



MINISTRY OF FINANCE

# Reflections on Structural Reforms in the EU

July 2005





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# Reflections on structural reform in the EU

## 1. Introduction

The Broad Economic Policy Guidelines (BEPGs) lay down the EU's medium term economic policy strategy with particular attention to the contribution economic policies can make to reach the Lisbon strategic goals. The guidelines cover in particular policies in Member States but refer also to central objectives to be achieved at the Community level.

Based upon a proposal from the Commission, and after having consulted relevant council formations of the Community the ECOFIN council submitted a new set of guidelines for the period 2005-2008 which the European Council approved in June 2005 and which will be legally adopted by ECOFIN in July 2005.

Over the coming year, Member States will in accordance with the new cycle and procedure for BEPG deliver National Reform Programmes (NRP) specifying how they have most recently and over the coming years will respond to the specific challenges their countries are facing. Subsequent to that, and using these reports along with other evaluations, the Community will collectively take stock of the progress in the multilateral surveillance process and evaluate the background for the relative performance of Member States. It may in particular consider the need for updating the country specific guidelines.

This working paper contains analytical reflections on these challenges and aims to provide input to the process. The approach is selective and the discussion does not pretend to provide a comprehensive overview of all relevant policies, implementations and aspects involved in making EU and its Member States deliver on strategic targets. It focuses on how to boost medium term growth and employment, while recognising that other important EU



objectives such as high social standards and environmental sustainability cannot be achieved alone by higher growth and employment.

The report is also very focused on EU15 performance for two reasons. As the ten new countries entered 1<sup>st</sup> May 2004 their record in terms of pursuing economic reforms in the context of BEPG has only just begun. For partly the same reasons paucity of historical data makes it more difficult to integrate their economic performance and the underlying economic policies in a number of analyses.

## 2. Executive summary

### Benchmarking is a process for learning

Economic development is not a beauty contest. The purpose of EU economic policies is to improve living standards, employment and the quality of life including better environment and strong social cohesion to the benefit of EU-citizens.

Citizens of the EU do not suffer if other regions grow stronger and manage to achieve higher levels of employment. Other regions do not even expand their relative wealth – compared to the EU – to the extent higher national growth rates only reflect higher population growth. What matters for living standards is the average level for citizens<sup>1</sup>.

But if other regions are richer, grow faster and enjoy higher employment levels the EU may learn from their experience, policies and approach to implement reforms. That is why benchmarking, supplemented by careful analysis, is important.

Many countries and regions, most predominantly China and India in recent years, grow much faster than the EU while departing from levels of productivity and living standards being much lower. Most of this growth differential is due to catching up by importing already known and developed technologies and working methods from richer countries.

As a result the growth performance in much poorer countries may not in the immediate future provide direct inspiration for EU policies. However, the strong growth performance of lower income countries provides one strong relevant lesson: what initiates and maintains such a performance is by and large the opening of markets and interaction with other countries and regions.

Their growth has not been at the expense of growth and prosperity elsewhere. Emerging countries particularly in Asia, EU15 and EU *all* saw much faster growth during the last decade relative to previous decades. EU benefited from higher imports of goods and services from these countries at lower prices than we could produce ourselves while employment rates increased for

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<sup>1</sup> This is an economic rationale. While not being a problem for EU living standards, a long term declining trend of EU's share of world economic activity may have repercussions for its relative say in political questions.

most of the 1990s, proving that EU could create more new jobs than was lost.

This development is also linked to the fact that EU as a whole has a floating exchange rate towards the rest of the world. In case of extraordinary productivity gains or nominal reductions of wages outside Europe, EU exchange rates with that region would most likely depreciate rather quickly and restore competitiveness. If not, these countries would see their inflation rate go up as employers bid up wages to expand production given an under evaluated currency and this would lead to a similar adjustment of aggregate competitiveness in the medium run.

Likewise, extraordinary productivity gains in Europe will tend to appreciate the currency, thereby not necessarily affecting cost competitiveness but boosting living standards. Structurally, major imbalances in cost competitiveness is not likely between areas among which the exchange rate is flexible, although financial market fluctuations, including speculative, related to other factors may have a substantial impact in the short and medium term.

#### *Comparing EU with US performance relevant for several reasons*

Comparing aggregate EU performance with that of the US is more directly relevant because levels of productivity and living standards are roughly on par at the outset.

Macroeconomic benchmarking of EU and the US provides a picture with nuances: EU performance is somewhat better than its reputation.

Most of the EU15-countries have levels of productivity close to US-levels, the gap is concentrated among a few countries. Productivity growth – when adjusted for a number of relevant factors including effects from labour market reforms – has essentially been at the same level as in the US over the last 10 years as a whole. This is to be expected given that the initial level of productivity in the mid 1990 was broadly the same, implying that the long period of easy gains from the catching-up after the Second World War has ended. The weakening of the growth in productivity in Europe over this 10 year period is however a case for concern.

Over the last 10 years, the EU economies have increased the share of the working age population in jobs with 5 percentage points while it has remained broadly stable in the US. A significant number of EU-countries match US employment rates confirming that high employment may be obtained by different policies as discussed below.

Despite the better employment performance in EU over the last 10 years, the US employment rate remains roughly 10 percentage points higher than the aggregate EU rate.

Where the US evidently stands out is the much higher level of average hours worked, a level which has even increased since 1995, whereas average hours worked in the EU has continued its long term trend of decline. While the hypothesis of these reflecting underlying cultural differences in the choice between consumption and leisure may carry some truth, the shorter EU working hours may also reflect markedly higher marginal tax rates to finance more redistributory policies and higher public expenditures in general.

In any case, the low level of hours worked in the EU has serious negative implications for production and tax revenues, exposing the dilemma that the EU welfare systems rely heavily on citizens working a lot and thereby paying much taxes in spite of these same taxes reducing the incentive to do so.

*Labour market reform works: but more than one route to low unemployment*

While progress has been achieved in reducing EU structural unemployment it remains at a too high level. However, a number of countries have managed to bring down unemployment to 4-6 per cent of the labour force and the differences in performance adjusted for cyclical developments seem largely to reflect differences in labour market policies. This confirms that such institutions matter for the underlying, or structural, unemployment level in individual countries.

Comparisons indicate that there is more than one route to low unemployment. High benefit levels reduces work incentives and raise structural unemployment, but in a number of countries a combination of tight administration and enforcement of eligibility rules, active labour market efforts and flexible hiring and firing rules appears to counteract such effects and allow for as low levels of unemployment as is the case in countries with much lower benefit levels. While that combination has positive implications for income distribution, tight administration and active labour markets policies bear more substantial public expenditures.

EU-countries with strict employment protection experience higher than average unemployment rates as it boosts the wage bargaining power of already employed and increasing the risk aversion of employers hiring young, old or long term unemployed workers. Strict employment protection may

also limit the potential to reduce a high level of unemployment originating from a negative cyclical shock.

Thus Member States have a choice in constructing a package to reach low employment that best reflects broader national preferences, but the overall package must be balanced in terms of the incentives and opportunities it presents for job creation.

*Fiscal sustainability lacking: economic incentives to action large*

Encouragingly a number of countries have implemented substantial pension reforms in recent years ensuring or moving closer towards basic consistency in pension systems in terms of systemic balance between contributions and benefits whatever the unpredictable development in factors such as life expectancy will be.

Notwithstanding the result of such reforms, fiscal policies in EU15 are not sustainable. Even using relatively optimistic projections, EU15 Member States will need to tighten their public finances by several percentage points of GDP taken into account the fiscal costs associated with ageing populations.

Economic incentives to reform are large. Actual or just expectations of mounting fiscal debt burdens have historically led to higher real interest rates. Uncertainty about how Member states will deal with a known problem can lead to overcautious consumers and enterprises and boost savings rates at a time when EU needs stronger domestic demand.

Over time and with a reduced work force, a rising debt burden and higher age related expenditures will tend to crowd out the possibilities for maintaining, let alone increase, public spending on welfare services and growth-oriented areas such as research and development. Large public debts strongly increases the sensitivity of public finances to higher interest rates and put citizens at risk of facing the implication of sudden large packages of tightening.

The challenge is to create larger awareness of the costs of inaction and demonstrate the benefits of fiscal sustainability.

Member States have a well-developed three-pronged strategy to deal with these challenges. They can *run down debt* through fiscal surpluses to reduce future interest rates payments. This creates room for financing higher pension expenditure and the loss of tax revenues from a shrinking work force.

They can implement labour market and pension reforms that expand the work force and/or adjust future *pension benefits* as life expectancy goes up in which case they can be less ambitious about medium term budget consolidation.

The relative magnitude and character of the outstanding challenges that individual Member States are facing vary substantially. A small group of countries are close to long term balance, but have also little scope to expand their working force or raise already high tax rates, implying that expenditure restraint and/or pension reform are paramount. Other countries need a large improvement in long-term finances, but have larger room for labour market reforms to boost their work force, and hence tax base, and/or raise tax rates as the effects of ageing kick in.

### **Raising productivity: competition is the key**

Competitive conditions in the market place are key drivers of productivity growth. They press existing firms to improve performance in order to keep market shares and profit margins, force ailing firms out and give new innovative firms a chance to enter markets with new ideas.

Economic policies and government regulation should thus aim to keep barriers to entry for new firms low, ensure efficient competition between incumbents while avoiding measures that keep ailing firms too long in place.

A review of the framework conditions for productivity growth from product market reforms shows considerable progress over a wide front and some of the gains are likely to be harvested in the coming years.

There is however also continued scope for improvement. Implementation of internal market measures, creating the room for a larger market in which to sell products and to boost competition, has been slipping. State aid can be better targeted to address genuine market failures while the current aid goes too much in the direction of postponing needed adjustments to changed market conditions. This consumes scarce public and private resources and is of little lasting help to employment while living standards suffer if the reallocation of capital and labour from declining to expanding industries is stretched over a long period of time.

Also areas fully or partly controlled by the public sector are involved, such as opening up the large market of public procurement and better regulation of the network industries that can ease entry of new firms and strengthen further competition.

Public regulation of private firms is often necessary to achieve important objectives, but the quality of regulation can be improved, reducing compliance costs while at the same time preserving or even improving the attainment of the stated goals (safety concerns, providing services in remote regions etc.).

*Boosting innovation: clear supply constraints, reform government support*

With overall productivity levels close to US level, there are no further easy gains expected from importing best practice on the general level from the US which means that EU's own policies particular in the field of innovation has become even more important than they were just 15-20 years ago.

The results from efforts in R&D and knowledge vary substantially between EU Member States. The average results, indicated by patents, scientific publications and citations are behind those of the US. Efforts in R&D are key not only to producing new knowledge, but also to the ability to use and implement existing knowledge.

The supply of highly qualified researchers and innovation staff is one of the most important barriers to expand EU's production of knowledge, an area where EU clearly is far behind the US.

EU public sector spending on R&D is on par with that of the US, for (further) education it is substantially higher. The higher US overall spending on R&D must then by definition reflect better framework conditions for innovation. Strengthened competition, better functioning financial markets and patent systems would increase private sector efforts in R&D.

The role and responsibility of the public sector is strong, and this underlines the importance of getting quality and structures right. General education and basis research is the core. Improving quality of education is a key priority in a large number of member states.

As regards applied research, focusing on technologies with wide application reduces the risk of government failures in resource allocation. Better cooperation between public and private research activity and improvements in governance structures in public knowledge institutions are a key to success.

Increased public support to innovation in the public /or private sector can be helpful but needs to be well planned. Supply constraints of highly qualified innovation workers are evident and new initiatives will often imply some crowding out of other activities. It is important to limit support instruments

to areas where overall net gains to society are clearly positive, that boost private sector innovation and where even reformed financial markets are unable to deliver sufficient financing.

Monitoring of policies on R&D could focus more directly on achieving more and better results in terms of R&D and innovation output. Improved indicators are needed for that purpose.

Given the small size of the average EU Member State, the considerable spill-over-border-effects from research spending and the need to increase competition also in the knowledge industry, the international dimension of public policies in this area needs to be strengthened considerably.

#### *Enhancing the popularity of structural reform and adjustment*

The purpose of structural reform is to provide benefits in terms of higher living standards together with more and better jobs to citizens and consumers:

- More competition and open trade ensure lower consumer prices and more and better products and thereby ensuring improvements in living standards across the board.
- Labour market reform paves the ground for more jobs and higher net incomes for those otherwise unemployed.
- Moving towards sustainable fiscal positions helps securing social standards in the longer term, smoothening later economic recessions and improves the possibilities of making positive future priorities.

The benefits for the average citizen are created in both the short and longer term. The composition of these average gains may, in particular in the short term, include larger gains for some and losses for others, in particular in relation to the creation and destruction of jobs.

Gains in terms of consumer purchasing power from more trade and competition are unconditionally positive, but some jobs in obsolete industries disappear in that process, while the other jobs created – such as those related to new exports and consumer services made available by the enhanced consumer purchasing power – may appear in other sectors and need other skills.

Compared to the normal very large annual gross creation and destruction of jobs, changes related to structural reform and adjustment to new market conditions are not large, but are an additional reason to ensure comprehen-



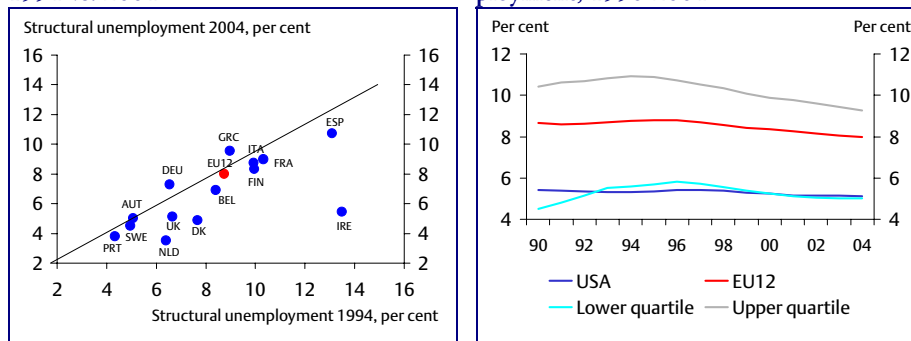
sive policies to facilitate such transition, especially by measures to adjust and increase skills and ensure the flexibility of labour markets.

The challenges in terms of adjustments for some should never prevent harvesting the larger benefits for consumers and citizens at large, but inspire the development of the policies needed to smoothen these changes.

# 1. Labour Markets

For the EU15 as a whole unemployment remains at a high level, around 8 per cent in the euro-zone (EU12), well above the US, *cf. Figure 1.1a and 1.1b*. However, there is huge variation from nearly 11 per cent in Spain to around 4-5 per cent in NLD, SWE, AUS, DK, PRT, UK and IRE. Moreover, a number of countries have managed to reduce structural levels quite considerably over the last 10 years, among others, but not only, the 7 countries having achieved low levels, while others have had only modest falls in unemployment.

**Figure 1.1a. Structural unemployment, 1994 vs. 2004**, **Figure 1.1b. Structural levels of unemployment, 1990-2004**



Notes: Structural unemployment is the OECD NAIRU measure. In figure 3.1b lower quartile covers SWE, AUT, PRT, FIN and upper quartile covers FRA, ITA, ESP, IRE. The data represents a population-weighted average of the countries' NAIRU.

Source: OECD and own calculations.

There has been an increase in employment rates across the board over the last decade, *cf. figure 1.2a*. A major factor has been substantially higher employment rates among women, particularly in countries with initially lower overall employment rates, and employment among elderly workers has also picked up since the 1990, *cf. figure 1.2b-c*.

Figure 1.2a. Employment rates, 1992-2003

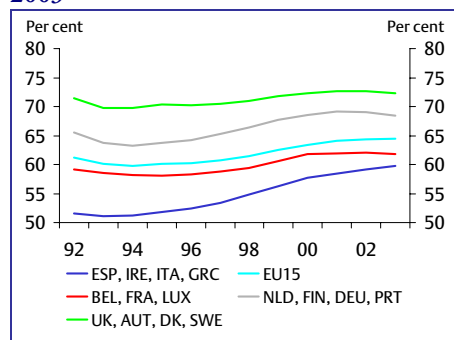


Figure 1.2b. Employment rates for 55-64 year-olds, 1992-2003

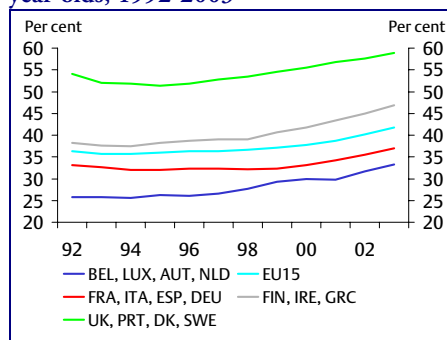


Figure 1.2c. Employment rates for females, 1992-2003

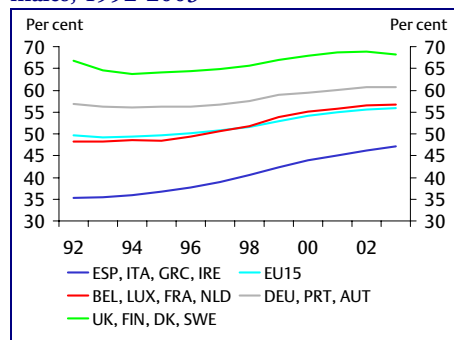
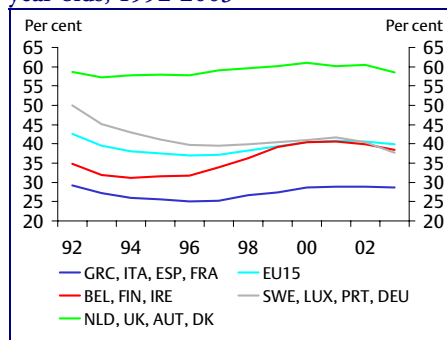


Figure 1.2d. Employment rates for 15-24 year-olds, 1992-2003



Notes: Numbers are simple averages. Countries sorted by increasing level of employment rates in 1992.

Source: Eurostat and own calculations.

### BEPG's on labour market policies

The main threads of the BEPGs on labour market policies are (full text in *Box 1.1*):

- Reform tax benefit systems to increase incentives to work, reviewing levels, duration and eligibility for benefits.
- Ensure efficient labour market policies with rigorous impact assessment of individual programmes.
- Relax overly restrictive job protection legislation (EPL) that makes it costly to hire and dismiss workers. In particular, tight EPL increases the risks that people have difficulties re-entering employment once losing a job, because firms are aware of the costs associated with later reducing staff levels.

- Promote wage (bargaining) systems that allow wage differentials to reflect differences in skills and regional conditions, with overall changes in wages conducive to growth in employment and reflecting underlying productivity performance.

#### Box 1.1. BEPG on structural adjustment and labour markets

*Guideline n°4. To ensure that wage developments contribute to macroeconomic stability and growth* and to increase adaptability Member States should encourage the right framework conditions for wage-bargaining systems, while fully respecting the role of the social partners, with a view to promote nominal wage and labour cost developments consistent with price stability and the trend in productivity over the medium term, taking into account differences across skills and local labour market conditions. *See also integrated guideline “Ensure employment-friendly wage and other labour cost developments” (No 21).*

*Guideline n°5. To promote greater coherence between macroeconomic, structural and employment policies,* Member States should pursue labour and product markets reforms that at the same time increases the growth potential and support the macroeconomic framework by increasing flexibility, factor mobility and adjustment capacity in labour and product markets in response to globalisation, technological advances, demand shift, and cyclical changes. In particular, Member States should renew impetus in tax and benefit reforms to improve incentives and to make work pay; increase adaptability of labour markets combining employment flexibility and security; and improve employability by investing in human capital. *See also integrated guideline “Promote flexibility combined with employment security and reduce labour market segmentation” (No 20 and No 8).*

#### Progress in implementation

Progress in easing employment protection legislation (EPL) seems to have slowed down. There was substantial progress in the period from the late 1980s until the late 1990s on easing EPL, particularly in countries with initial high and medium levels, *cf. figure 1.3a*. Since the late 1990s, further easing has occurred only in the countries with the highest levels, in particular Italy and Greece, *cf. figure 1.3b*.

