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**IS THE EUROPEAN ECONOMY A PATIENT AND
THE UNION ITS DOCTOR?
ON JOBS AND GROWTH IN EUROPE**

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Is the European Economy a Patient and the Union its Doctor?

On Jobs and Growth in Europe

ENEPRI Working Paper No. 35/April 2005

Sjef Ederveen, Albert van der Horst and Paul Tang*

Abstract

A stronger focus on jobs and growth is part of an effort to renew the Lisbon strategy. Yet the view that economic expansion contributes to maintaining Lisbon's other goals of social cohesion as well as the environment is somewhat optimistic. First, there are structural trade-offs among the central elements of the Lisbon strategy. Escaping these trade-offs temporarily is sometimes possible but requires policy changes. Second, higher productivity (growth) may not provide more structural room for governments to manoeuvre. It leads to higher tax receipts but also to higher public expenditures since public sector wages and social security benefits are linked to productivity. In contrast, more employment (jobs) is associated with a smaller public sector. But to engineer the increase in employment, changes in welfare state arrangements are needed. In other words, focussing solely on the sick child will probably harm the other children.

Looking back, employment has kept expanding in the European Union whereas the productivity growth rate has been falling. The latter is not easily explained by (falling) investment in knowledge. Instead, the current relatively low productivity growth rate largely reflects success in the past: many European countries have caught up with the United States, having seen comparatively fast employment growth in the late 1990s. Looking forward, we argue that the combination of the Open Method of Coordination (OMC) with national action plans, the way the EU wants to achieve its goals, is both too little and too much: European interference with national employment policies has a weak basis, while the OMC may not provide member states with a strong enough commitment to pursue an innovation agenda.

Key words: Jobs and growth, Lisbon agenda, productivity slowdown, Open Method of Coordination

JEL classification: F15, F21, F43

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Preface

The economic ambition of the European Union is summarised in the Lisbon agenda: Europe should improve its competitiveness without harming social cohesion or the environment. In the upsurge of Lisbon's mid-term review, President of the European Commission José Manuel Barroso has recently focused the agenda on jobs and growth, as he identifies, following Wim Kok and André Sapir in recent reports, the economy as Europe's 'sick child'. This study reviews the recent performance of European economies with a focus on their productivity growth.

The European Commission has little legal power to enforce the reforms necessary to reach its economic ambitions. Much depends on the willingness of member states to carry out policy changes. The collaboration of the Commission and the member states is organised through the Open Method of Coordination (OMC). In the areas of jobs and growth, Messrs Kok and Mr Barroso conclude, the OMC has not yet delivered. This study investigates whether the OMC, including the recently proposed national action plans, is sufficiently equipped for its tasks.

Special thanks go to the Minister of European Affairs Atzo Nicolai and the Ministry of Foreign Affairs' Forward Strategy Unit, in particular Jeroen Slaats, who have initiated and supported this project. They have raised the question about CPB's view on the mid-term review of the Lisbon agenda and they have arranged several meetings of a 'sounding board' group. Stephan Raes (Economic Affairs), Jos Kester (Ministry of Social Affairs), Aino Jansen and Hans Peter van der Woude (Ministry of Foreign Affairs), Bart van Riel and Ton van der Wijst (SER), Willem Kooi and Mark Roscam (Ministry of Finance), Hans Reiff and Andre de Moor (Ministry of Education, Culture and Science) and Kees Vijverberg (Ministry of Housing, Spatial Planning and the Environment) participated in this sounding board. Their ideas, suggestions and comments have been very valuable. Although the spillovers from these comments have been substantial, the subsidiary principle nevertheless implies that the full responsibility of this study remains with the CPB. Knowledge spillovers are often strong when researchers are proximate. As such, the study has benefited from useful discussion and comments from within the CPB by Erik Canton, George Gelauff, Henri de Groot, Rob Luginbuhl, Bert Smid, Michel Toet, Paul Veenendaal, Dinand Webbink and Henry van der Wiel.

Henk Don
Director CPB

Executive Summary

Looking back at the first half of the Lisbon strategy, it has been difficult to simultaneously improve the central elements of the strategy: the economy, social cohesion and the environment. European Commission President José Manuel Barroso has drawn the conclusion that the EU has to focus on its ‘sick child’, namely on the economy. In his view, growth and jobs are essential for improving social cohesion and the environment.

The view that economic expansion contributes to maintaining social cohesion as well as the environment is somewhat optimistic. First, there are structural trade-offs among the central elements of the Lisbon strategy. Escaping these trade-offs temporarily is sometimes possible but requires policy changes (such as pricing pollution). Second, higher productivity (growth) may not provide more structural room for governments to manoeuvre. It leads to higher tax receipts but also to higher public expenditures since public sector wages and social security benefits are linked to productivity. In contrast, more employment (jobs) is associated with a smaller public sector. But to engineer the increase in employment, changes in welfare-state arrangements are needed. In other words, focussing solely on the sick child will probably harm the other children.

How sick is the European economy really? In the last 15 years participation in European labour markets has increased. Currently, labour productivity per hour is high in many European countries. It is perhaps troubling that the rate of productivity growth has fallen since the 1970s and especially in the late 1990s. The slowdown in productivity growth does not reflect a falling rate of investment in knowledge. Instead, the slowdown is explained by two European successes. First, the poor productivity growth in the late 1990s reflects strong employment growth in that period. Second, the slowdown reflects high growth in the past: in the 1960s and 1970s, European countries had ‘the advantage of backwardness’, i.e. the potential to increase productivity by imitating and implementing state-of-the-art technologies. Approaching the technology frontier, however, limits the relatively easy opportunities for technological progress.

At the same time that the European economies saw a sharp decline in productivity growth, the American economy showed acceleration in productivity growth, mainly prompted by the intensified use of information and communication technology (ICT) in services. The American acceleration does not make European countries worse off, but shows a potential for increasing productivity growth. Some European countries such as Finland and Sweden have already taken advantage of this potential. Whether other European countries will do the same in the near future is an open question.

The slowdown does not show a clear relation with investment in knowledge and technology, but to reverse it, more investment is needed. Greater investment in research and development, in education and possibly in ICT are likely to contribute to higher productivity growth in the medium term.

Introduction

Much cited is the phrase ‘to become the most competitive, knowledge-based and dynamic economy in the world’. It summarises the Lisbon declaration of government leaders, drafted some five years ago. According to the declaration, the EU and its member states should improve economic performance without deteriorating the environment or damaging social cohesion. A wide variety of actions and targets have been proposed at the same time to achieve this, and together they form the Lisbon strategy.

One immediate success has been to put economic performance on top of the EU policy agenda. Quite a few observers find the Lisbon strategy overly ambitious or ineffective (or both), but do not seem to disagree that reforms of various markets and government policies have the potential of boosting economic performance considerably. There is even a fear that without reforms the EU will fall behind.

Changing just one or two aspects of economic life in the EU did not seem enough for it to become the most dynamic economy in the world. Therefore, the Lisbon strategy covered many aspects of economic life, ranging from increasing labour market participation to 70% of the potential labour force to completing the internal market for services and from raising R&D expenditure to 3% of gross domestic product to reducing the administrative burden on companies. The Lisbon strategy was worked out in detail. The broad aim of increasing overall participation in the EU labour markets was supplemented with explicit targets for the participation rates of women and workers older than 55. Similarly, the aim of improving education was translated into targets for early school-leavers, graduates in mathematics, science and technology, literacy for 15-year olds and so on.

In short, Lisbon aimed at improving economic performance in the EU but not at any cost. Europe was looking for its own ways to increase employment and raise productivity. It was not only concerned with improving economic performance, but was also eager to maintain the non-economic qualities of life: economic performance should not harm the environment or break up social cohesion.

Yet five years after its start, the Lisbon strategy has not brought a clear change in the relative position of the EU in the world economy. Even after the collapse of the Internet bubble and during an economic recession, productivity growth in the United States remained impressive, i.e. higher than in the EU. Lisbon has not delivered, Mr Barroso concludes.

Former Dutch Prime Minister Wim Kok and others (European Commission, 2004a) have reviewed the Lisbon strategy and put forward several proposals to rejuvenate it. Building on this review, Mr Barroso recently clarified the position of the new European Commission. Both Mr Kok and Mr Barroso seek to renew the Lisbon strategy in two ways. The first way is to give the Lisbon strategy a clearer focus: growth and jobs must take centre stage. The stronger emphasis on the economy seems to imply less emphasis on the environment or social cohesion. But Mr Barroso and Mr Kok see growth and jobs as essential for achieving sustainable development and for financing the EU welfare states in the future. Clearly, this seems to be an important change in view between 2000 and 2005. Whereas in the Lisbon declaration economic growth was made conditional on social cohesion and the environment, Mr Barroso and Mr Kok seem to put forward the view that growth cannot proceed without the other two factors. This raises the question of whether there is a trade-off or not. An answer to this is formulated in chapter 1.

The priority on jobs and growth is also seen to reflect the urgency of problems in the EU economies. Specifically, Mr Barroso argues: “I have three children: the economy, our social agenda and the environment. Like any modern father, if one of my children is sick, I’m ready to drop everything and focus on him until he is back to health. But that does not mean I love the others any less.”¹ Mr Barroso is a modern father but perhaps also another overwrought parent. The EU economies are among the

¹ See the article “Shift in direction for EU economy” by D. Rennie, 3 March 2005 (retrieved from <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2005/02/03/weu03.xml&sSheet=/news/2005/02/03/ixworld.html>).

well-off ones in the world, so how sick can they really be? Chapter 2 considers this simple and yet complex question. Not surprisingly, the factors behind employment (jobs) and productivity (growth) are rather different and hence are discussed separately.

The second way to renew the Lisbon strategy is to put pressure on member states to reform. Both Mr Kok and Mr Barroso lay the blame for the lack of progress partly, if not fully, with the member states, in which the political will to reform is considered too weak. The national governments and parliaments must therefore adopt a national action plan to increase the rate of growth and the number of jobs in their countries. Rather than being ‘named and shamed’ by the Commission, the fear of losing their political reputations should induce national policy-makers to implement the programmes. Moreover, the idea seems to be that if countries undertake reforms at the same time, these reforms become less painful: “after all, everyone will benefit from the future that the Lisbon agenda is trying to shape” Mr Barroso writes (European Commission, 2005, p. 13). The renewed Lisbon strategy should thus commit national policy-makers to reform and help them to internalise the spillovers of national reforms to EU partners. Is the Open Method of Coordination (OMC), which is central in the implementation of the Lisbon strategy, necessary and effective in bringing commitment and changing national perspectives into an overall EU viewpoint? Chapter 3 deals with open coordination and the underlying principle of subsidiarity. In this chapter, the distinction between jobs and growth is essential.

Scope and place of the report in CPB’s research

This report is not the first time that the CPB has discussed the economic performance in Europe or the allocation of responsibilities between the Union and the member states, and it is not intended to say the final word on one of these topics. Instead, the report refers to past and to future research. First, this report does not discuss employment growth in Europe or ways to increase it at great length. The scenario study by de Mooij & Tang (2003) deals with this rather extensively. De Mooij & Tang argue that employment growth is essential for sustaining European welfare states, but at the same time requires reforms. Instead, this report focuses on productivity growth. Second, the contribution by CPB & SCP (2003) looks at the idea of Social Europe. It puts forth that the standard arguments for an EU coordination of welfare states – scale economies and international externalities – are rather weak. This report briefly reconsiders these arguments. We also consider other, often political arguments that seem to speak in favour of EU involvement in labour market policies and institutions through the OMC.

The report points at the potential importance of education and innovation. Yet, we say little to nothing about EU involvement in these areas, as this is the subject of ongoing research. Finally, the report also pays little or no attention to completing the internal market for services. Kox et al. (2004) estimate the consequences for trade and investment flows. Later this year, CPB will also try to assess the impact on economic welfare in Europe. Table 1.1 offers a schematic overview of the research topics and output.

Table 1.1 Overview of main CPB research on productivity and employment in Europe

	Growth (productivity growth)	Jobs (employment growth)
Past performance and future trends	Chapter 2 on the European slowdown	De Mooij & Tang (2003) on European welfare states Future research on the choice between leisure and work
The role of European Union	Kox et al. (2004) on the internal market for services Future research on education and innovation Chapter 3 on the OMC	CPB & SCP (2003) on Social Europe Chapter 3 on the OMC

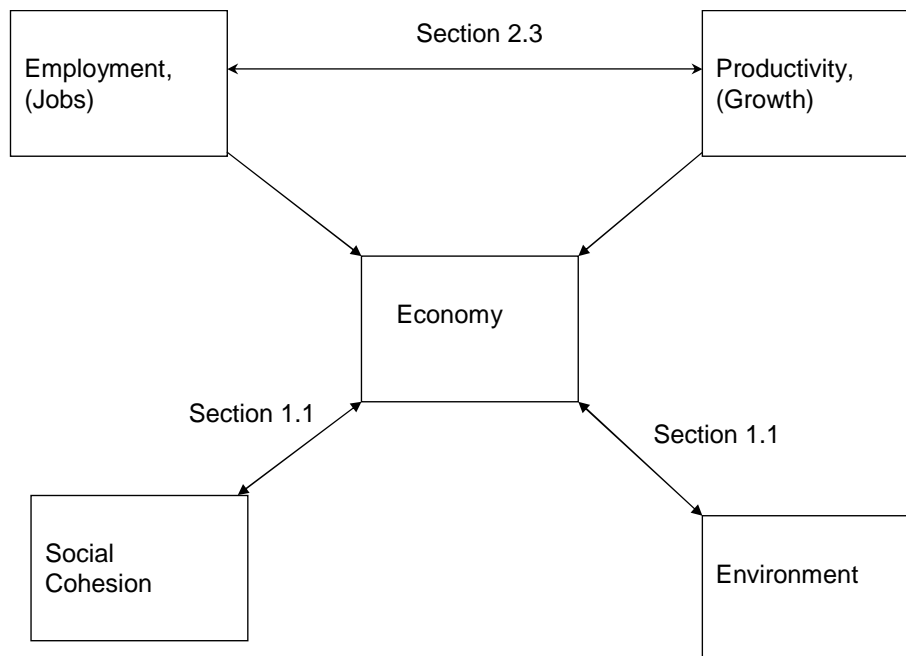
Chapter 1.

Trade-offs for Economic Growth

1.1 The price to pay for jobs and growth: Social cohesion and the environment

Up to now the aim of raising economic growth in the European Union has been conditional in the Lisbon strategy. Two broad conditions have been recognised: economic growth should not come at the expense of social cohesion and should not bring damage to the environment. These conditions reflect the idea that welfare is not identical to economic production and income. More specifically, the two conditions reflect the concern that boosting economic growth may be at odds with maintaining social cohesion and the environment. Mr Barroso's European Commission seems to sweep this concern aside. Jobs and growth are explicitly put on centre stage. Moreover, the Commission seems to argue that jobs and growth will only help European countries to achieve the other non-economic goals. Growth is regarded as essential for keeping the European welfare states sustainable. With regard to sustainability, investing in a clean environment is not seen as a drag on economic growth, but rather is assumed to provide a boost to innovation. Is the concern about trade-offs relevant or is Mr Barroso right to sweep this concern aside? This chapter discusses separately two possible trade-offs: between economic growth (predominantly jobs) and social cohesion and between economic growth (mainly productivity) and the environment. As Figure 1.1 shows, there is a trade-off between productivity and employment growth (which is later discussed). The relation between social cohesion and the environment is left out, as we consider them to be hardly related.

