EFN REPORT

THE EURO AREA AND THE LISBON STRATEGY

AUTUMN 2004

About the European Forecasting Network

The European Forecasting Network (EFN) is a research group of European institutions, founded in 2001 and co-financed by the European Commission. The objective of the EFN is to provide a critical analysis of the current economic situation in the euro area, short-term forecasts of the main macroeconomic and financial variables, policy advice, and in-depth study of topics of particular relevance for the working of the European Economic and Monetary Union. The EFN publishes two semi-annual reports, in the spring and in the autumn. Further information on the EFN can be obtained from our web site, www.efn.uni-bocconi.it or by e-mail at efn@uni-bocconi.it .

Participating Institutions:

IGIER, Università Bocconi (Coordinator)
Team Leader: Massimiliano Marcellino (massimiliano.marcellino@uni-bocconi.it)

Centre d´Etudes Prospectives et d´Informations Internationales (CEPII)
Team Leader: Lionel Fontagné (fontagne@cepii.fr)

The Halle Institute for Economic Research (IWH)
Team Leader: Christian Dreger (cdr@iwh-halle.de)

The Department of Economics, European University Institute (EUI)
Team Leader: Michael Artis (michael.artis@iue.it)

Anàlisi Quantitativa Regional (AQR), Universitat de Barcelona
Team Leader: Jordi Suriñach (jsurinach@ub.edu)

Instituto Flores de Lemus (IFL), Universidad Carlos III
Team Leader: Antoni Espasa (espasa@est-econ.uc3m.es)

Department of Applied Economics (DAE), University of Cambridge
Team Leader: Sean Holly (sean.holly@econ.cam.ac.uk)

External Collaborator:
Global Insight
Team Leader: Emilio Rossi (emilio.rossi@globalinsight.com)

Coordinator of the Report: Massimiliano Marcellino

This Report reflects the authors' views. The European Commission is not liable for any use that may be made of the information contained herein.

Report closed on 24 September 2004

Table of Contents

Executive Summary

The Autumn 2004 report of the European Forecasting Network (EFN) presents a detailed analysis of the macroeconomic outlook and forecasts for the euro area and the new member states. It continues with eight studies on the working of the Lisbon Strategy and related issues. We first summarize the contents of each of the chapters, and the full report then follows. Additional details on each study can be found in a set of annexes available on the EFN web site at www.efn.uni-bocconi.it .

Euro area outlook and Forecasts

World growth has been strong this year, but the euro area still lags behind

In the first half of 2004 and during the summer, world output has been expanding strongly. Constantly high and rising oil prices, however, have spread some doubts about the continuation of the upswing. This is true particularly for the US, where output growth slowed in the second quarter of 2004 and consumption in particular was less buoyant than expected. In addition, the strong stimulus provided by US fiscal policy is declining while US monetary policy will become less expansive in the second half of 2004, further dampening the rapid expansion of output.

The second centre of the upswing is East Asia with its two main economies, Japan and China. In Japan, however, like in the US, the economy slowed in the second quarter. While export expansion is still dynamic and consumer confidence is strong, the high investment dynamics from last winter seem to show signs of weakening, judging from data from the national accounts. This is possibly due to the oil price hike. China is still booming, although administrative measures to prevent the economy from overheating started to dampen growth in demand during the summer.

The mild revival in the euro area is mainly export driven, with a minor expansion of private consumption

The euro area still lags behind the world-wide expansion. While economic activity picked up markedly during the first half of 2004, a strong upswing has not been realized, because investment growth has continued to be very slow. The revival was driven mainly by strong exports which benefited from a booming world economy and, to a lesser extent, by an expansion of private consumption.

In the beginning of 2004, consumer spending grew more strongly than in any quarter since the downswing started in 2001. In addition, consumer confidence indicators are marginally higher than last year. Thus, the widespread view that a low propensity to consume of households has blocked the recovery of the economy is not supported by the recent data. In general, it is difficult to argue that savings are too high in the euro area. Saving decisions appear to be rational given the higher awareness of sustainability problems of the pay-as-you-go pension systems. In addition, the bursting of the asset price bubble has reduced the wealth of private households, and the oil price hike has put downward pressure on real incomes. Clearly, further progress on structural reforms of the social security systems would strengthen the confidence of households.

A rebound of investment activity is still missing…

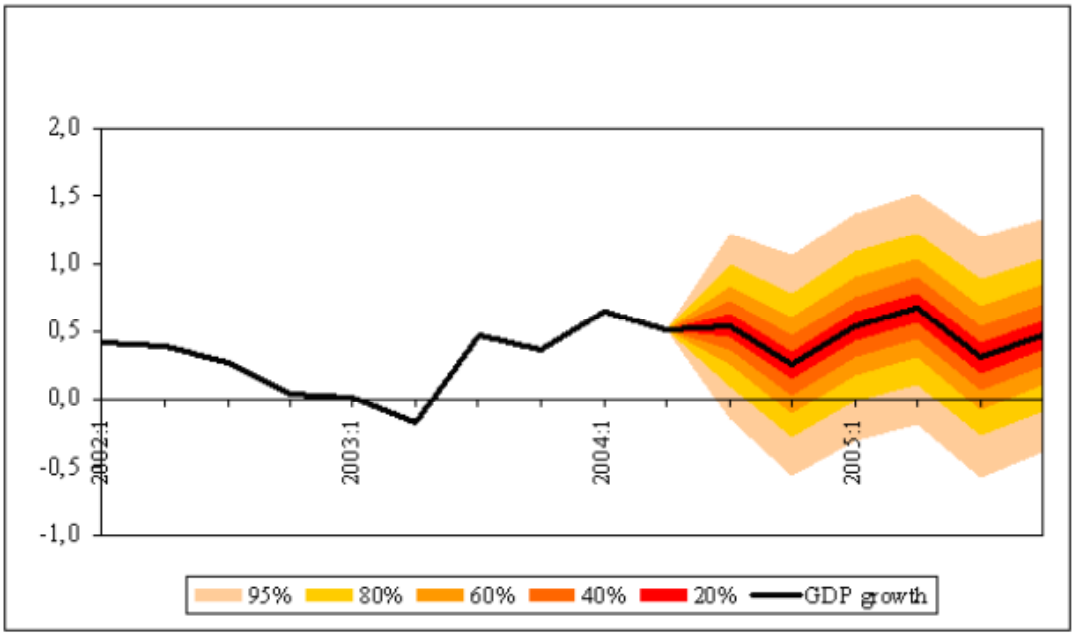
What is importantly missing is a rebound of fixed capital investment which has instead stagnated for the last 3 ½ years by now. Thus, some need to modernize the capital stock should have accumulated, all the more so as nowadays a considerable share of the capital stock is fast depreciating ICT capital. Moreover, industrial production has been expanding since February, and short term indicators like business confidence or order books point to a continuation of the moderate upward trend for the second half of the year. Low real interest rates favour investment decisions. In addition, quarterly results of firms have turned out to be largely favourable during recent months, suggesting that internal terms of financing are improving. However, capacity utilization in the manufacturing sector, which stood at about 81% in the middle of 2004, according to business survey data of the European Commission, is still rather low. Real unit labour costs have been rising during most of the last three years, and are falling only since the last quarter of 2003. They will slowly continue to fall during the course of this year and the next. This implies that the profitability of production will gradually improve. All in all, investment will not be the driving force of economic activity before the turn of the year. While this impedes the upswing in the short run, the relatively weak investment activity over the past decade is a cause for concern for the long-run competitiveness of European firms.

