While the deficits of central government were rather small, the sum of the deficits of the regions seems to have been less monitored and restricted (due to increased "regional autonomy").

Spain has a small and declining manufacturing sector which is now 12%. The current account switched deeply into the red and tourism income declined from 4% of GDP to 2.5 %. In manufacturing Spain still has a very large sector of low skilled industries (38% vs. 29% in the EU 15), and high shares of labour and marketing driven industries (compensated for by a small sector of technology driven industries). Exports to BRICS are low, globalisation is not seen as chance. Foreign direct investment plunged from 7% at the beginning of the crisis to 2.5% at the end. Spain had the highest surge in unit labour costs of the P3, mainly because productivity was near to stagnation from 2000- 2010. Spain has recovered its current account and its unit labour costs over the last four years, partly due to catching up in productivity (by shedding labour). Innovation and education is far from excellent, labour markets are regulated for insiders, and very unregulated for newcomers. Immigration is rather strong further adding to a segregated labour market. The largest industries are structured metals and motor vehicles (the latter with a downward trend). The refinement of petroleum is one of the faster growing industries. While alternative energy production made some progress, oil and gas imports are still higher than in EU 15 relative to GDP.

In Spain reforms of the labour market and problems with the housing and local banks are at the centre of economic policy (*Jin*, 2012). The declining share of manufacturing did not receive much attention. In the reform programs some attention is given to the education system as well as to raising energy efficiency and entrepreneurship.

A successful example of industrial strategy can be seen in the Basque province. The regional government actively supported changes in the education and innovation system to combine these systems with the manufacturing sector. It successfully attracted foreign direct investment and today the Basque province is one of the higher income regions. There is a plan for the development of the industrial strength of Spain for 2020 ("Plan Integral de Política Industrial 2020" – PIN 2020) but it is not really effective.

Greece: Desperately needing agents of reforms, new institutions, firms and openness

Greece has experienced the sharpest drop in GDP among the periphery countries since the crisis (-20%). GDP per capita is today 28% lower than for the EU 15. The gap had been 16% in 2008 and only 7% in 1978. On the positive side GDP per capita is today 14% nearer to EU 15 than in 1960. As to the relative position of the southern countries GDP per capita in Greece is still a little bit higher than in Portugal.

Greece has the highest debt and the largest current account deficit. The latter has decreased by 10% since 2008 but it is still 8% (Greece had a balanced current account in the mid nineties). Wages increased fastest among P3 but productivity too.

Wages have decreased since 2008 by 2.7% p.a. or 10% cumulatively. Unit labour costs relative to (unweighted) EU 15 are now lower than in 2000. Tourism had expanded relative to GDP in the nineties, but no longer in this century. Receipts per tourist are low and Greece is losing market shares in general and relative to Turkey. Today the manufacturing sector is the smallest among the P3 countries at 9%. Greece had no bubble in housing or the financial sector in the period prior to the crisis. It has by far the lowest share of inward FDI. Manufacturing is specialized in labour intensive goods and low skills industries. The exporting sector is small. Greece has political tensions with two neighbours which lead to a very small share of exports to neighbouring countries. Its presence in the BRICs market is half of that of EU average. Greece has the most critical attitude to globalization, by far the highest share of military spending and the lowest R&D ratio. The share of renewable energy is smaller than in EU average, imports of oil and gas relative to GDP are higher than the EU average and rising. The share of oil and gas imports to GDP was 4.4% in 2010, this is an increase of one quarter since 2000, and 60% higher than in EU 15. If Greece would have oil imports as low as the "low 3" countries this alone would reduce its current account deficit by 4%. The share of renewable energy in energy consumption is 7.5%, much lower than in the other P3 countries and lower than in EU15, as is its increase between 2000 and 2010 (Greece 2.5%, EU 15 4.3%).

There is no industrial policy in Greece. Large parts of the industrial base were lost either due to globalization or due to the integration of Bulgaria into the European Union. The lack of any adequate response from Greece's economic policy to globalisation as well as extensions of the European Union lead to a rapid decline of the share of manufacturing. As late as 2010 the Federation of Industries of northern Greek (FING) called for new initiatives to increase productivity, innovation training and industry friendly regulation, which could be labelled as a horizontal industrial policy. In 2012 a group of organizations headed by IOBE presented a

concept delineating nine industrial sectors, crucial for Greek recovery. This could be a blueprint of a sectoral industrial policy; however it plays no role in the economic discussion dominated by austerity measures. The sectors ranged from bio-agro food, energy/environment, textiles, construction, ICT to health and packaging. In the same year *McKinsey* (2012) presented a report about the potential strength of Greece including tourism and construction (see *Gartzonikas*, 2012).

Portugal: long run success could return with entrepreneurship and globalisation

Portugal started from the lowest position as regards GDP per capita and is catching up rather smoothly, and is now very near to the GDP per capita of Greece. Unit labour costs did rise more strongly than in the EU, since wage increases were higher and productivity increased less. Unit labour costs decreased absolutely since 2008 and its price competiveness is now better than 2000 (compared to the unweighted average of EU 15). Current account deficit have risen up to 15% of GDP and have now returned to 3.6%. Tourism is improving slightly but is still only 3% of GDP. The share of manufacturing is declining strongly and Portugal lost a large share of its apparel industry. It has the highest and fastest growth in R&D expenditure, and is close to average in the Pisa ratings.

Portugal does not have and never had a specific industrial development plan. It has however been trying to cope with its structural weaknesses, namely highly regulated product and labour markets, a poor and incomprehensive education system and an out of date innovation system. It tries to promote technology transfer by attracting foreign direct investment and has actually been rather successful in this even in the years after the financial crisis. Industry structure is heavily biased towards low tech and low skilled industries, and suffered losses in these industries. The differences between regions is marked, with the Lisbon regions contributing the largest share to GDP, while the north is the largest export base, and the Algarve is a strong tourism base. Portugal has some industrial clusters, however not actively promoted by cluster policy. A specific focus has been the sector of renewable energy. Portugal is to some extent leading in renewable energy (solar, wind and in the Azores even geothermal energy). It is actively promoting the use of electric cars and promoting the creation of electric charging stations distributed throughout the country.