Figure 1.3a. Index for employment protection legislation

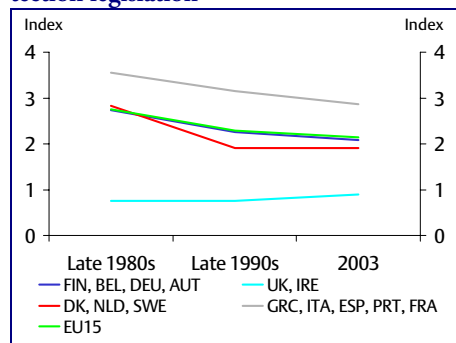
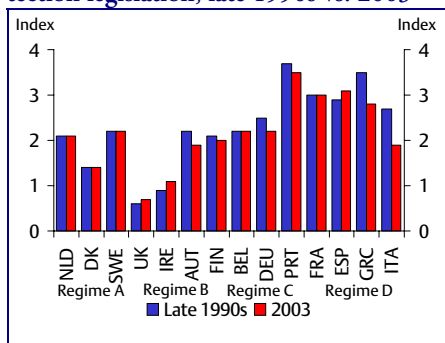


Figure 1.3b. Index for employment protection legislation, late 1990s vs. 2003

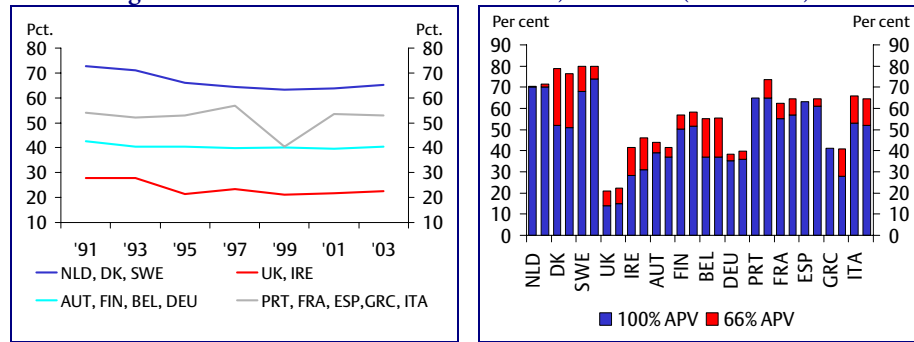


Notes: Index in figure 3.2a. is excluding collective dismissals. In figure 3.3a data is a simple average over the regimes.

Source: OECD (2004d) and own calculations.

For gross replacement rates – unemployment benefits relative to previous salary net of social contributions – the overall picture is of broadly unchanged levels over the last 15 years, though with some convergence: countries with the lowest ratios have slightly increased benefit levels while countries at the top have trimmed levels, *cf. figure 1.4a and 1.4b*. However, a number of countries have reduced non-wage labour costs in the form of social security contributions which is not captured by the gross replacement rates, implying that the overall tax wedge on low paid works, in particular, has been reduced and provided a boost to employment.

**Figure 1.4a. Replacement rates in the different regimes over time** **Figure 1.4b. Replacement rates, 1999(1<sup>st</sup> column) and 2003 (2<sup>nd</sup> column)**

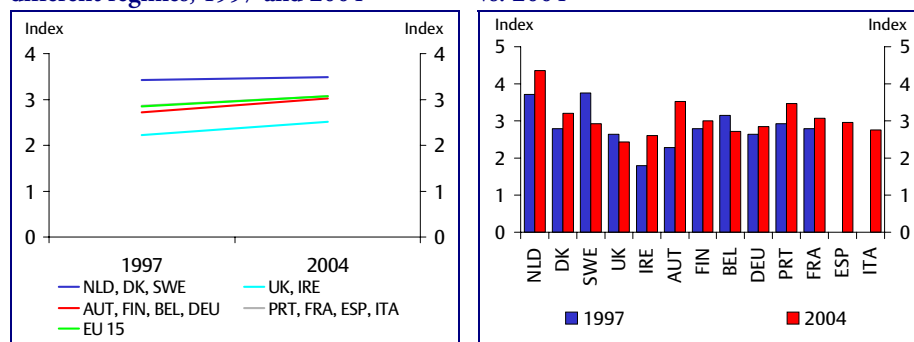


Notes: In Figure 1.4a the data is a simple average of the regimes. In Figure 1.4b the replacement rate is used in the first year for each country. It is calculated as the average over three family types and as the average of a worker with respectively 66 or 100 per cent of the wage of an average production worker (APV)

Source: OECD Benefits and Wages 2002 and 2004 plus updates from OECD secretariat.

Based upon scarce data covering only two years, nearly all Member States have tightened conditionality of benefits over the last decade in line with BEPG, cf. figure 1.5a and 1.5b (a high level of the indicator suggests a high requirement of availability). Most important among such conditions is the requirement to seek actively a job as well as accepting a job offer from labour authorities<sup>1</sup>.

**Figure 1.5a. Availability indicator in the different regimes, 1997 and 2004** **Figure 1.5b. Availability indicator, 1997 vs. 2004**



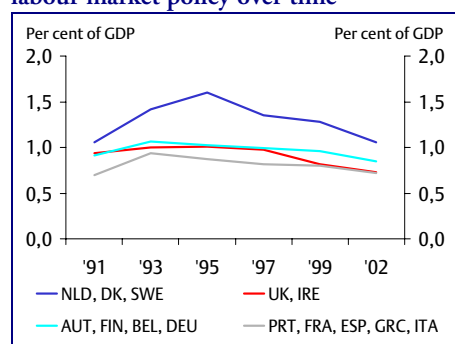
Note: In figure 1.5a data is a simple average over the regimes.

Source: Hasselpflug (2005) and Danish Ministry of Finance (1998).

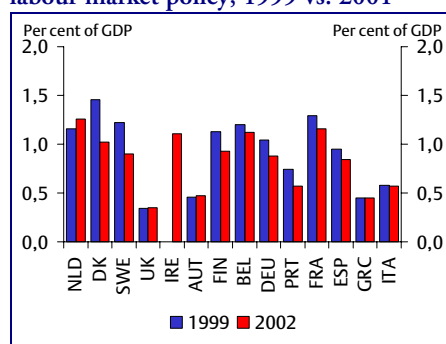
<sup>1</sup> Hasselpflug (2005) and Danish Ministry of Finance (1998).

Member state spending on Active Labour Market Policies (ALMP) has tended to fall since its peak in 1995, probably also reflecting the fall in unemployment rates over the last 10 years. This fall has been most pronounced in the Netherlands, Sweden and Denmark which on average spent 1,5 per cent of GDP in 1995; this group of countries is still at the top in spending, but now closer to the rest, spending roughly the same as Ireland, Finland, Belgium and France.

**Figure 1.6a. Public expenditure on active labour market policy over time**



**Figure 1.6b. Public expenditure on active labour market policy, 1999 vs. 2001**



Note: In figure 1.6a data is a simple average over the regimes. For both figures the numbers for Ireland are 2001.

Source: OECD Employment Outlook 1994 and 2004.

### Factors explaining divergences of unemployment rates

Experience over the last decade shows that the relative performance of Member States as regards unemployment rates to a large extent depends on the package of labour market policies they have chosen. To simplify the presentation, the EU15 has been grouped into four regimes based upon their relative positions as regards the four parameters discussed above: strictness of EPL, level of replacement rates, public spending on ALMP and availability requirements.

Figure 1.7a. Structural levels of unemployment, 2004

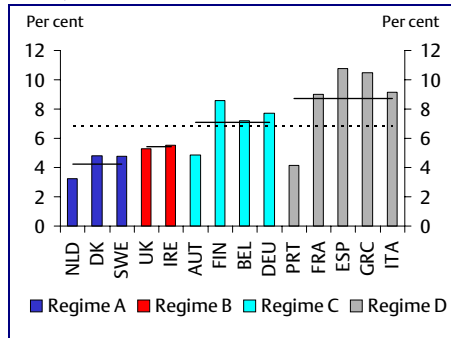
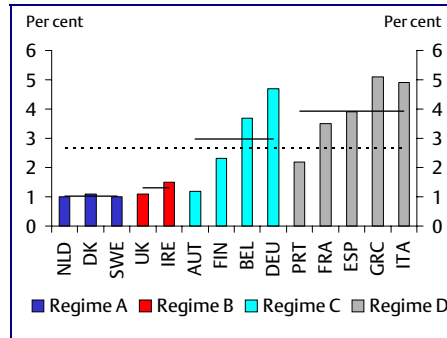


Figure 1.7b. Long-term unemployment, 2003



Notes: The measure for structural unemployment is the OECD NAIRU. Long-term unemployment is defined as the share of the labour force, which has been unemployed for more than one year. Lines represent unweighted averages of each regime.

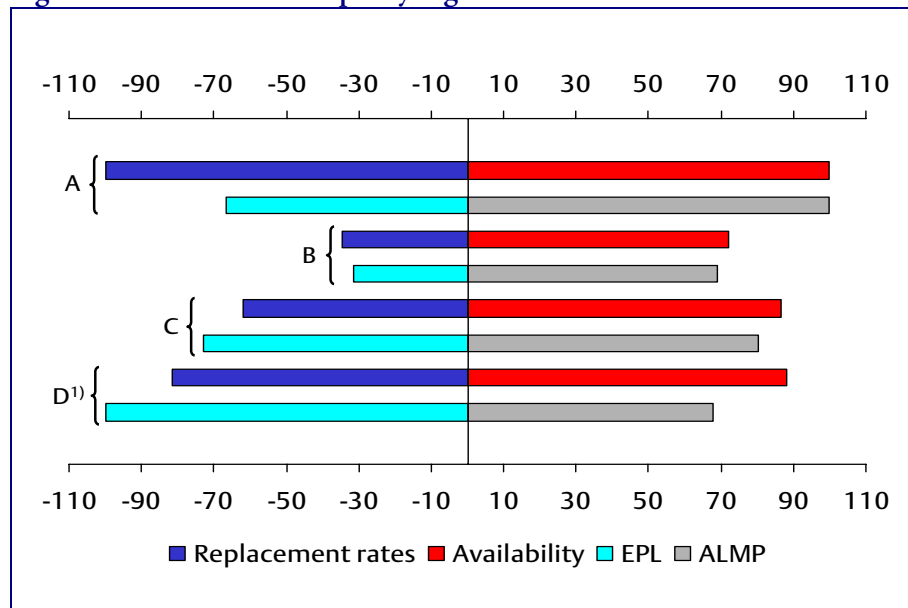
Source: OECD and Eurostat.

About five countries have unemployment rates from 4-6 per cent, *cf. figure 1.7a*. Three of these countries – Sweden, the Netherlands and Denmark – are characterized by a relatively low to medium level of EPL, very high degrees of active labour market policies and availability requirements and levels of compensation for unemployment as demonstrated in figures 1.3-1.6. With their relative position as a group on these policy characteristics they are visualised as “regime A” in *figure 1.8*.

The two other countries with low unemployment – Ireland and UK – are characterised by low relative levels for all four parameters (regime B).



**Figure 1.8. Labour market policy regime characteristics**



Notes: The regime indexes are calculated using a simple average of the indicators covering the given countries' labour market policies.

For each indicator, index 100 denotes the regime with the highest score on the given indicator.

1) Greece is not included in the statistical analysis due to missing data. It is however estimated that Greece falls under Regime D.

Source: Own calculations.

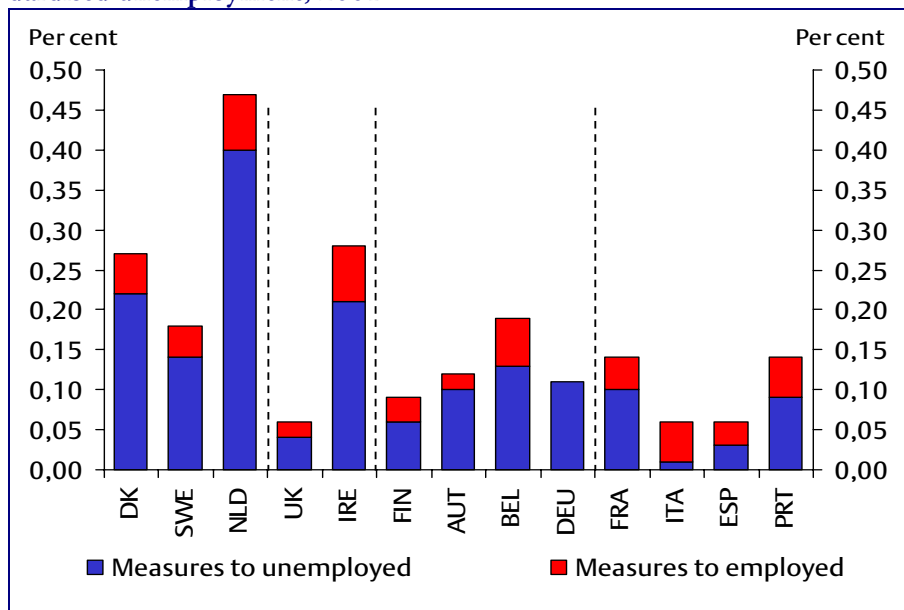
These five countries, also have significantly lower long-term unemployment, *cf. figure 1.7b*.

Four countries – Austria, Finland, Belgium and Germany – are characterised by medium levels of EPL, high levels of replacement rates and index of availability but low levels of active labour market policies (regime C). Their unemployment rates are roughly in the middle.

Finally, five countries – Portugal, Spain, France, Italy and Greece – are characterised by very high EPL and average levels of compensation, high levels of formal availability requirements but very low levels of active labour market policies (regime D). These countries have the highest unemployment rates, particular long term.

The apparent positive effects from active labour market policies in Denmark, The Netherlands and Sweden may be inseparable from the positive effects of strong requirements of availability. Indeed, what marks out the countries with high spending on active labour market policies, is first of all higher spending as a per cent of GDP on *measures to unemployed*, including remuneration in activation, *cf. figure 1.9*. It is in practice difficult to enforce job availability if the public labour agencies cannot in the final instance offer jobs in the public sector itself – or subsidised jobs in the private sector – to persons unable (or unwilling) to find a job themselves. Indeed, all countries with high expenditures, notably Sweden, Denmark and The Netherlands, also have strong requirements of availability.

**Figure 1.9. Expenditure on active labour market policy relative to standardised unemployment, 2001**



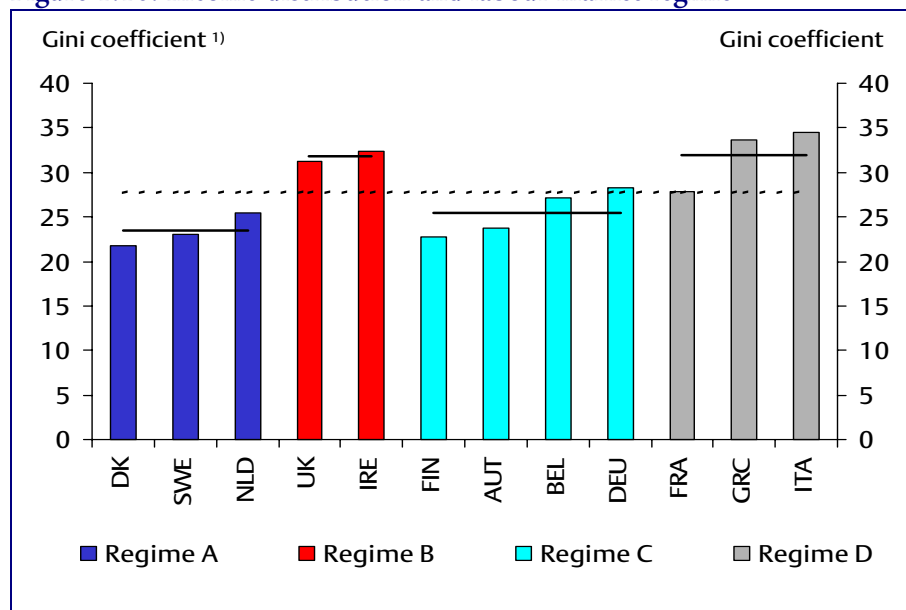
Notes: The index is calculated as expenditure on active labour market policy as per cent of GDP divided by the rate of standardised unemployment.

Data for DK and PRT are from 2000.

Source: OECD labour market statistics database and own calculations.

The preference for active labour market policies in some countries to counteract adverse incentives from high benefit rates instead of simply reducing them should be seen in the context of the effect on distribution of incomes. Countries with relatively high benefit rates and high levels of active labour market policies (regime A) are also characterised by fairly even distributions of income, *cf. figure 1.10*.

**Figure 1.10. Income distribution and labour market regime**



1) A low gini coefficient indicates a relatively even distribution of incomes.  
Source: Förster and Pearson (2002).

Lower benefit rates will tend to reduce income equality even if the effects to some extent can be offset by higher employment rates among groups with high unemployment risks and hence more equal distribution of total earnings within the working age population. By contrast, additional emphasis on active labour market policies may bring about comparable levels of higher employment without the direct negative effects from lower benefit rates in the group of persons who remain unemployed.

Regime A may at least compared with regimes C and D, be better able to deal with structural adjustment. All firms are regularly exposed to changes in demand for their products due to changes in consumer preferences and in competitive positions with other firms. This requires a corresponding movement of jobs from contracting to expanding firms. In regime A, a firm

is not sanctioned through strict EPL for bringing the number of employees to the level consistent with a reduced sales and production level. Employees may initially loose out as they will move more quickly from a paid job to unemployment benefits. However, with active support from labour authorities to find new jobs and with expanding firms less concerned about the risk of having to finance a too large work force, the period in unemployment is likely to be relatively short. This improves long-term productivity while the transaction costs for the involved firms and workers can be kept relatively low, for the latter also because unemployment benefits give a reasonable coverage for lost earnings in the period between two jobs<sup>2</sup>.

However, more active labour market policies are also more costly than lower benefit rates and require a much more complicated system to ensure efficient outcomes. The positive effects are to a large extent associated with their potential to test availability, encourage unemployed workers to seek non-subsidised work and ensure that a life style of “no employment” is not supported by non-conditional income support as argued above. The overall system needs then to be consistent with these requirements.

With these objectives and constraints in mind, two issues are important:

- Unless remuneration in job offers is below the going wage rate, there is a risk that job search, both before and in activation, suffers. This implies that the moderating impact on wage demands, also from unions, evaporates. Moreover, the overall number of people in activation will increase due to the larger inflow and slower outflow of participations, making it more costly in budgetary terms and less likely that the jobs offered would have the same level of intrinsic value for society.
- Activation should be neither too soon nor too late. If too soon, too many persons will be placed in assisted training and jobs that would have found normal jobs relatively quickly. If too late, there is a risk that they will loose the attachment to the job market.

#### **Assessment of BEPG on taxes and trade-offs in labour market policies**

While there are many reasons for variations regarding numbers of hours worked both within EU15 countries and relative to the US, tax rates may play a part. Marginal tax rates – as well as overall tax burden – are substantially lower in the US, *cf. figure 1.11 and 1.12*. Even the quartile of Member States with the lowest tax-to-GDP ratios has on average a much higher tax level. The differences between marginal tax rates in EU15 and US is though

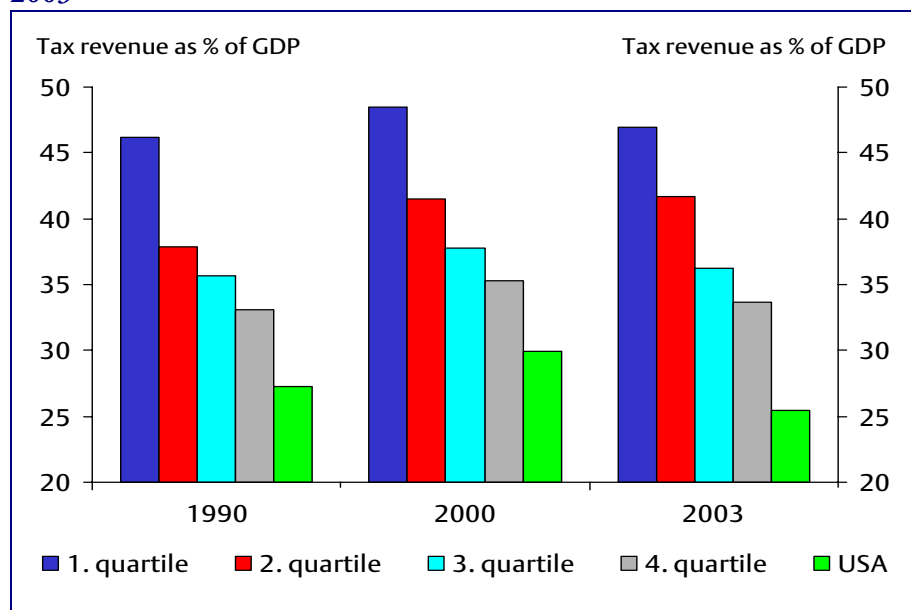
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<sup>2</sup> The merits of the flexicurity model have been discussed in OECD (2004d and 2004f).

considerable smaller than the average tax-to-GDP ratio, suggesting that the overall lower level of the tax burden underestimates the distortions associated with the US tax system.