...but conditions for a revival have improved

GDP growth in the Euro area is forecast at 1.8% in 2004 and 1.9% in 2005

Overall, production in the euro area will expand by 1.8% in 2004 and by 1.9% in 2005: see Figure 1. Taking a supply side perspective, about 72% of growth is generated by the services sector. The index of industrial production excluding construction will instead grow at average annual rates of 2.3 and 2.4% in 2004 and 2005 respectively, with the sectors producing non-durable consumer goods registering lower rates of growth.

Figure 1 Quarterly GDP growth rates and confidence bands



Percentage change over the previous quarter

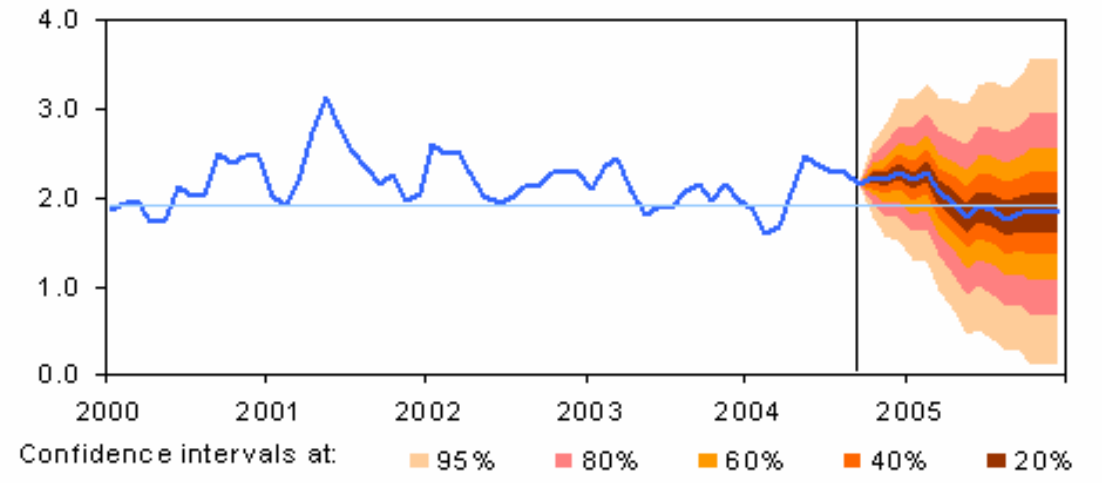
The rise in the unemployment rate has been relatively moderate due to labour market reforms in the 1990s

The rise in the unemployment rate has been quite moderate in comparison with previous cycles. The greater resilience of the labour market seems to be attributable to structural reforms in the second half of the 1990s such as the higher availability of temporary contracts. This has increased the job content of growth. But even a more flexible labour market reacts to the business cycle with some delay. Business expectations about the evolution of employment point only to a slow improvement in the coming months, and the unemployment rate will decrease only in 2005, while the participation rate will not resume the rising trend it had at the time before the economic downturn. Surely, there is still potential for increasing the job content of economic growth by further reforming the European labour markets. Further reforms should comprise less complicated opening clauses for collectively bargained wages and working times, and a stronger role for firm level bargaining.

Due to higher prices in crude oil the euro area inflation forecasts have been updated to 2.1% for 2004 and 1.9% for 2005

The main upward innovations in inflation come from international crude oil prices in euros and from a greater impact than was initially estimated of tobacco tax changes in some member countries. On the other hand, in the core index, which excludes unprocessed-food and energy prices, all its main components except tobacco have experienced mild downward innovations. Taken together, the forecast for total inflation is 2.1% for 2004 and 1.9% for 2005, see Figure 2. This, while reducing the scope of the ECB for following looser monetary policy, should not lead it to increase interest rates as a reaction to higher raw material prices, provided that the unions do not obtain a large compensation for the price increases. In that event the ECB could decide to increase interest rates to break the wage-price spiral.

Figure 2 Year-on-year inflation rates and confidence bands



The EFN forecasts for the main macroeconomic variables in the euro area are summarized in Table 1.

Table 1: Economic outlook for the euro area

	2001	2002	2003	2004:	2004: annual		2005: annual	
				1st half	Point Forecast	Interval Forecast	Point Forecast	Interval Forecast
GDP	1.6	0.8	0.5	1.6	1.8	1.6 2.1	1.9	1.3 2.5
Potential Output	2.5	2.4	2.2	1.8	1.8	1.6 1.9	1.8	1.2 2.3
Private Consumption	1.8	0.5	1.0	1.0	1.3	1.1 1.6	1.8	1.2 2.4
Government Consumption	2.5	3.0	1.9	1.7	1.5	1.3 1.7	1.4	1.0 1.9
Fixed Capital Formation	-0.3	-2.9	-0.6	0.6	1.0	0.0 1.9	3.0	0.3 5.7
Exports	3.3	1.5	0.1	5.6	6.0	5.4 6.6	6.4	4.5 8.3
Imports	1.7	0.3	1.9	4.6	5.6	4.9 6.4	7.0	5.0 9.1
Unemployment Rate	8.0	8.5	8.9	9.0	9.0	8.9 9.1	9.0	8.7 9.4
NAIRU	8.6	8.4	8.3	8.4	8.5	8.4 8.6	8.7	8.5 8.9
Labour Cost Index	3.4	3.5	2.7	2.1	2.2	2.1 2.4	2.7	2.2 3.1
Labour Productivity	0.3	0.2	0.0	1.4	1.7	1.4 2.1	1.9	1.1 2.7
HICP	2.3	2.2	2.1	2.0	2.1	1.6 2.6	1.9	1 2.9
IPI	0.5	-0.5	0.4	4.01	2.3	1.2 3.4	2.4	1.3 3.5

Percentage change in the average level compared with the same period a year earlier, except for unemployment rate and NAIRU that are expressed in levels. Labour productivity is measured as a long run concept and refers to employment potential. Point forecasts and 80% confidence bounds are taken from the EFN forecasting model and are based on 2000 stochastic simulations.