Portugal is attempting to use its location as hub for exports into the global markets, with a specific emphasis on exports to Portuguese speaking countries (the sixth most spoken language in the world). Inward investment from non European countries remains very low. And Portuguese harbours are not used as an exit or entry point into or out of fast growing markets overseas. Without being an industrial policy agenda in the narrow sense, the National Reform program 2020 is a sensible summary of horizontal measures needed to provide the base for the growth of Portuguese manufacturing and exports. Structural reforms are included in the memoranda of understandings, even if the restrictive measures dominate, (as long as broad cuts in expenditure are binding, and the structure of expenditure is not changed (*Neto*, 2012)). For example military expenditure is still 2.1% of GDP (the fourth highest

in EU 15) and well ahead of research and development expenditures. And even if renewable energies make up 22% of energy consumption (as compared to 15% in 2000 and to 10% in EU 15), the share of oil and gas imports of GDP is still much higher than in 2000 and in the EU 15. These two facts show the correct path is being taken but also that there the potential for improvement. The tax rate is the highest of the P3 countries, nevertheless the consolidation programs to a large extent focus on higher taxes, not on lowering expenditure. The strategy to decrease the tax wedge so as to encourage firm creation and FDI was not explained well and had to be abandoned after fierce public protests.

Ireland: a success story interrupted by housing bubble and bank risks

Ireland is very different from the three southern periphery countries. Ireland has a strong industrial sector, based on foreign direct investment, but also successfully upgraded domestic firms in a specific development strategy. It has development plans which are discussed with its social partners and which can be considered the nucleus of an industrial policy. It has a high share of technology driven industries and a small share of labour intensive industries or those specialized in low skill industries. It is export oriented, has on average a positive current account balance, even if it deteriorated in 2004 and even if the share of manufacturing fell before the crisis. Unit labour costs are currently below 2000 (relative to EU 15), the current account has returned into the surplus. Taxes are in general low specifically for corporations and for foreign entities, GDP per capita is much higher than GNP (Gross National Product) due to profits in Ireland being transferred back to headquarters, GDP per head is well above European average, and GNP is near to the European average. Ireland had been oriented towards the United Kingdom in exports and imports, but succeeded in reorienting itself towards the US and is now one of the most globalised countries, considering globalisation as a chance not a burden. Regulation is low for product as well as labour markets, in innovation Ireland ranks somewhere in the middle.

If we stress that industrial policy is nearly absent in periphery countries, we have to make an exception specifically for Ireland. The successful catching up of Ireland in the nineties was explicitly based on development plans and on review groups of the Minister of Industry and Commerce, (named after its chairman) the *Culliton Report* (1992). The report called for a broad formulation of policy for industry including taxation, infrastructure, education and science. The success of Ireland was based on an intensive strategy to attract foreign direct investment. It was sector specific insofar as Ireland intentionally did not want direct investment in labour intensive sectors, but in medium to high tech sectors. This was based on the experience that firms which based their investment on low costs left the country if the wages rose (footloose industries). But it was a specific policy not only to attract foreign investors, but to connect them to Irish networks of suppliers, to foster endogenous small and medium sized industry and to provide excellent quality and research facilities, so that even firms which came first for low wages, afterwards upgraded their Irish subsidiaries. Three sectors dominated inward direct investment, namely ICT, pharmaceuticals and chemicals and

medical devices (*Neto*, 2012). Low tax rates and efficient institutions (from the state agency IDA to institutions of technology transfer and support for SME) are constituting pillars of a forward looking industrial policy which to some degree fits into the French model (of selecting grand projects) and not to the German model of only providing framework conditions and a good business environment.

Ireland thus is the shining example of a peripheral country which successfully caught up.

It did apply an intentional development strategy, in which (i) a technology transfer via foreign direct investment occurred, (ii) the share of manufacturing increased, and (iii) the specific targeting of industries which should and should not be attracted took place. Ireland furthermore paid attention to the potential disadvantages of such a strategy, by improving the education and innovation system by promoting endogenous firms as suppliers of the foreign subsidiaries but also as standalone producers and exporters.

The crisis had two specific elements, one was the shift to non tradables, specifically housing and construction. The other was the size and instability of the financial sector. Ireland did not pay enough attention to the housing bubble and the size and risks undergone by the banking sector. These disequilibria finally required the nationalization of the large banks at the huge expense of the public sector, which then lead to deficits and the exclusion from the financial markets also for sovereign risk (and programs under the European rescue fund). In the crisis Ireland had to bail out its banks and this led to a heavy burden in the fiscal position (which had been conservative before). As far as the strategy applied during the crisis is concerned, Ireland, due to its history of long run development, could exert a rather strong influence on the memoranda. Since Ireland has no current account deficit the crucial problem is to run down the public deficit imposed as a result of bank rescue packages. Ireland returned to small positive growth as early as 2011. For the whole period since 2000, real growth was 2.1%; double that of the EU 15 or in Germany. The strong industrial base of Ireland in principle survived the crisis of 2009 and Ireland has yet again a current account surplus.

A hypothetical experiment

We has seen that the three southern peripheral countries have today higher military expenditures than other European countries, higher oil and gas imports, and lower tourism exports than in 2000. Table 32 indicates how the current account balance would be if the three countries reduced their military expenditure to that of the three countries with the least expenditures (which might be an underestimation since import shares for military equipment are very large), if they reduces oil and gas imports to the imports of the three countries with the lowest imports (which should be feasible given the excellent chances for solar and wind energy and the small industrial sector) and if the countries would increase tourism exports to that share already experienced in 2000.

The result of this experiment is that the 8.3% deficit in current account is reduced to 0.7%. Spain and Portugal would have a surplus in the current account. This demonstrates the scope

of a long-run policy not focusing on austerity, but on reforms towards a future sustainable model.

Table 32: Hypothetical current accounts 2012

	Current account	Military expenditures	Oil and gas imports	Tourism	Current account
		Difference to			Hypothetic
	2012	Low 3 countries		2011/2000	2012
Greece	-7.8	1.5	3.9	2.3	-0.2
Spain	-2.0	0.2	2.5	1.1	1.8
Portugal	-3.6	1.3	3.1	-0.3	0.5
Periphery 3 (P3)	**-4.5**	**1.0**	**3.2**	**1.1**	**0.8**
EU 15	**0.5**	**0.7**	**2.2**	**0.2**	**3.6**

[1] Hypothetic current account if military expenditures were reduced to that of three lowest countries as well as gas and oil imports, and if tourism exports (relative to GDP) were as high as in 2000.
S: WIFO calculation.