There is a clear picture of EU15 countries with high levels of hours worked, such as Ireland, Spain and Greece, also having lower marginal tax rates than the rest. Studies suggest that a substantial part of the differences in hours worked within EU15 may be attributable to differences in tax rates<sup>3</sup>.

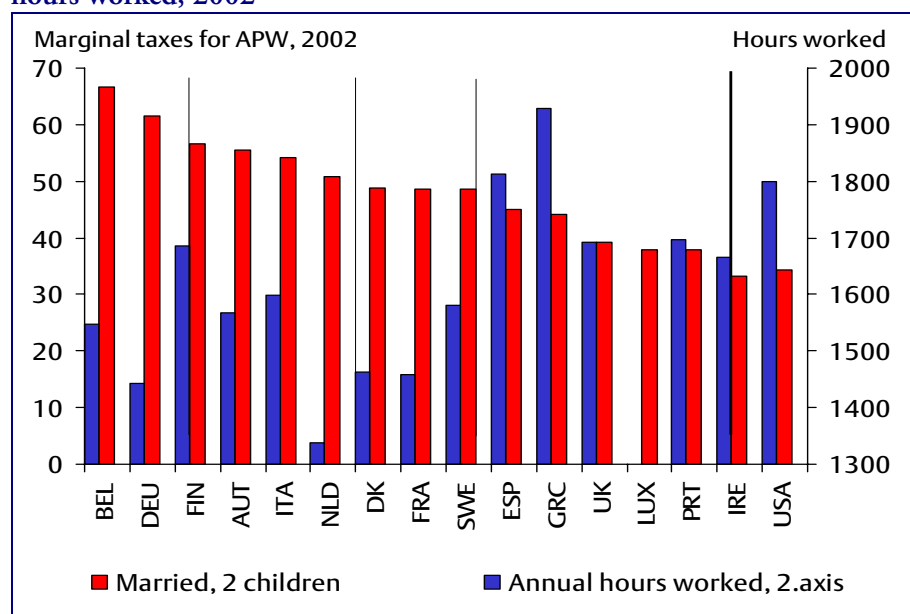
**Figure 1.11. EU15 countries vs. USA on tax pressure, 1990, 2000 and 2003**



Notes: Quartiles and weights based on population shares.  
 Source: OECD Revenue Statistics 1965-2002 and own calculations.

<sup>3</sup> In Prescott (2004) the whole difference between US and some major European countries is attributed to tax rates while Alesina et al (2005) conclude that other factors are more important.

**Figure 1.12. EU15 countries vs. USA on marginal tax rates and annual-hours worked, 2002**



Notes: The “Marginal tax rate” is an average of marginal tax rates for three different household types with incomes around the income of an average production worker and includes the effect of consumption taxes.

Source: OECD Revenue Statistics 1965-2002, OECD Taxing Wages 2003, Eurostat and own calculations to be documented in a forthcoming working paper from Danish ministry of Finance.

As well as boosting labour supply, lower marginal tax rates also tend to reduce unemployment under most realistic circumstances, although the net effects are disputed and depend on a number of circumstances<sup>4</sup>.

Overall this suggests, that the long standing recommendation to cut taxes in particular for low paid workers should be considered in view of the specific circumstances countries are facing. It is most relevant for countries facing high unemployment, low employment rates, relatively long working hours, moderate levels of progression in wage taxation and relative unequal distribution. Furthermore, increased mobility among high wage earners and the role that taxes may play in attracting such workers should also be factored into the recommendations on tax systems for the individual countries.

<sup>4</sup> Næss-Schmidt (2003).

A major factor behind the higher employment rates in high employment countries is the employment rates of women and youth. The total employment rate in the top quartile of EU15 exceeds 72 per cent while it is almost 60 per cent for the lowest quartile, i.e. a gap of nearly 12 percentage points, *cf. figure 1.2a*. That is significantly less than the corresponding gaps for women and youth employment rates, *cf. figure 1.2c. and 1.2d*.

This makes it likely that higher employment rates for the EU15 as a whole, in addition to lower unemployment, will need to come from, in particular, higher employment of women and to some extent youth and older workers, as discussed in more detail in the section on long term sustainability.

However, higher participation rates for women will probably have to be accompanied by higher public support to child-care and changes in tax systems, both of which imply some trade-offs. Simulations suggest that increased support can bring net benefits also for public finances and total welfare but that there are falling marginal returns of higher subsidies to childcare etc.<sup>5</sup>.

Moreover, the high level of female participation in the Nordic countries also results from tax systems that imply lower marginal taxes on the second wage earner relative to other EU15 countries<sup>6</sup>. While incentives for women can be increased in other countries, it may well be at the cost of reduced incentives for men in terms of supply of hours worked. Present tax-systems may in a number of countries reduce the incentives to have two working incomes in the family: tilting the incentives in a context of budget *ex-ante* neutral change may increase female labour force participation but not necessarily increase overall employment in hours. In other words, the net contribution to public finances *ex-post* may be both positive and negative.

### **BEPG conclusions and national challenges**

Most of the key components have shown themselves to be valid, in particular the need to reform benefit systems, including their administration and the need to relax EPL in some countries.

There is more than one route to low unemployment. But there is a choice to be made: low unemployment cannot be combined with high EPL, high compensation, low availability requirements and only limited efforts to guide and train people back to work.

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<sup>5</sup> OECD (2004a).

<sup>6</sup> OECD (2005).

The challenge for the *Member States* is thus to ensure that their ambitions, as regards employment, are matched by an overall package of policy measures that can increase employment and facilitate structural adjustment.

More focus is needed on measuring the contribution from individual components of the BEPG to ensure the most efficient mix of policies, also in view of the underlying objective of improving long-term fiscal balances as well as other economic objectives. Measures that improve employment but entail net budgetary costs should only be adopted if they attain well-identified social objectives (for example finding highly disabled people a place in the job market to improve social inclusion or improving gender equity).



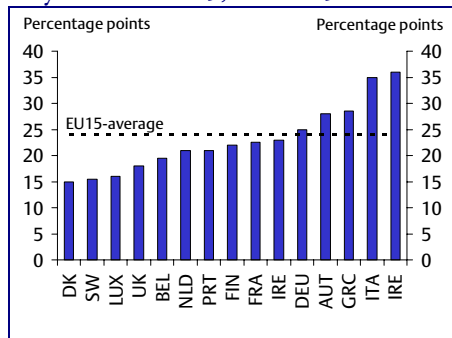


## 2. Fiscal sustainability

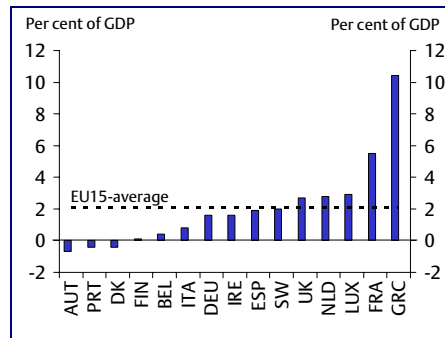
All Member States will experience a substantial ageing of the population over the next few decades, implying a steep increase in the dependency ratio, *cf.* *figure 2.1a*. The implication of the demographic challenge is a need for fiscal and structural policy reforms in most – if not all – countries in order to avoid higher debt ratios and a fiscal tightening when ageing is mounting and thus securing long-term fiscal sustainability.

Only 3-5 of the EU15 countries appear to have (near) sustainable public finances, *cf.* *figure 2.1b* (definition in note to figure). Fiscal policy in the EU15 countries needs on average to be tightened by several percentage points. The required tightening would have been substantially higher if the calculation had not factored in not yet implemented changes in pension systems and fulfilment of ambitious employment targets.

**Figure 2.1a. Increase in old-age dependency ratio<sup>1)</sup> in EU15, 2000-2050**



**Figure 2.1b. Indicator of financing gap<sup>2)</sup>**



Notes: 1) The old-age dependency ratio is defined as the number of persons above 65 years relative to the number of 15-64 years old.

2) The financing gap measures the permanent fiscal adjustment required to ensure long term sustainability of public finances by assessing the net present value of the future flow of net revenues over an infinite horizon).

Source: Eurostat structural indicators and European Commission (2004a).

Ageing is foremost a fiscal policy challenge, not a question of lower prosperity. Real disposable incomes per capita go up steady even in the most pessimistic projections of the costs of ageing: assuming a growth rate of productivity of 1½ per cent and a continued fall in working hours of ½ per cent year as in the previous 10 years, GDP per worker would have increased by 25 per cent in 20 years. Even with an increase of tax rates in the order of 3-4 percentage points of GDP, this would be consistent with an increase in net real wages of 15 per cent<sup>1</sup>.

The problem is to avoid raising tax rates which in particular in some EU countries with already high rates, may create sizeable distortions in labour markets and challenge other economic objectives.

The BEPG's suggest three main policy instruments – the three pronged ageing strategy -- (see box below) to meet these challenges if debt levels are to be contained when higher expenditures start kicking in:

- Reduce debt-to-GDP ratios so that public interest expenditure as a share of GDP declines over time.
- Increase incentives to older workers to stay longer in the labour market to expand the tax base and reduce expenditure.
- Reform pension systems in a way that reduce the net costs to public budgets and reduce its exposure to further increases in life expectancy while ensuring an adequate safety net for future pensioners.

While the required overall magnitude of adjustment follows relatively straightforwardly from the structural position of public finances, the appropriate mix of instruments is for each Member State to decide. The more debt is reduced in the medium term, the less need is there to expand the work force and reform pension systems<sup>2</sup>.

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<sup>1</sup> If the average tax rates on wages go from for example 45 to 49 per cent, it would imply the share of the gain from higher real wages would fall from 25 per cent to 15 per cent

$$\frac{(0,51 \times 1,25 - 0,55 \times 1)}{0,55 \times 1}$$

<sup>2</sup> This trade-off between medium-term consolidation and structural reforms ensuring long-term sustainability improvements is reflected in the reformed Stability and Growth Pact, which allows for a temporary deviation from the medium-term budgetary objective or the adjustment towards that objective for countries implementing structural reforms, explicitly stating that “the Council shall take into account the implementation of major structural reforms which have a verifiable impact on the long-term sustainability of public finances”.

There are strong economic and social policy arguments for getting public finances back on track within the EU. If financial markets, consumers and firms become concerned that public deficits will remain at the current high levels and that the challenge faced by the ageing of the populations is not taken up, then there is a clear medium term risk that inflation and interest rates, both nominal and real, will rise again. Volatility of interest rates may also increase again as it will appear unclear what the new policy regimes are going to be<sup>3</sup>.

Larger public deficits and hence debt burdens also increases the sensitivity of public finances to higher interest rates and put citizens at risk of facing the implication of a sudden crises induced package of spending cuts and tax increases.

Furthermore, ambitions to maintain, let alone expand, welfare services and growth oriented expenditure such as public R&D expenditure will be constrained if interest burdens and financing of public pensions consume a still larger share of tax revenues.

A clear and decisive strategy for dealing with the costs of ageing could also be helpful in the present economic climate. Consumers and investors are very likely to recognise the need for a tightening given the extensive debate on the issue in a number of member states. In the absence of precise information about its timing, magnitude and content they may well be overcautious in their spending plans at a time where lack of domestic demand is a dominant constraint on economic growth for EU15 as a whole. A carefully phased-in reform of pension systems, having only marginal negative effects on disposable incomes in the short term, could well boost private spending.

### Box 2.1. BEPGs on economic and fiscal sustainability

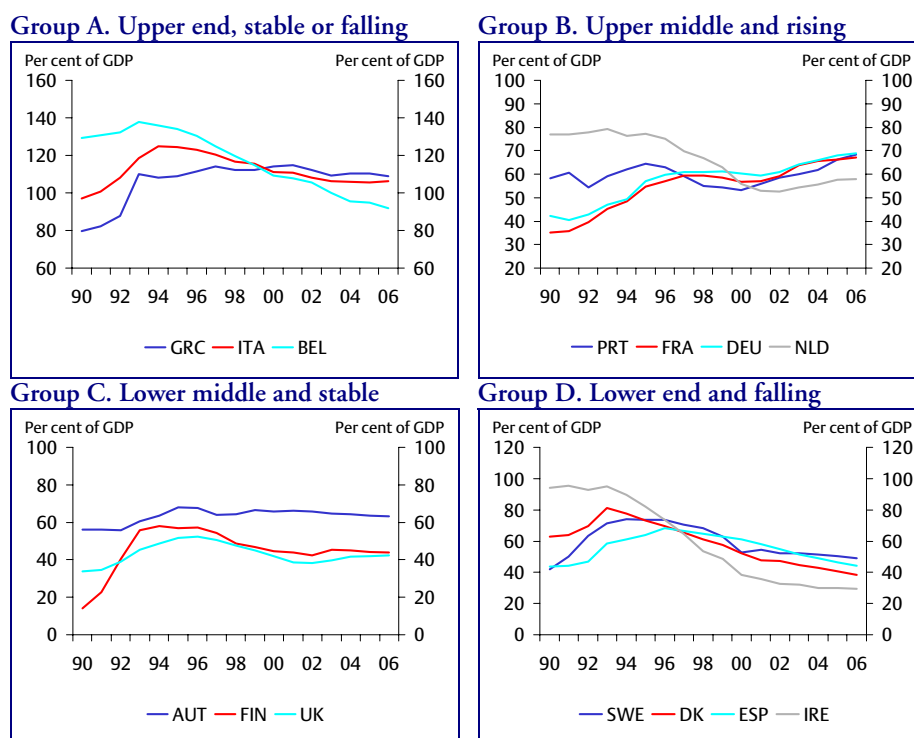
*Guideline n°2. To safeguard economic and fiscal sustainability as a basis for increased employment, Member States should, in view of the projected costs of ageing populations, 1. undertake a satisfactory pace of government debt reduction to strengthen public finances, 2. reform and re-enforce pension, social insurance and health care systems to ensure that they are financially viable, socially adequate and accessible, and 3. take measures to increase labour market participation and labour supply especially amongst women, young and older workers, and promote a lifecycle approach to work in order to increase hours worked in the economy. See also integrated guideline "Promote a lifecycle approach to work" (No 17, and 4, 18, 20).*

<sup>3</sup> While the empirical literature points to the difficulties of being precise about the magnitude of effect there is indeed good evidence that sustained deficits over a long period drives up real interest rate, as government debt rates go up. A summary of the literature is contained in OECD (2003a).

### Reducing debt ratios

While debt ratios fell nearly uniformly in Member States in the late 1990s, only 5 Member States have managed to continue this trend including the four countries that in the first place already had low debt ratios at the outset (group D) and, markedly, Belgium, *cf. figure 2.2*. At the other end are four countries with initially upper middle debt ratios where debt level ratios have started to grow since 2000 (group B). For the remaining 6 EU15 countries with either very high or lower middle debt ratios (group A and C), debt ratios have remained largely stable.

Figure 2.2. Gross government debt-ratios 1990-2006

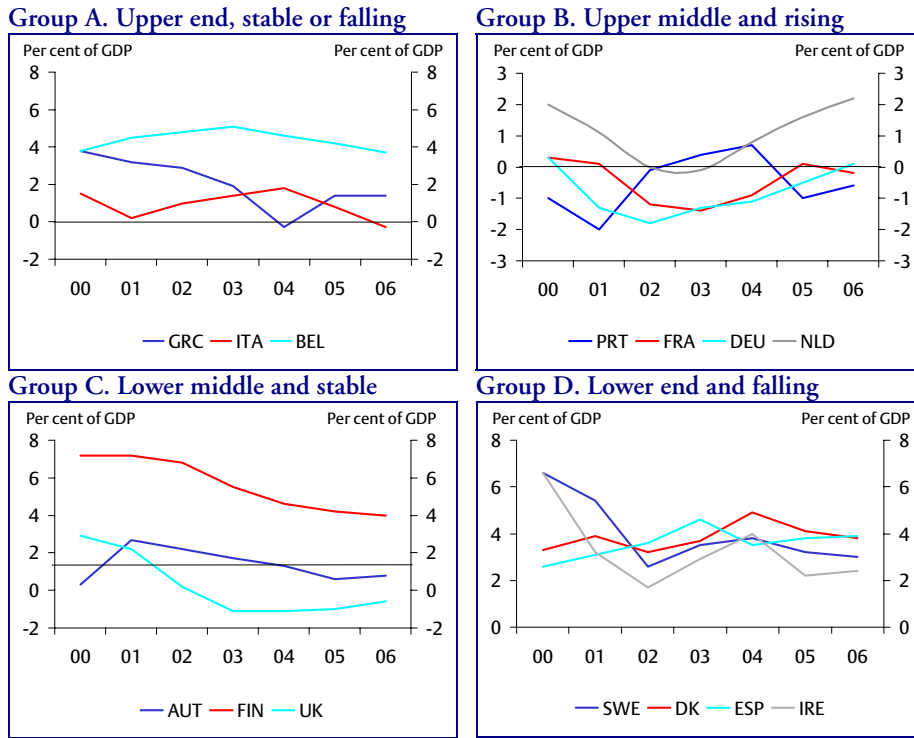


Source: Commission, Ameco data, April 2005.

While there is some cyclical component to the overall slow down in debt reduction, a return to higher and more normal growth and inflation rates would still leave roughly one-third of the EU15 countries – mainly in group B and C – with fiscal positions not consistent with reductions of debt ratios, let alone fall in real debt levels, *cf. figure 2.3a and 2.3b*. Their structural deficits are too high to be neutralised by nominal GDP-growth. Moreover, cur-

rent interest rates are clearly below expected medium-term levels. A resumption to normal growth will also imply higher interest rate which will in particular be felt in countries with high debt ratios.

**Figure 2.3. Gap between actual and required structural balance to achieve stable debt-ratio, 2000-2006**

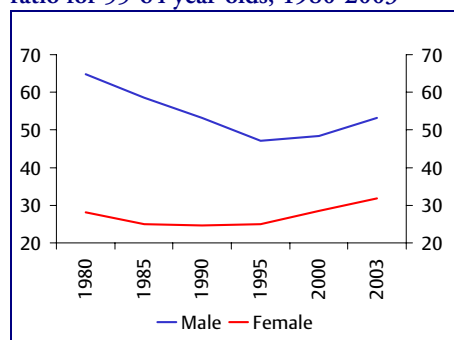


Source: Commission, Ameco data, April 2005 and own calculations.

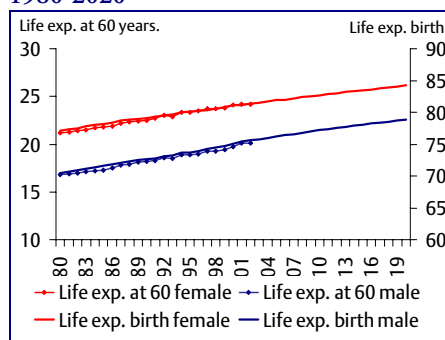
**Reduce incentives to early retirement**

Since the early 1960s and until very recently, employment rates were falling for older workers despite continued improvements in health conditions for this group, cf. figure 2.4.a and 2.4.b. For men at the age of 50 life expectancy has increased from 26 to 28½ over the last decade, for women from 31½ to 33 for the EU as a whole and is likely to increase further in the coming years.

**Figure 2.4.a Employment/population ratio for 55-64 year-olds, 1980-2003**



**Figure 2.4.b. EU15 life expectancy, 1980-2020**



Notes: In figure 4.5a 1980 refers to 1979 and 1985 refers to 1983. For the year 1979 data for AUT, BEL, DK, GRC, LUX and UK was not available. For 2004-2020 the baseline scenario in the source material has been used.

Source: OECD Employment Outlook 1997, 2000 and 20047, Eurostat and own calculations.

While the reduction in employment rates over this long period has without doubt been affected by reduced economic incentives to stay in the labour market, it also suggests that there is no automatic positive effect on labour market participation as the older work force experience a larger ability to work. In the absence of a change in economic incentives, there may well be a long-term secular increase in demand for leisure, which dominates the ability to work-effect for this age group.