New Member States: Macroeconomic Outlook and Forecasts

For the New Member States, GDP growth will jump to at least 5.2% in 2004 and remain over 4% in the following years

Even before their accession, most of the key economies in the region were recording improved performances, with GDP growth accelerating in the first quarter of 2004. Average annual GDP growth in the region is bound to recover from a preliminary 4.5% in 2003. Our growth forecast for 2004 and beyond is somewhat more optimistic than in our last report. Growth has surprised us on the upside in the first half of 2004, mostly in the case of the economies that have relied on net exports as the key driver of growth in the last several quarters. According to our latest forecasts, GDP growth will jump to 5.2% this year, driven by strong performances in Poland and Slovakia, recoveries in growth in the Czech Republic and Hungary and the continued boom in the Baltics. Our projections for 2004 may well be pushed further upwards based on the very

positive results that were recorded in the first six months of this year. The outlook for growth for all of the New Member States is very good with annual rates in the 4-4.5% range in the coming years.

The New Member States aim at joining the Economic and Monetary Union, but few of them are expected to qualify by 2007-2008

Despite a modest acceleration of inflation in all of the New Member States, the risk of a major resurgence in inflation is not significant in the short- to medium-term future. Overall inflation rates are likely to peak sometime later this year and start declining again in 2005 and beyond. In most cases, inflationary performance is not likely to constitute an obstacle to the New Member States' quest for future membership in the Economic and Monetary Union (EMU). While the smaller New Member States, such as the Baltics, Slovenia, Cyprus and Malta can conceivably adopt the euro as early as in 2007-2008, the four largest, Poland, the Czech Republic, Hungary and Slovakia, have a more difficult task for the next several years, with the prospect of adopting the euro now being pushed back to as far as 2010. Continued problems in containing fiscal deficits are at the core of this challenge. The current fiscal ills in the region are not going to disappear in the short-to-medium term unless growth reaches 4-5% annually across the region and budget spending is seriously curtailed. In our Spring 2004 report, we indicated that the fiscal situation across the region was not very rosy. Unfortunately, the situation has not improved much in the interim. Fiscal challenges will also make interest rate convergence more difficult. Having switched to a more cautious approach to interest rate reductions during 2003, the monetary authorities in most of the New Member States set a steady course late last year and early this year by keeping rate adjustments to an absolute minimum. While there is arguably still room for further interest rate cuts in many of the countries, most notably Slovakia and Hungary, the authorities cannot ignore the first signs of gathering inflationary pressures.

Fiscal challenges will also make interest rate convergence more difficult

---

What success has been achieved in hitting the Lisbon targets?

The key point of the Lisbon Strategy is to become the most competitive and dynamic knowledge-based economy in the world

In the 2000 Lisbon Council the heads of European Union countries stated as their goal the establishment of "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" by 2010. To achieve this, it was intended that an array of economic and structural reforms called the Lisbon Strategy had to be implemented. At the time the macroeconomic backdrop to the proposals was particularly propitious – with hindsight – the world economy was at a cyclical peak. After four years of poor economic performance the euro area is now recovering on the back of a strong revival in the US and Asia. However, the coordination of fiscal policy through the mechanism of the Stability and Growth Pact is in tatters and 6 countries have deficits in excess of 3 % of output.

Setting a date of 2010 as the time by which the necessary supply side changes should be implemented and given an opportunity to boost productive capacity was always very optimistic. Nevertheless, in political terms it was felt that a date which fell within the normal

political horizon was more likely to infuse the reform process with a sense of urgency. However, in many cases the cyclical slowdown since 2000 and rising unemployment has dented any enthusiasm for major change and the supply side reforms – particularly in the large countries of continental Europe – have failed to materialise.

Yet, the current assessment of the Strategy is rather negative

The recent assessment by the European Commission on the progress in achieving the Strategy's goal is mixed: Denmark, Luxembourg, the Netherlands, Austria, Sweden, and the United Kingdom have achieved good results, while Greece, Italy, Spain, and Portugal have performed relatively poorly. Our own evaluation is even more negative, as detailed in the next Chapter.

Rethinking the monitoring of the Lisbon strategy's targets

To measure and monitor the Lisbon's strategy, a complex system of hundreds of indicators was developed. The Commission reduced the list to only 14 Structural Indicators in 2004, which are related to the five main areas of the Lisbon Strategy and to the General Economic Background.

Major problems are the need for public finances to be viable, the unsatisfactory contribution of employment and productivity to growth, the disappointing development of the internal market, and the lack of sustainability of growth

According to the Commission, more than six million jobs have been created since 1999, several key markets have been completely or partially opened up to competition, the knowledge-based economy is becoming a reality, the sustainable development approach is being taken more fully into account in policymaking; and, some one hundred regulations, directives and programmes have been adopted in different fields, all pursuing the Lisbon goals. But there are still a number of major problems, including the need for public finances to be viable, the unsatisfactory contribution of employment and productivity to growth, the disappointing development of the internal market and, the lack of sustainability of growth.

Our empirical analysis illustrates that euro area GDP per capita growth is positively correlated with growth in human capital, employment and business investment. Another important factor influencing growth is the innovation and research process: increases in patents, in youth education attainment levels and in science and technology graduates have run parallel to growth rates, while increases in spending on human resources are not particularly important. Similar results are obtained both from estimating growth equations and evaluating the main components of composite indicators.

These empirical findings could be periodically re-evaluated and represent an interesting complement to the Commission's review of the evolution of different indicators.

Key components to achieve the Lisbon targets are Innovation and Education…

…and supply-side reforms

Supply-side reforms in Europe: Can the Lisbon Strategy be repaired?

As noted in the previous Chapter, the progress of the Lisbon strategy is rather slow and there is little sign that Europe's economic decline is stopping or turning around, particularly in the large countries of continental Europe. There is also substantial agreement on what should be done to improve the long run economic outlook, at least at a general level. Yet, the economic reforms that are needed are not being implemented, or are being enacted too slowly. What can be done to speed up the pace of reforms? What are the most urgent priorities? In particular, what role should the EU play in bringing about supply side reforms? In which areas of supply side policy, if any, is the need for European coordination more acute? How can the current institutional framework for coordination of supply side policies be improved? These are the issues addressed in this chapter.

Information and Communication technologies (ICT) are also important since they influence labour productivity growth

Hourly labour productivity gains due to ICT are comparable across the United States, the United Kingdom, Germany and France, but the highest contribution of ICT in the United States (0.91 point of percentage) and in the United Kingdom (0.85 point) is compensated by lower TFP gains in both countries

The impact of ICT on hourly labour productivity

We propose an accounting assessment of hourly labour productivity growth, in an international perspective, focusing more particularly on information and communication technologies (ICT). As a matter of fact, ICT, viewed as all-purpose technologies, is associated with a third industrial revolution, as these increase growth potential and bring about productivity gains. Therefore, ICT is a key element within the Lisbon Strategy.