10. Towards a strategy for the European periphery

(1) The P3 countries did not develop smoothly even before the crisis. Rather, they experienced recurrent problems in competitiveness that were often temporarily alleviated by devaluing the currency. However, over the last fifty years the P3 managed, in general, to catch up remarkably well. Starting from a per capita GDP of only 54% of the EU 15 in 1960, they reached 82% on average in 2008, with Spain coming nearest to the EU average (with 94%), and with Portugal lagging behind by about 30%. The P3 were also successful in attracting foreign direct investment. On average the share of inward FDI stocks increased from 7% of GDP in 1980 to 22% up to 2000 leading to a significant catching up in productivity.

(2) Problems started to emerge, however, in the nineties (and were aggravated in the first eight years of this century) with the emergence of new low cost competitors, and after entering the monetary union. The mounting problems prior to the financial crisis period were: (i) a loss of price competitiveness at least since 2000, (ii) an increase in current account deficits reaching double digit percentages of GDP, (iii) a dramatic decline in manufacturing, (iv) tourism revenues not even keeping up with GDP growth and (v) a levelling-off of FDI inflows.

(3) The problems of each of the periphery countries are to some degree different, but specifically the three southern economies share a lot of common elements. We therefore concentrate on strategy elements for Greece, Spain and Portugal (P3).

Some of them would apply for southern Italy too. Ireland is in many respects different, from its geographical position, the attractiveness for high tech investment and its positive attitude towards globalisation.

We have to analyse the problems of the countries and how they arrived in today's situation. Similar analyses are in principle available in the literature of many renowned economists, by the EU commission and the OECD. We extend these analyses in this study specifically to derive policy conclusions for the southern periphery.

(4) The first step of the reform process should be to develop a vision of where the country wants to be in 20 years, after the consolidation period. The vision essentially has to come from the country itself, taking into account the goals of Europe, for example as outlined in Europe 2020 and also the challenges of globalisation, new technologies, welfare reforms, climate change and an ageing population. Europe will itself face a transformation to a more dynamic, inclusive and sustainable model. The periphery countries should define their role in this new European model of growth and development (as envisaged in the WWWforEurope project).

(5) This vision will deeply influence the structure of the short and medium-term reforms. These need to have a restrictive bias so as to reduce budget deficits and public debt. But it is essential that the short-run measures are designed bearing in mind the perspective of the longer run goals and the position the country will have in the globalising world of tomorrow. The restrictive bias in the aggregates necessary for budget consolidation (e.g. lower public expenditure and higher taxes) has to include components which lowers the restrictive bias in the short run. The first component should come from the structure of expenditure and taxes. Expenditure should be shifted from administrative expenditure (preventing activities and business starts) to growth promoting expenditure and those with a high employment content; taxes should be shifted from those specifically negative for growth to those less negative for growth and employment. Further active components could be to increase the confidence of agents and to attractive neighbours and partners to invest in the country. While the main reforms has to be done in the Southern countries, the higher level of governance (the EU) could help by increasing and better steering of transfers, And debtor countries could stimulate demand and increase welfare at home by investing into ecological prospects and reducing income differences. Positive structural effects eventually may outweigh the negative aggregate effects (or at least dampen them).

(6) Today the periphery countries are completely stuck in reverse gear. The overarching goal is to save money and to cut deficits. There is no sign of a proactive component, no strategy to develop new industries and services, to create new firms to encourage competitive firms and clusters to grow. The consolidation process is interpreted by the periphery countries as something forced upon them by the financial markets or the "troika" (EU, IMF, ECB). Neither government nor political parties or non-governmental

institutions or academia tells them the reforms – if embraced somewhat differently – are in the long-run in the interest of the country. The troika concentrates on the necessity to cut budget deficits without pro-growth and pro-employment components.

This asymmetric policy reaction led to a strong decline in GDP and a significant increase in unemployment. The "Memoranda of Understanding" outline the conditions for cheap finance: most measures are restrictive, those which are pro-aktive are less stringently defined, without deadlines or the necessary resources. Blind spots include industrial policy, export promotion, firm creation, and alternative energy usage.

(7) Industrial policy in the traditional sense of supporting ailing industries, decelerating structural change and preventing exit is fortunately not applied. But also industrial policy in the sense of encouraging new firms, entry, business starts and structural change is nonexistent. Clusters are neither developed nor extended, tax incentives are not planned (partly out of budgetary considerations but probably also due to the existing combination of relatively high statutory taxes and low compliance). Fostering education/innovation is not a priority due to a shortage of money and because these policies are thought to only have long term effects.

(8) While there is a rethinking of industrial policy for rich countries there is nothing similar for catching up economies. For rich countries the motivations are (i) that countries with a low share in manufacturing and a current account deficit suffered deeper in the financial crisis, (ii) that rich countries are losing market shares to China and other Asian countries which are promoting industries and exports in an active way (with emphasis on some sectors), (iii) low interest rates had shifted investment from manufacturing to bubble prone "non tradables" (real estate, construction, finance) and from innovation to speculation, (iv) private innovation sticks to current paradigms ("path dependency") and do not innovate according to changes in societal priorities (e.g. climate change , health problems).

(9) A forward looking industrial policy should be proactive, fostering innovation and competition at the same time as well as activities with positive spillovers. No concept of industrial policy is available for peripheral industrializing countries with a high productivity gap (or those falling behind after a period of catching up). Concepts for developing countries exist in a nutshell, focusing on education and selective FDI with complementary national policies for endogenous firms and suppliers. These measures should prevent "persistent core-periphery patterns and the development trap".

(10) It is important for European periphery countries - which have lost competitiveness - to have some internal devaluation. But it is not sufficient to cut wages, specifically if the low increase in productivity was the reason for rising unit labour costs. It is evident that sheltered sectors and specifically all layers of government paid excessive wages and hired too many people. But wage restraint, cuts in pensions and dismissals of civil servants is actually the easier but less effective part of a strategy. Efficient government

reforms of administration, higher tax compliance, the effective use of structural funds and catching up in productivity is all important.