The actual pick-up in employment rates is probably linked to effects from already implemented reforms by strengthening the economic incentives to prolong the working life. These efforts should be seen in the context of the rise in life expectancy combined with until recently still shorter working lives: the number of benefit years went up while the number of contribution years went down. This made public pension system increasingly more expensive to finance and for the same reason, a continuously better “investment” for the average pensioner.

Member States have inter alia, *cf. table 2.2*:

- Increased the “normal” statutory retirement age.
- Lengthened the number of working years to qualify for a full pension.
- More generally strengthened the actuarial characteristics, e.g. a closer link between what the individual contributes and later receives in benefits.

Moreover, as some of these reforms are far from fully phased in there should be further gains in the years to come.

**Table 2.2. Reforms to pension systems: encouraging later retirement**

			Measures to delay retirement <sup>1)</sup>					
			"Regular" retirement programmes					
Participation rate, 55-64 in 2000			Increas- ing "normal" retire- ment age	Upward adjust- ment of women's retire- ment age	Length- ening contri- bution periods for full pension	Limiting access to early pensions	Im- proved actuarial charac- teristics	Access to other "early retire- ment" pro- grammes
Male	Female							
FIN.....	48	44	+ <sup>3)</sup>				+	+
FRA.....	42	30			+			
DEU....	56	37		+		+	+	+
ITA.....	45	17	+	+ <sup>2)</sup>		+	+	
NLD....	46	18					+	+ / -
ESP.....	58	22					-	-
SWE.....	72	65	+		+		+	
UK.....	66	40		+				+

Notes: 1) A "+" indicates a measure which should induce a rise in the effective age of retirement in the case of policies affecting the age of retirement, a fall in average benefits in the case of policies affecting average benefits, and an increase in the employment of older workers for measures affecting employment. A negative sign indicates the opposite.

2) New labour-market entrants only.

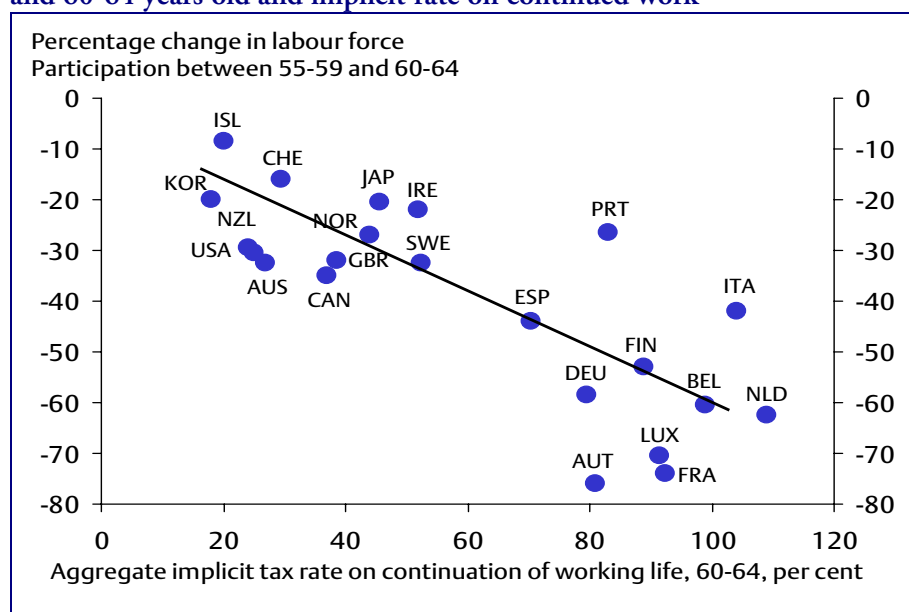
3) Civil servants only.

Source: OECD (2003b).

More sophisticated analytical work as well as more simple correlations shows that such incentive-based reform does have a positive impact on employment performance among elderly workers and may already have impacted on actual performance. Among present EU15 members, the top employment rates are noted in Britain, Ireland and Sweden where the incentive to continue to work beyond the age of 55 is the highest: while a worker in Sweden aged 55-59 retains roughly 50 per cent of his gross salary if he continues to work another year, the net benefit is close to zero in countries like France and Belgium when factoring, in that more earnings may actually be at the cost of receiving less pension benefits, *cf. figure 2.5*.



**Figure 2.5. Fall in labour market participation between 55-59 years old and 60-64 years old and implicit rate on continued work**



Source: Duval (2003).

Looking at the reforms over the last few years as opposed to earlier reforms, there has been a certain tendency to rely more on giving bonuses to those working for a few years more rather than reducing benefits if the chosen retirement age is below what may be consistent with long-term sustainability<sup>4</sup>. While this will increase employment rates, it is likely to be weakening public finances thus undermining the rationale for boosting employment rates in the first place.

If public finances are to be improved, future reforms that recalibrate retirement incentives for the group of older workers need to take into account explicitly this balance.

### General pension reforms

In addition to measures that directly aim to increase incentives to prolong working lives, Member States have also introduced reforms that adjust benefit calculations more generally. Prime examples are, *cf. table 2.3*:

<sup>4</sup> Reports from Economic Policy Committee and Cardiff Reports, 2001-2004.

- Shifting indexing of pension levels wholly or partly from wages to prices, which provides savings, as prices in general increase with less than wages (Finland, Germany and Italy).
- Extending the reference period for the calculation of the pension level to a broader period of working years, for example best 10 years rather than best 5 years, which typically also will lower average annual benefit levels as well as be less biased in terms of rewarding people whose earnings peak late in life (Finland, France, Italy, Spain, Sweden and the UK).

**Table 2.3. Reforms to pension systems: benefit levels<sup>1)</sup>**

Indicators of benefit levels			New formula for calculating benefits						
Net replacement rate at earliest retirement age <sup>2)</sup>	Net replacement rate at "normal" retirement age <sup>2)</sup>	Projected fall in average pensions relative to productivity 2000-2050	Shift from indexing on wages to-wards prices	Changing the reference earnings	Lengthening contribution period	Changes to rules for accruing pension rights	Actuarial adjustment with increased life expectancy <sup>3)</sup>	Other measures to restrict benefits	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
FIN...	55	64	-5.5	+	+		+	+	
FRA...	87	87	-21.3		+		+		
DEU..	68	77	-13.7	+			+		
HUN..	..	..	-6.6	+			+ / -		
ITA.....	55	80	-30.6	+	+	+	+	+	
NLD..	83	92	2.9						
ESP.....	71	101	-2.0		+				
SWE....	72	72	-19.9		+	+	+	+	
UK.....	..	40	-47.0		+			+	

Notes: 1) A (+) indicates measures likely to reduce average benefits and a (-) indicates a rise. The symbol (+ / -) indicates a measure where the direction of the impact of the measure is difficult to determine.

2) Replacement rates at APW earnings net of taxes and contributions.

3) This includes measures which affect the way in which pension rights are accumulated other than changes in reference earnings and the lengthening of the contribution period.

Source: OECD (2003b).

The results in terms of budget savings are in some cases quite substantial with falls in average annual benefit rates relative to real wage increases in the order of or above 20 per cent for SWE, UK and FRA. However, life time

benefits for the individual pensioners will still go up in most countries as the number of benefit years will increase due to longer expected lives.

However, as these budget savings have already been factored in the calculations in the start of these sections on long-term sustainability, it shows that the underlying increase in public expenditure to GDP-ratio from ageing is quite substantial in some countries.

### **The role of private pensions**

There is considerable merit in letting actuarially based, private pension schemes take over a larger role in providing high compensation levels in retirement age for former middle and high income earners rather than using pay-as-you-go systems for this purpose<sup>5</sup>.

Such private systems are typically isolated from changes in demography and the expected length of living in contrast to classical pay-as-you-go systems. In private schemes, longer expected life leads to lower benefits – otherwise it would not be actuarially based – while in a pay-as-you-go system benefit rates are left unchanged unless a discretionary decision to do otherwise is taken. Furthermore, the fall in the tax base resulting from a reduction in the working age population require higher tax rates to finance a given level of pension (and other public) expenditures, while in funded, defined contribution schemes the financing of pension benefits has already been obtained historically.

However, building up new private schemes is no substitute for reform of public pension schemes. The potential, but also uncertain, increases in private savings following from the build up of new schemes only alleviate public finances if it improves the net present value position of the government. It can do so first of all by boosting the net financial assets of the private sector, and hence private financial incomes and, therefore, also the public tax base. This may increase tax revenues for given tax rates and reduce means-tested expenditure. The effects on net present value depend in particular on three issues:

- 1) Is more inflow into long-term schemes mainly at the expense of other savings (*substitution*)?

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<sup>5</sup> Typically, in such voluntary schemes, future benefits will be a pure function of each generation's historical contribution plus the accumulated return on assets. In classical public systems, the present working age population pays the current outlays of pension benefits out of general taxes ("pay-as-you-go").

- 2) Are such long-term schemes taxed lower than other income from saving over the lifetime of the savings plan? (I.e. *Tax favoured status* is most often the case).
- 3) Has increased inflow of funds been induced by even more favourable tax treatment with considerable *dead-weight losses* and with considerable substitution effects in terms of funds flowing from higher to lower taxed savings instruments?

The available evidence indicates that public measures to expand voluntary tax favoured schemes to alleviate the burden from ageing through hoped for increases in total private savings is tenuous at best<sup>6</sup>. One particular problem is that such voluntary schemes tend to be used mostly by higher income earners where the substitution effect, rather than net saving, is likely to be the most pronounced. If the schemes are tax-favoured, the net effects on private savings need to be even larger to achieve long-term budget neutrality.

Thus, encouraging private savings schemes will in a long-term fiscal perspective only be a response to a public financing problem in the combination with a pruning of pay-as-you-go systems.

Moreover, one should probably see such schemes as offering the opportunity to top up a more targeted public pension system. The public part could focus on providing adequate safety nets, leaving to financial markets the job of keeping income levels for middle and higher income families at a high level also in retirement.

By contrast, the social policy objective of ensuring a reasonable minimum level of income for all old age persons cannot be delivered by voluntary systems.

### Overall assessment of (relative) challenges

While ageing will present challenges for all Member States, they are of different magnitude in terms of increased costs and the scope for increasing employment.

This can be illustrated by a few examples. For some countries, long term sustainability seems broadly attained, but they have also relative limited scope for further increases in employment and tax rates (Austria and Den-

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<sup>6</sup>Antolin et al. (2004).

mark). For some countries long-term sustainability is far from achieved, but they have on the other hand a strong potential for growth of employment and with tax rates at low or medium level (GRC and FRA)

**Table 2.5. Long-term challenges on the fiscal front differ**

	Tax pressure <sup>1)</sup> 2002	Employment rate, 2004	Unemployment rate, 2004	Financing Gap despite expected employment gains*
-----Per cent of GDP-----				
AUT .....	44,0	69,2	4,4	-0,7
DK.....	48,9	75,1	4,8	-0,4
FIN.....	45,9	67,7	9,3	0,1
BEL .....	46,4	59,6	7,8	0,4
ITA.....	42,6	56,1	8,8	0,8
IRE .....	28,4	65,4	5,6	1,6
DEU.....	36,0	64,8	8,9	1,6
ESP.....	35,6	59,7	11,4	1,9
SWE .....	50,2	72,9	5,3	2
NLD.....	39,2	73,5	5,1	2,8
FRA.....	44,0	62,8	9,1	5,5
UK.....	35,8	71,8	5,1	2,7
GRC.....	35,9	57,9	9,2	10,4
EU15.....	40,6	64,3	8,0	2

<sup>1)</sup> Total taxes as a per cent of GDP.

Notes: Unemployment measure employed is the Eurostat definition.

\*: Eurostat structural indicators and European Commission (2004a).

Source: Eurostat, European Commission, EPC and own calculations.  
OECD revenue statistics.

However, the fact that a country has a potential for higher employment will not in itself solve the problem. Policy reforms will in many cases have to be implemented to bring about the desired result. Moreover, higher employment rates – in particular for women – may well require considerable higher public expenditure as described in the part on labour markets<sup>7</sup>.

### Overall conclusions in terms of BEPGs and national challenges

- The need for medium and long-term consolidation is paramount for all EU15 countries. The three-pronged strategy to deal with the fiscal consequences of ageing is the right one, but more progress is needed as non-action entails large economic and social costs.

<sup>7</sup> A number of simulations on the link between subsidies to child-care, female labour force participation and net budgetary effects are contained in OECD (2004a).

- The appropriate mix between medium-term budget consolidation over the coming five years *and* pension/labour market reforms to increase employment depends on national preferences. But it is clear – as also recognised in the recent adjustment of the Stability and Growth Pact – that in the absence of reforms to address the well identified long-term budgetary challenges, the medium term consolidation must be correspondingly higher.
- When evaluating the national need to reform pension systems, more emphasis on Member States room for manoeuvre on tax rates and labour markets as a substitute for pension reform and general expenditure restraint. However, a potential for increases in employment rates is not the same as actively achieving it; further reforms will often be required.
- A larger emphasis on the point that recalibration of incentives to improve labour market incentives for older workers to prolong working lives is consistent with the underlying need of improving public finances.
- The definition of “adequacy” in public pension plans should be interpreted in the context of continued expected increases in life expectancy and health conditions for the age group 55-65: if capacity for work is improved, then – all other things equal – the rationale for public income support is less compelling.
- Promotion of well-designed and regulated private pensions systems on an actuarial basis in conjunction with reform of public pension systems can be instrumental in putting long-term public finances on a sounder footing. But substantial tax incentives for private voluntary pension systems constitute a net burden to long-term finances and are unlikely to provide a good safety net for persons of old age.



### 3. Product and Capital markets

Competitive conditions in the market place are key drivers of productivity growth. They press existing firms to improve performance in order to keep market shares, force ailing firms out and give new innovative firms a chance to enter markets with new ideas.

Economic policies and government regulation should thus aim to keep barriers to entry for new firms low, ensure efficient competition between incumbents while avoiding measures that keep ailing firms too long in place. This is well reflected in BEPG on products markets, which focus on, *cf. box 3.1* below:

- Increasing the transposition rate of internal market directives, thus creating incentives for a larger market with reduced barriers to entry.
- Eliminate other barriers to cross border trade, for example in services, including financial and public procurement.
- Provide adequate powers to an effective independence of competition authorities.
- Reduce state aid and target remaining aid to identified market failures.
- Encourage market entry and effective competition in network industries (electricity, gas, telecommunications and public transportation) within a context of an integrated and larger EU.
- Reduce the compliance costs of enterprises while respecting the underlying objectives of public regulation; a policy particularly helpful for SMEs.



### Box 3.1. BEPG's on competition policy, including state aid and regulatory framework

*Guideline n°12. To extend and deepen the Internal Market*, Member States should: 1. speed up the transposition of Internal Market directives; 2. Give priority to stricter and better enforcement of Internal Market legislation; 3. eliminate remaining obstacles to cross-border activity; 4. apply EU public procurement rules effectively; 5. promote a fully operational internal market of services, while preserving the European social model; 6. accelerate financial market integration by a consistent and coherent implementation and enforcement of the Financial Services Action Plan. See also integrated guideline "To improve matching of labour market needs" (N° 20).

*Guideline n°13. To ensure open and competitive markets inside and outside Europe, reap the benefits of globalisation*, Member States should give priority to: 1. the removal of regulatory, trade and other barriers that unduly hinder competition; 2. a more effective enforcement of competition policy; 3. selective screening of markets and regulations by competition and regulatory authorities in order to identify and remove obstacles to competition and market entry; 4. a reduction in State aid that distorts competition; 5. in line with the upcoming Community Framework, a redeployment of aid in favour of support for certain horizontal objective such as research, innovation and the optimisation of human capital and for well-identified market failure; 6. the promotion of external openness, also in a multilateral context; 7. full implementation of the agreed measures to open up the network industries to competition in order to ensure effective competition in European wide integrated markets. At the same time, the delivery, at affordable prices, of effective services of general economic interest has an important role to play in a competitive and dynamic economy.

*Guideline n°14. To create a more competitive business environment and encourage private initiative through better regulation*, Member States should; 1. reduce the administrative burden that bears upon enterprises, particularly on SMEs and start-ups; 2. improve the quality of existing and new regulations, while preserving their objectives, through a systematic and rigorous assessment of their economic, social (including health) and environmental impacts, while considering and making progress in measurement of the administrative burden associated with regulation, as well as the impact on competitiveness, including in relation to enforcement; 3. encourage enterprises in developing their corporate social responsibility.

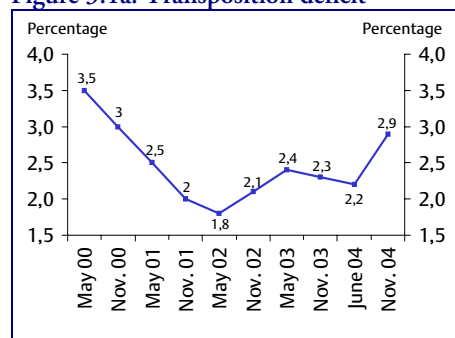
*Guideline n°15. To promote a more entrepreneurial culture and create a supportive environment for SMEs*, Member States should: 1. improve access to finance, in order to favour their creation and growth, in particular micro-loans and other forms of risk capital; 2. strengthen economic incentives, including by simplifying tax systems and reducing non-wage labour costs; 3. strengthen the innovative potential of SMEs, and 4. provide relevant support services, like the creation of one-stop contact points and the stimulation of national support networks for enterprises, in order to favour their creation and growth in line with Small firms' Charter. In addition, Member States should reinforce entrepreneurship education and training for SMEs. They should also facilitate the transfer of ownership, modernise where necessary their bankruptcy laws, and improve their rescue and restructuring proceedings. See also integrated guidelines "To promote a growth, employment orientated and efficient allocation of resources" (n°3) and "To facilitate all forms of innovation" (n°8), n°22 and 23.

*Guideline n°16. To expand, improve and link up European infrastructure and complete priority cross-border projects with the particular aim of achieving a greater integration of national markets within the enlarged EU. Member States should: 1. develop adequate conditions for resource-efficient transport, energy and ICT infrastructures – in priority, those included in the TEN networks – by complementing Community mechanisms, notably including in cross-border sections and peripheral regions, as an essential condition to achieve a successful opening up of the network industries to competition; 2. consider the development of public-private partnerships; 3. consider the case for appropriate infrastructure pricing systems to ensure the efficient use of infrastructures and the development of a sustainable modal balance, emphasizing technology shift and innovation and taking due account of environmental costs and the impact on growth. See also integrated guideline “To facilitate the spread of ICT and build a fully inclusive information society” (n° 9).*

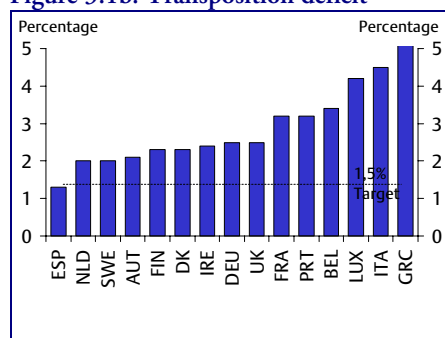
### Implementation of internal market directives

The transposition deficit for the internal market directives is on average 2.9 per cent with a rising tendency, *cf. figure 3.1a*. There are, however, considerable differences between the member states with a backlog of 3-4 per cent among the slowest and around or below 1 per cent in the five quickest implementing countries, *cf. figure 3.1b*.

**Figure 3.1a. Transposition deficit**



**Figure 3.1b. Transposition deficit**



Notes: a) The transposition deficit shows the percentage of internal market directives not yet communicated as having been transposed, in relation to the total number of internal market directives, which should have been transposed by the deadline.

b) In per cent of total number of directives.

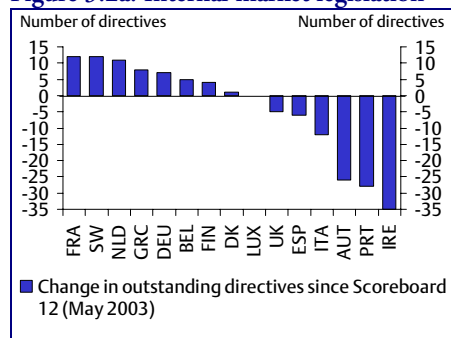
Source: European Commission (2005).