The results for the United States, the United Kingdom, Germany and France reveal a division between countries. All four countries display total factor productivity (TFP) gains but paradoxically, over the 1995-2001 period, these gains are weakest in the United States and the United Kingdom. Over the nineties, TFP gains accelerate in France, in Germany and in the United States. On the contrary, they slow down in the United Kingdom though from a high level over the 1990-1995 period. Hourly labour productivity gains are comparable across the four countries, but the highest contributions of ICT in the United States (0.91 point of percentage) and in the United Kingdom (0.85 point) is compensated by lower TFP gains in both countries. The evolution of the labour quality contribution underlines too the possible mismatch between labour and capital, entailing lower TFP gains, as the increase in unskilled labour (as measured by education) in the United States has brought about a deterioration of labour quality over the 1995-2001 period. In France, the fall in labour quality is due to demographics, with the workers aged 54 and more leaving the labour market.

The sectoral analysis carried out for France, the United Kingdom and the United States shows that productivity gains were especially large in ICT-producer industries, in each of these countries. Hourly labour productivity in the ICT producing sector grew by between 12 and 14 per cent in the three countries between 1995 and 2001. Productivity gains also show a marked acceleration over the nineties. Accordingly, TFP gains also increase at a sustained pace.

The sectoral analysis shows that productivity gains were large both in ICT-producer industries, and in the ICT-user sector,

In the ICT-user sector, service industries, the productivity acceleration over the second half of the nineties is generalised and strong (except in the United Kingdom in terms of hours). In the United Kingdom, and even more in the United States, the levels reached during the past period are astonishing for industries belonging to the service sector, with average yearly gains by respectively 2.41 and 3.87 per cent for hourly labour productivity, 1.65 and 2.54 percentage points for TFP. These unusual levels suggest huge productivity spill-over effects linked to ICT are underway, to the extent that the contribution of ICT capital deepening is great in both cases (0.66 and 0,99 point of % per year respectively). It is noteworthy that the strong TFP gains recorded in the user sector in these two countries point to spill-over effects not limited to the producer sector.

ICT explains well the increase in hourly productivity in the US and UK but not in France. In this country, the gains in hourly productivity are high in the manufacturing sector (around 4% between 1995-2001), which is nevertheless less intensive in ICT than services. However, measurement problems affecting services call for caution in interpreting the link between ICT capital deepening and productivity gains in France, especially in banking and finance.

Does deregulation of factor markets affect the path of long term growth?

Institutions should also have an impact on long term economic growth, but empirical evidence is missing

According to modern growth theories, policy and institutional settings have an impact on the path of long term economic growth. To some extent, regulation is necessary to ensure the functioning of market economies, for example in the areas of competition, consumer protection, property rights and environment. Institutions can increase efficiency by correcting market failure. On the other hand, overregulation might worsen resource allocation and the incentives for innovation, thereby exerting adverse effects on long term growth. While the impact of institutions on the macroeconomic performance is well established by sound theoretical models, empirical evidence is not so clear-cut. Therefore, we have analysed the empirical link between institutions and growth. Due to data availability, the focus is mostly on factor market institutions. Several panel estimation methods are used in order to get more robust results. We also investigate the relevance of measurement errors that result from a varying composition of the deregulation indicators.

Our empirical analysis shows that more deregulation fosters growth, in particular through the capital deepening channel

Once measurement errors are controlled for, the alternative models show very similar results. Overall, advances in deregulation will improve the macroeconomic performance. Institutions will affect growth mainly through the capital deepening channel. This points to the relevance of institutions during the catching-up process to the technological frontier. In contrast, the impact of institutions on steady state growth seems to be almost insignificant. In fact, the link might be more complex and may be transmitted through the determinants of technological progress, including research and development and human capital accumulation.

The impact of institutions on the European employment performance in European labour markets, 1979-2001

The employment record in Europe is quite weak, with high long term unemployment rates and relatively low participation rates

Rigidities in national labour markets are widely seen as responsible for the weak employment performance in Europe. The average unemployment rate is 8 percent, and is predicted to be stable for the near future. A substantial part is due to long term unemployment: 45 percent of the unemployed are unemployed for longer than 12 months. The high unemployment rates are accompanied by lower employment and participation rates. Currently, EU15 employment rates are 65 percent, which is not far below the Lisbon goal. But the gaps are wider for young people, older workers and women. Long term unemployment rates exceed the average in Germany, Italy and Spain. Employment rates are relatively low in Belgium, Greece, Italy and Spain. To some extent, labour market institutions can account for this outcome, as they may postpone the reallocation of labour in response to structural shocks. We investigate their impact on the employment record, where the latter is measured, inter alia, by the employment rate, the threshold of employment and the marginal intensity of employment.

Higher union power, higher taxes and a more generous unemployment benefits system lower the employment rates

According to the empirical results, greater union power and stricter employment protection lower the employment rate. Where union power increases wages above the competitive equilibrium, employment prospects are worsened, leading to a decline in participation. A rise in the tax wedge and a more generous unemployment benefit system tend to reduce the employment rate, emphasizing the relevance of policies that increase the incentives for households to work. Higher union power will raise the threshold of employment, especially when unemployment benefits are more generous. This effect is partly offset by a high degree of coordination in wage bargaining. Employment protection legislation is most important for the marginal intensity. Stronger protection will reduce the job content of output growth. The best fitting models point to some interaction of employment protection with other institutional and business cycle variables. A decline in the marginal intensity is expected, if union power is high, and the unemployment benefit system is more generous. The results point to a comprehensive strategy, emphasizing the relevance of policies that increase the incentives for households to work.

Competition and the advent of the euro

Have markets in the euro area become more competitive with the advent of the euro?

We have investigated the proposition that markets in the euro area economies have become more competitive with the advent of the euro. The increased competition stems from more transparent price comparisons and the removal of both exchange rate risk and the buying and selling spreads in foreign exchange markets. These changes lower the total cost and uncertainty to consumers of purchasing goods produced or sold in other euro area countries and make markets more integrated.

A fall in the markup signals an increase in competition…

How might the increased competition manifest itself? In response to the now relatively cheaper imports, firms may lower their prices and markup. One could imagine the extreme case where prices and the markup fall so that relative prices in each country are unaffected by the introduction of the euro meaning that the distribution of sales remains the same and measures of industry concentration are unaffected. Another response may be for firms to merge which would reduce competition and lead to an increase in prices and the markup.