(11) The southern periphery countries suffer from closed shops, low product market competition, regulated labour markets with insider/outsider problems, large administrative costs, and an abundance of laws and restrictions for doing business. Reducing these barriers has similar effects to internal devaluations like lowering costs and encouraging new firms.

(12) Structural funds were underused by periphery countries, due to administrative failures. Funds were channelled into large tangible infrastructure like highways and airports. The funds should be fully exploited and the money should be rechanneled into industrial zones, business start-ups, training and retraining. The danger exists, that the pro active component of the June meeting of 2012 of the European Council (the promise to provide money for an investment of 130 bn.) is either merely announced but not enacted or again used for large projects with low impact on production and exports.

(13) The southern periphery countries have low expenditure on R&D, and consequently low output of innovations. Innovations in very small firms seem to happen, but these firms do not grow into medium sized firms. Expenditure on education is comparable to that of other EU-15 countries, but the southern periphery countries perform badly in the Pisa ratings. Investment in lifelong learning and training is scarce, active labour market policy is underdeveloped. Labour markets are heavily regulated, characterized by insider-outsider problems and high wages in the public sector. Pension systems are different with Greece having net pensions often higher than income during the working life.

(14) Labour costs were rising faster than in other European countries up to 2008. This reflected the catching up process usual for countries with lower income. The unusual development was that productivity catch up did not happen; this is the deeper problem which led to higher unit labour costs. Since 2008 the periphery countries are going in the direction of an "internal devaluation". Wages did not increase (or were reduced), while productivity increased a little bit leading to lower unit labour costs for most of the European partners. In 2012 relative unit labour costs have returned to their 2000 position for the (unweighted) average of the European partners. A gap remains of 10% vs. Germany. It would not make sense to unilaterally try and close this gap by additional wage restraints. Low wages raise poverty and reduce consumption as well as the pressure for structural change. Disequilibria have to be closed from both sides, specifically if one country – Germany – took a very aggressive strategy of lowering wages relative to productivity in the past.

(15) Reform partnerships are needed and feasible. Reforms are blocked by institutions dominated by elites and vested interests. Changes in management would be much easier if the participation of young people in labour market and in decision processes

would be increased and if gender equality would be promoted. Female participation is higher in secondary (+3%) and tertiary education (+9%) than male, but labour market participation is lower (-18%), as is their representation in the parliament (-44%) and in ministerial positions (-64%).

(16) The contribution of creditor countries to close the gap could be (i) wage increases in parallel or higher than productivity, (ii) increasing consumption by lowering income dispersion, or (iii) investment into environmental or social innovation (in both perspectives Germany underperformed in the past ten years). Germany had an extreme fall in its wage rate over the past decade and is heavily losing ranks in the evaluation of its social and ecological performance (*Aiginger - Leoni*, 2012).

(17) A successful reform strategy should start from the vision based efforts of the periphery country. It has to be supported firstly by better targeted and increased funds from the European level to enable a pro growth and pro employment component during the phase of consolidation and secondly by those European countries ("the centre", the surplus countries) which suffer from low domestic demand. This limits transfers necessary to the periphery and promotes welfare in the leading countries. It provides the environment needed for reforms in periphery countries to be successful.

References

Acemoglu, D., The crisis of 2008: structural lessons for and from economics, Policy Insight 28, 2009.

Aghion, Ph., Boulanger, J., Cohen, E., Rethinking Industrial Policy, Bruegel Policy Brief, 04/2011.

Aghion, Ph., Cette, G., Cohen, E., Lemoine, M., Crise et Croissance: une stratégie pour la France, Paris, 2011.

Aiginger, K., A systemic industrial policy to pave a new growth path for Europe, A Systemic Industrial Policy to Pave a New Growth Path for Europe, WIFO Working Paper, 421/2012.

Aiginger, K. (2011A), The inefficiency of Industrial and Innovation Policy in France, VOX, 3.10.2011.

Aiginger, K., Core versus periphery in the Recent Recession as compared to the Great Depression, in Lacina, L., Rozmahel, P., Rusek, A. (eds.), Financial Crisis: Institutions and Policies, November 2010, pp 16 – 38.

Aiginger, K. (2011B), "Why Growth Performance Differed across Countries in the Recent Crisis: the Impact of Pre-crisis Conditions", Review of Economics and Finance, No.4 /2011, S 35-52.

Aiginger , K., "Industrial policy: a dying breed or a re-emerging phoenix", Special issue on the Future of Industrial Policy, Journal of Industry, Competition and Trade, Vol. 7, No 3+4, December 2007, pp. 297-323.

Aiginger, K., "Industrial policy: past, diversity, future", Journal of Industry, Competition and Trade, Vol. 7, No 3+4, 2007, pp. 143-146.

Aiginger, K., "Competitiveness: From a Dangerous Obsession to a Welfare Creating Ability with Positive Externalities", Special Issue on Competitiveness, Journal of Industry, Competition and Trade, Vol. 6, No 2, June, 2006, pp. 161-177.

Aiginger, K., Cramme, O., Ederer, S., Liddle, R., Thillaye, R., Reconciling the short and the long run: governance reforms to solve the crisis and beyond, European Policy Brief, WWWforEurope, September 2012.

Aiginger, K., Guger, A., Stylized facts on the interaction between income distribution and the great recession, Prepared for the NERO meeting of OECD in Paris on 2012, June 18th.

Aiginger, K., Huber, P., Firgo, M., Policy options for the development of peripheral regions and countries of Europe, European Policy Brief, WWWfor Europe, December 2012.

Aiginger, K., Leoni, Th., Ein neuer Wachstumspfad für Deutschland, Strukturpolitik für Soziales Wachstum, Expertise im Auftrag der Abteilung Wirtschafts- und Sozialpolitik der Friedrich-Ebert-Stiftung, Berlin, 2012.

Aiginger, K., Sieber, S., "The Matrix Approach to Industrial Policy", International Review of Applied Economics, Vol. 20, No.5, December 2006, pp. 573-603.

Atkinson, R., America must learn from Germany – before it's too late, 5.2.2012. http://globalpublicsquare.blogs.cnn.com/2011/10/24/america-must-learn-from-germany-before-it%E2%80%99s-too-late/

Berthold, N., Rieger, J., "Industriepolitik im neuen Gewand? Markt- und Staatsversagen bei der Clusterbildung", in: Wirtschaftswissenschaftliches Studium, 2011 (2), pp 79-84.