Figure 1.1 Trade-offs between the four essential elements of the Lisbon strategy



1.1.1 Economic growth versus social cohesion

In the Lisbon strategy the aim of maintaining social cohesion has been worked out in various ways.² Central to the concept of social cohesion is income inequality and income redistribution to keep inequality limited. European economies are characterised by an elaborate welfare state: social security, tax and other systems that aim at protecting individuals against unforeseen shocks in income and redistributing purchasing power from the rich to the poor. As a result, the income distributions in European economies are more equal than that in the US. For example, the income of the 10% richest is at least three times higher than the income of the 10% poorest in the Netherlands and Sweden, whereas in the US it is five and a half times higher. The income redistribution comes at a cost: it distorts individual decisions to work, to save and to invest. Some find this cost too high or fear that it will become too high.

Mr Barroso is not alone in thinking that economic growth is essential for maintaining the European welfare states. Sapir et al. (in European Commission, 2003), for instance, maintain that to keep the financial position of the public sector sustainable European countries need to see faster growth. In this view economic growth does not come at the expense of the welfare state, but is an instrument to limit income inequality and to maintain social cohesion. One argument of this view is that with a higher income the same number of workers is better able to pay the same – or a growing – number of social security benefits.

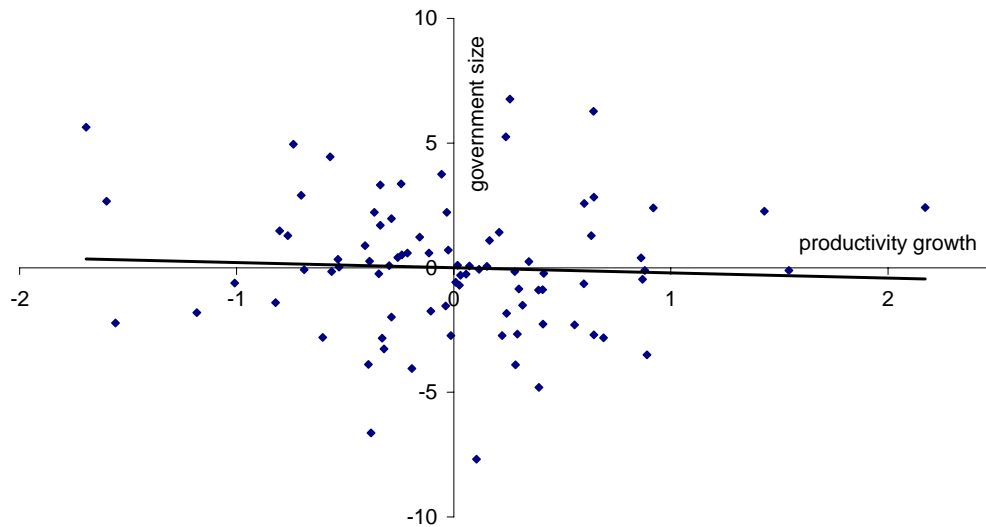
The financial burden on workers becomes less, however, only if wages rise (much) faster than social security benefits. A crucial assumption is thus a decoupling of benefit income from wage income. The relative income difference between workers and benefit recipients must become (much) larger in the future than it is now. This may trigger demand for higher social security benefits, which may partly or fully undo the effect of economic growth on the financial burden. Similar reasoning holds for other aspects of public expenditure, such as old-age pensions and expenditures on – labour intensive – health care. When higher productivity (per worker) and higher wages translate into higher public expenditure, the financial position of the public sector may not improve at all, even though total income is higher. The tax revenue grows, but public expenditure grows as well. So whether allocating the pie is easier when the pie is larger is an empirical question.

To see whether productivity growth changes the balance between the private and the public sector, Figure 1.2 plots the relation between the share of public expenditure in production and the growth rate of labour productivity. A negative relation may arise for two reasons. First, with higher productivity growth wages (and other income) in the private sector outpace expenditure in the public sector. Second, a smaller public sector may imply a stronger incentive for the private sector to invest, innovate and grow. The difference between the two reasons is the chain of causation. According to the first, higher productivity growth leads to a smaller government whereas according to the second it is exactly the other way around. Not only could a negative relation arise, but a positive relation is also possible. For instance, higher productivity growth may bring about a shift in demand in favour of public goods and services (Baumol's Law).

A clear relation does not emerge from the data (once country-specific and period-specific fixed effects are allowed for). An increase in the productivity growth rate is not associated with a relative decrease in government spending within the same five-year period. This point underlines the case that productivity growth is an obvious way to keep the European welfare states intact.

² In the Lisbon agenda, it comprises the distribution of income, the risk of poverty, unemployment, the regional dispersion of employment rates and the fraction of early school-leavers.

Figure 1.2 Higher productivity growth is not associated with less public expenditure

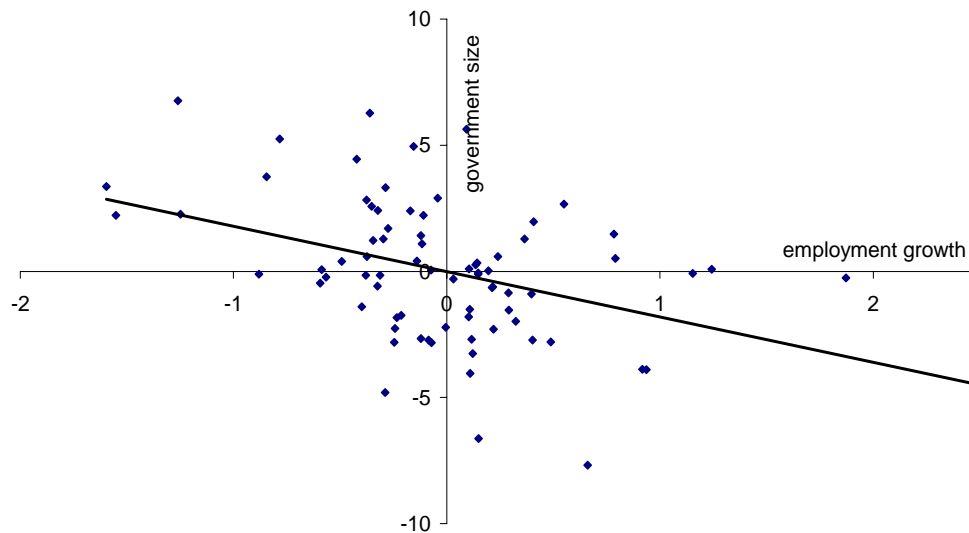


Notes: Government size is measured by (a log of) total public expenditure as a percentage of gross domestic product. The five-year averages of all variables have been corrected to take account of country-specific and period-specific fixed effects.

Source: Data are from Ameco and cover an unbalanced sample of 19 OECD countries in 1978-2003 (five-year intervals).

A more obvious way to lower the tax burden on workers than by increasing productivity levels is by raising participation rates. Figure 1.3 plots the relation between public expenditure as a percentage of gross domestic product and employment growth. A clear and negative relation emerges, implying that employment growth may indeed contribute to keeping the EU welfare states sustainable. This should not come as a real surprise. When European governments are able to bring down unemployment and increase participation among, for example, older workers, they will see the tax revenue increase as well as expenditure on social security benefits go down. The relation between employment growth and social expenditures will not make political choices easier, however. To understand this, we turn to the question of how to structurally raise employment rates.

Figure 1.3 Higher employment growth goes hand in hand with a smaller government



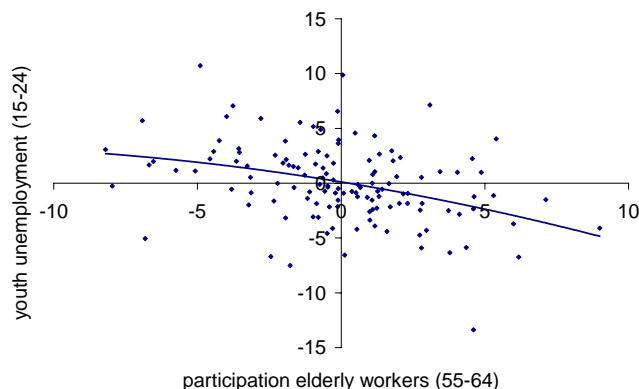
Note: See Figure 1.2 for an explanation.

To structurally reduce unemployment and permanently increase participation, labour market institutions need to be reformed. Shorter and lower unemployment benefits, less employment protection or combinations thereof are proposals in that direction. With reform comes the concern that more employment comes at the price of more inequality (see also Box 1.1). The labour market institutions in Europe are intended to protect workers against the whims of the markets by providing them income or job security. Reforming these institutions may then lead to larger income differences. Indeed, empirical work by de Groot et al. (2004) confirms a trade-off between participation and inequality. They find that lower and shorter unemployment benefits, a lower tax wedge and less coverage through collective wage is associated with higher participation but also leads to more income inequality. Interestingly, countries have partly escaped the trade-off through active labour market policies. Spending on things like training, matching and public jobs has had the impact of reducing inequality and raising employment. Similarly, de Mooij & Tang (2004) provide evidence that raising the upper secondary education of the labour force has allowed countries to score well on both counts. The empirical work thus suggests that there is a trade-off between employment and equality. At the same time, some countries may have the possibility to escape this trade-off by putting more emphasis on active labour market policies or on secondary education.

Box 1.1. Does higher participation lead to more unemployment?

Some fear that boosting participation is useless as higher participation will simply lead to more unemployment. Behind this fear is the idea that total employment is fixed. This is a rather popular and persistent fallacy. To some extent it may be true in the short run (owing to hiring and firing costs and labour hoarding), but in the long run it is clearly wrong. First, unemployment rates fluctuate only temporarily, but are bounded in the long term. This implies that employment and labour supply grow hand in hand. In Europe both have grown by about 1.1% annually in the last two decades. Second, less participation by elderly workers has not led to lower youth unemployment. Figure B.1.1 shows instead that the opposite is true (where once again country-specific and period-specific fixed effects are taken into account). An increase in the participation of relatively old workers is associated with a decrease, and not an increase, of unemployment among the relatively young workers. The negative relation indicates that the non-participation of elderly workers and unemployment among young workers are driven by similar factors, most likely the labour market institutions in interaction with macroeconomic shocks. Policies aimed at reducing youth unemployment by limiting elderly participation have at best been only temporarily successful. The idea that total employment is fixed does not find much support. If the Lisbon agenda has led in some countries to a break in economic policy, from discouraging to encouraging labour supply, that alone is an important success.

Figure B.1.1. Higher participation of the old is associated with lower unemployment among the young



Notes: Both unemployment (among the young) and employment (among the old) are scaled with the labour force in the relevant age group. The five-year averages have been corrected for country-specific and period-specific fixed effects.

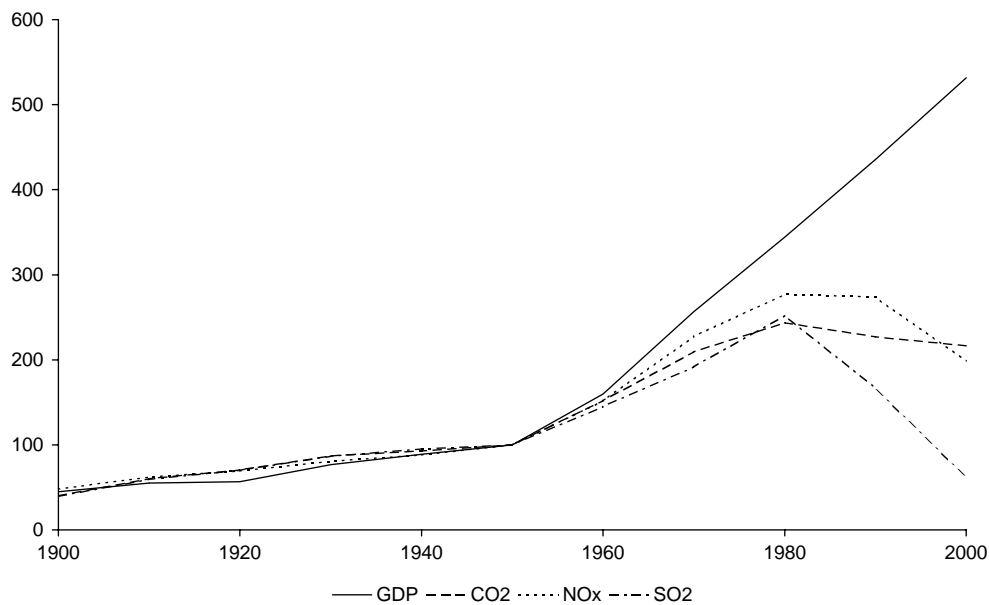
Source: The data are from the Labour Force Statistics of the OECD and covers an unbalanced sample of 28 OECD countries in 1968-2003 (with five-year intervals).

1.1.2 Economic growth versus the environment

Economic growth may come at the expense of the environment. Higher production is usually associated with higher energy use, higher emissions of greenhouse gasses and more local pollution. Until 1980 this link between economic growth and pollution clearly applied, as Figure 1.4 shows for the emissions of sulphur dioxides (SO_2), nitrogen oxides (NO_x) and carbon dioxides (CO_2) in Europe.

This negative relation between the economy and the environment is not an invariable law. In fact, some environmental problems have reduced as countries have grown richer, as Figure 4 illustrates for recent decades. The emissions of sulphur dioxides (SO_2) in the EU-25 reached a peak in the 1980s, whereas the emissions of nitrogen oxides (NO_x) attained a maximum in the 1990s. Thereafter the emissions of both have fallen even though European economies have continued to grow.

Figure 1.4 Emissions of CO_2 , NO_x and SO_2 have not followed production in the EU-25 (1950 = 100)



Source: RIVM (2004).

This non-monotonic relation between the economy and the environment is known as the Kuznets-curve. At the initial stages of development the economy has a clear priority over the environment. At those stages, reducing poverty is essential and economic growth is instrumental in achieving this at the expense of the environment. At later stages social preferences shift from the economy to the environment. Once poverty is under control, the concern for the environment builds up and the wish for good living conditions becomes dominant. Still, economic growth leads to more pollution, but now societies put effort into emission reductions. These reductions in emissions do not come automatically, but are a deliberate choice. Policies that lead towards forms of sustainable economic growth eventually become socially and politically feasible.

Yet policies to decouple the economy and the environment are not always feasible. First, national decision-makers do not take into account the international benefits from national environmental policies. This is the classic problem of collective action. Countries benefit directly from reducing local pollution such as smog, stench and noise. Indeed, as indicated before, national and EU policies have been effective in reducing emissions of local pollution, including sulphur dioxides and nitrogen oxides (SO_2 and NO_x respectively). Nevertheless, the incentives for individual countries to reduce their

emissions with global environmental externalities, such as greenhouse gasses (CO₂) are much weaker. Figure 1.4 shows that the CO₂ emissions have not fallen as fast as the emissions of SO₂ and NO_x and are projected to increase in 2020. Second, competition among governments may stop them from effectively fighting even local problems. The difference between energy taxes on households and on firms is telling. The competition among governments to attract firms with favourable conditions will only grow in the future. Both reasons imply that a reduction of emissions at higher stages of development is not an automatic process. In fact, rich countries do not always choose to work towards a cleaner environment, whereas poorer countries do, which implies that the empirical evidence for the Kuznets-curve is not very strong (see for example de Bruyn, 2000).

Limited coordination is one threat to sustainable growth, while the costs of environmental policy are another. Some claim that the costs of Kyoto are prohibitively high and are a drag on economic growth. This is exaggerated. CPB (2004a), for example, calculates for different scenarios the costs of stabilising greenhouse gas emissions (at 550 ppmv) for the EU-15 under the assumption of international emission trade. In 2040, these costs range from 2.2% of national income in the scenario Strong Europe to 6.2% in the scenario Global Economy. This boils down to foregoing one or two years of economic growth. Clearly, these costs are not negligible but are not prohibitive either. Others claim that eco-efficient innovation stimulates, rather than deters, future economic growth, by saving on inputs that will likely become scarcer and therefore more expensive. Of course, this would make the costs of environmental policy negligible. The empirical support for this view is weak or even lacking.