If the directives are not applied properly, the internal market benefits will not be fully achieved. The Internal Market Strategy 2003-2006<sup>1</sup> called on Member States to reduce the number of infringements against them by 50 per cent in 2006. A few countries have now more cases against them com-

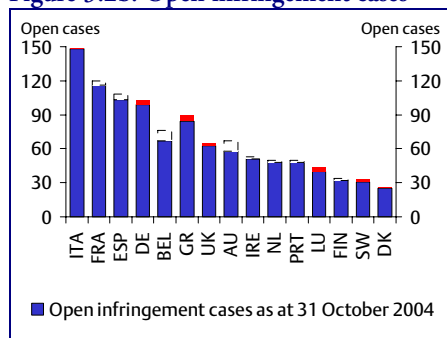
<sup>1</sup> European Commission (2003a).

pared with a year ago and these countries are even the ones with most infringements cases against them, *cf. figure 3.2b*.

**Figure 3.2a. Internal market legislation**



**Figure 3.2b. Open infringement cases**



Notes: a) A positive value means that the backlog has increased while a negative value means the opposite.

b) Dotted lines = decrease in the number of open cases since May 2003. Red = increase in the number of open cases since May 2003.

Source: European Commission (2004b) and European Commission (2005).

### Services

There are a substantial number of barrier that reduce the provision of services account member state borders. Some are linked to language and cultural differences, some result from a regulatory framework that may in certain cases prevent firms ability to exploit their underlying comparative advantage in exporting their products.

Given the reform efforts over the last decades on the regulatory front relating to utilities, communications, transportation and financial services the major focus for further efforts would be public services, retail and wholesale, business services and hotels, *cf. table 3.2*.

**Table 3.1. Sectorial composition of the European economy, 2001**

Employment structure EU 15, 2001	Millions employed	Share of employ- ment, per cent
<b>Primary and manufacturing</b> .....	<b>38</b>	<b>22</b>
Primary industries .....	8	4
Manufacturing .....	30	18
<b>Construction</b> .....	<b>12</b>	<b>7</b>
<b>Market services</b> .....	<b>70</b>	<b>41</b>
Utilities and communication .....	4	2
Retail and wholesale .....	28	16
Hotel and restaurants .....	8	5
Transportation .....	7	4
Financial services .....	5	3
Business services .....	18	11
<b>Public services</b> .....	<b>50</b>	<b>29</b>
General administration and defense .....	12	7
Education .....	11	6
Health and social work .....	27	16
<b>Total</b> .....	<b>170</b>	<b>100</b>

Source: Groningen Growth and Development Centre, <http://www.ggdc.net>.

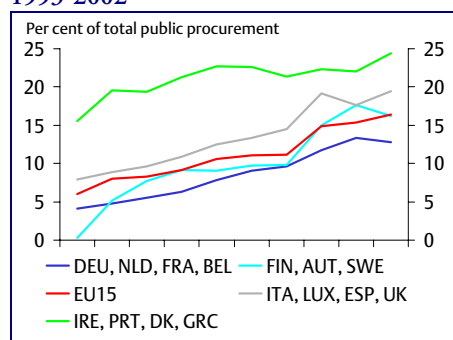
The remaining sectors where trade so far has been relatively limited are more difficult to address and are in fact very often linked to the production of services either fully or partly subsidised by the public sector (the public sector accounts for 40 per cent of the service sector). For sectors such as construction, education, health and social services potential opening up for more competition between Member States implies: 1) increased mobility of workers combined with perhaps more mutual recognition of professional competences and service standards and 2) outsourcing actual production to other countries and, in some cases, with reimbursement of costs for the client/customer as the necessary condition for effective competition<sup>2</sup>. The issue of education and research in an internal market context will be further elaborated in section 5 on “The Knowledge Based Economy”.

<sup>2</sup> The European Court of Justice ruled against German health insurance rules in 2004. The German insurance fund would not pay for travel expenses in a specific case where a patient was treated in Italy. This is in contravention of Article 49 of the treaty, on freedom to provide services.

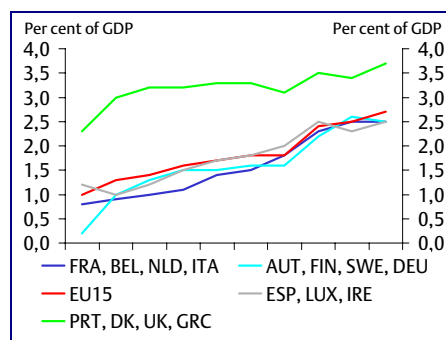
### Public procurement

There has been a considerable growth in outsourcing of public procurements since 1993, but the ratio is still very low and suggests non-transparent and discriminatory bidding procedures. Countries like Ireland, Portugal, Denmark and Greece are publishing more of the public procurements than the other EU-countries over time, *cf. figure 3.3a*. In per cent of GDP, Portugal, Denmark, Greece and UK publish more than 3.5 per cent of GDP. Their procurement level has, though, been rather stable in recent years. The rest of the EU-15 countries are publishing about the same amount of procurements in per cent of GDP with a rising tendency since 1993 *cf. figure 3.3b*.

**Figure 3.3a. Published public procurement as per cent of total procurement, 1993-2002**



**Figure 3.3b. Published public procurement as per cent of GDP, 1993-2002**



Source: Eurostat.

Based on available statistics only 18 per cent of the value of total procurement equal to 2.8 per cent of GDP, is advertised throughout the EU in 2002.

Member States could make more use of the established network of contracting authorities in EU countries, applicant countries, and the EEA and Switzerland, thus covering the European market. The network has two main functions: to grant practical assistance to companies confronting barriers tendering in a second country, and to facilitate exchange of experience and best practice among contracting authorities. This will afford companies improved scope for free and fair competition in public procurement.

An exchange of ideas between EU countries could produce simple and pragmatic tendering methods and models, which can be applied to complex and standard services alike. These models should be freely and easily accessi-

ble to suppliers and companies, focus on reducing the time and costs involved in submitting tenders, and reduce associated bureaucracy.

### **General competition policies and state aid**

The key objective of competition policy is to prevent enterprises from exploiting market power – typically large market shares – to the detriment of consumers and other firms. Such abuse can take numerous forms, for example: keeping prices artificially low to sanction new firms that try to enter a market (predatory pricing), refusal to supply components to competitors (exclusive supply and distribution contracts), price agreements between firms in the same industry that keep prices artificially high (cartels) etc.

To improve the effectiveness of competition policies it is necessary in line with the BEPG to have: 1) adequate legal instruments to tackle such abuse and 2) necessary manpower and independence from political pressure to be able to use these instruments where appropriate.

Most Member States have strengthened their competition laws and furthermore established competition councils. A vast majority of Member States have also established independent institutions that can act decisively in the case of potential abuse, *cf. box 3.2*. Many Member States have also in recent years given more investigative power to the competition authorities and given them the possibility to use sharper sanctions.

**Box 3.2. Competition authorities**

	<b>Independency</b>
Austria.....	Yes, since 2002
Belgium.....	Yes
Czech Republic.....	Yes, since 1996
Cyprus.....	Yes
Denmark.....	Yes
Estonia.....	No
Finland.....	Yes
France.....	Yes
Germany.....	Yes
Greece.....	No
Hungary.....	Yes
Ireland.....	No
Italy.....	Yes
Latvia.....	No
Lithuania.....	Yes, since 1999
Luxembourg.....	No (reform is under way)
Malta.....	No
Netherlands.....	Yes, since 2001
Poland.....	No information
Portugal.....	Yes, since 2003
Slovakia.....	Yes
Slovenia.....	Yes
Spain.....	No
Sweden.....	No
UK.....	Yes, since 2003

Source: Cardiff Reports (2004) and own research.

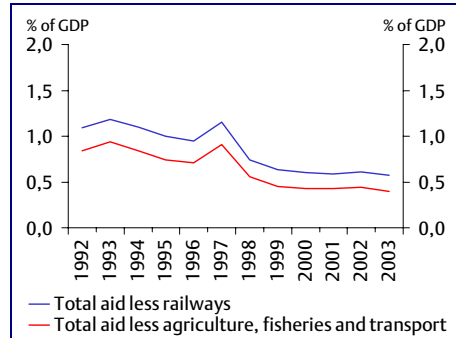
In addition to become more independent, the fact that the referral of cases to political confirmation has been either eliminated or curtailed also implies that the decision making process has been fastened.

The present pattern of state aid in EU weakens competition. Too much aid has as its main consequence that ailing firms can postpone needed adjustments to face competition from other firms, including new entrants, which weakens productivity and innovation and consumes public resources, which could be put to better use.

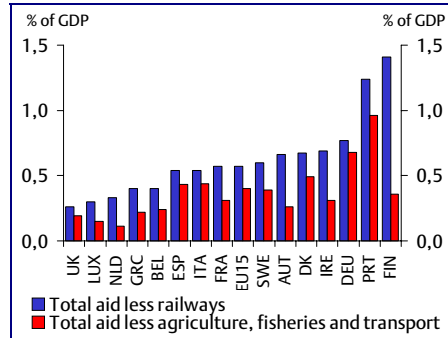
Recognising this, Member States have tended to reduce the selective – and the most distorting state aid – to specific industries and firms in trouble while keeping more horizontal aid roughly unchanged in line with the general thrust of BEPG on state aid, *cf. figure 3.4.a-d*. By horizontal objectives are (typically) meant support to R&D and innovation, small and medium sized enterprises, the environment and regional economic development.

The current review of state aid rules could be used to improve further the effectiveness of state aid in the EU. Three points are essential. First, continued vigilance in preventing state aid being used mainly to postpone a needed adjustment process for specific firms and industries. The emphasis should be to have labour market institutions flexible enough to help reduce adjustment costs including, where appropriate, publicly co-funded retraining programmes imbedded in a general framework of active labour policies which could help workers get *new* jobs in *new* firms and industries.

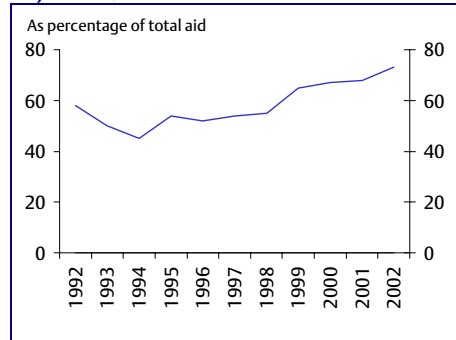
**Figure 3.4a. EU15 level of state aid, per cent of GDP, 1992-2003**



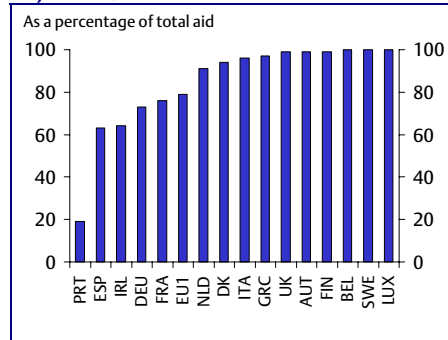
**Figure 3.4b. State aid in Member States, 2003**



**Figure 3.4c. EU15 state aid to horizontal objectives, 1992-2002**



**Figure 3.4d. EU15 state aid to horizontal objectives, 2002**



Notes: Total aid is less agriculture, fisheries and transport.  
 Source: European Commission (2004d) and the Commission’s online state aid scoreboard indicators.



Second, a careful examination of the case for providing horizontal aid is needed. There is case for providing support to for example innovation, but instruments need to be carefully constructed to avoid perceived market failures being replaced by expensive public failures as discussed in chapter 5 on the “Knowledge Based Economy”.

Thirdly, the enlargement should be used to a reorientation of the regional guidelines for state aid. The treaty and specific provisions of the relevant legal texts allow less prosperous regions more leeway to use state aid. Generally, the new Member States will thus have larger room for manoeuvre, while the existing Member States, all other things equal, have less.

However, if there is general agreement that production support to individual industries/firms are both distorting for trade between Member States *and* ineffective as a national/regional development tool, then it is not clear why poor regions should use such instruments. In fact, there are indications that the legal room for manoeuvre has contributed to bidding contest between Member States for mobile firms without any obvious winners apart from the firms getting the subsidies. To prevent such unheard competition aid intensities should be as low as possible.

Summing up, the enlarged EU should have in place state aid rules that are well targeted allowing essentially only: 1) measures to overcome well identified market failures in product markets that cannot better be solved by other mechanisms, and 2) concerning aid motivated by regional development or labour market concerns, more emphasis on horizontal aid mechanisms: E.g. reduced social contribution rates for *all* firms established in the region (as opposed to selective investment incentives for new jobs/firms) or *temporary* wage subsidies to help workers get jobs in *new* firms after the closure of a plant (as opposed to long-term subsidies to keep an ailing plant alive) and 3) ensure that measures are assessed by their impact on competition and effectiveness. The objective is that all new aid should be carefully analysed at an early stage, thus making the aid more effective with the least detrimental effects on competition. Furthermore it is also important to encourage the use of ex-post assessments. Experience from ex post assessments can lead to some general conclusions as well as a general methodology that will be useful in future ex ante analyses.

### **Network industries**

Reforms of the regulatory framework for network industries (telecommunication, electricity, gas, post and railway) have expanded competition signifi-

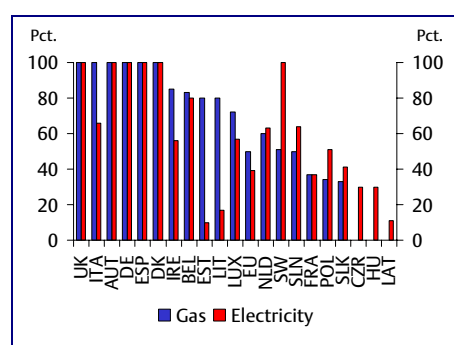
cantly. Where possible, network industries have been or are in the process of opening up to competition.

Although the reliance on market mechanisms has increased over the past decades, regulations continue to hinder and distort market forces in many sectors with detrimental effects on economic performance.

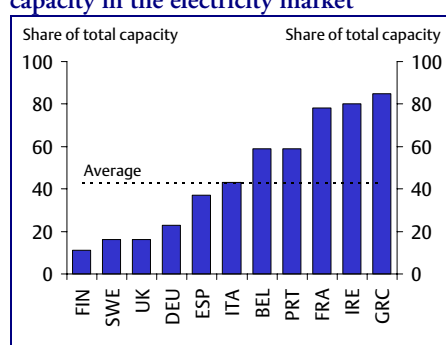
There has been progress in developing a successful framework for competition in the energy sector<sup>3</sup>, *cf. figure 3.5a*. The gas sector, however, is somewhat behind the electricity sector as regards competition. Especially the new Member States face a big task the coming years in opening up their markets.

A key barrier in the two sectors could be the continuing dominance of the incumbent companies, *cf. figure 3.5b*. This makes it even more important to remove barriers to trade between countries to allow non-domestic firms to enter markets with very dominant players.

**Figure 3.5a. Declared market opening**



**Figure 3.5b. Biggest generator's share of capacity in the electricity market**



Source: European Commission (2004e).

Even though the liberalisation process has been more difficult than expected, market opening has been extended for both sectors. This has been assisted by “unbundling”, i.e. splitting up vertically integrated firms into different parts to allow for more competition in the areas with little or no natural monopoly. The majority of countries have though opted for the least ambitious/lowest level of unbundling and entry conditions for new firms continue to be difficult in many countries, suggesting further room for liberalisation of energy markets in terms of management and ownership issues, *cf. box 3.3*.

<sup>3</sup> Member States committed themselves in 2003 to fully open the energy markets by 1<sup>st</sup>. July 2004 for business customers and by 1<sup>st</sup>. July 2007 for households.

**Box 3.3. Liberalisation of energy markets**

Unbundling refers to the act or process of separating a vertically integrated utility into its functional component parts. This separation is accomplished either by the sale of divisions of a company or by restructuring these divisions into independent commercial entities. This unbundling process minimises distortions in a single European electricity and gas market, by ensuring transparent and non-discriminatory terms of transmission access for third parties and curtailing the risks of cross-subsidisation of the generation and supply activities of incumbents.

Unbundling of accounts is the weakest form of unbundling, whereby the integrated companies are required to publish separate balance sheets and profit and loss accounts for each of their activities, therefore getting the lowest grade “1” below. Full ownership unbundling, on the other hand, is the strongest, whereby assets of the integrated company are divided up between several newly-formed, legal entities which do not have significant common ownership, management, nor control of operations, therefore getting the highest grade “4” below.

It seems that the unbundling process is a bit ahead in the electricity sector compared with the gas sector. When comparing countries, there does not seem to be a specific pattern.

	-----Electricity-----		-----Gas-----	
	Unbundling transmission system operator <sup>1</sup>	Balancing conditions favourable to entry	Unbundling transmission system operator <sup>1</sup>	Balancing conditions favourable to entry
UK	1	Yes	1	Yes
ESP	1	Yes	2	Yes
NLD	1	Yes	3	Moderate
LIT	1	Moderate	4	No info
SWE	1	Yes	4	Moderate
ITA	1-2	Moderate	2	Yes
DK	2	Yes	1	Yes
AUT	2	Yes	2	Yes
BEL	2	No	2	Moderate
LAT	2	No info	2	No info
SLK	2	Moderate	2	No info
DEU	2	No	3	No
CZR	2	No	4	No info
SLN	2	No	4	No info
IRE	2-3	Moderate	3	Yes
FRA	3	Moderate	4	Moderate
POL	3	Moderate	4	No info
HUN	4	Moderate	2	No info
LUX	4	No	3	Moderate
EST	4	No	none	No info

Note: 1) 1=ownership, 2=legal, 3=management and 4=accounts.

Source: European Commission (2004d).

By and large, prices have fallen and consumer choices have increased. Combined with technological developments, market opening has brought down prices for national telephone calls by 50 per cent since 1998, and those for international calls by 40 per cent<sup>4</sup>.

In the energy sector, however, it seems that prices have not converged as expected. The prices were slightly falling in the 1990s but since then they have either been stable or rising, cf. figure 3.6a+c. Looking at country data, the data shows that prices still differ between Member States, where the largest disparities are found in the electricity prices, cf. figure 3.6b+d.

Figure 3.6a. EU electricity prices, 1996-2002      Figure 3.6b. EU electricity prices, 2002

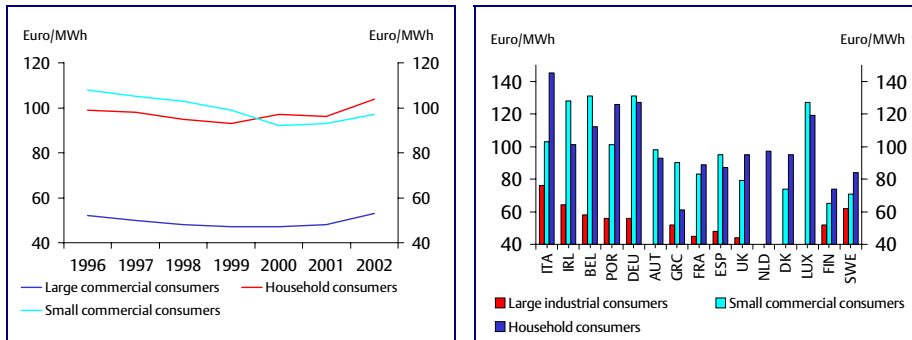
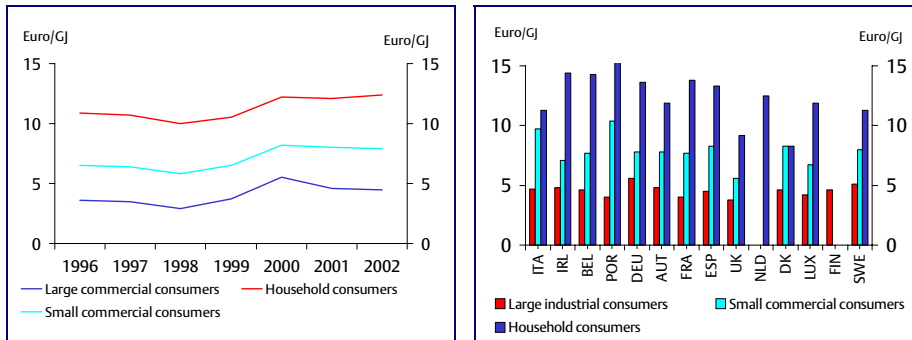


Figure 3.6c. EU gas retail prices, 1996-2002      Figure 3.6d. EU gas retail prices, 2002



Notes: Prices are current and exclude VAT and other energy taxes.  
 Source: European Commission (2004d).