..but it seems to be due to other factors rather than the introduction of the euro, such as the business cycle and inflation

Therefore, there may be two opposing forces on both the markup and competition following the introduction of the euro. The difficulty is to judge if competition has on balance increased in the face of these opposing forces. One way to proceed is to focus on the market outcome in terms of the firm's surplus profit, or in practical terms, the markup. A fall in the markup implies that there is a net benefit to consumers and a net loss to firms, which is consistent with the outcome that would ensue if there were an increase in competition. Therefore, one indirect measure of competition would be the markup, such that a decrease in the markup, all else being equal, is concomitant with a net increase in competition.

We show that although the markup has varied considerably since the introduction of the euro most of this variation can be explained by the movement of inflation and the business cycle. Therefore if we take changes in the markup as a proxy for changes in competitiveness we do not find any evidence of a pro-competitive impact of the creation of the euro area. This may be due to the fact that we are still in a period of transition or that the data are insufficient for making the kinds of distinctions necessary. The impact of the euro on competition therefore remains an open question and one with considerable interest for policy makers in light of the aims of the Lisbon strategy.

Financial Integration of European stock markets

Financial integration is also important to achieve the targets of the Lisbon Strategy

This chapter aims at investigating the financial integration process in Europe compared to the rest of the world over the last decade. We analyse the dynamics of daily returns for 90 country-and-sector indices in Europe as well as in the rest of the world. Returns are obtained from the Datastream database. They cover eleven countries from the euro area and nine countries or zones from the rest of the world over 1990:1-2002:08. Returns are expressed in euros (or Ecus) for euro area countries, and in dollars for all other countries. Hence, the integration measure of each zone (euro area, rest of the world) is not affected by exchange-rate variations.

Our econometric analysis detects increasing integration in stock markets in the euro area, more so across countries than across sectors

Our measure of integration draws on dynamic factor analysis, using a rolling window of one or three years. We show financial integration to be always higher in the euro area than in the rest of the world. For the euro area, our measure of integration across countries rises sharply in 1997-1998; it then declines slightly. For the rest of the world, integration rises only slightly in 1997-1998, and stays constant afterwards. We conclude that financial integration has been at play in the euro area in the 1997-1998 period, and that integration has remained at a higher level afterwards. Conversely, the sector-based integration measure tends to decline over the whole period, both in the euro area and in the rest of the world. The fall is especially marked in 1999-2000, probably due to the bursting of the "dot.com" bubble. At the beginning of the period, the sectoral component is dominant in explaining the co-movements of the returns. This is no longer true at the end of the period for the euro area, due to the scissor evolution of the country-based integration (which rises) and of the sector-based integration (which declines). At the end of the period, the integration measure is about the same for countries and for sectors in the euro area.

Chapter 1
Euro Area Outlook and Forecasts

Economic Outlook for 2004 and 2005

World growth has been strong this year…

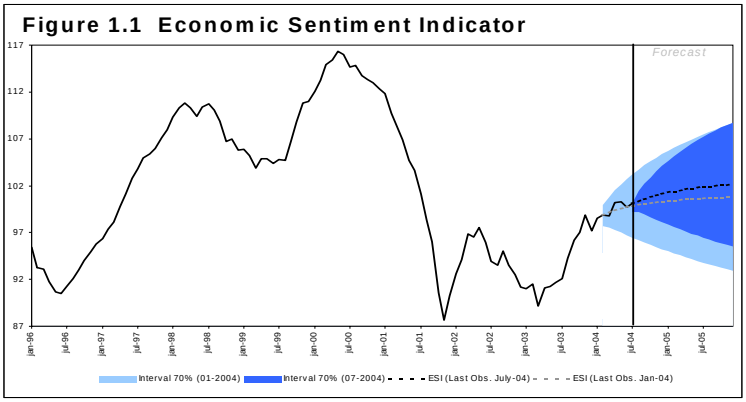
In the first half of 2004 and during the summer, world output has been expanding strongly. Constantly high and rising oil prices, however, spread some doubts about the continuation of the upswing. This is true particularly for the US, where output growth slowed in the second quarter and consumption was less buoyant than expected. In addition, the strong stimulus of US fiscal policy is declining and monetary policy will become less expansive in the second half of 2004, further dampening the fast output expansion.

The second centre of the upswing is East Asia with its two main economies, Japan and China. In Japan, however, as in the US, the economy slowed in the second quarter. While export expansion is still dynamic and consumer confidence is strong, the high investment levels of last winter seem to have weakened according to data from the national accounts, possibly due to the oil price hike. China is still booming, although administrative measures to prevent the economy from overheating started to dampen growth in demand during the summer.

…with the euro area as the least dynamic of the main regions.

In the midst of a worldwide upswing, the euro area is still the least dynamic of the large economic regions. That said, the economy performed somewhat better than generally expected during the first half of the year, helped by strong export growth. The improvement in expectations can be seen in figure 1.1, which shows the Economic Sentiment Indicator for the euro area with the interval forecasts with base on January and July 2004.

Figure 1.1 Economic Sentiment Indicator



Growth dynamics will be strong enough to overcome some dampening effects

In 2005, the worldwide upswing is expected to lose some momentum. The slowdown will be due to the receding stimuli in the US, the effects of the administrative measures in China, and the dampening effects of the high oil prices. On the other hand, the revival in the euro area will gain some momentum in the ensuing months and the growth dynamics particularly in

East Asia appear to be strong enough to ensure a healthy expansion of world output in this year and in 2005. Thus, world trade is expected to expand at 7.8% in 2004. Due to the recovery of the euro area and the implied lag structure, the rate of growth is expected to be slightly higher in 2005 (8.2%).

While world production fulfilled the expectations of an upswing in the first half of the year, stock market indices in the US and in Europe have declined during the summer to their levels of late 2003. This suggests that the markets have priced in a considerable amount of risk. Above all, the recent oil price hike has clouded the prospects. This came at a time when the booms in the US and in China already appear to have peaked.

Risks for the present upswing:

- the oil price hike

The strained markets for crude oil are partly the result of instability in many oil producing countries. At the same time, they are part of the broader picture of high commodity prices, due to strong growth of demand from the US and from China. The general upward trend of commodity prices appears to have eased, but the price for crude oil is about 13 Dollars higher than the average in 2003, around 41 US-Dollars per barrel (Brent) in September. In this forecast we assume that the oil price will only slightly decrease with an average of 37 Dollars both in the year 2004 and 2005. Under this assumption, the oil price hike will dampen the world wide upswing, but it will not put an end to it (see Box 1.2).