Past experience suggests that discussing ‘the’ trade-off between the economy and the environment is not appropriate. Different environmental problems have developed differently over time. Looking at the future, policies to break the link between the economy and the environment, i.e. to escape the trade-off between the two, are not self-evident. These will require international or European coordination (or both) even more than before. The emissions of greenhouse gasses are especially likely to grow, although not at the rate of economic growth, unless effective action is taken. It is still an open question as to whether Kyoto provides a strong framework for international agreements and will lead to European action that effectively breaks the link between economic production and greenhouse gas emissions. Research and development that is adequately directed towards the main economic problems in relation to the environment will also be required.

1.2 Conclusions

Mr Barroso’s claim that jobs and growth are essential for maintaining social cohesion and the environment does not seem realistic. Economic growth will come at the expense of the environment unless policies are implemented to break the link between the two. These policies do not seem to thwart economic growth but are not free either. The main problem is perhaps the organisation of these policies, especially if they require international or European coordination or both.

Further, economic growth does not ensure that the European welfare states are sustainable in the future. What is required is employment growth (and not productivity growth). Such growth is possible but seems to necessitate reforms in the welfare states. Employment growth as a result of these reforms is likely to come at the expense of greater levels of income inequality. Yet some countries may avoid this trade-off up to some point, for example by shifting from passive to more active labour market and social security policies.

Chapter 2. Growth and Jobs

Ever since European Union leaders formulated the ambition of becoming the most competitive economy in the world, economic growth in Europe has been faltering. This state of affairs partly reflects a cyclical downturn. Some unexpected factors, such as the stock market collapse and the sudden threat of terrorism, may have prolonged this downturn. Nevertheless, an upturn usually follows a cyclical downturn.

Nevertheless, the poor growth rates in recent years partly reflect structural problems.³ First, labour markets in many EU economies are considered sclerotic. Symptomatic are high unemployment benefits, strong employment protection and powerful trade unions. Moreover, governments find it difficult to reform labour market institutions as this often requires interventions in the social security system. Second, productivity growth is a concern: it was high until the 1970s, but has since fallen. Several explanations have been put forward. Some think that Europe invests too little in knowledge, in particular in R&D and education. Some think that Europe does not benefit enough from the new possibilities of information and communications technology (ICT). Others think it is a combination of the two. Whatever the explanation, the slowdown in productivity growth will make the Lisbon ambition unfeasible, even in the long run.

There is a second reason why the ambition to become the world's most competitive economy has become more difficult to realise: the economic performance of the US has improved in the last 10 years. With the problems of imperfect labour markets and poor productivity growth in mind, the credo of Mr Barroso's European Commission – growth and jobs – does not seem odd.

The next section compares the performance of several European economies over time and with the track record of the US. Section 2.1 shows among other things that the European employment rate in persons has grown faster than the American equivalent in the last 15 years. In section 2.2 we argue that future trends, rather than past performance, will require reforms of European labour markets. This section reiterates earlier CPB work and therefore remains short. Instead, relatively much attention is given to productivity growth. Section 2.2 shows that productivity in Europe is relatively high but that its rate of growth has been falling over time since the 1970s. In further sections we argue that the European slowdown is not related in a straightforward way to investment in knowledge. The slowdown is rather the logical outcome of European successes. The American acceleration, on the other hand, is driven by investment in ICT, especially in services.

2.1 A growing number of jobs but falling rates of growth

Americans are richer than Europeans. Production per head of the population is roughly 30% higher on the other side of the Atlantic than it is in the European Union. No wonder that the economic performance of the United States is often put forward as an example for the European Union and its member states.

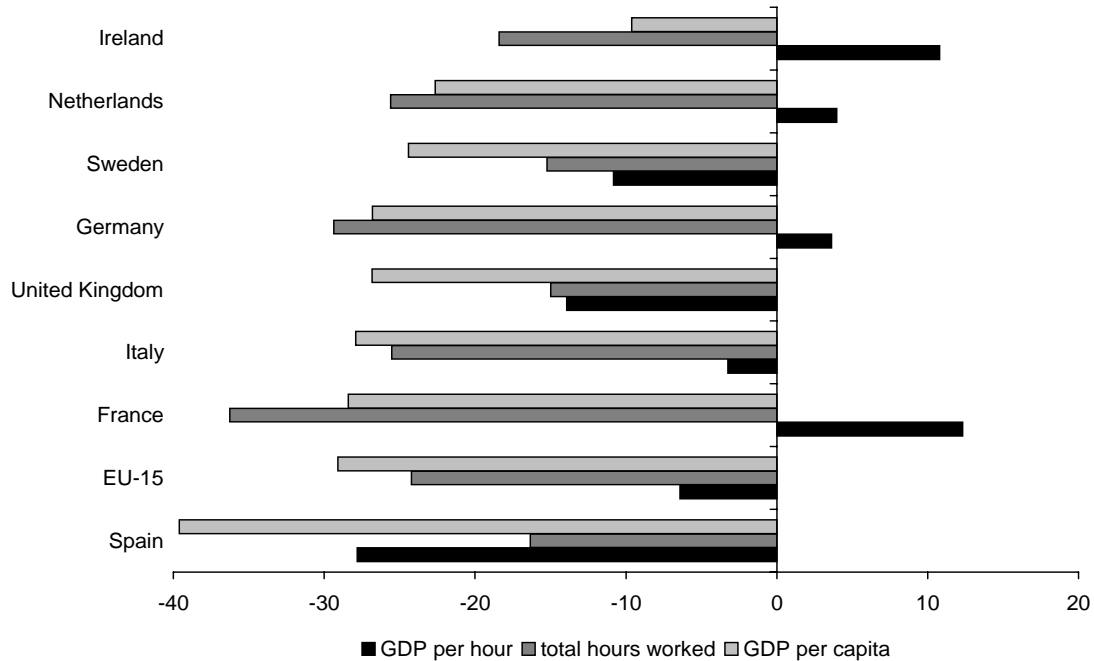
Production as a measure of economic performance does not take into account whether it is the result of high productivity or much effort. Hard but not smart work implies long working hours and little leisure. Needless to say, leisure is also important for the economic welfare of households and individuals, even though it is not reflected in the usual statistics of income and production.

To roughly distinguish between hard and smart work, Figure 2.1 decomposes production per capita into productivity per hour and total hours worked per capita. The variables for eight European economies and the average for the European Union (of 15 members) are expressed as a percentage difference with those of the United States and are ranked according to GDP per capita. In France, for

³ Sapir et al. (in European Commission, 2003) forcefully point at these structural problems.

example, the GDP per capita is 28% behind that of the United States: the difference in hours per capita is 36%, which is, however, partly compensated by a 12% higher production rate per hour.

Figure 2.1 European productivity per hour is high but hours worked are low (percentage difference with the US)



Note: Decomposition of GDP per capita in 2003 by productivity (GDP per hour worked) and employment (hours worked per capita) as a percentage deviation of the US rates.

Source: The GGDC Total Economy Database (August 2004), (see <http://www.ggdc.net>) and own calculations for the EU-15.

An important observation from Figure 2.1 is that productivity per hour worked is not uniformly lower than in the US. Workers in Ireland, the Netherlands, Germany and France produce more per hour than their American colleagues. Even the EU-15 average, including the relatively low productivity countries Greece, Portugal and Spain, is only moderately behind. (For new member states, see the discussion in Box 2.1.)

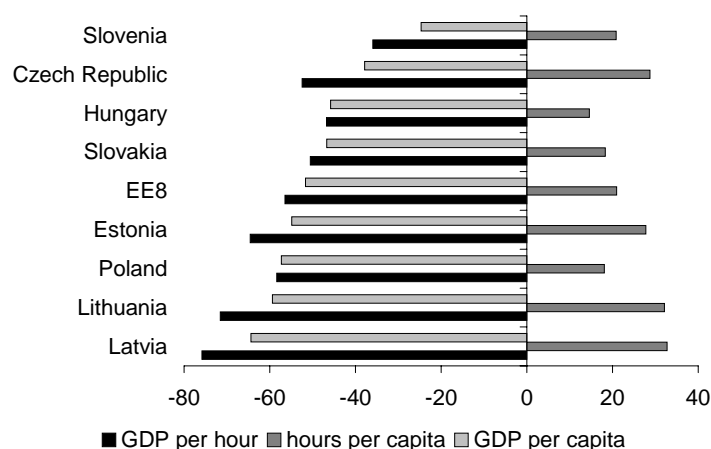
The income gap between the two economic blocs is largely explained by the difference in hours worked per capita: annual hours worked in European countries are relatively low, lagging 5 to 35% behind the US. Within Europe, working hours are relatively high in countries with relatively low productivity levels (per hour), as in Spain, Portugal and Greece. The shortest hours are observed in France, Germany and the Benelux countries. This suggests a negative relation between working hours and productivity per worker, even in the long run. Are Western European economies productive, for example because unproductive workers are excluded from the labour market? We turn to a possible trade-off in section 2.3.

Box 2.1. New member states

This study focuses on the 15 member states that formed the EU up to 2003. In contrast to the new member states, a fair comparison of these countries with the US is possible for two reasons. First, the EU-15 countries and the US have known fairly similar conditions for several decades: they are all market economies with good access to the world markets. New member states from Eastern Europe have been competing under similar conditions only recently. Second, reliable statistics for productivity for a couple of decades are not available for the new member states.

To give a brief indication of the situation in the new member states, Figure B.2.1 presents the level of GDP per capita, decomposed into employment (in hours) and productivity per hour in deviation of the EU-15.

Figure B.2.1. Eastern Europeans work more but less efficiently those in the EU-15



Notes: In deviation of Figure 2.1, the percentage deviation of the EU-15 is shown. EE-8 is the average of the eight new member states from Eastern Europe.

The picture is clear: labour productivity per hour clearly lags behind the EU-15 average, and is fully responsible for the lag in income per capita. In terms of employment, however, workers in almost all of the 15 member states work on average less than their Eastern European colleagues.

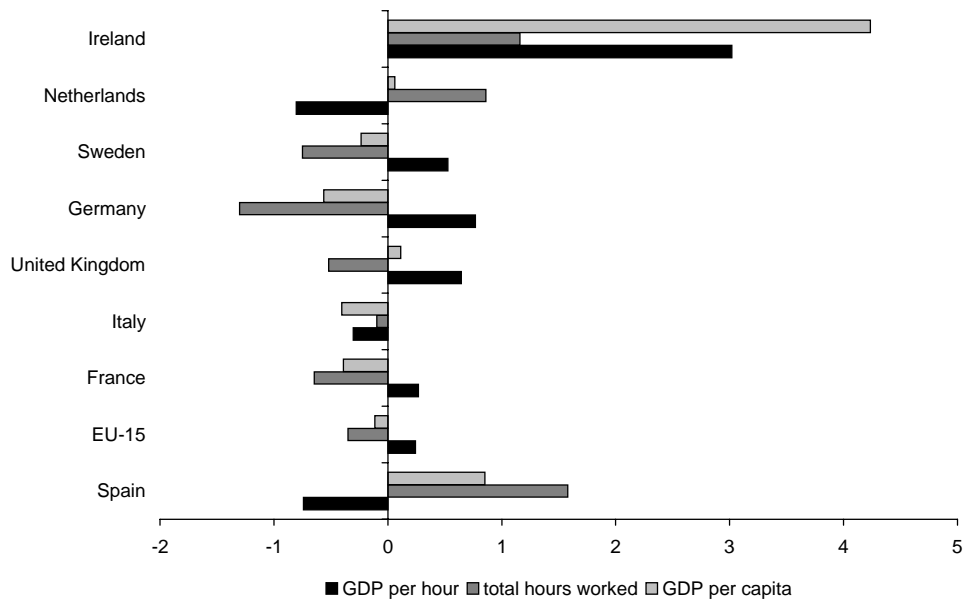
Developments over the period 1989-2003

Productivity per hour is high in many European countries. That productivity is below the US average in other European countries is not an immediate cause for concern. Typically, these countries, such as Greece and Portugal, have joined the EU relatively late. As long as they catch up to the highly productive European countries, the European average will come close to or even exceed the American level of productivity in due course.

Figure 2.2 shows the growth rates within the EU in the period 1989-2003, in deviation of the growth rate in the US.⁴ Again, GDP per capita is decomposed in productivity per hour and total hours worked per capita.

⁴ The GGDC (2004) data set is balanced for the period 1989-2003, including united Germany.

Figure 2.2 Over the last 14 years, the growth difference between the EU and the US has been small



Note: Decomposition of the growth rate (%) of GDP per capita in deviation of the growth rate in the US (1989-2003), (see Figure 2.1 for data definition and source).

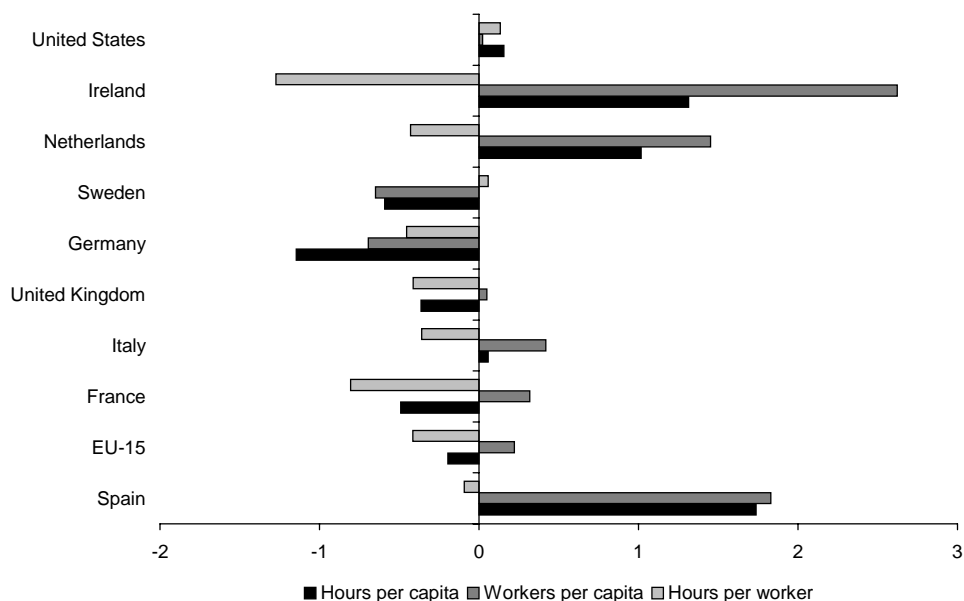
For the EU, growth of GDP per capita was 1.7% annually and roughly kept pace with the US. Whereas employment growth was relatively low in the period 1989-2003, productivity growth in the EU was clearly higher than the US.

The differences across European countries were, however, huge. Ireland performed remarkably well, especially in terms of productivity: the growth differential for GDP per hour was on average 3% during the 14 years and was enough to close the initial productivity gap with the US of 30%. The performance of Spain (and also Portugal and Greece) was, however, disappointing: Spain was able to reduce the gap in GDP per capita, but not the difference in GDP per hour worked. These countries were not able to raise their productivity levels, even though they had the advantage of backwardness (i.e. improving productivity by adopting technologies from the most advanced economies).

In the period 1989-2003, the gap of the EU-15 with the US in production per capita grew, for which the difference in employment growth was responsible. Behind this lagging growth in hours worked per capita, two developments can be observed. First, European economies created more jobs than the US, as shown by the bars for workers per capita in Figure 2.3. Indeed, in the latter the fear of jobless growth emerged. In contrast, European countries such as Ireland, the Netherlands and Spain, and to a lesser extent France and Italy, saw remarkable growth in participation rates in the period 1989-2003.⁵ Second, the working weeks of European workers declined, with Sweden as the single exception. Working weeks became on average shorter and the number of part-time jobs grew. Europeans opt for a different combination of work and leisure than Americans. Box 2.2 goes into the reasons behind this difference.