Further progress in ensuring effective competition and exploitation of economics of scale would benefit from: 1) improved conditions for cross border

<sup>4</sup> European Commission (2002).

exchanges and 2) a coherent tariffication and capacity allocation process at EU level. It is furthermore important that the directives in the Internal Market are correctly implemented and effectively applied in practice.

### Box 3.4. Year of opening up telecommunication, postal and railway

	Telecommunication	Postal	Railway
AUT	1999	Derogation	No information
BEL	1998	Open	Derogation
CZR	2001	State-owned company operates 95 pct. of the market	Steps taken in 1994 to liberalise the market. In 2003 more than 90 pct. is still provided by a state-owned company
CPR	2002	2002	No information
DK	Open	Derogation	Transport of goods is fully liberalised. Transport of passengers not fully liberalised
EST	2001	No information	No information
FIN	1994	1994	Derogation
FRA	1998	1999	2003
DEU	Open	Gradually opened in 1998	In 2002 there were a total of 313 public railway companies
GRC	2001	No information	No information
HUN	Open	Derogation	Derogation
IRE	Derogation	2002	No information
ITA	Open	Derogation	Open
LAT	2003	Open but almost monopoly	Open
LIT	2003	2002	No information
LUX	1999	Derogation	No information
MAL	2000	Derogation	No information
NLD	1998	Derogation	Beginning to open up
POL	2002	No information	Derogation
PRT	2000	Derogation	Derogation
SLK	Derogation	No information	Derogation
SLN	Derogation	Derogation	Rail freight liberalised
ESP	Open	Derogation	2003
SWE	Open	Derogation	Derogation
UK	Open	2003	No information

Note: When possible the year of opening up is mentioned. The year does not correspond to the year from when the market is fully liberalised but to the year the market started to open up for competition.

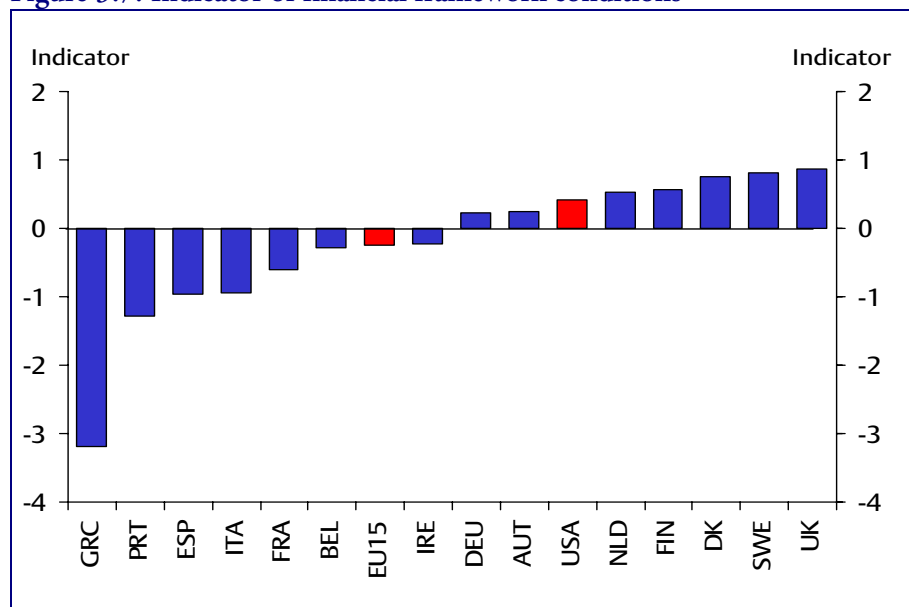
Source: Cardiff reports.

Regarding other network industries, liberalisation is far more progressed in telecommunications than in postal services and in particular railways, *cf. box 3.4*. This reflects partly technology factors, which have substantially helped creating the foundation for more competition in the first sector and partly that public concerns to ensure equal access to and (relatively) equal prices for all consumers have been more of a concern in postal services and public transportation.

### **Financial markets**

A large number of studies suggest that legal and accounting reforms which strengthen general transparency, creditor and shareholder rights, contract enforcement and accounting practices can improve the capability of financial markets to do its job i.e. allocate savings to the firms and households who can make the most efficient and innovative use of the funds at the lowest costs.

Financial sector regulations have in the past created different playing fields for the European financial service providers, creating of barriers between various segments of the financial system. These barriers internally in Member States have been compounded by barriers between Member States due to differences in regulations, standards etc. A study from the late 1990s suggested that a wide variety of Member States had less favourable financial conditions than the more unified financial structure in the US, but also considerable differences within Member States, *cf. figure 3.7*.

**Figure 3.7. Indicator of financial framework conditions**

Notes: The indicator covers a collective set of financial framework conditions; enforcement, transparency, shareholder, and creditor rights.  
The lower the indicator, the worse are the conditions.

Source: Leahy et al. (2001).

The scope for further gains from reforms is underlined by other more recent studies. Estimates based upon conditions prevailing around 2000 indicate that pooling national bond and equity markets would raise the level of EU-wide GDP by 1.1<sup>5</sup> and manufacturing productivity could increase by close to 1 per cent if US financial condition were in place<sup>6</sup>. The study also points out that the degree of financial development continued to differ substantially across EU countries despite its progress towards integrating national financial markets. This gives EU the opportunity to raise the performance of its economies by moving closer to the benchmark of the most-advanced-country.

Since the late 1990s, both policy reforms and market/technology driven trends have led to profound improvements in financial markets in EU. The creation of the European Monetary Union and thus a common currency for a very substantial part of EU and moves towards an efficient and Single

<sup>5</sup> London Economics (2002).

<sup>6</sup> Giannetti et al. (2002).

Market for financial services through the Financial Services Action Plan (FSAP) and Risk Capital Action Plan (RCAP) are arguably the most important regulatory and institutional stimuli for change.

Removing or reducing regulatory barriers is a high priority and progress has been achieved<sup>7</sup>. Prudential regulation has limited the ability of institutional investors to invest in private firms not listed on major stock exchanges; some Member States have concordantly eased such constraints without compromising the underlying objectives.

Government can also by “working with the market mechanism” help market participants to understand and price risks appropriately, thus expanding the supply of capital to SMEs. A number of measures at the community and national level are undertaken with this perspective in mind.

Most Member States as well as the community are also providing more financial support to venture capital mechanism etc. Two issues are important here. First, such instruments should be horizontal and not targeted to specific sectors (i.e. in conformity with EU state rules). Secondly, it is not an easy task to overcome the so-called market failures in financial markets with public instruments to support innovation and R&D as discussed in chapter 5 on the “Knowledge Based Economy”.

### Regulatory framework

Public regulation such as laws and statutes that require specific qualifications, certificates, control of production methods and contents of goods etc. are typically put in place to serve public interests such as safety and health but can have major influence on the competitive conditions in the market they regulate and typically impose costs on businesses.

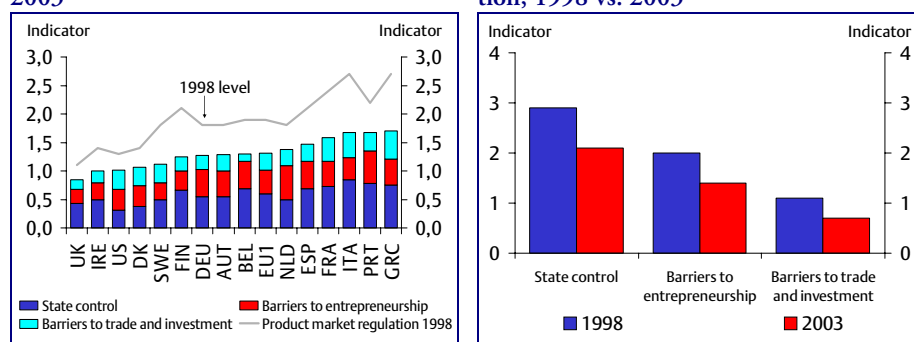
Historically, the EU has had a more regulated market than USA but there are differences between the EU-countries. United Kingdom and Ireland are characterised by a low level of regulation whereas countries like Italy, Greece and France are the most regulated markets, *cf. figure 3.8a*. Comparing regulation over time all countries have been able to lower the regulations affecting the product market. Especially Finland and Italy have lowered their regulations significantly. There seems to have been an across the board improvement in regulatory quality in various areas with less undue state interference and fewer barriers to entrepreneurship, trade and investment, *cf. figure 3.8b*.

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<sup>7</sup> Overviews of SME finance issues in a policy perspective are contained in OECD (2004e) and European Commission (2003b).



**Figure 3.8a. Product market regulation, 2003** **Figure 3.8b. EU15 product market regulation, 1998 vs. 2003**



Source: OECD (2004b).

The importance of the issue has been highlighted by studies suggesting that the gross costs of administrative burdens<sup>8</sup> are between 2 and 4 per cent of GDP in Netherlands, Belgium and Denmark<sup>9</sup>. By reducing these administrative burdens, the costs to businesses can be lowered and thereby improve the business environment, which eventually could have a positive impact on GDP.

Because of the importance of being able to measure the administrative burden the Irish, Dutch, Luxembourg and British presidencies have agreed on a joint initiative to prioritise regulatory reform over the course 2004-2005. The Commission has therefore committed itself to develop, in cooperation with the Council, a method to measure the administrative burden on businesses.

### Conclusions on BEPG on product and Capital markets

- The BEPG's on product markets seem on the whole right. The main problems are implementation and uneven progress of market opening and improved regulation in Member States.
- Despite repeated efforts to step up implementation of internal market directives, there continues to be a considerable back log which is a joint European problem given the cross border implications.
- Services are a candidate for market opening going beyond the considerable efforts under way or accomplished for network and financial services.

<sup>8</sup> The EPC defines the administrative burden as "the costs arising from the reporting and information obligations resulting from the legislations and regulations that apply to businesses." European Commission (2004f).

<sup>9</sup> European Commission (2004f).

It is an area where a number of legitimate public concerns need to be addressed. This should not though be an obstacle to some progress.

- The current review of state aid policies should be used as an occasion to ensure that state aid is limited to the extent possible to correcting for well-identified market failures. Instruments to improve performance in less prosperous regions should be more horizontal.
- In addition to continued emphasis on implementing the Financial Services Action Plan to create a fully internal market in this sector, Member States should screen for regulatory/legislative barriers that reduces the supply of capital to innovative firms.
- Efficient regulation of network industries in the future may require more focus on co-operation between regulatory authorities as well as more direct joint regulation to ensure a truly internal market.
- Regulatory costs emanating from EU and national regulation must be more adequately addressed i.e. existing as well as new regulation must be better assessed in terms of its costs and benefits for consumers and enterprises. For existing legislation, priority areas should be selected based upon prior identification of their potential for improvements.



## 4. Knowledge Based Economy

The lack of apparent innovative capacity vis-à-vis US in conjunction with *perceived* weaker productivity performance as discussed in chapter 5 on “US as a benchmark for growth”, has been the perhaps most important factor behind the focus on strengthening the *knowledge-based economy*.

The central tenets of the BEPGs are to promote primarily private investment in knowledge to make progress in getting R&D investments closer to the 3 per cent of GDP objective and encouraging innovation more broadly by:

- Improving framework conditions in product, capital and labour markets.
- Reforming governance structures to enhance the quality and effectiveness of public research and educational institutions and their ability to co-operate with private partners also with the view to increase the diffusion of knowledge, in particular to SMEs.
- Increasing the supply and mobility – also between Member States – of knowledge workers.

The first recommendation is very central and relates to the discussion on the previous pages on BEPG on these areas. The following discussion will focus on the remaining issues.

**Box 4.1. BEPG on a knowledge-based economy**

*Guideline n°7. To increase and improve investment in R&D, in particular by private business*, the overall objective for 2010 of 3% of GDP is confirmed with an adequate split between private and public investments, Member States will define specific intermediate levels. Member States should further develop a mix of measures appropriate to foster R&D, in particular business R&D, through; 1. improved framework conditions and ensuring that companies operate in a sufficiently competitive and attractive environment; 2. more effective and efficient public expenditure on R&D and developing PPPs; 3. developing and strengthening centres of excellence of educational and research institutions in Member States, as well as creating new ones where appropriate, and improving the cooperation and transfer of technologies between public research institute and private enterprises; 4. developing and making better use of incentives to leverage private R&D; 5. modernising the management of research institutions and universities; 6. ensuring a sufficient supply of qualified researchers by attracting more students into scientific, technical and engineering disciplines and enhancing the career development and the European, international as well as intersectoral mobility of researchers and development personnel.

*Guideline n°8. To facilitate all forms of innovation*, Member States should focus on: 1. improvements in innovation support services, in particular for dissemination and technology transfer; 2. the creation and development of innovation poles, networks and incubators bringing together universities, research institution and enterprises, including at regional and local level, helping to bridge the technology gap between regions; 3. the encouragement of cross-border knowledge transfer, including from foreign direct investment; 4. encouraging public procurement of innovative products and services; 5. better access to domestic and international finance, and 6. efficient and affordable means to enforce intellectual property rights.

**RDI-performance and supply of innovation workers**

A broad group of indicators convey as a whole the strong message that the innovation capacity of the US economy is well above the EU15-level:

- Despite an increase in the number of patents per million of inhabitants of 30 per cent since the early 1990s in the EU15, the US number exceeds the EU15-level with 1/3; the relative gap has though declined over the 1990s, *cf. figure 4.1a*. Only the Netherlands, Germany, Sweden and Finland outperform the US, *cf. figure 4.1b*.
- In 1991, the number of scientific publications per inhabitant was double as high in the US as in EU15 and 3 times higher than in Japan. Since then the picture has changed. From the mid 1990s there has been a downward absolute trend in the US while both EU15 and Japan have scored notable progress over the period, *cf. figure 4.1c*. Sweden, Finland, Denmark, United Kingdom and the Netherlands have a higher level of publications than the US, *cf. figure 4.1d*.

- In terms of other scientists citing their work US scientists outperform EU15 and Japan by broadly the same proportion as the relative production of scientific publications. There has been no relative change since the early 1990s indicating that the quality of articles in EU15 may not have progressed at the same relative rate as the number of publications, *cf. figure 4.1e.*
- The number of tertiary level graduates in US is well above all EU15 countries, *cf. figure 4.1f.*
- US has not only more researchers employed in the economy, but also the split between different sectors is manifestly different: while the number of public sector and higher education researchers per person in the work force in US is slightly below the EU15-level it is more than 2 times higher in the US business enterprise sector, *cf. figure 4.1g and h.*

Figure 4.1a. Number of patents

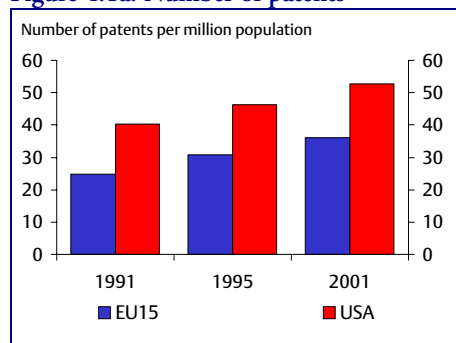


Figure 4.1b. Number of patents

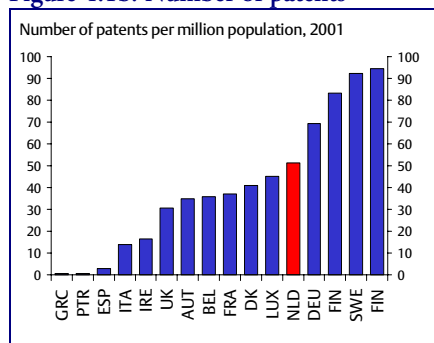


Figure 4.1c. Scientific publications

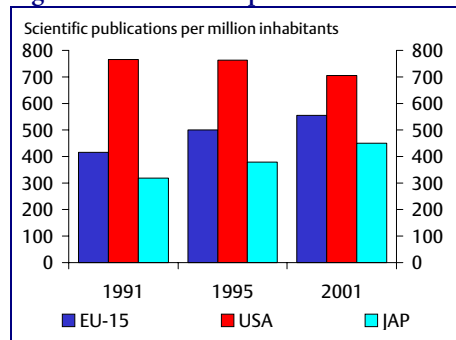


Figure 4.1d. Scientific publications

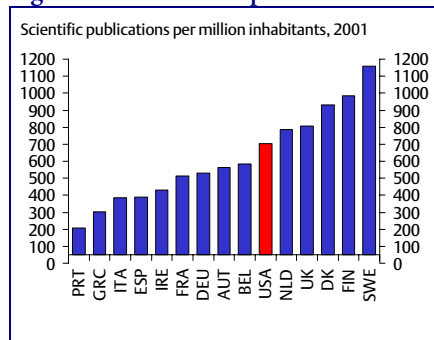


Figure 4.1e. Citations of scientific literature

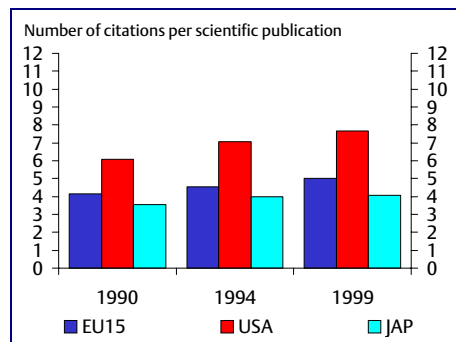
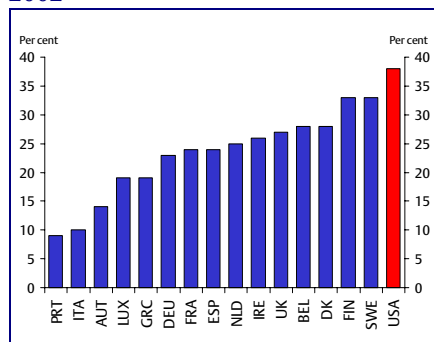
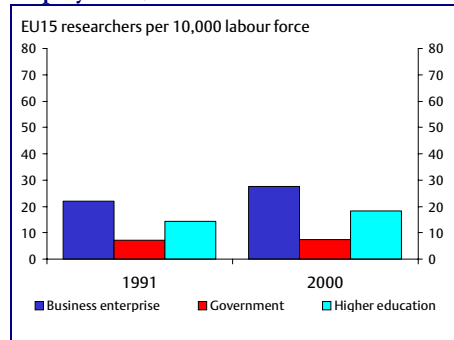


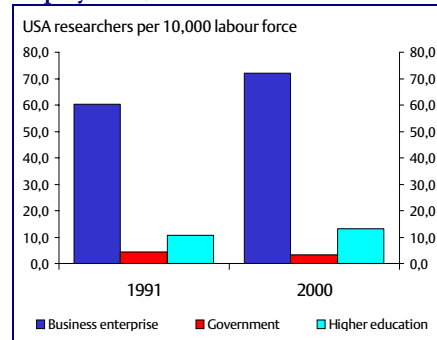
Figure 4.1f. Share of tertiary level graduates in the population (age 25 –64 year), 2002



**Figure 4.1g. Researchers per sector of employment, EU15**



**Figure 4.1h. Researchers per sector of employment, USA**



Notes: In panel a and b, the number of patents is "triadic"\* patent families per million population per inventor's country of residence.

\* Patents filed all together to the EPO, the USPTO and the JPO to protect a single invention.

In panel c and d, data for number of scientific publications may vary between analyses following different classifications of journals.

In panel e, citations are defined as citations by scientific papers to scientific literature. Geography refers to cited region. Citations are on the basis of a three-year window with a two-year lag; for example, 1999 citation counts are articles published in 1999 citing articles published in 1995-97.

Source: OECD Science, Technology and Industry Outlook 2004 (and 2003), OECD Main Science and Technology indicators 2004-2, OECD Education at a Glance 2004, National Science Foundation, Science and Engineering Indicators 2004 and Eurostat.