- the US current account deficit,

which, to a large extent,

is financed by East Asian governments

A constant risk to the stability of the world economy is the large US-current account deficit, which, relative to GDP, exceeded the 5% threshold in the first half of this year. The stability of the US economy depends on it remaining an attractive place for foreign financial investment. Recently, however, the most important investors were East Asian central banks, mainly those of Japan and China. Thus, the stability of the US-Dollar depends to some degree on the stability of the monetary strategy of these countries. Japan in particular helps to finance the US-current account deficit partly because it aims at an expansion of the Yen monetary aggregates: an unsterilized purchase of Dollar assets raises the Japanese monetary base. But this expansive monetary policy only makes sense as long as the Bank of Japan has to fight deflation. With the Japanese economy in an upswing, a moderately positive inflation rate might be achieved some time in 2005. At this point, the Japanese central bank might cease to be an important investor in US assets. Therefore, the risk of turbulences in the currency markets appears to be higher at the end of our forecasting horizon than they are now.

The revival in the euro area is mainly export driven

The euro area still lags behind the world wide expansion. While economic activity picked up markedly during the first half of 2004, a strong upswing has not been realized, because investment growth was still very slow. The revival was mainly driven by strong exports which benefited from a booming world economy and, to a lesser extent, by an expansion of private consumption.

To some degree, strong export growth during the last decade is just a consequence of the rising international integration of production processes. It has been argued recently that a large share of exports nowadays is in fact simply re-exportation of

intermediate goods produced in and imported from more competitive emerging market economies. Moreover, a growth rate of imports lower than that of exports could be explained by a decreasing domestic demand for imports. If these points were correct, the recent strong expansion of exports would generate little domestic income. Econometric analysis of the dependence of German imports on exports and domestic demand indeed shows that this effect has increased in the process of globalization; but it does not compensate for the stimulating effects of a foreign demand increase.. Thus, the recent export boom in all likelihood generates considerable domestic income and improves the chances for the European economy to come out of stagnation.

There are good reasons for saving rates to increase slightly

In the beginning of 2004, consumer spending grew more strongly than in any quarter since the downswing started in 2001. Consumer confidence indicators are slightly higher than last year. Thus, the widespread opinion that a low propensity of households to consume blocks the recovery of the economy is not supported by the recent data. In general, it is difficult to argue that savings are too high in the euro area. Saving decisions appear to be rational given the higher awareness of the sustainability problems of pay-as-you-go pension systems. Clearly, further progress on structural reforms of the social security systems would strengthen the confidence of households. In addition, the bursting of the asset price bubble has reduced the wealth of private households, and the oil price hike puts a downward pressure on real incomes.

A rebound of investment activity is still missing…

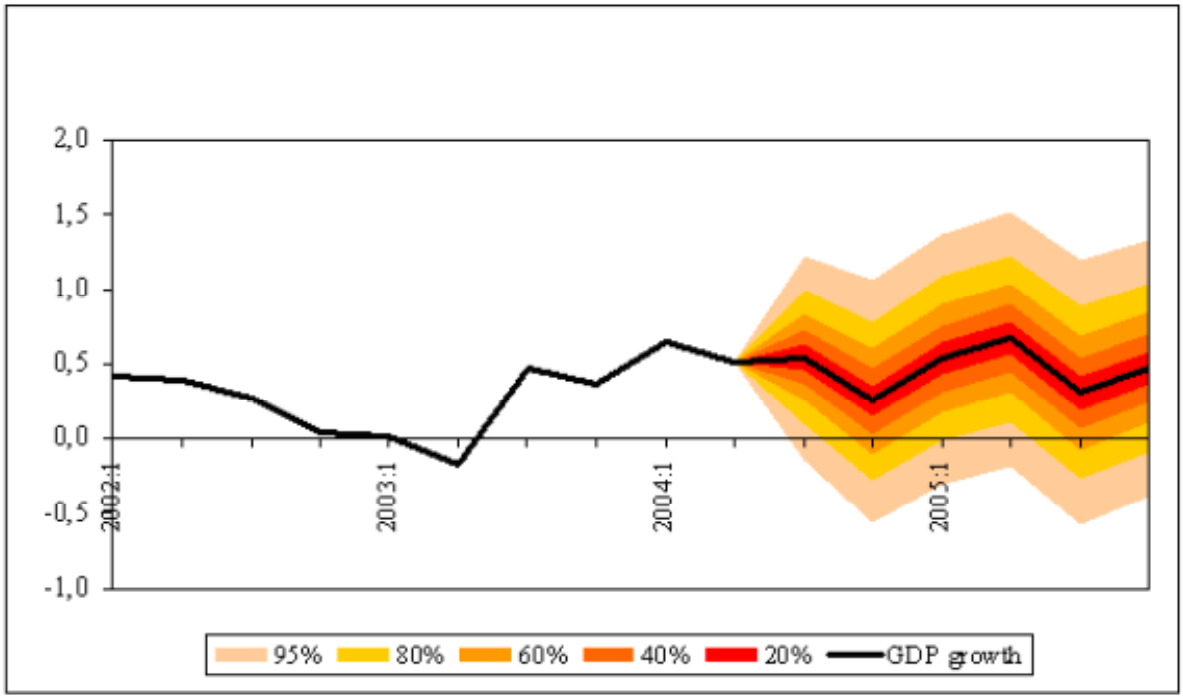
...but conditions for a revival have improved

What is missing from the picture is a rebound of fixed capital investment which has been stagnant for 3 ½ years by now. Thus, some need to modernize the capital stock should have accumulated, all the more so as nowadays a considerable share of the capital stock is fast depreciating ICT capital. Moreover, industrial production has been expanding since February (except for June), and short term indicators like business confidence or order books point to a continuation of the moderate upward trend for the second half of the year. Low real interest rates favour investment decisions. In addition, the quarterly results of firms have turned out to be largely favourable during recent months, suggesting that internal terms of financing are improving. However, capacity utilization in the manufacturing sector, about 81% in the mid of 2004 according to business survey data of the European Commission, is still rather low. Real unit labour costs had been rising during most of the last three years, and are falling only since the last quarter of 2003. They will slowly continue to do so this year and the next. This means that the profitability of production will gradually improve. All in all, investment will not be the driving force of economic activity before the turn of the year. Not only does this impede the upswing in the short run, the relatively weak investment activity over the past decade is a cause for concern for the long run competitiveness of European firms.