⁵ The Lisbon agenda pays special attention to the participation of women and elderly. Readers interested in the European scores should consult CPB & SCP (2003).

Figure 2.3 In Europe, there are more workers who work fewer hours (annual growth in 1989-2003)



Note: Population is restricted to the working-age.

Source: GGDC (2004) and own calculations for the EU.

Box 2.2. Strong love for leisure or just high taxes on work?

Two competing explanations are put forth in the literature to explain the declining and relatively short working weeks of European workers. First, the decrease in hours worked per capita may reflect a stronger preference for leisure over goods as wages increase (Blanchard, 2004). European workers use part of their higher income for leisure; American workers prefer more consumption of goods. Alternatively, the short working weeks may reflect distortions, such as high (marginal) taxes on work (Prescott, 2004). This explanation makes sense only if workers respond quite elastically to changes in net wages, as Prescott assumes. The discussion has not been settled yet, though it has important implications for policy. The second explanation asks for a reduction in labour-market (or tax) distortions whereas the first implies that the gap in income per capita between Europe and the US should be taken as it is: a personal, deliberate choice. The next publication of *European Outlook* by CPB and SCP will study the choice between leisure and work in detail.

The break in the mid-1990s

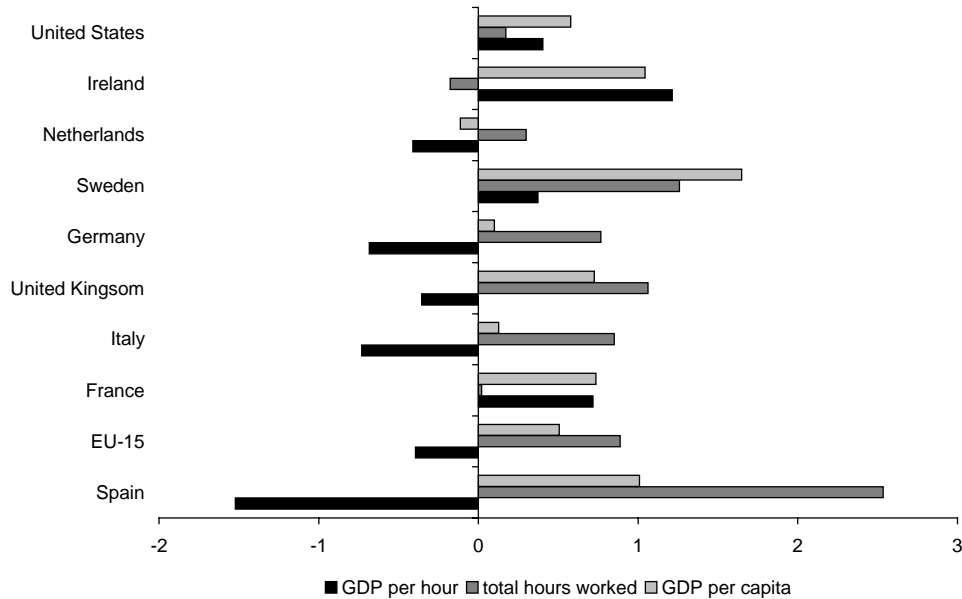
The discussion thus far does not provide much reason to be gloomy about the productivity performance of the European economy or to praise the American dynamics. In many European countries productivity is higher than or close to the American level, and for the EU it has grown on average somewhat faster than in the US. Yes, the US could be said to outperform the EU in terms of employment, considering both the levels and the growth rates of total working hours. Whether or not this is a problem for Europe is not immediately clear. First, it may be a matter of choice: Europeans use their prosperity to enjoy more leisure. Second, it could be a matter of division of labour and therefore a measurement issue: Americans hire a cleaning lady, whereas Europeans clean their houses themselves; the first activity is measured in the employment statistics, unlike the second.⁶

One has to focus on the period after 1995 to understand the gloom about the European economy and the optimism about the American ability to innovate: after 1995 productivity growth has been

⁶ The upcoming *European Outlook*, to be published in September 2005 by CPB and SCP, is devoted to the divisions of time between work, household production and leisure.

accelerating in the US, whereas growth has been slowing down further in the EU. Figure 2.4 visualises this by showing the growth acceleration or deceleration of GDP per capita. Note that it is different from the previous figures: it does not directly compare the performance in the EU and the US but rather cuts the period 1989-2003 into two parts and compares the later period 1997-2003 with the earlier period 1989-96.

Figure 2.4 Productivity growth has slowed down in Europe, but accelerated in the US



Note: Decomposition of the acceleration of GDP-per-capita growth between 1989-96 and 1997-2003 (see Figure 2.1).

Both economic powers saw the growth rate of GDP per capita increase. The US hardly accelerated more than the EU-15, but the sources of growth differed remarkably. In Europe, faster growth in total hours worked and especially in the number of workers (per capita), compensated for the slowdown in productivity growth. In the US, both sources were responsible for the acceleration. In other words, after 1995 the main difference between the two economic blocs was the change in productivity growth.

The acceleration in US productivity growth and the slowdown in EU productivity growth are widely documented in the growth-accounting literature,⁷ although the particular numbers vary from study to study, depending on the country sample (euro area versus EU), the time span and the data source. Our measure for the slowdown, a decline from 1.5% to 1.1%, is at the lower end of what can be found in the literature. Much more dramatic are the figures of Fiani (2004), who observes a slowdown in the growth of hourly productivity for the euro area of 1.6 percentage points (1991-96 versus 1997-2001).

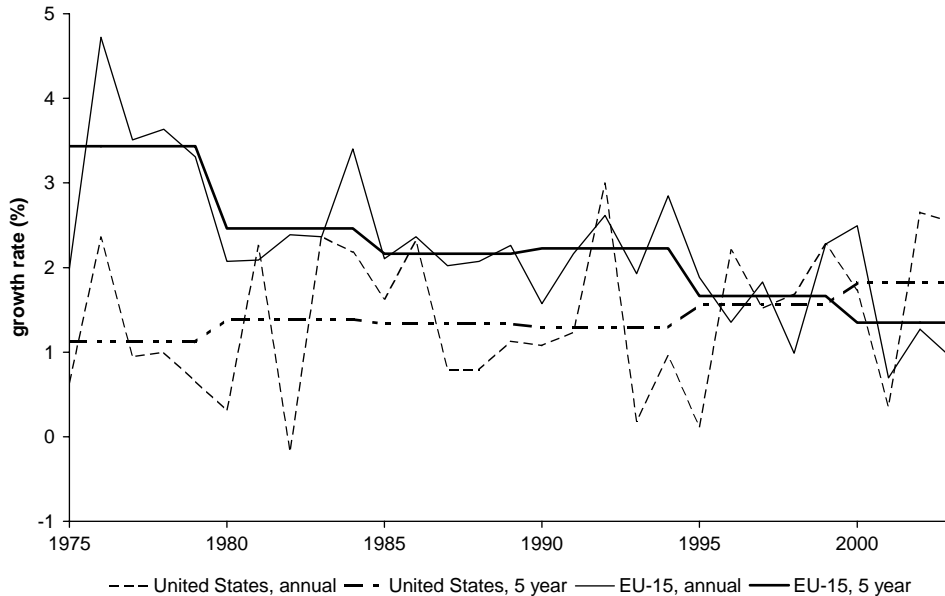
A structural decline in productivity growth since the 1970s

Productivity growth in Europe has not slowed down all of a sudden, but rather shows a structural decline (see Figure 2.5). In the 1970s, the European countries clearly outperformed the US in terms of productivity growth. Even in the 1980s, US commentators (see Baumol et al., 1989, Dollar & Wolff, 1993 and Nordhaus, 2004) were very concerned about the poor productivity growth in their country. Indeed, with the exception of France and the Netherlands, the average European rate of productivity

⁷ See Daveri (2004), Denis et al. (2004), Gordon (2004) and O'Mahony & van Ark (2003).

growth was still higher than the American rate at that time. The lead of Europe gradually declined, however. In recent years, productivity growth in Europe has been what it used to be in the US in the 1970s and 1980s.

Figure 2.5 The productivity slowdown in Europe (EU-15) is structural



Note: Growth rate of productivity per hour 1975-2003, both annual and their five-year averages, running from 1975-79, 1980-85, etc.; the final period 2000-03 covers only four years.

Source: GGDC (2004).

For the US, Figure 2.5 shows that the acceleration of productivity growth since 1995 occurred after a long period of stable growth. Until about 1995 growth in productivity per hour was on average 1.3% annually, but then it speeded up. The growth rate accelerated from 1.5% in 1995-99 to 1.8% in 2000-03. In the last period the growth rate in the US was about a half percentage point higher than in the EU-15.

From Figure 2.5 the concerns about the European performance become clear. The difference in productivity growth between the US and the EU is perhaps not large, but the direction of change is worrying. In the 'old world' the rate of productivity growth goes downhill, whereas in the 'new world' the pace has picked up. Of course, this does not bode well for the Lisbon ambition. If the change is structural and extends into the next decades, the US would soon become – again – the unchallenged productivity leader in the world.

Conclusion

In the period 1989-2003 the EU was able to raise employment. Indeed, in 2003 quite a few countries scored equally well or better than the US on participation in persons. (A few large member states have a relatively poor employment record, making the Lisbon target for participation difficult to meet in the near future.) Whereas European economies have not been bad at creating jobs in the past period, we argue in section 2.2 that in the near future even more jobs are needed: participation has to increase to relieve the growing pressure on the European welfare states.

Looking back, the main problem with the economic performance of the EU has not been 'jobs' but 'growth'. European productivity growth is slowing down. At the same time, the American rate of productivity growth has jumped, i.e. has increased after a period of stable and relatively low growth. In section 2.3 we go deeper into the reasons behind the EU slowdown and America's acceleration.

2.2 Future trends and employment growth

In past years the EU-15 has seen its employment in persons grow faster than its population. Employment in hours has grown less rapidly: hours worked per worker have continued to fall. Europeans thus spend relatively more time on leisure and household activities. The employment growth in the past is not an immediate reason for concern. Rather, the future is worrying. There are several trends that threaten the financial sustainability of the public sector in European economies. In other words, they put the public sector under pressure. Employment growth is essential for relieving this pressure (see chapter 1).

Pressure on the welfare states

Structural trends put pressure on the public sectors in Europe, leading to similar problems in different European countries. According to de Mooij & Tang (2003), these trends together will in particular make the European welfare states in their current forms unsustainable, forcing national governments to initiate change. In particular four trends are relevant:

- Ageing populations are raising public expenditures on old-age pensions and health care. Further, relatively slow productivity growth and high income elasticities will lead to extra demand for publicly provided services (i.e. Baumol's Law).
- The position of high-skilled workers in the labour markets is steadily improving relative to low-skilled workers. That the income differences between the two groups have not grown (rapidly) in the recent past is a result of the fast increase in the supply of high-skilled workers. When the increase levels off, as is expected during the coming decades, the income differences may start to grow. Higher benefit levels prop up the wages of the low-skilled, but also lead to more unemployment among them.
- Society has become more heterogeneous. Individualisation as well as immigration has contributed to that. More heterogeneity makes economic policy less effective. Some specific transfers, for example, not only benefit those who need support, but are also provided to those with high incomes. Heterogeneity also raises the demand for diversity, which the public sector often fails to deliver.
- The choice set of individuals has expanded, increasing the response to income taxes and income transfers and has amplified the distortionary consequences of taxation. Adding to this is the increasing mobility of capital and firms. With further integration of capital and good markets, this mobility will only grow. This also raises the costs of taxation.

International integration and the welfare state

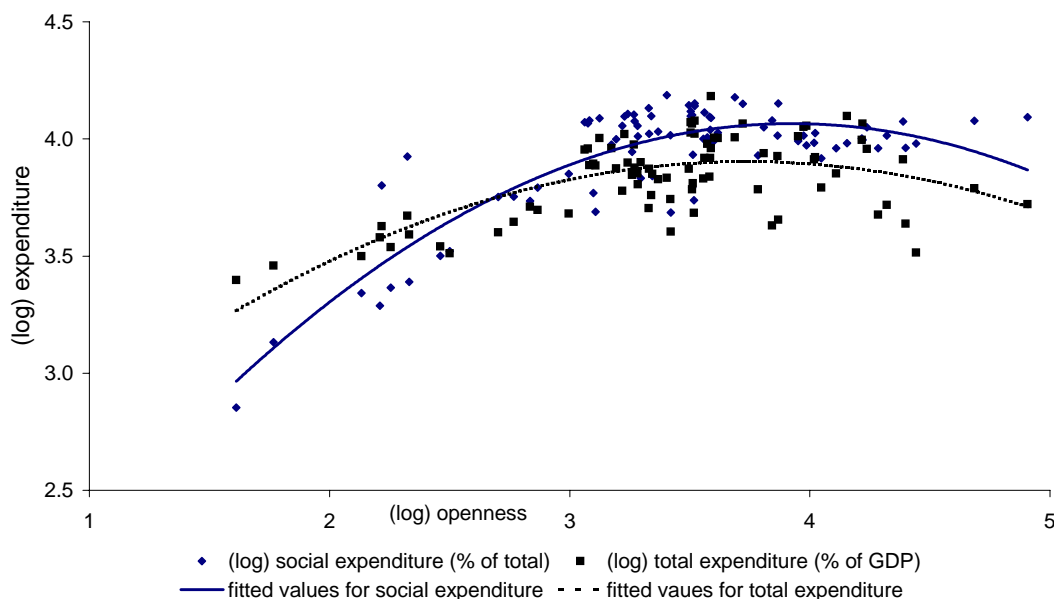
Is globalisation not one of the important threats to the European welfare state? As a result of integration, firms can escape the relatively high tax burden in Western European countries by relocating their activities to countries with relatively low taxes. These countries can no longer afford extensive and thus expensive social security systems. International integration and the welfare state do not seem to mix.

The logic is flawless but the analysis is not. First, it assumes that firms are extremely mobile, whereas in fact they are not. Proximity to consumers and suppliers is an important aspect of location (see Brakman et al., 2005). Indeed, the rich European countries offer good access to a large output market and specialised input markets, making firms reluctant to leave. Second, the analysis is incomplete. When firms tend to relocate their activities, employment tends to fall as well. To restore equilibrium in the labour market, wages must fall (or grow for some time at a lower pace). At equilibrium the relatively high taxes, partly in the form of social security contributions, are compensated by relatively low wages. This situation confirms a general rule in the economic literature on taxation, which states that the immobile factor bears the burden of taxes in the end, although formally the mobile factor, i.e.

the firm, may pay them. The implication of this rule is that EU and international integration shifts the burden of taxation, from the (more) mobile factor to the immobile factor. EU countries can afford extensive social security systems as long as they can afford a higher tax burden on labour. Summing up, since firms are not fully mobile and lower wages may compensate higher taxes, the impact of integration on social spending may not be as negative as a simple partial analysis seems to suggest.

Rodrik (1998) argues that the impact of international economic integration on social spending could even be positive. As a result of integration, economies become more vulnerable to external shocks. This raises the demand for (public) insurance. Governments may respond to this demand and extend, rather than downsize, their social security systems. A first look at the data seems to corroborate Rodrik's view. Figure 2.6 plots openness, defined as the average of exports and imports as a ratio of gross domestic product, against two measures of public spending, namely the share of transfers in public expenditure and the GDP-share of total public expenditures. The figure suggests that openness is associated with more transfers (as a percentage of total public expenditure) and that openness leads to more public spending (as a percentage of total production). A better look at the data reveals that just a few observations give rise to a positive relation and that for the bulk of the observations a clear relation does not seem to emerge. Clearly, however, integration does not necessarily lead to downsizing of the European welfare states.

Figure 2.6 Open economies do not show lower income transfers or smaller government size



Notes: Social public expenditure concerns transfers both in monetary terms and in kind and is expressed as a percentage of total public expenditure. The government size is measured by total public expenditure as a percentage of gross domestic product. Five-year averages are shown.