### Spending on R&D

US spends close to 3 per cent on R&D while the share of GDP in EU15 for the latest available year (2002) is just 2 per cent and has remained almost flat over the 1990s, though with a slight increase since the mid 1990s, *cf. figure 4.2a and b.*



Figure 4.2a. R&D expenditure in EU15 by source of finance (GERD), 1990-2002

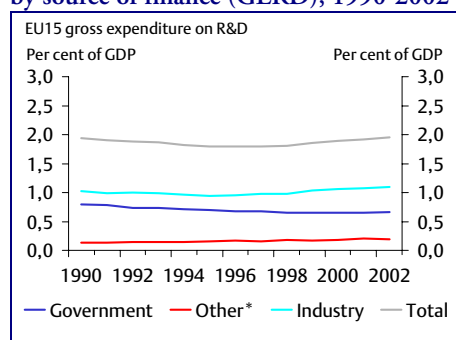


Figure 4.2b. R&D expenditure in USA by source of finance (GERD), 1990-2002

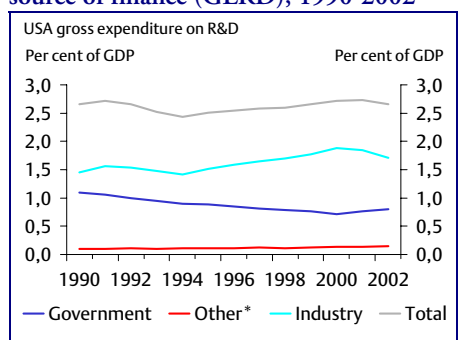


Figure 4.2c. Investments in knowledge EU15 vs. USA, 2001

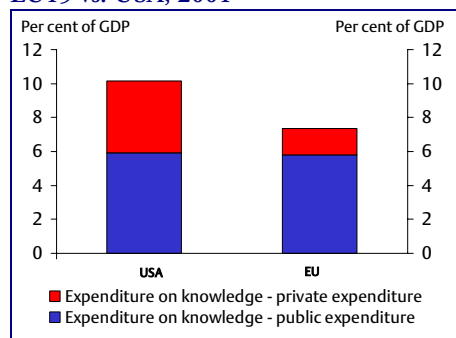
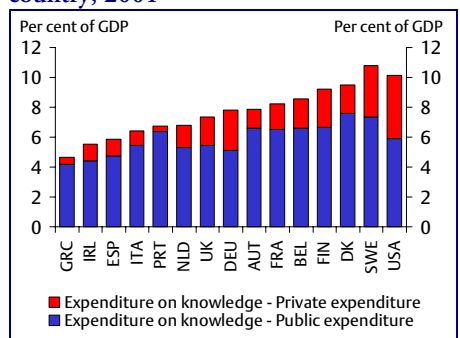


Figure 4.2d. Investments in knowledge by country, 2001



Notes: \*"Other" includes R&D financed by other private or public national and international sources.

Knowledge includes spending on R&D and all levels of education.

Source: OECD, Eurostat and own calculations.

The difference between the two regions is entirely explained by higher private sector spending in the US, as public spending in both regions equalled roughly 0.7 per cent of GDP in 2002. US government spending on R&D as a share of GDP has declined since the early 1990s while the decline in EU15 has been much smaller.

The same picture emerges if spending on education is included, *cf. figure 4.2c*. In terms of *total* knowledge expenditure Sweden spends more than the US while almost all EU15 have higher *public* spending on education and research combined as a share of GDP when comparing with the US, *cf. figure 4.2d*.

### The role of budgetary support for R&D

There is a good economic case for a certain level of public budgetary support for R&D. Firms that engage in R&D activities typically cannot capture all the benefits through for example patents or employment contracts which prevent researchers and their new employer from capitalising on the knowledge build-up in the former job. In other words, R&D may lead to benefits for others than those who finance the costs (*externalities*).

Even when full appropriation of benefits by the financer is feasible it may not be the best solution for society as the marginal social costs of using the information (after research expenses have been incurred) may well be small, but the benefits large. So patents may impose a too high price on the use of existing knowledge.

Furthermore, it can be difficult to get private funding for very basic research: both the timing and magnitude of benefits may be highly *uncertain*. Moreover, there may be no strong a-priori knowledge about who will benefit from it and how. Under these conditions, it may be very difficult even for a broad group of private investors to provide financing.

These externality and uncertainty arguments are prime reasons for direct government budget support to R&D and potentially innovation. Perceived financial market failures have often been put forward as other arguments but they are substantially weaker, in particular after a long period of reform in financial markets, *cf. box 4.1*.

#### Box 4.1. Financial market failures as arguments for public spending on research, development and innovation

A traditional, but in general not entirely convincing argument for public financing is “information asymmetry”. The argument is that the innovator/firm has strong and well-identified reasons to believe that a project is viable, but financial institutions – due to lack of trust and weak understanding of the information supplied – refuse financing. It is inherent that the proponent of a specific project has more knowledge about the specific project, though not necessarily the marketing potential, than outsiders. However, it is not clear how this “asymmetry of information” can be overcome by letting the banker be replaced by a government controlled allocation mechanism.

A second potential argument is that individual projects have a well-identified market potential but with a wide margin for the expected return. This may imply that firms with a weak/small capital base – for example SMEs – may not undertake a project despite an expected above-average return. However, if a firm will not fund itself a risky, but potentially highly profitable project, it should go to the financial markets to share the risk with numberless other projects. Financial markets may have problems understanding the project and giving it due credit for its value, but that is a separate problem also facing any government controlling financing mechanisms, as argued above.

But both of the above arguments do suggest that government regulation in the field of financial markets should be careful not to put in place unwarranted barriers that raise the cost of, or reduce the amount of capital that would otherwise flow to (often small) innovative firms that will have to rely on external capital, a key point also discussed in chapter 3.

Given the scale of financial market reforms over the last decade the expectation must be that the merit of “financial market” failure as a case for public budgetary support has fallen substantially.

While there is a good case for the government to produce and/or subsidise R&D there is de facto extreme uncertainty related to the net benefits of *incremental* changes of budgetary support. This is due to basic factors above the nature of research as well as nearly insurmountable methodological problems linked to estimating benefits.

The essential problems are the following:

- When a government subsidises/produces research there will be some crowding out of other innovation efforts, *cf. box 4.2*: highly qualified innovation workers will (always) be employed irrespective of public funding or not.
- Higher spending may over time induce “production” of more innovation workers, but certainly with falling returns (limited amount of “clever” people and good research projects).

- If the basic argument for public funding is uncertainty above a range of issues related to the benefits of the research then clearly it is difficult ex post, but even more so ex ante, to identify the size of benefits.
- All government budgetary instruments imply higher taxes or a lost opportunity to cut taxes. Thus, the gross benefits from increased research must be set against the higher distortions from higher tax rates. The distortionary costs will be amplified by the fact that it is very difficult, not to say impossible, to construct instruments that do not imply funding for projects that would have been undertaken in the absence of higher subsidies.

#### Box 4.2 How much does public funding crowd out private RDI?

The basic question is to what extent increased public support for RDI crowd out other RD(I) activities:

- Does the support lead to employment of a researcher in a public/privat research project who would have carried out research, development or innovation activities somewhere else in the economy with potentially equal externalities?
- Some private companies may stop financing specific research because the government is now paying for it.

These issues have dealt with in a number of studies focusing either on the firm level, the industry level or the macro level.

At the firm/industry level the method is to review whether higher government support to the firm/industry is accompanied by lower own-financed research relative to some base year. While the available evidence in general points to less than full crowding out there are some methodological problems.

First of all there is a significant probability that both private and public institutions will, at the same time, identify the same new scientific areas as having above average potential and, therefore, scale down their expectations and, with it, investments in other areas. Statistically, the hypothesis of a negative or weak crowding out effect will in this case be confirmed both at firm level and industry level. In addition, those industries that expand their research budgets will tend to squeeze the market for researchers and innovators in other industries. At the firm level there is, again hopefully, a chance that the firms who benefit from research funding have a better capacity for expanding its research activities relative to other firms: that is why they apply for and receive public funding (self-selection bias).

The above problems could lead to a macro approach. The macro level has the advantage of connecting the development in the total public research investments with the total private investments.

The macro level, however, introduces new problems. Both the public and private research might be determined by the same market trends, including cyclical adjustment of spending, and, most importantly, the total supply of highly qualified labour.

Given these basic problems of uncertainty and methodological problems, it is not surprising that the empirical literature, despite being highly extensive, has produced a wide range of estimates of the gross benefits from research activities with the studies themselves underlining the uncertainty argument<sup>1</sup>.

One basic result is that the return from private research is higher than public. This may well, though, reflect the fundamental problems of capturing the benefits of public research. In particular, a vast amount of public research is not intended to improve standards of living in a material sense, but to contribute to general learning, culture etc. that is likely to only have a very strenuous link with private sector innovation but which absorbs innovative resources.

If the aim is to encourage private sector innovation, a cautious overall interpretation could be:

- Remove all undue regulatory obstacles particular in the financial markets which prevent investment viable for the society as a whole from being financed before embarking upon second best solutions (in line with the suggestions in the section on financial markets in chapter 3).
- Make a clear overall assessment of the costs and benefits, taking into account the distortionary costs, including adverse effects on private RDI, from higher tax rates (or foregone tax reductions).
- Choose support areas where the ultimate benefits (over time) are likely to benefit the innovation process *and* have a high level of expected externalities. Increase in research in the public sector can potentially reduce innovation by limiting the pool of researchers and by increasing distortions from higher tax rates.
- When subsidising private research, use instruments that aim at spreading the ultimate benefits of the output beyond the firm that is directly benefiting from the support.

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<sup>1</sup> The Literature is clear on the uncertainties linked to estimates of the return on RD investment:

“Currently, we do not have the robust and reliable... tools... to state with any certainty what the benefits of additional public support might be” (Salter, 1999)”.

“The findings (the effect of public R&D on private R&D) overall are ambivalent... and the “experiment(s)” that the investigators envisage is not adequately specified” (David et al., 2000)”.

“The relationship between R&D and innovation is a complex, non-linear one” (Guellec et al., 2001)”.

- A general (non targeted) RDI investment subsidy – for example a tax credit – will also go to firms who can themselves fully capture the benefits via patents, in fact leading to potential overinvestments in some types of R&D. Moreover, the budgetary costs will be inflated by reclassification of activities towards R&D due to the preferential tax treatment implying all in all that net benefits may be negative as well as positive depending upon your choice of assumptions<sup>2</sup>.

### Governance and institutional reforms

EU15 Member States have in most recent years initiated reforms in the following areas:

- A serious and quite universal effort to *improve quality of education*. In some countries this has also been the follow-up to disappointing test scores in international and national evaluations<sup>3</sup>. Key ingredients are more autonomous management of institutions combined with more rigorous evaluation and accountability for results.
- New governance and funding structures for universities and advanced learning institutions: stronger management, more reward of excellence, review of budget allocation mechanisms, efforts to increase funding from and co-operation with the private sector, focus on patenting rights and the creation of new institutions with specific and more narrow research agendas are typical components<sup>4</sup>.
- The globalised character of advanced research and the large spill-over of positive effects between countries suggest more division of work, removing institutional and other barriers to mobility for students<sup>5</sup>, highly skilled and research workers. This has led to an intensification of the work on efforts to ensure that students and researchers also in practice can study and do research in other countries by way of increased use of mutual rec-

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<sup>2</sup> Cornet (2001).

<sup>3</sup> OECD (2003c).

<sup>4</sup> OECD(2003d) and OECD (2004c).

<sup>5</sup> A key conclusion from a recent OECD review is that “The national framework of quality assurance, accreditation and recognition of degrees is, in many cases, insufficiently geared towards addressing the quality of cross-border and private provision. This increases the risk that learners are victims of rogue degree providers (degree mills), offering low quality educational experiences and qualifications of limited value. In order to fill in this gap of the existing frameworks, OECD and UNESCO are currently working together on developing non-binding international guidelines on *Quality Provision in Cross-border Higher Education*”.

ognition of diplomas as well as move in the direction of standard certificates etc<sup>6</sup>.

- Countries are increasingly reviewing whether there may be scope for reallocation in national budgets within the areas of education, innovation and R&D. There may for example be a case for letting users pay a larger share where they capture most of the gains and can afford it, and potentially use the money to boost, for example, basic research where appropriate.
- Some countries are using specific tax schemes to be able to attract highly qualified researchers and (equally important for business developments) senior managers, a consequence of the fact that researchers are mobile and tax issues are a consideration when considering where to stay.
- All EU15 countries allow for 100 per cent deduction of research expenditure in their tax laws rather than activating the expenditure as an investment and depreciate it over the following years, which must be counted as a tax subsidy. A number of countries have introduced additional incentives<sup>7</sup>.

Examples from Member States taken from the Cardiff reports are included in *box 4.4*.

The institutional and governmental reforms have in many countries only been launched very recently and need to be pursued further in the coming years. In contrast to labour and product market reforms there are also much less clear “winner models” that can be emulated. There is a long lead-time between adopting legislation to changed behaviour in institutions and to the impact on firms’ innovative capacity which is the final objective.

This suggests that reform efforts will have to sustain over a long period and continuously be adjusted in view of results.

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<sup>6</sup> This is organised in the so-called Bologna-process. The Bologna declaration lists 6 objectives, which should lead to 1) comparable examines, 2) further and higher education at two levels, 3) a merit system that encourages mobility, 4) encouraging mobility all together, 5) co-operation concerning quality assurance and 6) a European dimension in further and higher educations.

<sup>7</sup> European Commission (2004).

#### Box 4.4. Major structural R&D changes and reforms in the EU15 countries

The reforms that have been adopted for the last 3 years have been categorized into 4 main headlines, which seem to be the main focus for the present. The year indicate when a certain reform or initiative has taken place.

	Governance	Tax incentives	Supply of researchers	Co-operation between private-public
Austria.....	2002	2002	2001	
Belgium.....		2002, 2003		
Czech Republic...	2003			
Cyprus.....	2003			
Denmark.....	2001, 2002		2002	2002, 2003
Estonia.....				2003
Finland.....				
France.....	2002	2003		
Germany.....	2002		2001	2002
Greece.....		2002		
Hungary.....	2003			
Ireland.....	2001, 2003			
Italy.....	2001, 2002, 2003		2003	2001, 2003
Latvia.....	2003			
Lithuania.....	2003			
Luxembourg.....	2002, 2003			
Malta.....				
Netherlands.....	2001, 2002			
Poland.....				
Portugal.....	2001, 2002	2002		2003
Slovakia.....				
Slovenia.....	2003			
Spain.....	2001	2001, 2002, 2003	2001	
Sweden.....	2001			2001, 2002
UK.....	2001	2001, 2002, 2003		

Source: Cardiff reports, 2002, 2003 and 2004.



### Conclusions for BEPG and national challenges

The focus on framework conditions and institutional reforms is the right one. The following improvements are suggested:

- *Numerical targets* for performance should be more focused on output and results (such as number of patents, level of private sector innovation) and supply constraints (such as expanding number of graduates in critical areas for innovation). Moreover, when evaluating progress in reaching the 3 per cent spending target more emphasis has to be put on the sectorial composition of public funding (natural sciences as opposed to social sciences etc.) due to the quite diverging expected benefits on private sector innovation.
- Strengthen the *international dimension*. Step up the work on reducing institutional and legal barriers to mobility of students, researchers and research itself within EU15 to create a truly “Internal market for knowledge”. More co-funding of projects, for example over the EU-budget, is advisable for projects where cross-border spill-over effects are significant and hence national incentives to invest may be too small. Joint financing instruments within the EU15 can also help in improving the efficiency of the allocation of research among institutions (excellence) by creating more competition for scarce funds.
- In view also of the clear *budgetary trade-offs* involved consider carefully the relative weights given in overall economic policies to general supply side measures and demand side measures. Review also scope for reallocation within educational and research budget lines to ensure that the needs to boost innovation are being solved within a framework of sound fiscal policies.

The initial structural conditions in Member States are important in defining the appropriate reforms and adjustments:

- Public spending on knowledge in EU15 is at level with and for some countries above the US-benchmark with the “deficit” in spending entirely due to private spending and almost by definition due to inferior framework conditions. The latter are also reflected in much lower production of university graduates restraining the supply of knowledge workers.
- The higher tax rates in a large number of EU15 countries, as discussed in chapter 1, also imply that the required returns from public spending in these areas must be higher than in the US to be economically viable.

- Countries lagging well behind the EU15 average in economic development may well be better off targeting funds to higher education and technology transfer than higher public spending for R&D<sup>8</sup>.

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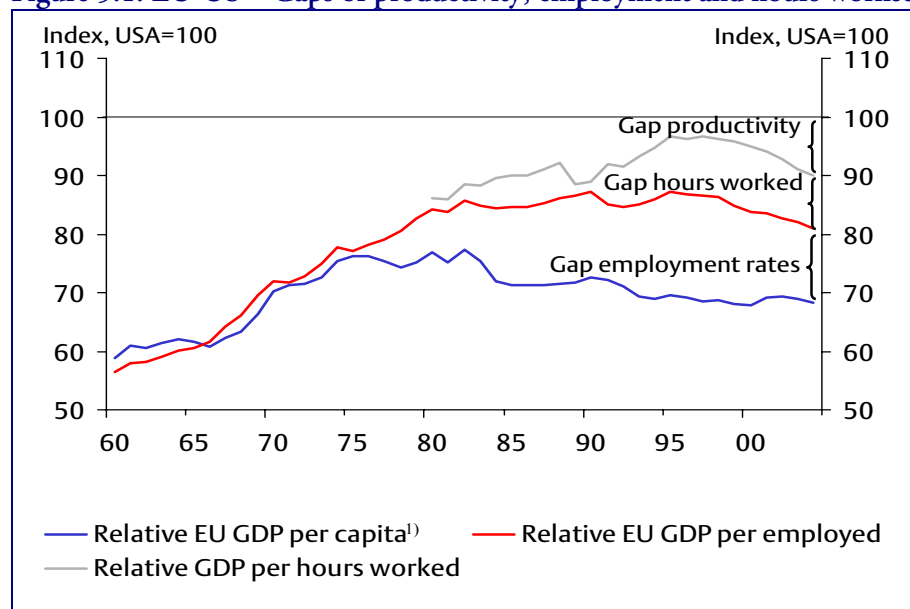
<sup>8</sup> EPC report on accession countries (2004).



## 5. US as a benchmark for growth

From 1960 to 1975, EU15 was catching up with the US, with output per capita increasing from just over 60 per cent of the US level to around 75 percent *cf. figure 5.1*. The catching-up of per capita GDP was almost exclusively driven by the larger growth in *productivity* (output per hours worked) reflecting a traditional catching-up process with EU15 being able to import technology from the world leader. For the other two components of GDP growth as a whole, *employment rates* (share of working age population in employment and *working hours* (hours worked per employed), the EU15 and US experienced broadly comparable trends.

**Figure 5.1. EU-US = Gaps of productivity, employment and hours worked**



1) Per capita in the working age population.

Source: Eurostat, Ameco Indicators, OECD, Groningen Growth and Development Centre, January 2005, <http://www.ggd.net> and own calculations.

From 1975 to 1995, the gap of GDP per capita started to widen slightly. This reflects widening gaps of both working hours and employment rates. By contrast, the gap in productivity continued to narrow.

In the period 1995 – 2004, employment rates actually grew significantly stronger in the EU15 than in the US contributing to a reduction in the gap of per capita GDP of 5 percentage points – on average ½ per cent per year – which was only marginally offset by a continued relative decline in working hours, *cf. table 5.1.*

**Table 5.1. Relative performance USA and EU15 1995-2004, decomposition of levels and changes**

	Excess growth in US, in per cent		Level of gap 2004, in per cent <sup>2)</sup>
	Whole period	Average per year	
GDP per capita <sup>1)</sup> .....	1,5	0,3	32
Of which coming from			
- Output per hour .....	5,0	0,5	10
- Employment rates .....	-4,5	-0,5	13
- Hours worked per employed .....	1	0,1	9

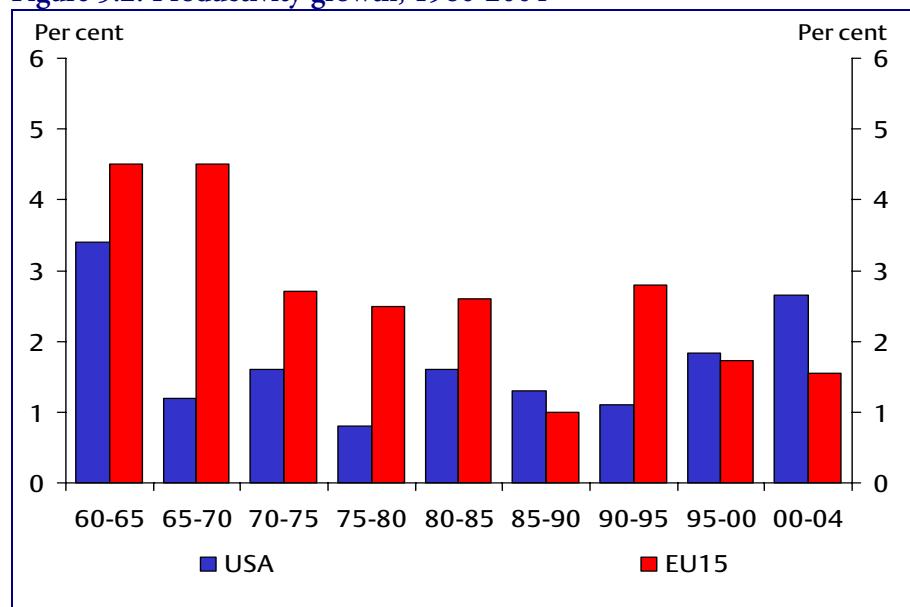
Note: 1) National account statistics. Per capita in the working age population.