GDP growth in the Euro area is forecast at 1.8% in 2004 and 1.9% in 2005

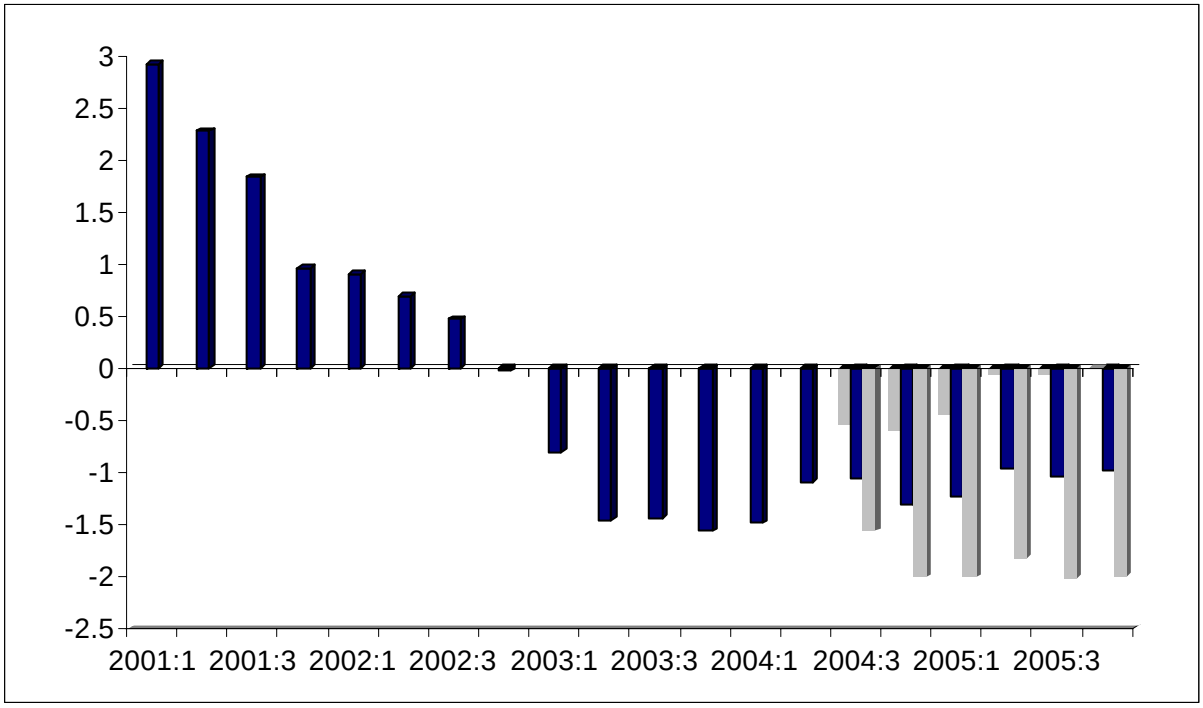
Overall, production in the euro area will expand by 1.8% in 2004 and by 1.9% in 2005, see Figures 1.2 and 1.3. This year the output gap continues to widen. It will shrink in 2005 but will still amount to about 1.2% of GDP at the end of that year.

Figure 1.2: Quarterly GDP growth rates and confidence bands



Percentage change over the previous quarter

Figure 1.3 Output gap



In percent of potential GDP, 80% confidence bands

Table 1.1: CONTRIBUTIONS OF PRODUCTION SECTORS

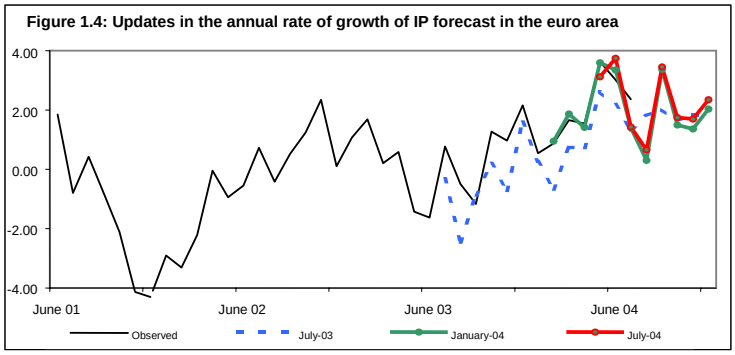
Year	GDP growth	Agriculture	Industrial	Construction	Services	Net taxes
1999	2.8%	0.1%	0.2%	0.1%	2.1%	0.3%
2000	3.5%	0.0%	0.9%	0.1%	2.6%	-0.1%
2001	1.6%	0.0%	0.1%	0.0%	1.7%	-0.2%
2002	0.9%	0.0%	0.1%	-0.1%	0.9%	-0.1%
2003	0.5%	-0.1%	0.0%	0.0%	0.6%	-0.1%
2004	**1.8%**	**0.0%**	**0.5%**	**0.0%**	**1.3%**	**0.0%**
2005	**1.9%**	**0.0%**	**0.5%**	**0.0%**	**1.4%**	**0.0%**

Taking a supply-side perspective, see Table 1.1, the construction sector, which has been falling slightly since 2001, will register a small positive contribution to GDP growth in 2004. The industrial sector will go from zero contribution in 2003 to five tenths of a percentage point in 2004, while the services sector will be responsible for about 72% of GDP growth in 2004 and 2005.

The recovery of industrial production continues with more momentum than in January

The observation of the index of industrial production for July has confirmed the expected recovery, which has been better than the forecast, but with annual rates above what was expected in our last report in January (2.3% and 2.4% in 2004 and 2005 respectively instead of 1.8% as forecasted previously). Figure 1.4 shows the change in expectations in the last EFN reports.

Figure 1.4: Updates in the annual rate of growth of IP forecast in the euro area



Source: Eurostat & EFN Date: September 21st, 2004

The average annual rates of growth for the different industrial sectors classified according to the destination of goods are shown in table 1.2. It can be seen that recovery continues in 2004 in all components except energy, which was growing at 2.9% in 2003. In 2004 and 2005, the non-energy sectors with lower rates of growth will be the sector producing non-durable consumer goods.

Sectors producing non-durable consumer goods will register lower rates of growth

Table 1.2 ANNUAL AVERAGE RATES FOR INDUSTRIAL PRODUCTION IN EURO AREA(***)

	1998	1999	2000	2001	2002	2003	**2004**	**2005**
Capital	6.7	2.4	8.2	1.6	-1.6	-0.1	3.6	3.8
Durable	4.2	1.3	6.1	-2.1	-5.6	-4.3	2.5	1.9
Intermediate	3.7	1.9	6.2	-0.6	0.2	0.4	2.2	2.9
Non Durable	2.1	1.2	0.9	0.8	0.6	0.1	0.6	1.1
Energy	1.6	0.8	1.9	1.3	1.1	2.9	2.0	0.6
Total EMU	3.8	1.8	5.2	0.4	-0.5	0.3	2.3	2.4

(***)Bold figures are forecasts. Working day adjusted data.

Source: Eurostat and UC3M.
Date: September, 21st 2004

The industrial recovery in the Euro area will be weaker than in the US

In 2003, industrial production in the euro area registered a rate of growth similar to the one registered in the US, but in 2004 and 2005 industrial growth will be significantly higher in the US than in the euro area, with annual mean rates of growth in 2004 of 4.6% in US and 2.3% in Europe.