Source: The data are taken from Ameco.

Conclusion

Four trends – population ageing, changing skill composition, increased heterogeneity and rising costs of taxation – put pressure on the welfare state: public expenditures increase, become less effective and more costly to finance. One way to bring down public expenditure and to relieve the pressure is to increase the employment rate. Jobs should therefore be high on the policy agenda in the different European countries. Of course, more jobs may require changes in the current welfare-state arrangements.

2.3 Determinants of productivity growth in the past

2.3.1 Europe's slowdown: Victim of its own success

By trying to invigorate the EU economy, the Lisbon strategy is meant to fight pessimism. The gloom about Europe's performance is wide-spread. One reason is the trend of falling productivity growth rates. In the late 1990s, European economies showed, according to several sources, a significant decline in the productivity growth rate. This continues a trend that started after the first oil crisis. The trend suggests that Europe will see its relative position in the economic League of Nations deteriorate, especially since a country like China sees its income double every 10 years and the American economy has surprised observers by showing an acceleration in productivity growth rates.

This section challenges pessimism not by promising a glorious future but by pointing to a glorious past. The slowdown, we argue, is partly the inevitable consequence of Europe's success. First, high employment growth – one of the objectives of the Lisbon strategy – is partly responsible for disappointing productivity growth in the late 1990s. Second, many European countries have caught up with the US and have exhausted their potential to grow by imitating state-of-the-art technologies. The logical implication is that their rate of productivity growth has fallen. Furthermore, structural reasons for the slowdown do not seem strong. Yes, nowadays the EU invests relatively less in R&D and spends relatively less on education than the US, but this was also true 10, 20 or 30 years ago. Moreover, the EU has not seen its expenditure on R&D or on education as share of GDP fall. Only in interaction with catching-up could R&D and education play a role: the low expenditure levels could contribute less to productivity growth when countries approach the productivity frontier. Even in this case Europe's slowdown is the mirror image of its own success, reflecting high employment growth in recent years and catching up in recent decades.

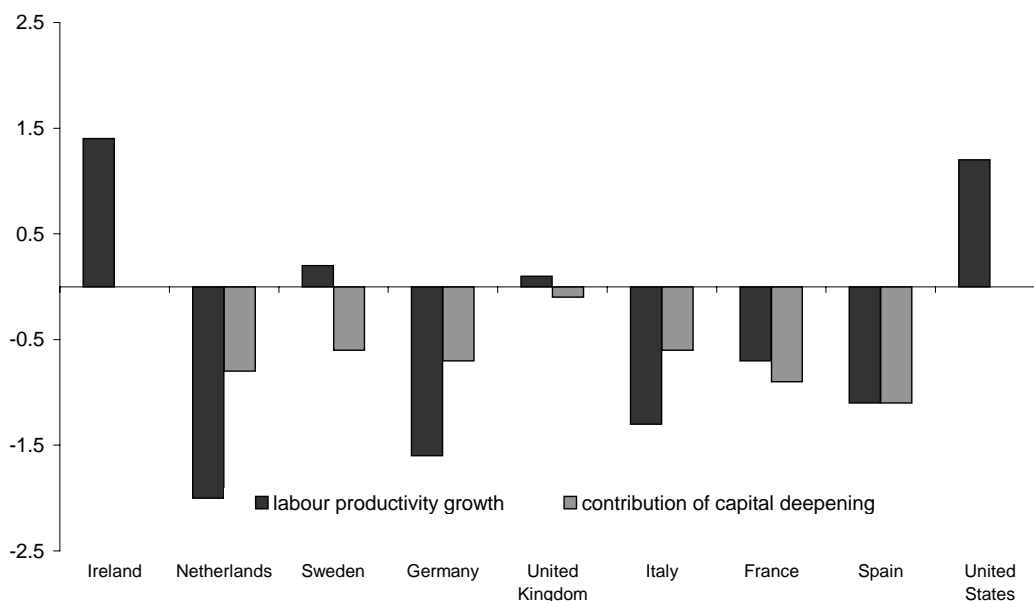
In the short term, employment growth hurts productivity growth

In many European countries productivity growth in the second half of the 1990s was significantly lower than in the first half. At the same time, the growth of employment (in persons) recovered markedly from -0.35% in the first half to 0.65% in the second half. In the US the concern was exactly the opposite: the country showed a remarkable increase in productivity growth but was not able to create jobs. There was fear of jobless growth.

The different country experiences suggest a trade-off between employment growth and productivity growth, at least in the short run. One explanation is that irrespective of the economic conditions, highly productive workers are employed and that depending on these conditions the less-productive workers are invited to enter or forced to leave the labour market. With fast(er) employment growth, as in the second half of the 1990s, the less-productive workers enter, reducing the average productivity of workers. This effect on productivity of the composition of the labour force has been studied for the Netherlands, which had spectacular employment growth in the 1990s. The effect exists, but is quantitatively small (CPB, 2004b). Another, more relevant explanation for the short-run trade-off is the delayed response of capital growth to a change in employment growth, such that the available stock of capital per worker falls when employment expands. As a result, labour productivity slows down as production becomes less capital-intensive. Below we clarify why this explanation is relevant for the 1990s in two steps.

The first step relates the change in labour productivity growth (from the first to the second half of the 1990s) to the change in capital deepening. Capital deepening contributes to labour productivity growth. The more capital goods are available for a worker, the higher the productivity of this worker. Figure 2.7 shows the change in labour productivity growth and the contribution of capital deepening to that growth for several countries. The difference between the two is usually referred to as total factor productivity.

Figure 2.7 A falling capital-labour ratio largely explains the slowdown in the late 1990s



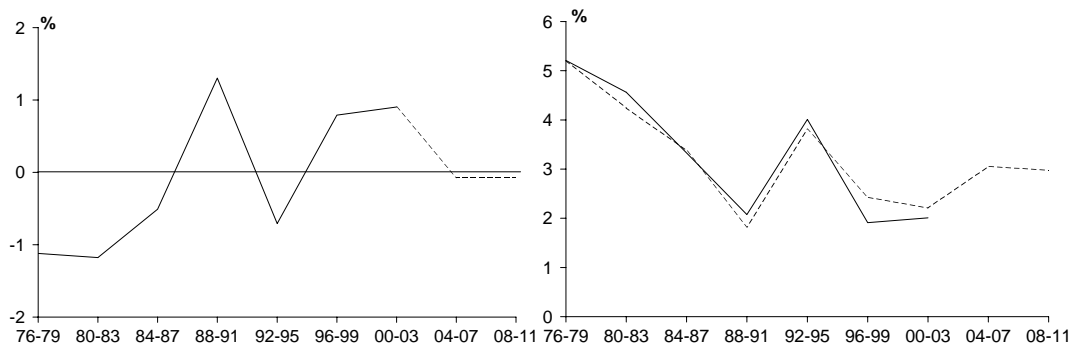
Notes: The figure shows the difference between the period 1996-2000 and the period 1989-1995. For Ireland and the US, the change in the contribution of capital deepening is negligible. The data shown is the composite of nine European economies: Belgium, Denmark, Spain, France, Germany, Italy, Netherlands, Sweden and the UK. The panel of 16 OECD countries includes in addition Australia, Canada, Finland, Japan, Norway, New Zealand and the US.

Source: *Economic Outlook* (2004).

Countries in continental Europe saw the growth rate of labour productivity fall. At the same time, these countries saw (the growth of) the capital-labour ratio decline. In France and Spain a lower contribution of capital explained the growth slowdown completely, in Germany and Italy it was responsible for a significant part.

The second step relates fluctuations in capital deepening to fluctuations in employment growth. Figure 2.8 shows the four-year averages of the growth in total working hours (left panel) and in the capital-labour ratio (right panel). A quick look already reveals that capital-deepening is weak in periods of high employment growth (as in 1988-91 and 1996-2003). This apparent relationship is confirmed by a panel regression for 16 OECD countries in the period 1970-2003, where we regressed the pace of capital deepening on the growth of employment (measured as total hours worked). The dotted line in Figure 2.8 shows that the explanatory power of this regression is very high: a very large proportion of the fluctuations in capital deepening are induced by fluctuations in employment growth. This implies that the slowdown in productivity growth, insofar as it stems from a slower pace in capital deepening, is temporary. It is the flip side of a strong increase in employment growth. If employment growth in the near future, say in 2004-11, were return to its average over 1970-2000, capital deepening would be expected to recover. This is indicated by the dotted lines in both panels for 2004-11.

Figure 2.8 Growth of total hours worked and the capital-labour ratio in Europe



Notes: The left panel shows the growth (four-year average) of total hours worked including a projection for 2011; the right panel shows capital deepening (four-year average, straight line), the fit from a panel regression and a forecast based on the same regression and the projection for employment.

Capital deepening is, however, only part of productivity growth. For the other part, growth of total factor productivity (TFP), a similar story does not hold: TFP growth hardly slowed down in the late 1990s – the period of accelerating employment growth – and even less so in the early years of the 21st century. Indeed, a panel regression confirms that TFP growth and employment growth are not especially related, not even in the short run. TFP growth has its own dynamics, not directly related to fluctuations in employment growth.

The trade-off between employment and productivity growth (or capital deepening) applies to the short run but most likely not to the long run. Barro & Sala-i-Martin (1995) show that for many OECD economies, unlike population growth, the growth rates of real GDP per capita do not have a secular tendency to decline.⁸ From a different angle, countries such as France and the UK experienced similar productivity growth of nearly 2%, despite their diverging population growth (0.3% in France and 1.5% in the UK). Van Ark et al. (2004) show that over the past two centuries productivity and employment growth are positively related, though a trade-off clearly exists for one or two decades. Finally, the European Commission (2004b) uses a (SVAR) model for the EU in which an employment shock has a negative but small impact on the level of labour productivity, but not on its long-term growth rate.

Summarising, high employment growth has contributed to the slowdown in productivity growth through a temporary reduction in capital intensity. It is unlikely, however, that a trade-off persists in the long run.

Europe's potential for catching up is exhausted

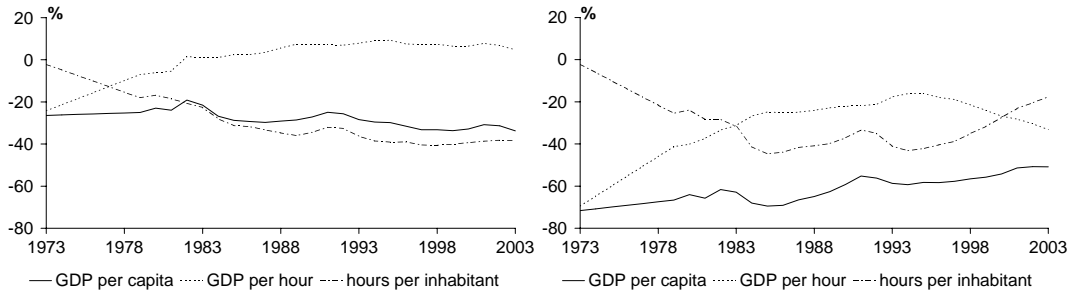
The high productivity growth rate in Europe after the Second World War derived partly from the possibility to learn from the leader in productivity, i.e. the US. By copying and adapting state-of-the-art technologies, most European countries could augment productivity at a rather rapid pace. At the same time the possibility to learn from the US diminished. This may explain the structural slowdown in productivity growth, at least for some countries.

France and Spain are illustrative of how European countries have caught up with the US. Figure 2.9 shows the decomposition of GDP per capita – in deviation of the US rate – into GDP per hour and hours per inhabitant. The figure shows that in the early 1970s France and Spain needed to increase

⁸ Theoretical models are often silent about the relation between productivity and population growth. The latter has a positive (and not a negative), effect on economic growth in some models. In these models more researchers generate more knowledge, which is non-rival and contributes to the productivity of *each* worker (Jones, 2004).

GDP per capita by 30% and 70% respectively to be at the levels of the US. In terms of GDP per hour France succeeded and Spain came halfway, but both lost ground in terms of hours per capita.

Figure 2.9 Catching up in France (left) and Spain (right): Difference with the US



Source: Computations by de Groot et al. (2004) based on the GGDC (2004) dataset.

France is an example of several advanced countries in Europe, such as Germany, Italy, the Netherlands, Belgium, Denmark and Austria. Until the 1980s or 1990s, these countries enjoyed high growth rates, catching up to the US. This potential for catching up has been exhausted, as their GDP per hour has come at par with the productivity leader. They still lag behind in terms of GDP per capita. This does not reflect a gap in ability, but stems from a different choice between labour and leisure (see section 2.1.)

Spain reflects a few lagging economies, including Greece and Portugal, with substantially larger productivity gaps.⁹ Convergence in GDP per hour was substantial until the 1970s (Greece and Portugal) or 1980s (Spain), but stopped in the 1990s. In Spain, it has turned into divergence since 1995. At the moment none of these countries converges to the US, despite their productivity gap of 30 to 60%.

Intermediate positions are taken by the UK, Sweden and Finland, still lagging 10 to 20% behind. Remarkable outliers are Ireland and Luxembourg. Owing to its specialisation in financial services, Luxembourg has a sky-high productivity level. Ireland has shown an extraordinary growth spurt. It has come to be at par with the US, both in GDP per hour and per capita, despite the gap of 80% in 1970.

Productivity levels in mainly Western European countries have come close to those in the US. These countries operate at the technology frontier and no longer have the ‘advantage of backwardness’. Can gradually losing this potential of learning explain (part of) the EU’s slowdown in productivity?

To answer this, we have run a panel regression in which labour productivity growth is ‘explained’ by R&D expenditure and by the productivity gap with the US.¹⁰ The effect of the gap measures the

⁹ Carvalho & Harvey (2004) apply a multivariate time series model and observe two possible convergence clubs in the euro zone. The first club (including France) is at par with the US. The second club (including Spain) will remain almost 30% below the high group in terms of per capita income.

¹⁰ A panel regression forms the basis for the decomposition of productivity growth into the impact of R&D and catching up for seven EU countries (Denmark, Finland, France, Italy, the Netherlands, Sweden and the UK). The panel includes 12 OECD countries and 12 industries in 1981-99.

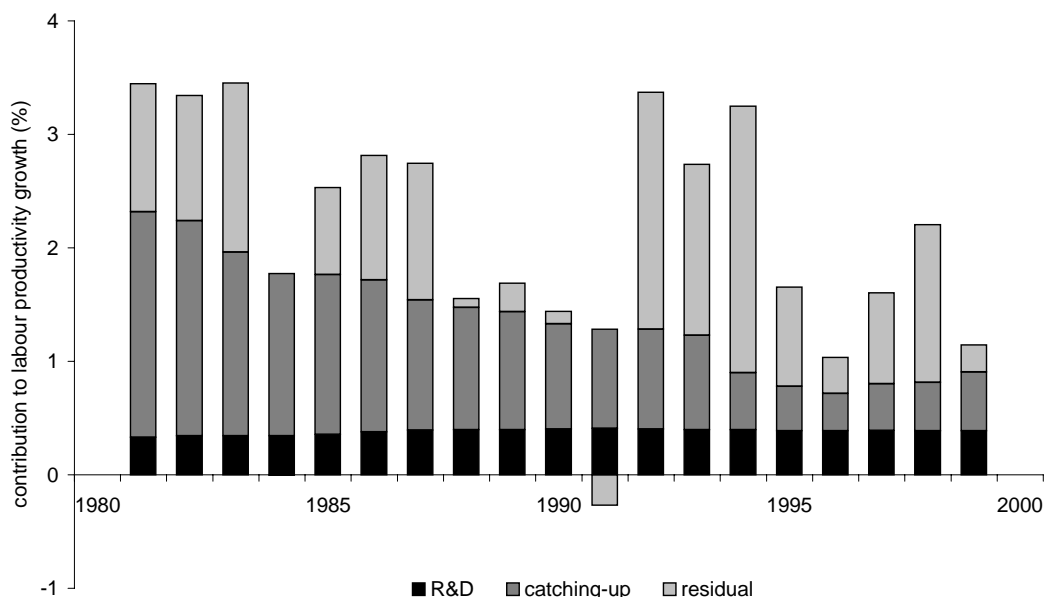
We regress the growth rate of value-added per hour in country i and industry j ($YH_{i,j}$) on the productivity gap with the US (per sector), the growth rate in the US (per sector) and the share of R&D expenditures (R/Y) and include a full set of industry & country dummies. The resulting equation is:

$$g(YH_{i,j}) = 0.15g(YH_{US,j}) + 0.07(YH_{US,j} - YH_{i,j}) + 0.31(R_{i,j}/Y_{i,j}) \quad R^2 = 0.15$$

Following Griffith et al. (2000), we also included a cross-term (productivity-gap * R&D-share) measuring the decreasing return on R&D in sectors close to the productivity frontier, but this cross-term is insignificant.

advantage of backwardness. In Figure 2.10 the regression result is illustrated for an average of seven EU member states. Labour productivity growth is attributed to R&D expenditure and to catching-up. The growth rate falls on average over the years. Similarly, the catching-up effect becomes smaller over time, as the gap with the US grows smaller. The effect is one and a half percentage points at the beginning of the sample period and only a half percentage point at the end. Catching-up is behind the structural slowdown in productivity.¹¹

Figure 2.10 Catching-up is behind the productivity slowdown



Note: The contribution of R&D and catching up to labour productivity growth in seven European countries (see footnote 10).