2) PPS per capita.

Source: Eurostat, Ameco indicators, OECD, Groningen Growth and Development Centre, January 2005 and own calculations.

On the other hand, the productivity gap started to increase from 1995 after having fallen steadily since 1960. This reflected both that productivity growth in EU15 has been on a declining trend since its historically very good performance in 1990-1995 and that growth rates of US productivity increased from its very low levels in the early 1990s, *cf. figure 5.2.*

Figure 5.2. Productivity growth, 1960-2004



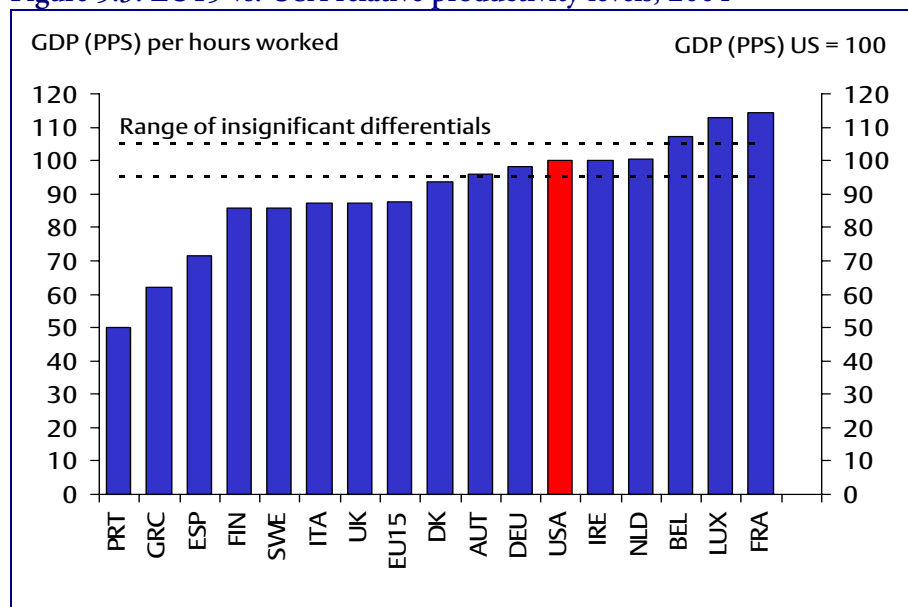
Notes: In figure 5.2 the productivity measure is GDP per person employed for 1960-1980 and GDP per hour worked 1980-2004.

As a result, the gap of GDP per capita rose marginally from 30 per cent in 1995 to 32 per cent in 2004 for EU15 as a whole. The productivity gap explains roughly 1/3 of this gap, while shorter working hours and lower employment rates account for respectively just under and just over 1/3 of the difference.

For roughly half of the EU15, there is virtually no gap of productivity with the US. Due to measurement problems, a gap should exceed 5 per cent to be statistically significant<sup>1</sup>: 3 EU15 countries have levels of productivity that are significantly higher (FR, B and LUX) while another 4 fall within the range of insignificant differentials *cf. figure 5.3*. The lower average productivity for EU15 in 2004 is very much influenced by Portugal, Greece and Spain. These three countries account for 10 per cent of employment, and all have productivity levels that are less than 70 per cent of the US.

<sup>1</sup> OECD (1999).

**Figure 5.3. EU15 vs. USA relative productivity levels, 2004**



Notes: Dotted lines represent +/- 5 per cent of USA level.

Source: Eurostat, OECD, Groningen Growth and Development Centre, January 2005, <http://www.ggd.net> and own calculations.

Source: Ameco indicators, OECD, Groningen Growth and Development Centre, Total Economy Database January 2005, <http://www.ggd.net> and own calculations.

### Factors explaining apparent lower growth of productivity

A number of factors imply that the underlying relative productivity performance of the EU15 may in fact have been as good as in the US in the period 1995 - 2004 as a whole.

#### *Statistical uncertainty and bias*

The differential of productivity growth was barely outside the range of statistical uncertainty for the period as a whole. US productivity growth relative to EU15 should exceed ½ percentage points per year to move outside the area of statistical uncertainty<sup>2</sup>, which the US has only just managed in the most recent years, as shown in figure 5.2.

In addition to general statistical uncertainty, there are some well-identified specific differences in statistical conventions that as a whole tend to inflate

<sup>2</sup> Ark (2004).

growth in the US relative to EU15. They include more use of hedonic pricing for IT-products, i.e. larger statistical upward adjustments in quality/performance and hence for any given nominal value of production a larger estimate of the volume of production and a lower level of prices. US conventions have also tended to count a larger share of software purchases as investments rather than intermediate inputs to the production. This is only partially offset by different weights used for calculation of aggregate GDP which tend to reduce relative growth rate in the US. There are partial studies showing that the net effects from these three factors could have increased the measure of relative US yearly GDP growth rate vis-à-vis EU15 in the order of  $\frac{1}{4}$  percentage point<sup>3</sup>.

*Industrial composition and terms-of-trade effects*

A larger increase in US productivity in the period 1995-2001 is due to relatively higher contributions to productivity from a small part of the whole economy, accounting for less than 20 per cent of total value added: IT-manufacturing, retail and wholesale distribution plus financial services *cf.* table 1.2.

The higher overall contribution to productivity growth from semiconductors and office machinery – accounting by itself for nearly the entire difference in the period 1995-2001 of  $\frac{3}{4}$  percentage point – is due to their larger share of total economy value added combined with the large increases in productivity these sectors continue to experience world wide. These two industries account for  $1\frac{1}{4}$  per cent of total value added in the US against  $\frac{1}{4}$  per cent in EU15. Had the US industrial structure in terms of value added prevailed also in the EU15 also, the difference in overall performance would have disappeared (last column of table 5.2).

The figures also show that measured growth in productivity in these two sectors combined was in fact higher in EU15 despite statistical methods in the EU15 that tend to show relatively lower increases in productivity levels as mentioned above and correspondingly higher increases in prices in EU15.

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<sup>3</sup> These issues are explored and partly quantified in OECD (2002b) and OECD (2003e).



**Table 5.2. The importance of industrial structure for relative overall performance of productivity, USA and EU15, 1995-2001**

	Share of value added in percent (1)		Average growth of productivity (2)		Contribution to annual productivity growth <sup>1</sup>			Difference in contribution to productivity growth in EU15	
	US	EU15	US	EU15	US	EU15	EU15	US structure of value added	US structure of value added
Semiconductors	0,9	0,1	65,1	89,8	0,6	0,1	0,8	-0,4	0,2
Office machinery	0,4	0,2	60,9	50,1	0,3	0,1	0,2	-0,2	-0,1
Other manufacturing	16,9	20,4	0,4	1,5	0,1	0,3	0,3	0,2	0,2
Retail and wholesale	12,1	9,5	7,4	1,2	0,9	0,1	0,1	-0,8	-0,8
Financial services	5,5	4,6	9,7	3,6	0,5	0,2	0,2	-0,4	-0,3
Other services	64,0	64,8	0,4	1,5	0,3	1,0	1,0	0,7	0,7
Total	100	100	2,6	1,8	2,6	1,8%	2,5	-0,8	-0,1

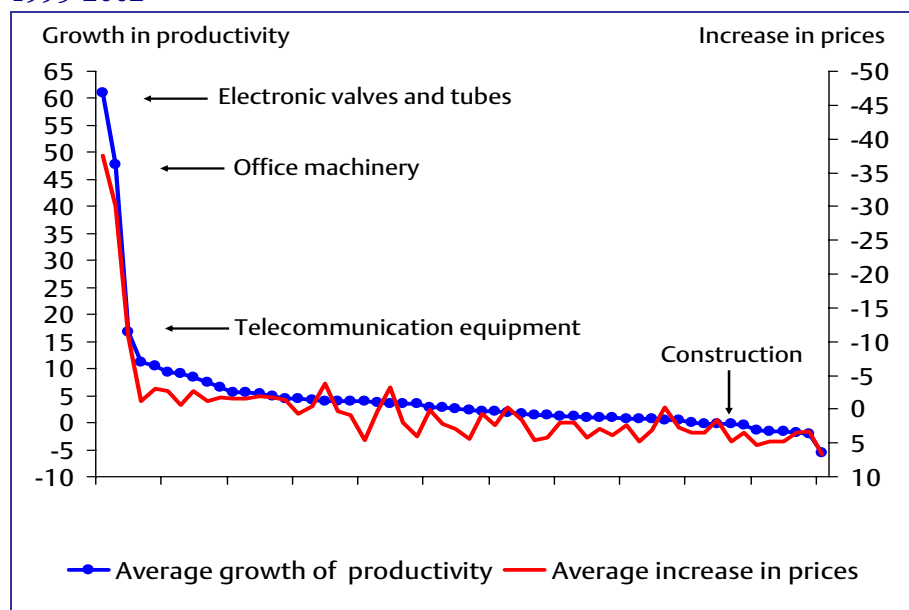
Note: Calculated as Share of value added (1) and multiplied by growth of productivity (2).

Source: Eurostat, Ameco indicators, OECD, Groningen Growth and Development Centre, January 2005 and own calculations.

The overrepresentation in these two industries with a World Wide structural capacity to engineer huge improvements in productivity is not by itself an advantage for the US as that sector continuously faces losses of terms-of-trade. An industry with a generic advantage in terms of being able to generate higher yearly productivity increases will tend to see roughly comparable lower levels of increases in sales prices as competition will ensure that margins and profitability are kept at market levels.

This general fact is well born out by the experience of the US industries in the period 1995-2001. Industries with low structural levels of productivity such as construction have been able to keep the highest level of increases in sales prices while IT-manufacturing, including telecommunications, have consistently faced double-digit yearly falls in sales prices, nearly 40 per cent for semiconductors (valves and tubes), *cf. figure 5.4*.

**Figure 5.4. Higher productivity growth means smaller increases in sales prices: Data from 60 USA industries, average yearly increases in the period 1995-2002**



Source: Eurostat, Ameco indicators, OECD, Groningen Growth and Development Centre, January 2005 and own calculations.

The structural worsening of the terms-of-trade for industries with high structural increases in productivity tends correspondingly to be translated into structural terms-of-trade losses for *countries* with overrepresentation of such sectors selling goods and services in sharp international competition<sup>4</sup>. Worsening terms-of-trade implies that a country need to sell still more domestically produced goods and services to buy a given basket of import goods and services. So if country A specialises in producing blue cheese and country B in semiconductors, the evidence is that country B will have to produce ever

<sup>4</sup> Bayomi and Haacker (2002) conclude in a cross-country study (32 countries) that the high productivity increases in IT-manufacturing essentially benefit the users and not the firms or countries producing these goods and services. The apparent benefits are larger for the US than for most EU15-countries, but that is mainly because they spend more on IT. A survey study by Nahuirs and Geurts (2004) concludes – though with considerable uncertainty – that a marginal increase in one country's level of productivity of 1 per cent will imply a worsening of the terms of trade – export prices/divided with import prices – by more than ½ per cent in the medium term and close to 1 per cent in the long term, which may also, at least partially, reflect such compositional factors.

more semiconductors to purchase the same amount of blue cheese from country A.

Singapore and Hong Kong are with very large shares of IT manufacturing are very clear examples of countries with large increases in productivity emanating from this sector while also facing substantial ongoing worsening of terms-of-trade.

#### *Retail trade and wholesale*

In retail and wholesale, the US productivity performance as measured in national accounts has been far superior to EU15 and provides, in conjunction with the contribution from IT-manufacturing, the statistical explanation for the overall higher productivity growth.

While this reflects real relative improvements, some qualitative notes of caution are required. On purely statistical measurement issues, the better US record in recent years in wholesale seems to disappear if national accounts data are replaced by data better able to take into account different pricing methods in the US. Alternative measurements of productivity increases in retailing still give US an edge, albeit of smaller magnitude<sup>5</sup>.

In the retail sector, there is strong evidence that the higher measured growth of productivity in the US largely reflects replacement of sales outlets within the same firms to larger outlets<sup>6</sup>. In conjunction with this factor, the evidence that US firms have been able to exploit IT better to reduce costs, not at least inventory costs, is arguably closely linked to the different size of distribution of outlets<sup>7</sup> in the US with the average outlet being 2-3 times larger than in the EU.

However, both the measured average of higher *level* of productivity as well as the higher *growth* of productivity in US retailing exaggerate the welfare gains associated with the US distribution model. To caricaturise: what is the wel-

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<sup>5</sup> Timmer (2005). Based partly on the same study, Blanchard (2004) also plays down the significance of the difference of productivity growth in the retail sector.

<sup>6</sup> Foster et al. (2002) conclude that within-firm closing down and opening up of new outlets account for the bulk of improvements of productivity for the retail sectors as a whole, while the Conference Board (2005) concludes that pharmacies/drugstores have seen massive reductions in market shares of sales units with few employees within the context of significant increase in the market shares of the largest firms.

<sup>7</sup> Conference Board (2005) presents estimates from Mintel Retail Intelligence that suggest that the average number of employees per outlet in the US is around 14 while it is well below 10 in all EU15-countries but UK and typically around 2-6.

fare level for the US consumer typically living in urban sprawl with large distances to shopping centres relative to European consumers who to a larger extent can shop closer to their residence (combined with shorter commuting distances)?

It is not the same product that is being sold, and hence price and productivity measurements can be more misleading than useful.

Moreover, the slower building up of large shopping centres within and outside city centres in Europe is also due to, at least partially, legitimate social choices reflected in specific restrictions/obstacles that render this building up more costly or outright impossible<sup>8</sup>.

While such regulatory barriers may not always exemplify the best possible solution to trade-offs between conflicting objectives, it does imply that relative welfare levels and gains cannot simply be equated with differences and changes in “production” costs in the retail sector.

*The effect of labour market reforms and less (relative) capital per hour*

The slightly weaker overall productivity performance may partly have been the statistical effect of the substantially higher employment rates in the EU15. Employment rates – the share of the working age population in employment – increased by roughly 5-6 percentage points from 1995 to 2004 while remaining broadly unchanged in the US. To the extent that this reflects the inclusion of alternatively non-employed persons with less than average productive capacity, it has reduced the average production per employed.

A number of European labour market reforms did explicitly target such inclusion, e.g. by lowering employer’s social security contribution for low paid workers and easing employment protection legislation for example by allowing more temporary work contracts<sup>9</sup>.

This should be seen as a welfare gain. Relative productivity for normal/higher skilled workers in the EU15 may well have kept pace with their equivalents in the US, while low skilled persons experienced higher net in-

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<sup>8</sup> There is a large literature that suggests that in particular (restrictions on) land use policies have had and have a major impact on the structure of the retail industry, one example being McKinsey (2002).

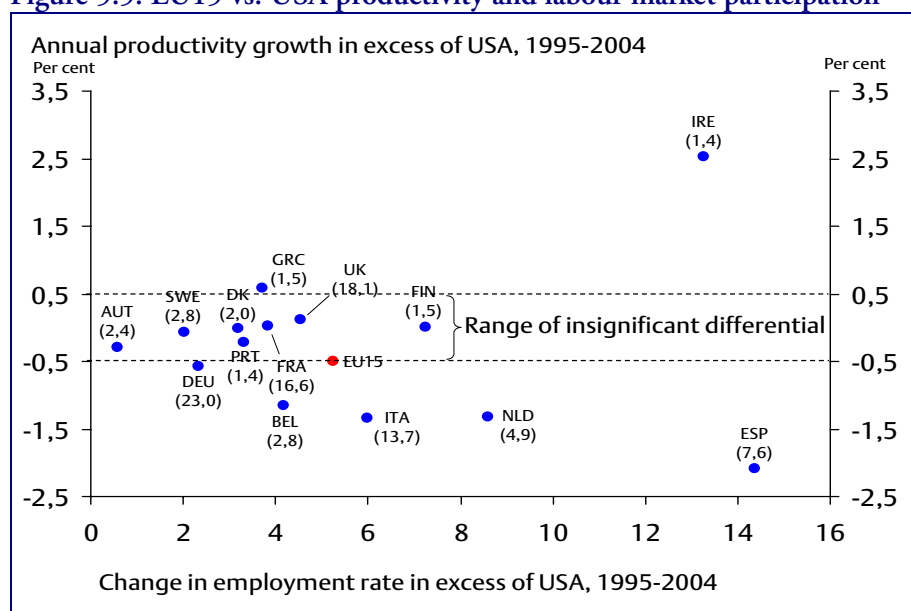
<sup>9</sup> For a formal analysis of the effects in France, see Cette (2005b).

comes. Tax payers as a whole benefitted from a larger tax base and hence, on the margin, increased room for tax cuts/less needs to raise tax rates.

The pattern of bilateral productivity performances vis-à-vis US for the EU15 countries seems to confirm this line of reasoning. For a very large group of the EU15 countries with comparable levels of GDP per hour, the differential was largely within the above-mentioned range of statistical insignificance ( $\pm 1/2$  percentage point) cf. figure 5.5. Those with highest relative growth rates tended to be countries with initially relative low *levels* of productivity (catching-up) and/or smaller increase in employment rates vis-à-vis US.

Furthermore, the entire measured differential in productivity growth can be explained statistically by Italy, the Netherlands and Spain. Together they account for 25 per cent of the EU15 labour force and they experienced particularly high growth of employment rates and at the same time the lowest increases of productivity.

**Figure 5.5. EU15 vs. USA productivity and labour market participation**



Notes: The productivity measure for employed is output per hour worked. Numbers in parenthesis refer to the given country's share of total EU15 GDP. The employment rate is share of persons aged 15-64 in employment.  
 Source: European Commission, EPC and Eurostat.

The relatively higher growth of labour productivity could also be affected by “capital thinning”. The large increase in employment rates in EU was not followed by increases in investment sufficient to prevent the capital-to-labour ratio of the EU to fall relative to the US<sup>10</sup>. In part this story cannot be disentangled from the effect of labour market reforms that tend to reduce the cost of labour in some segments of the labour market relative to capital and thus boost the relative demand for labour relative to capital<sup>11</sup>.

*Conclusions: using US as a benchmark*

- Underlying productivity growth for EU15 over the last decade is close to US levels: this is the expected outcome of the technology gap being closed during the early 1990s.
- EU15 has steadily increased employment rates since the mid 1990s providing a boost to both relative and absolute GDP per capita.

However, performance in US is still superior, using the US as a benchmark for further reform, the focus could be on the following factors.

- Employment rates remain more than 10 per cent below US levels and hours worked per employee are another 10 per cent lower than the EU15 average. Increasing living standard to the US level is therefore a *labour market* issue with a number of trade-offs involved as discussed in chapter 1.
- Further pricing in of low skilled labour to get closer to US employment rates may further widen the present productivity gap of 10 per cent. Keeping productivity growth at historical levels from the 1990s in a sustained period of time would thus require improved framework conditions for the majority of the EU15 countries with GDP per hour at par with US. Strengthened competition and improved innovation policies are likely to be the required key factors as discussed in chapters 3 and 4.

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<sup>10</sup> See for example IMF (2004).

<sup>11</sup> The higher investment rates are also partly related to measurement problems as already described above. Software expenditures are to a larger extent accounted for as investments in the US and as annual production costs in EU (OECD 2003e). Using production per hour adjusted for costs of capital the so-called total factor productivity – will tend to correct for the bias resulting from different classifications methods for investments.



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