Buigues, P.-A., Sekkat, K., "Public subsidies to business: an international comparison", in: Journal of industry, competition and trade, 2011 (11), pp. 1-24.

Carballo-Cruz, F., "Causes and consequences of the Spanish economic crisis: Why has the recovery taken so long?" In: Panoeconomicus, 2011 (3), pp. 309-328.

Culliton, J., "A Time for Change: Industrial Policy for the 1990s"- The Culliton Report, Industrial Policy Review Group (Ireland), 1992.

den Haan, W., Why do we need a financial sector?, VOX, 2011.

European Commission, An Integrated Industrial Policy for the Globalisation Era, Putting Competitiveness and Sustainability at Centre Stage, COM(2010) 614.

Firgo, M., Huber, P., "Background Report for the policy brief on policy options for periphery regions", manuscript, WIFO, 2012.

Gartzonikas, Greece, Country study as part of the project Welfare, Wealth and Work for Europe – WWWforEurope, August 2012.

Grossschädel, E., New Industrial Policy for Peripheric Countries, Master Thesis, Vienna, 2012.

Haldane, A., Madouros, V., What is the contribution of the financial sector?, VOX, 2011.

Jin, D., Research On Spain In Crisis – How to Save The Competitiveness? Country study as part of the project Welfare, Wealth and Work for Europe – WWWforEurope, August 2012.

Johnson, S. The Economic Crisis and the crisis in Economics, Revised version of a speech prepared for the presidential address to the Association for Comparative Economics, San Francisco, 4 January 2009.

Krugman, P., "Increasing Returns and Economic Geography," Journal of Political Economy, 1990, Vol. 99, No 3, pp. 483-499.

Krugman, P., Geography and Trade, The MIT Press, 1991.

Levvy, M., Diverging competitiveness among EU nations: constraining wages is the key, VOX, 2011.

Mazzucato, M., The Entrepreneural State, Demos, London, 2011.

McKinsey & Company, Greece 10 Years Ahead, Defining Grece's new growth model and strategy, McKinsey & Company, Report No.1/15, June 2012.

Neto, A., Portugal Country Report – A Detailed Explanation, Country study as part of the project Welfare, Wealth and Work for Europe – WWWforEurope, August 2012.

Reiner, Ch., "Play it6 again, Sam: Die Renaissance der Industriepolitik in der Großen Rezession", in Wirtschaft und Gesellschaft, Vol. 38 (1), pp. 15-56.

Rodrik, D., The manufacturing imperative, Project Syndicate, 2011.

Rodrik, D., "Industrial policy: don't ask why, ask how", in Middle East Development Journal, 2008, pp. 1-29.

Vekris, I., Republic of Ireland – Economic Situation, Future Perspectives and Industrial Policy, Country study as part of the project Welfare, Wealth and Work for Europe – WWWforEurope, August 2012.

WWWforEurope: Europe moving towards a new path of economic growth and social development, 7th Framework Programme.

Table A1: The largest and fastest growing industries in periphery countries: Greece

		Value added					Exports						
		2000	2007	2007-2000	2000	2007	2000	2007	2011	2007-2000	2000	2007	2011
Ten largest industries 2007		In %		Absolute difference	Absolute difference to EU-15			In %		Absolute difference	Absolute difference to EU-15		
da158	Manufacture of other food products	4.6	6.8	2.3	0.6	2.7	1.5	1.7	2.0	0.2	0.1	0.2	0.3
df23	Manufacture of coke, refined petroleum products and nuclear fuel	4.8	6.5	1.7	2.8	4.9	15.1	13.9	33.8	-1.2	12.5	10.1	28.6
dj281	Manufacture of structural metal products	1.5	6.1	4.6	-0.5	3.7	0.6	1.5	0.9	0.9	0.2	1.0	0.5
de222	Printing and service activities related to printing	1.3	5.8	4.6	-1.6	3.5	0.2	0.1	0.1	-0.1	0.0	-0.1	-0.1
de221	Publishing	3.3	5.2	1.8	0.3	2.3	0.5	0.6	0.4	0.1	-0.1	0.2	0.1
da159	Manufacture of beverages	8.4	4.8	-3.6	6.4	3.0	1.4	1.0	1.0	-0.4	0.1	-0.3	-0.4
db182	Manufacture of other wearing apparel and accessories	4.2	3.5	-0.7	2.7	1.7	13.2	5.7	2.6	-7.5	11.4	3.9	0.8
di265	Manufacture of cement, lime and plaster	5.0	3.3	-1.6	4.4	2.8	1.9	1.1	0.4	-0.8	1.8	1.0	0.4
dh252	Manufacture of plastic products	3.2	2.9	-0.3	-0.3	-0.6	2.5	3.2	2.4	0.7	0.3	1.0	0.2
da155	Manufacture of dairy products	3.7	2.7	-1.0	2.7	1.7	1.2	1.7	1.6	0.5	0.2	0.8	0.6
Ten fastest growing industries 2000 to 2007													
dj281	Manufacture of structural metal products	1.5	6.1	4.6	-0.5	3.7	0.6	1.5	0.9	0.9	0.2	1.0	0.5
de222	Printing and service activities related to printing	1.3	5.8	4.6	-1.6	3.5	0.2	0.1	0.1	-0.1	0.0	-0.1	-0.1
da158	Manufacture of other food products	4.6	6.8	2.3	0.6	2.7	1.5	1.7	2.0	0.2	0.1	0.2	0.3
de221	Publishing	3.3	5.2	1.8	0.3	2.3	0.5	0.6	0.4	0.1	-0.1	0.2	0.1
df23	Manufacture of coke, refined petroleum products and nuclear fuel	4.8	6.5	1.7	2.8	4.9	15.1	13.9	33.8	-1.2	12.5	10.1	28.6
dj285	Treatment and coating of metals; general mechanical engineering	0.2	1.0	0.9	-2.3	-1.8	-	-	-	-	-	-	-
dj271	Manufacture of basic iron and steel and of ferro-alloys (ECSC)	1.4	2.1	0.7	-0.1	1.7	1.8	2.9	3.9	1.1	-0.3	-0.6	0.9
dm351	Building and repairing of ships and boats	1.8	2.4	0.6	1.2	1.7	0.5	0.6	0.3	0.0	-0.1	-0.1	-0.1
da154	Manufacture of vegetable and animal oils and fats	0.9	1.4	0.6	0.6	1.2	3.1	2.5	1.7	-0.6	2.8	2.1	1.2
dg244	Manufacture of pharmaceuticals, medicinal chemicals and botanical p	1.5	2.0	0.5	-1.9	-2.2	2.7	6.3	4.4	3.6	-1.0	0.3	-2.4
Ten fastest declining industries 2000 to 2007													
da153	Processing and preserving of fruit and vegetables	2.7	1.9	-0.8	2.0	1.2	6.3	5.2	4.3	-1.1	5.7	4.6	3.7
dj273	Other first processing of iron and steel and production of non-ECSC ferr	1.2	0.3	-0.9	0.8	0.0	0.2	0.5	0.3	0.3	-0.3	-0.1	-0.1
de212	Manufacture of articles of paper and paperboard	2.2	1.4	-0.9	0.7	0.0	0.5	0.5	0.4	0.0	-0.3	-0.1	-0.2
dg245	Manufacture of soap, detergents, cleaning, polishing	2.4	1.5	-0.9	1.4	1.7	1.7	2.5	1.4	0.8	0.5	1.3	0.1
da155	Manufacture of dairy products	3.7	2.7	-1.0	2.7	1.7	1.2	1.7	1.6	0.5	0.2	0.8	0.6
di265	Manufacture of cement, lime and plaster	5.0	3.3	-1.6	4.4	2.8	1.9	1.1	0.4	-0.8	1.8	1.0	0.4
dl322	Manufacture of television and radio transmitters and apparatus for line	2.8	1.0	-1.8	0.7	-0.4	3.3	1.4	1.2	-1.9	-0.2	-0.3	-0.4
db171	Preparation and spinning of textile fibres	2.3	0.4	-1.9	1.9	0.2	1.8	0.8	0.4	-1.0	1.5	0.6	0.3
dj274	Manufacture of basic precious and non-ferrous metals	5.0	2.2	-2.9	4.1	1.2	8.2	11.0	9.0	2.8	5.9	7.9	4.7
da159	Manufacture of beverages	8.4	4.8	-3.6	6.4	3.0	1.4	1.0	1.0	-0.4	0.1	-0.3	-0.4