2.3.2 America's success: Using ICT

The usual measures, such as access to the Internet or access through a broadband connection, show that ICT has infiltrated economic life in the US much more than it has in the EU. Moreover, the technological breakthrough seems to have especially benefited American companies such as Microsoft, Cisco and Dell a great deal. Indeed, ICT is behind America's success after 1995 and is often regarded a recipe for Europe's ailing productivity growth.

But how important is the contribution of ICT to economic growth on either side of the Atlantic? First, ICT is more important in the US than in the EU, simply because the share of ICT capital is much higher (5.2% of GDP in the US versus 3.3% of GDP in four EU countries).¹² The share reflects investment in ICT goods in the past and present. It has increased in recent decades in Europe but much faster in the US. The growth of ICT capital has contributed positively to the acceleration of productivity growth in both regions. This is shown by the contribution of ICT capital in Table 2.1.

¹¹ Figure 2.9 also shows that R&D contributes to productivity growth, but not to its slowdown (see section 2.3.3).

¹² The ICT-decomposition of productivity growth is made by Inklaar et al. (2003) for four European countries (Germany, France, the UK and the Netherlands) and the US.

Table 2.1 Growth accounting decomposition of labour productivity growth

	EU-4		US	
	1979-95	1995-2000	1979-95	1995-2000
Labour-productivity growth	2.30	2.02	1.21	2.46
ICT-producing sectors	0.44	0.65	0.51	0.89
ICT-using sectors	0.62	0.59	0.36	1.43
Non-ICT sectors	1.21	0.83	0.48	0.23
Non-ICT capital	0.70	0.25	0.35	0.43
ICT-producing sectors	0.08	0.03	0.05	0.06
ICT-using sectors	0.18	-0.03	0.12	0.10
Non-ICT sectors	0.44	0.25	0.17	0.26
ICT capital	0.33	0.53	0.46	0.86
ICT-producing sectors	0.04	0.07	0.06	0.11
ICT-using sectors	0.21	0.35	0.28	0.57
Non-ICT sectors	0.08	0.11	0.11	0.18
TFP growth	0.94	1.07	0.26	1.05
ICT-producing sectors	0.30	0.53	0.35	0.71
ICT-using sectors	0.17	0.19	-0.15	0.68
Non-ICT sectors	0.48	0.35	0.06	-0.34

Note: The EU-4 comprises France, Germany, the Netherlands and the UK.

Source: Inklaar et al. (2003).

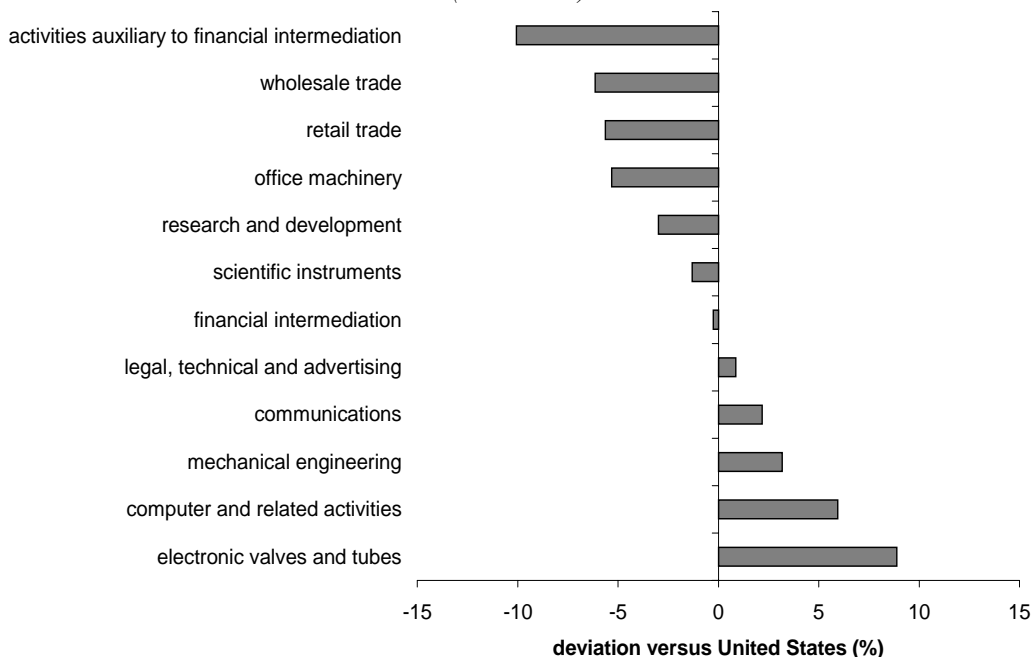
Second, two elements in the contribution of ICT to economic growth can be distinguished, stemming from the production of ICT or from its use in other sectors. Table 2.1 shows that the ICT-producing sectors of the economy (e.g. electronic equipment and communications) have contributed to higher productivity growth in both the EU-4 countries and the US. Although productivity growth rates of more than 10% are no exception, the direct impact of these sectors on aggregate productivity growth is limited, given their relative size: 0.2 percentage points in the European countries and 0.4 percentage points in the US. This does not exclude, however, the possibility of spillovers to other sectors.

The acceleration of productivity growth in the US is concentrated in ICT-using industries (e.g. wholesale trade, retail trade and financial intermediation): TFP growth in these service sectors has been up to 5% in 1995-2000, about 3 percentage points higher than in the decades before (1979-95). This contrasts sharply with the European experience in these sectors, showing a modest TFP growth of 1% both before and after 1995.

Does this evidence lead to the conclusion that ICT fully explains not only the acceleration of productivity growth in the US, but even the whole gap between the America's upswing and the European slowdown (van Ark et al., 2003)? This conclusion is not clear-cut, however, and several qualifications are in order (see also Box 2.3). First, ICT-related sectors in the US are not uniformly outperforming their EU counterparts. Figure 2.11 shows the growth differential for selected ICT-related sectors in the period 1995-2001. It clearly reveals that labour productivity in some sectors has grown much faster in the EU than in the US, especially in communication and computer services. Yet three large sectors (wholesale trade, retail trade and [part of] financial intermediation) have grown relatively fast in the US. These three sectors are able to account for almost all of the productivity growth difference between the two economic blocs. The question arises (which is the second

qualification) as to how much of the growth spurt in these sectors is related to the introduction of ICT. Gordon (2004) highlights the spatial component of productivity growth in the retail sector. The retail sector in the US has grown fast by using ICT intensively and by concentrating retail in the sparse suburbs of large cities. Daveri (2004), however, points at the limited use of ICT in retail trade. He shows that the share of ICT capital in this sector is smaller than in the total economy. Leaving this sector out of the set of ICT-using sectors, he shows that ICT use explains only 55% instead of 90% of the US acceleration, and 40% instead of 60% of the productivity gap between the US and the EU.

Figure 2.11 Growth differential of labour productivity for ICT sectors between the EU-15 and the US (1995-2001)



Source: O'Mahony & van Ark (2003).

Within Europe, the differences in impact of ICT across member states are huge and depend highly on the sources of growth (capital deepening or TFP growth) and types of industries (ICT-producers versus ICT-users). The share of ICT capital in Sweden and Finland comes close to the American rate of 6% of GDP, about twice as high as in Germany and Spain (Timmer et al., 2003). A different pattern, and again wide variation, can be observed in the productivity growth of ICT-producing industries: the growth has accelerated strongly in Germany and Finland, but slowed down in Sweden. This contrasts with productivity growth in ICT-using industries, showing an acceleration in Sweden, but a downturn in Italy (Daveri, 2004).

The differences across countries, including European success stories, and the high growth rates of many ICT sectors in Europe, make one point clear: Europe has not missed the ICT train completely (cf. Gordon, 2004). Some countries and several sectors have been able to produce or adopt ICT successfully. Why shouldn't other sectors and other countries be able to copy this? In other words, ICT is a potential source on which the EU can draw to raise its productivity growth. ICT has been unable to overcome the productivity slowdown in the past, but it could represent an opportunity for acceleration in the future.

Box 2.3. Why has the US benefited more from ICT than the EU?

We distinguish between two aspects of ICT-related productivity growth, namely ICT investment and TFP growth in ICT-intensive industries. In this box, we survey some of the arguments, but are unable to give a conclusive answer.

ICT investments are and have been higher in the US than elsewhere. Inklaar et al. (2003) investigate whether this reflects a relative cost advantage, but the evidence is hardly supportive. It is also unlikely to be a matter of insufficient access to new technologies in the EU, as the market for ICT goods and software is essentially global (van Ark et al., 2003). An alternative explanation starts with the observation that ICT investments are relatively risky. Bartelsman & Hinloopen (2004) argue that the share of firms investing in risky technology increases as competitive pressure becomes more intense and as firms are able to flexibly adjust complementary production factors such as labour. In a panel of 13 OECD countries, they show that employment protection legislation (EPL) in particular, but also various measures of product market regulations, significantly reduce the share of ICT investment in total investment. Van Ark et al. (2003) also point to structural impediments in product and labour markets hampering ICT adoption in Europe. They quote recent research for US retail trade, which has shown that the entry of highly productive firms and the exit of less-productive firms is responsible for almost all of the labour productivity growth in this sector.

TFP growth in ICT-using industries has been relatively high in the US since 1995. The success story of retail trade in the US suggests that conditions such as the scale and geography of the economy might determine the return on ICT adoption. Alternatively, Jovanovic & Rousseau (2005) argue that the adoption of a general-purpose technology like ICT in recent years or electronics in the late 19th century requires a lengthy learning process, resulting in temporarily lower productivity growth preceding the boom. The US has gone through this learning process in the 1980s and early 1990s; many European countries are still in it. An important aspect of this learning process is the implementation of ICT through experimentation and innovation. Pilat (2004, p. 52) argues that “without this process of ‘co-invention’, which often has a slower pace than technological invention, the economic impact of ICT may be limited”. Van Ark et al. (2001) conclude that “one must be careful not to embrace a simple story that is based only on excessive European regulation. The more rapid take-off of wireless technology in Europe suggests that some regulation, for example, setting standards, can be productivity enhancing as well.”

2.3.3 Growth to come: Investment in knowledge and technology

The poor productivity growth is often seen as evidence that the EU and its member states have less ability to innovate. Lacking, the reasoning goes further, is investment in knowledge. Europe spends less on R&D than the US. Europe spends less on (tertiary) education than the US. Investment in knowledge is the key to coming up with new ideas and finding ways to implement these ideas; it is the key to innovation.

We agree that investment in knowledge, through education and R&D, is beneficial for economic growth. We do not dismiss the thesis that more investment in knowledge will boost European productivity growth, as Messrs Barroso, Kok and Sapir put forward. This does not imply, however, that lack of investment explains the productivity slowdown in Europe. Investment in R&D or in education has not declined. As such, they did not contribute to the productivity slowdown. It may be, however, that the current shares of R&D and education have been sufficient in the past for the adoption of technology, but inadequate for future innovations.

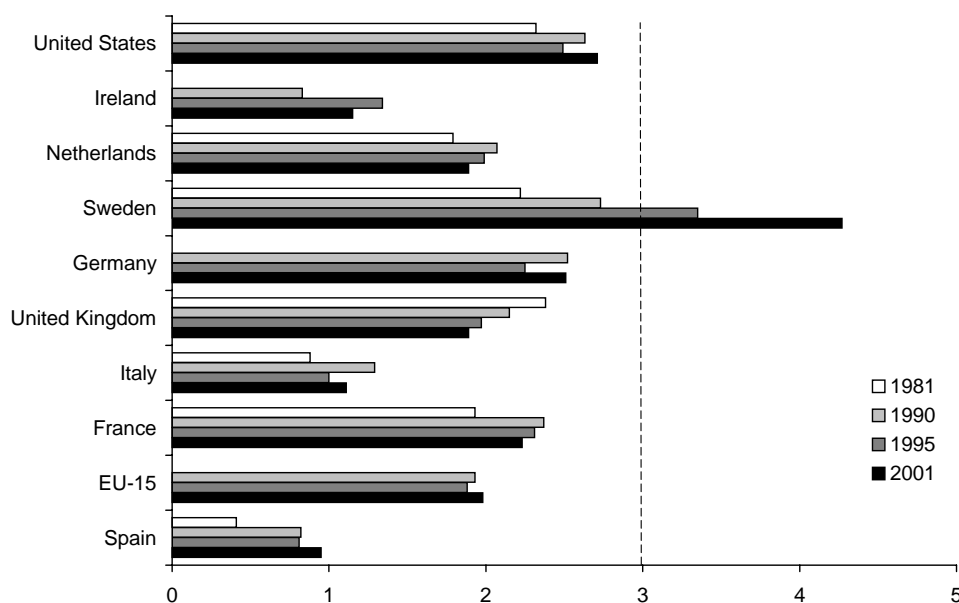
Research and development

R&D is important for discovering new products and production methods. In their brief survey of the literature Jones & Williams (1998) conclude that the social return on R&D is likely to exceed 25%. Given that a normal rate of return on investment is often set equal to 10%, this is high. Positive externalities explain that the return on R&D is higher than normal: investment by one firm increases not only productivity of that firm but also of other firms, within or outside the same sector and within or outside the same country. The large difference in return prompts Jones & Williams to conclude that

the US should spend more on R&D. In fact, much more: they claim that the US should quadruple its expenditure. From this perspective, the Lisbon target that the EU should increase R&D expenditure from roughly 2 to 3% does not even seem ambitious.

R&D contributes to growth, but is it also part of the story behind the productivity slowdown in Europe or the acceleration in the US? To start with the latter, Figure 2.12 shows that R&D expenditures in the US have slightly risen, but no more than slightly. In any reasonable estimate of the return on R&D, this increase has only marginally contributed to the productivity acceleration in the US. Moreover, a large role for R&D in growth is in conflict with the observation that the R&D intensity is quite low in successful ICT-using service sectors, such as wholesale and retail trade.

Figure 2.12 R&D expenditures (% of gross domestic product)



Source: Eurostat.

With the exception of Sweden and Finland, in European economies expenditures on R&D have been stable. In Sweden and Finland, higher R&D investments are likely to have contributed to an acceleration of productivity growth; in other countries, however, a change in R&D has not occurred, and cannot therefore explain the change in productivity growth. The total contribution to productivity growth depends not only on R&D expenditures but also on the return on these expenditures. This return may have declined since European economies have shifted towards the technology frontier. R&D's absorption of state-of-the-art technologies becomes less important when fewer technologies are left to absorb. But this line of reasoning is not essentially different from that in the previous section, where we argued that the potential for catching up is exhausted and that this is a structural reason for the productivity slowdown.

Where do these differences in R&D expenditures stem from? Bottazzi (2004) shows that country-level variations in R&D expenditures cannot be explained by differences in sector compositions. Low R&D expenditures at the national level reflect low expenditures within each sector. Unfortunately, little is known about the determinants of R&D expenditures within countries, sectors or firms. Several explanations are put forth in the literature to explain variations in these R&D expenditures. First, Bloom et al. (2002) show that the user costs of R&D are a significant determinant of R&D expenditures and likely explain part of the cross-country variation. They show that countries with low tax burdens on R&D, i.e. with low corporate taxes and substantial R&D tax credits, tend to have higher R&D shares. Second, not only costs, but also revenues are a likely determinant of R&D

expenditures. These returns are likely to be higher for countries able to learn from the productivity leader. In other words, catching-up reduces the return on R&D (Acemoglu et al., 2004). Third, both private firms and governments invest in R&D. It could be that public R&D stimulates firms to raise their private expenditures by reducing marginal costs. Alternatively, it is possible that public R&D makes private expenditures redundant, as new technologies are invented anyway. Unfortunately, the empirical literature does not clearly answer whether public R&D raises or reduces private expenditures, as Garcia-Quevedo (2004) concludes from an extensive meta-analysis.¹³ Finally, differences in regulations or in the scale of the economy may affect the R&D intensity, but again it is still unsettled as to how. It is even unclear whether unequivocal conclusions will ever be reached, as different types of R&D in different sectors have to deal with specific sources of market failures (Martin & Scott, 2000).

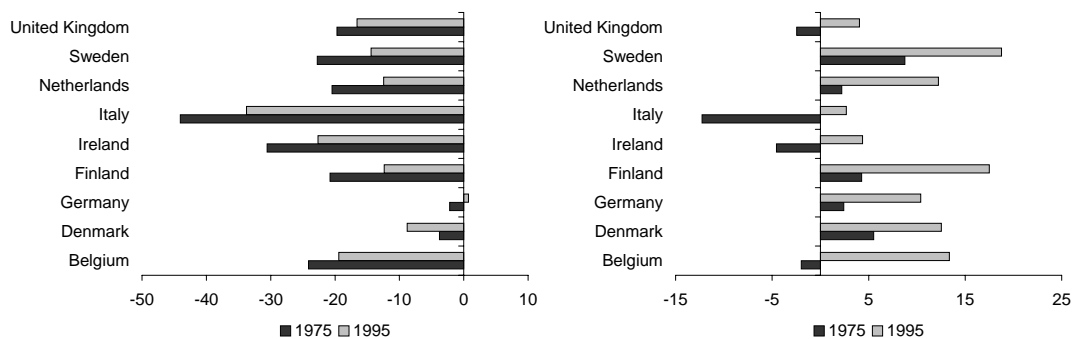
Looking back, R&D cannot explain the productivity slowdown in the EU: if anything R&D expenditures have increased. Looking forward, the empirical literature supports the idea that a higher R&D intensity raises productivity growth, but is less conclusive about how expenditures can be raised.

Education

An educated population is a prerequisite for high income per worker. This statement undoubtedly holds at the global level, comparing Western economies with developing countries. In a worldwide cross-section, Sala-i-Martin et al. (2004) show that primary schooling has been among the most important determinants of economic growth in the post-1960 period. Focusing on advanced economies, it is less obvious whether education is a critical factor behind productivity differences. Does education, possibly of a particular type, matter for economic growth in Europe and the US? If so, has it contributed to the productivity slowdown?

Intuitively, education matters for growth or at least for the level of productivity. Do empirical studies confirm this intuition? The economic literature does not provide conclusive evidence for the impact of education on productivity growth. Yet, de la Fuente & Domenech (2002) and Krueger & Lindahl (2001) emphasise that the contribution of investment in education to productivity growth is sizable, once education is correctly measured.

Figure 2.13 Schooling years and literacy in 1975 and 1995 (percentage deviation with the US)



Note: Schooling years (left panel) are OECD figures, as summarised by de la Fuente & Domenech (2001).

Source: Literacy of the working-age population (right panel) is taken from the 1994 International Adult Literacy Survey (IALS).

Could education also be a reason behind the productivity slowdown? It could be if the growth rate of human capital has slowed down. Unfortunately, observations for recent decades are scarce. The picture for the period up to 1995, in Figure 2.13, gives little indications of a European slowdown in

¹³ A meta-analysis can be briefly defined as a quantitative survey of the literature, taking differences in data sources or estimation methods into account.

education. First, European countries lag behind the US in terms of expenditure on education (as a share of GDP), but they are catching up. Second, Europeans had better scores than Americans on an internationally comparable literacy test – measuring both language and math skills – as demonstrated in 1975, and even more so in 1995.

Summarising, educational attainment did not slow down in recent years (or even decades) in Europe. Therefore, the productivity slowdown does not follow from reductions in education expenditures or performance.

R&D and education in combination with ICT

The fall in productivity growth rates in Europe cannot follow from a decrease in investments in R&D, education or ICT. The latter is, however, identified as the engine of the accelerating productivity growth in the US. Does Europe benefit too little from ICT because the level of investment in R&D and education is too low?

Griffith et al. (2003) point out that R&D has two sides. Investment in R&D is not only essential for the introduction of new technologies but is also conducive to the absorption of existing technologies. They show for a panel of 13 advanced OECD economies that this latter effect of R&D is stronger in less-advanced economies, since for them there are more existing technologies to absorb. For countries at or near the productivity frontier, the possibilities of absorption are exhausted or at least diminished. They have to come up with new technologies, like ICT. Is it a coincidence that R&D-intensive countries – such as the US, Sweden and Finland (see Figure 2.11) have been successful in ICT-production and adoption?

Similarly, the fact that education has not contributed to the productivity slowdown does not dismiss the possibility that a highly educated population is essential in the transformation of European economies from technology-adapting to inventing economies (cf. Sapir et al. in European Commission, 2003). The empirical evidence on this topic is inconclusive. Krueger & Lindahl (2001) conclude that “(T)he positive effect of the initial level of education on growth seems to be a phenomenon that is confined to low-productivity countries”. This view is challenged by a recent study by Vandenbussche et al. (2004), who find that skilled human capital (i.e. a highly educated population) statistically matters for technological progress in the advanced OECD economies. Tertiary education in particular is good for growth in these countries. Being at or close to the productivity frontier, these countries are less able to adopt technology from more advanced economies, so they have to invent new technologies or production methods themselves. This requires an educated population.¹⁴ If tertiary education mattered, the US would have a lead: its share of workers with a tertiary degree has increased from 30 to 38% of the working-age population in recent years (1991-2002).¹⁵ Only a few European countries, such as the UK, have been able to mimic this growth spurt, though at a lower level (from 16 to 27%). In other countries, such as Germany, the gap with the US has widened. Most European countries, however, have shown a significant increase in the share of the working-age population with an upper-secondary degree in recent years (1991-2002), which contrasts with the US, where this share declined from 54 to 49% (OECD, 2004, pp. 72-73).

Summarising, large R&D expenditures and a highly educated population might have contributed to the successful development and implementation of ICT in the US, Sweden and Finland, and may be a prerequisite for innovation of new technologies in the future.¹⁶

¹⁴ In contrast, the economically successful adoption of technologies by less-advanced economies requires a substantial amount of lower-skilled labour.

¹⁵ The source for this data is OECD (2004), pp. 72-73.

¹⁶ Future CPB research will investigate these issues further.

2.3.4 Section conclusions

Pessimism about the performance of European economies seems exaggerated. In many economies the level of productivity is high. The growth rate of productivity shows a decline, but this is a logical consequence of success. First, employment growth in the late 1990s was much higher than in the early 1990s by historical standards (although it was not high enough to reach the Lisbon targets for participation). As a result, fewer capital goods have been available per worker, leading to a fall in labour productivity growth. As such, this fall in productivity growth between the early and the late 1990s was temporary. Second, many European countries have caught up with the US. As a result, the potential for catching-up – by imitating and adapting state-of-the-art technologies and products – has become exhausted. This largely explains the downward trend in European productivity growth over a longer period than the 1990s. It implies that Europe will not return to its historically high productivity levels, but should be able to mimic productivity growth in other frontier economies as in the US.

At the same time that the EU saw a sharp decline in productivity growth, the growth rate in the US stepped up. The American economy has benefited from the ICT revolution more than European economies on average. Mainly the introduction ICT technologies in services such as retail and wholesale trade have contributed to the growth spurt. These service sectors are not known for their spending on R&D.

More generally, there are not many indications that Europe's slowdown or America's acceleration is related to changes in investment in R&D or in education. On both sides of the Atlantic, R&D expenditures have been a stable fraction of GDP over the years. Nor is a change in education expenditures an obvious candidate to explain the slowdown in Europe and acceleration in America. Over the years the average schooling years and average test scores have improved in Europe much faster than in America.

The fact that education, R&D and ICT do not explain the productivity slowdown in the past does not dismiss the opportunity they could offer for future productivity growth in Europe.

2.4 Conclusions

Looking back, European economies have scored well on some aspects of economic performance. First, participation in the European labour markets has on average increased, although the rates of participation have remained rather low in the largest EU member states. Second, the level of productivity has been high by international standards. That its growth rate has fallen over time, especially in the late 1990s and ever since the 1970s, is partly the consequence of economic successes. The fall in the late 1990s was related to a surge in labour market participation in that period. The decrease since the 1970s has been related to past growth: many European economies have caught up with the US in terms of productivity.

The European slowdown does not follow from decreasing investment in R&D, education or ICT. A possible explanation is that investment in knowledge may not have been enough to fully exploit the opportunities from ICT. Yet the evidence for this possibility is scarce as well as mixed.

In this chapter we have focused on the proximate causes of productivity: investments in R&D, education and ICT. We left out the deeper causes, such as institutions, regulations and preferences, without wanting to suggest in any way that they are unimportant for economic growth. On the contrary, removing international barriers to trade in goods and productive factors could be one of the spearheads of EU policy. Similarly, we have largely ignored the determinants of employment growth, but only pointed at the likely role of the welfare state. Questions dealing with why participation rates went up or why Europeans work shorter hours than Americans are either investigated in other CPB studies, such as CPB & SCP (2003) or will be the object of future research.

Chapter 3.

Open Method of Coordination: Too much and too little

3.1 Introduction

In Lisbon the heads of states formulated a common ambition for the member states of the EU. To fulfil the common ambition, a common approach seemed logical. Yet it was easier to agree on a formulation of the ambition (which country did not want to see an increase in production without deteriorating the environment or breaking up social cohesion?) than it was to reach a consensus on an approach. It was clear to everyone that politically sensitive reforms in their pension systems and labour market were needed to become more ‘competitive’. But opinions differed strongly on the exact changes.

Indeed, there is wide variety in the ways welfare states are organised in Europe. A single European model does not exist. A common way to categorise the European welfare states comes from Esping-Andersen, who originally distinguished three types of welfare states in Europe: the liberal, the social-democratic and the corporatist welfare state. Later the Mediterranean type of welfare state was added. A discussion on these different types can be found in CPB & SCP (2003).

The problem for the EU was to agree upon reforms without favouring one type of welfare state over the other. The solution to this problem was a method of governance, with which the EU and its member states already had experience. Since 1997, it has been used for coordinating employment policies. Not until the Lisbon summit of March 2000 was this governance method given its name, the Open Method of Coordination (OMC). This method brackets political conflict as it does not impose a single, European vision on the ideal welfare-state design or other policy areas. Instead, it is positioned as a “means of spreading best practices and achieving greater convergence towards the main EU goals” (European Council, 2000). In other words, Lisbon was not ‘day one’ of the new method but tried to bring together existing, scattered policy practices in a new discourse, open to everyone with an interest in (improving) these practices.¹⁷

There is a wide range of different forms of governance in use in the EU. These can be distinguished by a number of institutional choices, such as the focus on a national or a European policy and the actors involved.¹⁸ The OMC is a combination of national policy and informal European coordination, where decisions are based on consensus. Specifically and according to the March 2000 Presidency Conclusions of the European Council in Lisbon, it involves:

- fixing guidelines for the Union combined with specific timetables for achieving the goals they set in the short, medium and long terms;
- establishing, where appropriate, quantitative and qualitative indicators and benchmarks against the best in the world, which are tailored to the needs of different member states as a means of comparing best practice;
- translating these EU guidelines into national/regional policies by setting specific targets and adopting measures, taking into account national and regional differences; and
- monitoring, evaluating and undertaking peer review, organised as mutual learning processes.

¹⁷ Whether the OMC is a new mode of governance has since been subject to a lively debate in the literature. Radaelli (2003) for instance argues that the OMC is a new governance architecture. Yet the SER (2004) concludes that it is questionable whether the OMC is even a policy instrument. Although the method is part of the EU’s arrangements, ways to enforce compliance are limited at best. Furthermore, no competences are formally delegated to the EU level, i.e. the European Commission and European Parliament play only a minor role.

¹⁸ See WRR (2003) for an extensive treatment of the different forms of governance.

The ranking is based on the following three criteria. The first and most important criterion is the possibility of sanctions. Sanctions are informal in the OMC and derive from peer pressure and public opinion. Peer pressure is operative in the BEPGs, but it is virtually absent in the area of pensions, where only national strategy reports have a similar function. A second criterion to define the ‘strength’ of the mode of OMC is the determination of the common guidelines. All policy areas combine qualitative and quantitative guidelines; however, there are large differences across policy areas as to how precise and demanding these are. In the BEPGs there are for instance clear guidelines, whereas for pensions there are only broad objectives. A third and final criterion is the clarity regarding the roles of different actors, in particular in the peer review. The Lisbon declaration enumerates the different elements of the OMC procedure. But the document is written in rather general terms and does not provide all-encompassing and clear-cut procedures. Therefore, in the absence of juridical, predetermined procedures, the new method has unfolded in different ways, with different results as to the clarity of institutional actors’ roles.

Figure 3.1 shows that the ‘strength’ of the OMC differs from area to area. The degree of coordination is considered to be relatively weak in the area of pensions systems. The BEPGs provide the relatively strongest restrictions on the member states, although they retain the liberty to ignore the guidelines when making economic policy. Indeed, when compared with the Community method, where the EU is able to enforce agreements, the degree of coordination through the OMC is rather weak.

That the OMC has developed differently in various policy areas fits well with the principle of subsidiarity. According to this principle, which is central in the Constitution for Europe,¹⁹ competences remain with the member states unless there are good reasons to coordinate the action of the member states at the EU level. This principle implies indeed that the degree of coordination has to be different in different areas. But taking this one step further, the question arises as to whether EU interference with national policies in some areas is even necessary. We take up this question for the two areas that are central in the renewed Lisbon agenda: jobs and growth. The answer starts with an explanation of the subsidiarity principle.

The subsidiarity principle

Within the EU the allocation of competences between the Community and the member states themselves is subject to the subsidiarity principle. Competences remain exclusively with the member states unless there are good reasons for some form of EU coordination or centralisation.

The subsidiarity principle is, however, in itself neutral about the direction to take: decentralisation or centralisation. There are two good reasons to assign competences to the most decentralised (in this case national) level of decision-making. First, the distance between decision-makers and voters is relatively small. This is important for ensuring that decision-makers are accountable for their actions. Local environmental problems should preferably be handled locally. Second, decision-makers can relatively easily incorporate country-specific preferences or institutions in their actions, as is for instance prevalent in the labour market. Country-specific policies may be preferable over a unifying as well as restrictive framework.