S: Eurostat.

Table A2: The largest and fastest growing industries in periphery countries: Spain

		2000	2007	2007-2000	2000	2007
Ten largest industries 2007				Absolute difference	Absolute difference to EU 15	
dj281	Manufacture of structural metal products	3.0	4.6	1.6	1.0	2.2
dm341	Manufacture of motor vehicles	4.8	4.1	-0.7	0.2	-1.2
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.8	3.8	1.0	0.8	2.1
da159	Manufacture of beverages	3.4	3.7	0.4	1.4	1.9
da158	Manufacture of other food products	3.9	3.7	-0.2	0.0	-0.5
dh252	Manufacture of plastic products	3.1	3.1	0.0	-0.4	-0.4
dn361	Manufacture of furniture	3.1	2.9	-0.3	0.8	0.2
de222	Printing and service activities related to printing	3.1	2.8	-0.2	0.1	0.5
de221	Publishing	2.9	2.8	-0.1	-0.2	-0.1
dk292	Manufacture of other general purpose machinery	2.2	2.7	0.5	-0.9	-0.9
Ten fastest growing industries 2000 to 2007						
dj281	Manufacture of structural metal products	3.0	4.6	1.6	1.0	2.2
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.8	3.8	1.0	0.8	2.1
di266	Manufacture of articles of concrete, plaster, cement	1.8	2.7	0.9	0.5	1.2
da151	Production, processing, preserving of meat, meat products	2.0	2.7	0.7	0.3	0.9
dl311	Manufacture of electric motors, generators and transformers	0.7	1.3	0.6	-0.1	0.3
dj271	Manufacture of basic iron and steel and of ferro-alloys (ECSC)	2.1	2.6	0.5	0.6	0.4
dk292	Manufacture of other general purpose machinery	2.2	2.7	0.5	-0.9	0.2
di265	Manufacture of cement, lime and plaster	1.3	1.7	0.4	0.8	1.2
dj285	Treatment and coating of metals; general mechanical engineering	2.2	2.6	0.4	-0.3	-0.3
da159	Manufacture of beverages	3.4	3.7	0.4	1.4	1.9
Ten fastest declining industries 2000 to 2007						
dj287	Manufacture of other fabricated metal products	2.0	1.7	-0.3	0.2	-0.1
dh251	Manufacture of rubber products	1.6	1.3	-0.3	0.5	0.3
dl322	Manufacture of television and radio transmitters and apparatus for line	0.6	0.3	-0.4	-1.5	-1.2
de211	Manufacture of pulp, paper and paperboard	1.3	0.9	-0.4	-0.3	0.2
dl30	Manufacture of office machinery and computers	0.6	0.1	-0.4	-0.5	-0.5
dl316	Manufacture of electrical equipment n.e.c.	1.5	1.0	-0.5	0.4	0.0
dm343	Manufacture of parts, accessories for motor vehicles	3.0	2.5	-0.5	0.5	-0.1
dm341	Manufacture of motor vehicles	4.8	4.1	-0.7	0.2	-1.2
dg241	Manufacture of basic chemicals	3.3	2.6	-0.7	-0.8	-1.2
db182	Manufacture of other wearing apparel and accessories	2.4	1.6	-0.8	0.8	0.4

S: Eurostat.

Table A3: The largest and fastest growing industries in periphery countries: Portugal

		2000	2007	2007-2000	2000	2007
Ten largest industries 2007				Absolute difference	Absolute difference to EU 15	
db182	Manufacture of other wearing apparel and accessories	6.8	5.7	-1.0	5.2	4.5
da158	Manufacture of other food products	3.6	4.6	0.9	-0.3	0.4
dj281	Manufacture of structural metal products	2.1	3.7	1.7	0.1	1.3
de211	Manufacture of pulp, paper and paperboard	4.1	3.2	-0.9	2.6	2.2
dn361	Manufacture of furniture	3.4	3.2	-0.2	1.1	1.0
dh252	Manufacture of plastic products	2.4	3.2	0.8	-1.1	-0.3
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.3	3.2	0.9	0.3	0.5
de222	Printing and service activities related to printing	3.2	2.8	-0.4	0.3	0.5
dk295	Manufacture of other special purpose machinery	2.6	2.8	0.2	-0.2	-0.1
dc193	Manufacture of footwear	3.3	2.7	-0.6	2.8	2.3
Ten fastest growing industries 2000 to 2007						
dj281	Manufacture of structural metal products	2.1	3.7	1.7	0.1	1.3
da158	Manufacture of other food products	3.6	4.6	0.9	-0.3	0.4
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.3	3.2	0.9	0.3	1.6
dh252	Manufacture of plastic products	2.4	3.2	0.8	-1.1	-0.3
dc192	Manufacture of luggage, handbags and the like, saddler	0.1	0.6	0.5	0.0	0.4
dg244	Manufacture of pharmaceuticals, medicinal chemicals and botanical p	1.9	2.3	0.5	-1.5	-1.9
dj271	Manufacture of basic iron and steel and of ferro-alloys (ECSC)	0.5	0.9	0.4	-1.0	0.5
dk292	Manufacture of other general purpose machinery	1.3	1.7	0.4	-1.8	-2.0
da16	Manufacture of tobacco products	0.7	1.0	0.4	0.1	0.6
da155	Manufacture of dairy products	1.2	1.6	0.4	0.1	0.5
Ten fastest declining industries 2000 to 2007						
di264	Manufacture of bricks, tiles and construction products	0.9	0.4	-0.5	0.6	0.2
db171	Preparation and spinning of textile fibres	1.0	0.5	-0.5	0.6	0.3
da159	Manufacture of beverages	3.2	2.7	-0.5	1.2	0.8
db177	Manufacture of knitted and crocheted articles	1.2	0.7	-0.5	0.9	0.5
db172	Textile weaving	1.7	1.1	-0.6	1.2	0.8
dc193	Manufacture of footwear	3.3	2.7	-0.6	2.8	2.3
di265	Manufacture of cement, lime and plaster	2.3	1.5	-0.8	1.8	1.0
de211	Manufacture of pulp, paper and paperboard	4.1	3.2	-0.9	2.6	2.2
db182	Manufacture of other wearing apparel and accessories	6.8	5.7	-1.0	5.2	4.5
dm341	Manufacture of motor vehicles	3.4	1.6	-1.8	-1.2	-3.8

S: Eurostat.

Table A4: The largest and fastest growing industries in periphery countries: Periphery 3 (P3)

		2000	2007	2007-2000	2000	2007
Ten largest industries 2007				Absolute difference	Absolute difference to EU 15	
dj281	Manufacture of structural metal products	2.8	4.7	1.9	0.8	2.2
da158	Manufacture of other food products	3.9	4.1	0.2	0.0	-0.1
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.8	4.0	1.1	0.8	2.3
da159	Manufacture of beverages	3.7	3.7	0.0	1.7	1.9
dm341	Manufacture of motor vehicles	4.3	3.5	-0.9	-0.2	-1.9
dh252	Manufacture of plastic products	3.0	3.1	0.1	-0.5	-0.4
de222	Printing and service activities related to printing	3.0	3.1	0.1	0.0	0.4
de221	Publishing	2.8	2.9	0.1	-0.3	0.0
dn361	Manufacture of furniture	3.1	2.8	-0.2	0.7	0.6
dg244	Manufacture of pharmaceuticals, medicinal chemicals and botanical p	2.5	2.6	0.1	-0.9	-1.7
Ten fastest growing industries 2000 to 2007						
dj281	Manufacture of structural metal products	2.8	4.7	1.9	0.8	2.2
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.8	4.0	1.1	0.8	2.3
di266	Manufacture of articles of concrete, plaster, cement	1.8	2.5	0.7	0.5	1.0
da151	Production, processing, preserving of meat, meat products	1.9	2.5	0.6	0.1	0.7
dj271	Manufacture of basic iron and steel and of ferro-alloys (ECSC)	1.8	2.4	0.5	0.4	0.2
da158	Manufacture of other food products	3.9	4.1	0.2	0.0	-0.1
dk292	Manufacture of other general purpose machinery	2.0	2.5	0.5	-1.1	0.4
dj285	Treatment and coating of metals; general mechanical engineering	2.0	2.3	0.4	-0.5	-0.5
da159	Manufacture of beverages	3.7	3.7	0.0	1.7	1.9
de222	Printing and service activities related to printing	3.0	3.1	0.1	0.0	0.8
Ten fastest declining industries 2000 to 2007						
dj273	Other first processing of iron and steel and production of non-ECSC ferr	0.4	0.2	-0.2	0.1	-0.1
db173	Finishing of textiles	0.6	0.3	-0.3	0.3	0.1
dc193	Manufacture of footwear	1.3	0.9	-0.4	0.7	0.4
dl316	Manufacture of electrical equipment n.e.c.	1.4	1.0	-0.5	0.3	0.4
de211	Manufacture of pulp, paper and paperboard	1.7	1.2	-0.5	0.1	0.1
dl322	Manufacture of television and radio transmitters and apparatus for line	0.8	0.5	-0.4	-1.3	-1.0
db172	Textile weaving	0.7	0.3	-0.4	0.2	0.0
dl30	Manufacture of office machinery and computers	0.4	0.1	-0.3	-0.6	-0.5
db171	Preparation and spinning of textile fibres	0.7	0.3	-0.4	0.3	0.1
db182	Manufacture of other wearing apparel and accessories	3.1	2.2	-0.9	1.6	1.0

Periphery 3 (P3): Greece, Spain, Portugal.

S: Eurostat.