Similarly, there are two good reasons for delegating powers to the EU level or for sharing powers between the Community and its member states. The first derives from cross-border externalities. A policy change in one member state may have positive (R&D) or negative (pollution) effects on other member states. The second reason derives from economies of scale, which is for example an important justification behind the harmonisation or mutual recognition of standards: firms do not need to comply with many different standards but rather with only one. Figure 3.2 shows reasons for both decentralisation and for centralisation. An objective analysis of each pro or con is possible, but

¹⁹ Article 1-11 of the Constitution states: “Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and insofar as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level”.

works through the terms of trade. Higher employment in one country raises the export demand for others. In the short run, this could spur production, using slack capacity, and reduce unemployment. In the long run, higher export demand will be accommodated by higher export prices, as slack capacity is not structural. Higher employment in one country therefore benefits others through terms-of-trade gains. The negative spillover works through the (rental) price of capital. A member state will see capital leave and the investment rate fall temporarily when economic success elsewhere brings an increase in the return on capital. This will have a negative effect on productive capacity in the future.

The simulations assume that in Germany employment increases by 10% and reveal the effects on other European countries. Table 3.1 presents the simulation results. The impact on real income in Germany is less than 10%, implying lower real income per worker. To sell more German products abroad, producers need to lower their export prices. Likewise, the increase in the German demand for foreign products will lead to an increase in the import prices. With cheaper exports and more expensive imports, Germany sees its terms of trade fall. This is the main reason why real income increases to a lesser degree than employment.

The change in the terms of trade is an income loss for Germany but an income gain for the other European countries. Other countries share in the German success through the terms-of-trade improvement. Since the effect on capital costs is smaller, these countries have a net benefit from an expansion in German employment. More importantly, the spillovers of employment growth are rather small. The income gain is only 1 to 3% of the income gain for Germany (the first column in Table 3.1). Put differently, €1 of extra income in Germany leads to less than €0.1 of extra income in the other countries and regions in Europe. These effects cannot be characterised as a rising tide, but rather as a drop in the ocean.

A crucial as well as plausible assumption is that the rate of employment in one country does not have a direct effect on the structural rate of participation and unemployment elsewhere. As long as this holds, a member state can expect far more from increasing its own employment rate than from higher employment in other member states.

One could argue that more employment will also trigger more investments in innovation and technical change. These investments could have important spillovers on neighbouring economies. But of course, there are other, more direct ways than increasing employment to boost innovation and technical change. European efforts to increase innovation could better focus on these ways than on employment.

Table 3.1 The effects in Europe of an employment increase in Germany change as a result of the 10% increase in employment

	Real national income	Absolute change	Terms of trade
	Percentage change	(Germany = 100)	Percentage change
Germany	9.04	100.00	- 1.55
France	0.12	0.92	0.23
Italy	0.12	0.62	0.20
UK	0.09	0.71	0.19
Spain	0.10	0.36	0.21
Netherlands	0.18	0.49	0.12
Belgium	0.27	0.47	0.20
Eastern Europe	0.28	0.90	0.29

Source: Simulations with WorldScan.

Productivity growth

Investments in better products and production methods are important for the levels and growth rates of productivity. Typically, they involve externalities, i.e. investments by one firm increase the production

possibilities of other firms. The reason is that knowledge of products and production methods resembles a public good. Its use is non-rival and is – to some extent – non-excludable.

The spillovers of knowledge investments are international. Investments in one country have an impact on the productivity of other countries. Empirical work linking these two is large (for an overview see Keller, 2004). In particular, R&D investments are found to have important external effects on productivity outside the country in which the investments occur.

Knowledge is, however, not a global public good. Distance matters for the transfer of new technologies. The effect of knowledge investment on productivity becomes smaller the farther a country is from the place of investment. Table 3.2, based on Keller (2002), shows that R&D in the US contributes much less to total factor productivity (TFP) in small European economies such as Finland, Italy and the Netherlands, than German, French or British R&D, even though the US expenditures are more than six times larger. Keller's estimates imply that for every 1,200 kilometres the effect of R&D investments is reduced by a half. He also finds support for the popular notion that the world has become smaller: in the late 1970s the decay with distance was larger than in early 1990s. But even in the 1990s the distance factor was far from dead.

Table 3.2 European R&D is important for domestic productivity (TFP), percentage change in TFP due to a 10% increase in R&D expenditures

	Finland	Italy	Netherlands
Domestic	0.01	0.06	0.03
France	0.11	0.12	0.11
Germany	0.17	0.16	0.16
United Kingdom	0.16	0.15	0.17
Japan	0.01	0.00	0.00
US	0.08	0.05	0.06
Aggregate	0.53	0.53	0.53

Source: Own calculations based on Keller (2002).

There are at least two reasons for the strong effect of distance on knowledge transfer, depending on the form of the spillover. It could be that firms learn from observing the technologies that other firms employ. In this way investment in new products and production methods by one firm enhances the production possibilities of other firms directly: a pure knowledge spillover. New communication technologies have made learning at a distance easier. Yet face-to-face contact remains important, since knowledge about these products and production methods is at least partly tacit. Distance matters for bringing people together. It could also be that know-how is embodied in intermediate goods and services and in capital goods. Investment by one firm enhances the production possibilities of other firms indirectly, through the use of these goods and services: a pure rent spillover. Distance matters for international trade in goods and services. As a rule of thumb, the trade volume between a pair of countries reduces by half when the distance between them doubles. Since technical progress is concentrated in the production of tradables, i.e. primary products, manufacturing goods and some services (e.g. communication), the rent spillover across countries is economically important.

In short, spillovers from knowledge investment are international but are confined to neighbouring countries. Thus the EU seems to be well suited to coordinate and perhaps even to implement measures to stimulate knowledge investments. It seems likely that each member state has a stake in the success with which other member states stimulate investments in new products and production methods.

Conclusion

The OMC has expanded to different policy areas. This expansion is defended by the mutual interest in national economic policies. Central in this defence are cross-border externalities. The assumption of cross-border externalities seems reasonable for policies to raise growth by stimulating productivity-

enhancing investments in know-how and technology. A typical characteristic of these investments is that others besides the investor also benefit from them, either by acquiring new knowledge or through lower prices. The assumption of cross-border externalities is, however, dubious for policies that stimulate jobs. Once a member state is in a position of full employment or cannot lower the structural unemployment further, it cannot benefit from more jobs in another member state by raising exports and production. Consequently, EU labour markets are hardly interdependent: the labour market in one member state has only a marginal structural effect on production and relative prices in the others.

3.3 The functions and flaws of the OMC

The cross-border externalities of more jobs and higher growth differ markedly. More employment has virtually no international spillovers, whereas faster productivity growth may lead to significant gains elsewhere. Based on the first observation, one could argue that the EU has too many competences: the main argument for EU involvement with national employment policies is not very strong. At the same time, one could argue that the EU has too few competences: the European Community of member states has little influence on national policies to stimulate investments in technologies and know-how, even though these investments have clear international spillovers. Indeed, the member states have promised to stimulate this type of investment but without clear results thus far. For example, in the last five years R&D has been a rather stable percentage of production, even though the member states have endorsed the aim of raising it from less than 2% to now 3% of GDP in 2010. This is probably one of the examples Mr Barroso had in mind, when he concluded that the member states have not delivered. After reviewing the first half of the Lisbon strategy, Mr Barroso has put forward several proposals that should increase ownership of the Lisbon strategy among the member states. National governments should adopt and discuss with their parliaments a national action plan, in which targets and actions to reach these targets are made explicit. Also, the member states should choose a ‘Mr or Ms Lisbon’, who is responsible for the progress towards the targets.

EU involvement with national employment policies may not only arise from cross-border spillovers. The OMC may provide countries with a better opportunity to learn from each others’ experiences. Also, EU involvement may help politicians to pursue difficult domestic reforms. In its ideal-typical form the OMC could serve at least three different functions: it could help to internalise international spillovers, it could help politicians to pursue domestic reforms and it could allow countries to learn from each other. How well has it served each of these functions? And will the new proposals improve any of the functions? Five years of experience with the Lisbon strategy should help us to answer these questions.

International spillovers

Coordination is a necessary condition for internalising international spillovers. Indeed, the idea behind the OMC is that the economic performance of one country has a positive effect on the performance of the other countries. As such, the OMC is potentially useful for policies to stimulate knowledge investments or to boost innovation as well as for other areas such as the environment. The process has similarities with the one that is laid down in the Kyoto Protocol. In the latter process, national targets for reduction in greenhouse gas emissions add up to a common target for reduction. They are different for different countries and follow from lengthy multilateral negotiations in which a country’s circumstances will play a role. The decentralisation of targets does not restrict countries in the way they want to achieve a reduction in greenhouse gas emissions. In principle, the OMC can work in a similar fashion. In practice, the European Union’s goals have not been translated into different national targets, although the introduction of national action plans may change this practice.

A weak point of the Kyoto Protocol is the commitment to the national targets. When a country does not fulfil its target, is there a sanction that will credibly force a country to comply with its obligation? This same point applies even more strongly to the OMC. First, in the OMC formal sanctions do not exist. The main sanction mechanism is informal and relies on peer pressure and public opinion. Second, the Lisbon targets are or may prove to be much more ambitious than the Kyoto ones. The

targets are set before the costs of reaching these targets are known. What are the costs of increasing R&D expenditure to roughly 1% of GDP? When the costs of reaching a target are high, the target is not credible, whether the sanction mechanism is formal or informal.

Since the sanctions are not strong and the targets are not credible, the OMC does not seem to solve the problem of free-riders. Countries then fail to take into account that the benefits of productivity growth spill over to other European countries.

Domestic reforms

The sanction mechanism is central to the organisation of collective (and in this case EU) action. It may also be useful for political action at the national level. Politicians may find it difficult to pursue painful reforms. One reason is that the benefits and costs of such reforms are unevenly distributed. Many may gain, but a few will lose. The losers are relatively well-positioned to organise action groups and lobby against plans for reform. This may lead to a 'status quo bias'. Another reason is that re-election is helped with immediate results and not with future benefits. The IMF (2004) estimates that it takes more than six years before labour market reforms have a positive effect on production. With such a time lag the pressure to postpone reforms is large.

The OMC may serve the function of helping politicians to commit themselves to (plans for) reforms. For example, it may be useful in deflecting criticism of unpopular but necessary policy actions at the national level (WRR, 2003 and Collignon, 2004). Also peer pressure may contribute to the political determination to carry reforms through. Of course, to serve the function of stimulating commitment, targets are appropriate but an EU-wide target is not really necessary. Nevertheless, the OMC does not seem to have worked as a commitment device. After the first half of the Lisbon strategy, Mr Barroso has come to the conclusion that "the single biggest challenge we are facing midway towards 2010 is to fix the implementation deficit". Apparently, the OMC has failed at this task in recent years.

Learning

An important argument for a soft coordination method such as the OMC is the potential for policy learning, both bottom-up and cross-nationally. The idea is that through the process of participation, exchanging information and peer reviews, policy learning is stimulated. A problem in obtaining the optimal results for learning is that there is a tension between diversity and learning on the one hand and targeting for convergence and EU-wide results on the other hand. Whereas policy learning is an unpredictable, the cooperative process and progress on the Lisbon strategy is measured with targets and timetables and is enforced by peer pressure.

Although academic literature on the OMC has now become a thriving industry, our empirical knowledge of the OMC at work in specific policy processes remains limited. Still, from the preliminary evidence we can draw some lessons regarding its potential for mutual learning. The overall impression emerges that the results have been very limited until now. According to de la Porte & Pochet (2004), the European Employment Strategy has at best sparked national-level discussions. Also cross-national and bottom-up policy learning has been limited.

One seemingly successful result is convergence at the level of ideas in some policy areas (ideational convergence; see Radaelli, 2003). This may be an important development, as the convergence at the level of ideas may point the way towards an EU model. Radaelli (2003) for instance describes the emergence of an "EU desirable model" in employment policy, which is a hybrid of Anglo-Saxon and Scandinavian instruments. These elements of ideational convergence are still embryonic, however; furthermore, convergence in 'talk' may not produce convergence in decisions.

Will the new proposals improve the functioning of the OMC?

The adoption of a national action plans and the appointment of Mr or Ms Lisbon should improve the informal sanctions when a member state's contribution to growth and jobs is below par. These proposals to "help to get ownership and legitimacy at the national level would be strengthened through

the involvement of social partners and civil society in the preparation of a national Lisbon programme” (European Commission, 2005). Committing national politicians to reforms should enable countries to internalise the international spillovers of their policies better than before.

Clearly, these proposals are not aimed at fostering mutual learning. In areas where spillovers are virtually absent, such that the desired degree of coordination is weak, cross-national learning is the main value added by the OMC. Policy learning should be organised as a voluntary process (Groenendijk, 2004). The shift towards national action plans seeks to reinforce commitment and thus reduces the potential of learning. This is particularly relevant for employment, where international spillovers are weak, but where the common threat of population ageing warrants mutual learning.

In the previous section we argued that international spillovers of productivity growth are positive and thus a good reason to put pressure on member states to implement policies that raise productivity growth. Unfortunately, the proposals to renew the Lisbon strategy will not effectively strengthen the functioning of the OMC. There are at least two reasons to think this. The first reason is that politicians will refuse to commit themselves to targets (or deadlines) that are hard to reach. If they are to be held personally responsible for reaching targets, then it is to be expected that the national targets will not be very ambitious. A second reason why the changes in the governance method could be ineffective is that national voters may still perceive the targets as ‘something of Brussels’ and that the political consequences for the government and for Mr or Ms Lisbon will therefore be small. Especially large countries will not listen to Brussels, as evidence on peer pressure suggests (IMF, 2004). Even when hard sanctions are available, as in the Stability and Growth Pact, large countries may manage to exempt themselves. For all these reasons, it is questionable whether the new proposals help the OMC to act as a commitment device or enable countries to internalise the spillovers of their policies.

3.4 Conclusions: Which direction should reforms take?

The Open Method of Coordination potentially serves three tasks: it facilitates learning, it supports national reforms and it internalises cross-border spillovers. The method is applied to a range of policy areas, including jobs and growth, pensions and the BEPGs.

In some policy areas, such as innovation policy, international spillovers warrant coordinated action. Member states should raise investment in R&D beyond their national ambitions to enable other countries benefit from their inventions and vice versa. The experience of the past five years has, however, shown that the OMC is not capable of generating the necessary commitment from national governments. Although a greater involvement of national governments is a step forward towards more commitment, we still should not expect too much in this direction. Without formal sanctions there is no way to enforce the member states to improve productivity growth by raising their investments in R&D. Ideally, the decision-making power in innovation policy should be delegated to the EU in order to optimally benefit from its potential.

In other policy areas where international spillovers are weak (as in ‘jobs’), the Open Method of Coordination may already contribute by fostering mutual learning. This learning could be pursued further, in particular in policy areas where member states are faced with similar challenges. Neither the emphasis on national action plans nor the use of quantitative targets will be very helpful in this respect. Maybe the OMC in its current weak form is the most appropriate tool to serve the task of learning, although the huge diversity within the EU reduces the potential to imitate policies. It may still be too early to judge, but the only result so far seems to lie in the convergence of ideas.

Overall, it seems impossible to serve both jobs and growth with one single governance method. Especially when applied to policy areas with strong international spillovers, such as growth, the OMC does not seem to be the most appropriate method. Or, as Hodson puts it: “The open method, it is argued, provides a means to minimise the costs of co-ordination, but it is doubtful whether it can deliver the benefits” (Hodson, 2004, p. 233).

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NIER	National Institute of Economic Research, Stockholm, Sweden
NIESR	National Institute of Economic and Social Research, London, UK
NOBE	Niezalezny Osrodek Bana Ekonomicznych, Lodz, Poland
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