Table A5: The largest and fastest growing industries in periphery countries: Ireland

		2000	2007	2007-2000	2000	2007
Ten largest industries 2007				Absolute difference	Absolute difference to EU 15	
dg241	Manufacture of basic chemicals	26.7	24.6	-2.1	22.6	20.7
dg244	Manufacture of pharmaceuticals, medicinal chemicals and botanical p	7.8	9.5	1.7	4.4	5.2
da158	Manufacture of other food products	4.8	8.9	4.1	0.8	4.7
de223	Reproduction of recorded media	8.7	8.1	-0.6	8.4	7.8
dl331	Manufacture of medical and surgical equipment and orthopaedic app	3.9	6.4	2.4	2.8	5.0
dl321	Manufacture of electronic valves and tubes and other electronic comp	6.7	5.3	-1.4	5.3	4.2
dl30	Manufacture of office machinery and computers	7.6	4.4	-3.2	6.5	1.3
da159	Manufacture of beverages	3.6	2.8	-0.8	1.6	1.0
da155	Manufacture of dairy products	2.2	2.3	0.1	1.2	1.3
da151	Production, processing, preserving of meat, meat products	1.5	1.9	0.4	-0.2	0.1
Ten fastest growing industries 2000 to 2007						
da158	Manufacture of other food products	4.8	8.9	4.1	0.8	4.7
dl331	Manufacture of medical and surgical equipment and orthopaedic app	3.9	6.4	2.4	2.8	5.0
dg244	Manufacture of pharmaceuticals, medicinal chemicals and botanical p	7.8	9.5	1.7	4.4	5.2
dl334	Manufacture of optical instruments,photoieaphic equipement	0.7	1.5	0.8	0.4	1.1
di266	Manufacture of articles of concrete, plaster, cement	0.8	1.5	0.7	-0.4	0.0
dk292	Manufacture of other general purpose machinery	0.9	1.5	0.6	-2.2	-2.1
de221	Publishing	1.0	1.4	0.4	-2.1	1.3
dl332	Manufacture of instruments and appliances for measuring, checking, te	0.6	1.0	0.4	-0.8	-0.5
dn361	Manufacture of furniture	0.6	1.0	0.4	-1.8	-1.2
da151	Production, processing, preserving of meat, meat products	1.5	1.9	0.4	-0.2	0.1
Ten fastest declining industries 2000 to 2007						
da16	Manufacture of tobacco products	0.6	0.3	-0.3	0.1	-0.2
di261	Manufacture of glass and glass products	0.8	0.4	-0.5	-0.2	-0.6
dn362	Manufacture of jewellery and related articles	1.2	0.7	-0.5	0.9	0.5
dl312	Manufacture of electricity distribution and control apparatus	0.9	0.3	-0.6	-1.3	1.3
de223	Reproduction of recorded media	8.7	8.1	-0.6	8.4	7.8
da159	Manufacture of beverages	3.6	2.8	-0.8	1.6	1.0
dl322	Manufacture of television and radio transmitters and apparatus for line	1.6	0.2	-1.4	-0.6	-1.3
dl321	Manufacture of electronic valves and tubes and other electronic comp	6.7	5.3	-1.4	5.3	4.2
dg241	Manufacture of basic chemicals	26.7	24.6	-2.1	22.6	20.7
dl30	Manufacture of office machinery and computers	7.6	4.4	-3.2	6.5	3.8

S: Eurostat.

Table A6: The largest and fastest growing industries in periphery countries: Periphery 4 (P4)

		2000	2007	2007-2000	2000	2007
Ten largest industries 2007				Absolute difference	Absolute difference to EU 15	
dg241	Manufacture of basic chemicals	8.0	6.3	-1.7	3.9	2.5
da158	Manufacture of other food products	4.1	4.9	0.8	0.1	0.8
dj281	Manufacture of structural metal products	2.3	4.0	1.6	0.4	1.6
dg244	Manufacture of pharmaceuticals, medicinal chemicals and botanical p	3.6	3.8	0.2	0.3	-0.4
da159	Manufacture of beverages	3.7	3.6	-0.1	1.7	1.7
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.3	3.3	1.0	0.3	1.7
dm341	Manufacture of motor vehicles	3.4	2.9	-0.6	-1.1	0.6
dh252	Manufacture of plastic products	2.7	2.8	0.1	-0.9	-0.7
de222	Printing and service activities related to printing	2.6	2.7	0.1	-0.3	0.4
de221	Publishing	2.4	2.7	0.2	-0.7	-0.2
Ten fastest growing industries 2000 to 2007						
dj281	Manufacture of structural metal products	2.3	4.0	1.6	0.4	1.6
df23	Manufacture of coke, refined petroleum products and nuclear fuel	2.3	3.3	1.0	0.3	1.7
da158	Manufacture of other food products	4.1	4.9	0.8	0.1	0.8
di266	Manufacture of articles of concrete, plaster, cement	1.6	2.3	0.7	0.3	0.9
da151	Production, processing, preserving of meat, meat products	1.8	2.4	0.6	0.1	0.5
dk292	Manufacture of other general purpose machinery	1.8	2.3	0.5	-1.3	-1.3
dj271	Manufacture of basic iron and steel and of ferro-alloys (ECSC)	1.5	2.0	0.5	0.0	0.6
dl331	Manufacture of medical and surgical equipment and orthopaedic app	1.1	1.5	0.4	-0.1	0.1
dj285	Treatment and coating of metals; general mechanical engineering	1.6	2.0	0.4	-0.9	-0.9
dl311	Manufacture of electric motors, generators and transformers	0.9	1.1	0.3	0.0	0.2
Ten fastest declining industries 2000 to 2007						
db171	Preparation and spinning of textile fibres	0.6	0.2	-0.3	0.2	0.1
dl316	Manufacture of electrical equipment n.e.c.	1.2	0.9	-0.3	0.1	-0.2
de211	Manufacture of pulp, paper and paperboard	1.3	1.0	-0.4	-0.3	-0.1
de223	Reproduction of recorded media	1.9	1.5	-0.4	1.5	0.6
dm341	Manufacture of motor vehicles	3.4	2.9	-0.6	-1.1	-2.5
dl322	Manufacture of television and radio transmitters and apparatus for line	1.0	0.4	-0.6	-1.1	-1.0
dl321	Manufacture of electronic valves and tubes and other electronic comp	1.9	1.3	-0.6	0.5	0.1
db182	Manufacture of other wearing apparel and accessories	2.5	1.9	-0.7	1.0	0.7
dl30	Manufacture of office machinery and computers	2.0	0.9	-1.1	0.9	0.3
dg241	Manufacture of basic chemicals	8.0	6.3	-1.7	3.9	2.5

Periphery 4 (P4): Greece, Spain, Portugal, Ireland.

S: Eurostat.