The rise in the unemployment rate has been quite moderate in comparison to previous cycles. Although the recent downturn started in 2001, the NAIRU in the euro area is still almost 2 percentage points lower than in the mid90s. The greater

The rise in the unemployment rate has been relatively moderate due to labour market reforms in the 1990s

resilience of the labour market seems to be caused by structural reforms in the second half of the 1990s like higher availability of temporary contracts. This has increased the job content of growth. But even a more flexible labour market reacts to the business cycle with some delay. Business expectations about the evolution of employment point only to a slow improvement in the coming months, and the unemployment rate will decrease only in 2005, while the participation rate will not resume the rising trend it had at the time before the economic downturn. There is still potential for increasing the job content of economic growth by further reforming the European labour markets. Further reforms should comprise less complicated opening clauses for collectively bargained wages and working times, and a stronger role for firm-level negotiations.

A wage-price spiral triggered by the oil price hike would threaten the upswing

The forecast of a slowly improving labour market needs a caveat: if the unions tried to achieve compensation for the oil price rise for workers, employment will suffer from two adverse effects. First, labour would become more expensive relative to capital. Second, the ECB would step in by raising interest rates, because it will not be willing to accommodate a wage-price spiral. Otherwise, the chances are good that ECB interest rates will stay low, with only a moderate increase of about half a percentage point in 2005.

Due to higher prices in crude oil the euro area inflation forecast has been updated to 2.1% for 2004

The main upward innovations in inflation come from international crude oil prices in euros and from a greater impact than was initially estimated of tobacco tax changes in some member countries. On the other hand, in the core index, which excludes unprocessed-food and energy prices, all its main components except tobacco have experienced mild downward innovations. Overall, the expectations for the 2004 average annual total inflation rate have been updated from the 1.8% advanced in the last report to 2.1% and the corresponding core inflation rate continues at 2.1%. (see figure 1.5).

Core will be relatively stable around 2.0% during the rest of 2004 and 2005

For 2005, future crude oil markets do not indicate further major price increases and the year-on-year total inflation rate will systematically decrease from 2.3% at the beginning of the year to 1.8% in the last quarter, with an annual average of 1.9%. Core inflation will be relatively stable around 2.0%. The effects of the oil price hike on inflation in the euro area seem to be rather moderate. (see figure 1.5).

The monthly forecasts for 2004 and 2005 and the uncertainty surrounding them are shown in figure 1.5 by means of a fan chart. It shows that the probability of an inflation rate systematically higher than 2% throughout 2004 is high, but will fall considerably by mid 2005.

Deviations of core over 2% have larger persistent implications than similar deviations in other prices

Total inflation has been higher than 2% since mid-2000. Initially, see figure 1.6, this was due to unprocessed food and energy prices, because core inflation was considerably lower than that figure. However, in 2001 and 2002, core prices have been the main obstacle to a total inflation rate of 2%, and the expectations for 2004 and 2005 are that core inflation will show minor oscillations around 2%. In 2004 this problem is aggravated by the evolution of energy prices. Shocks in core prices have greater persistent effects than shocks in other prices, meaning that deviations of core inflation over 2% are going to have more persistent implications than deviations of similar relative importance in other prices.

Figure 1.5 Year-on-year inflation rates and confidence bands

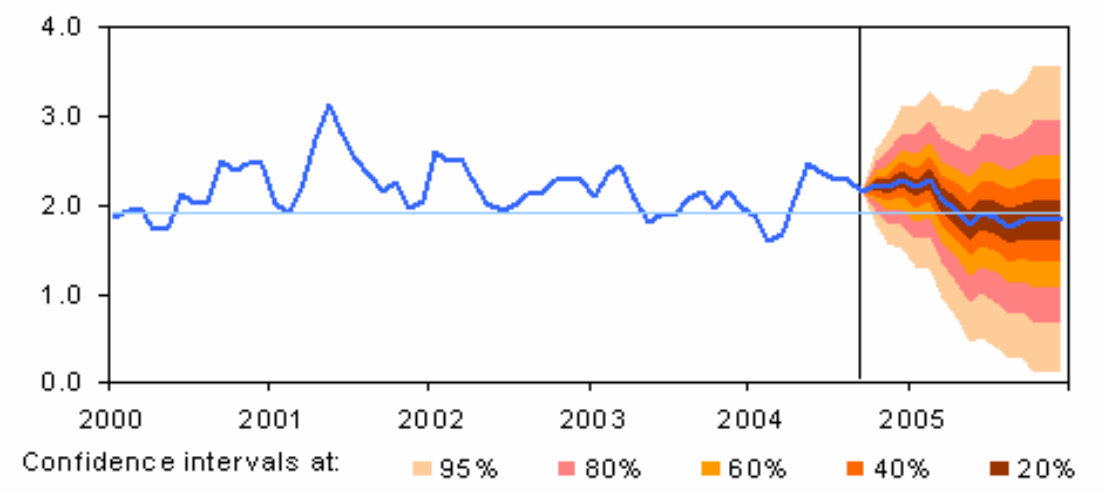
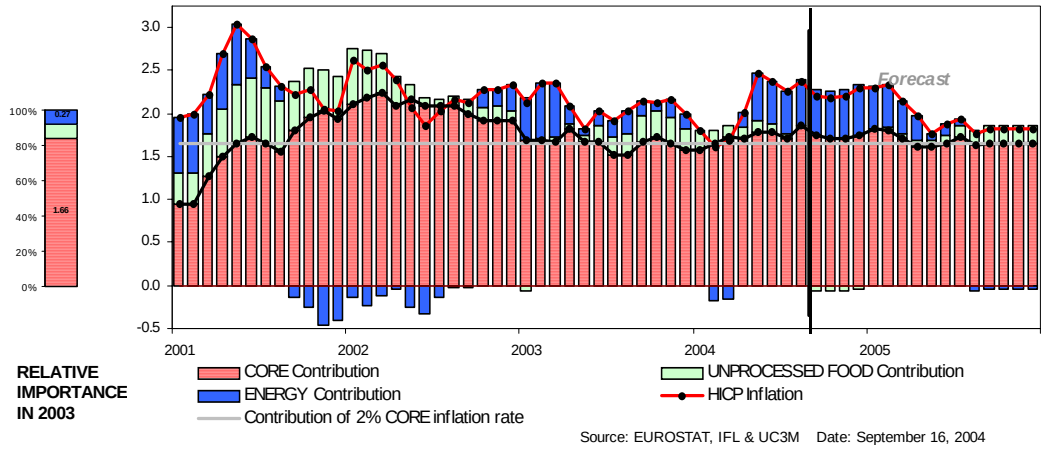
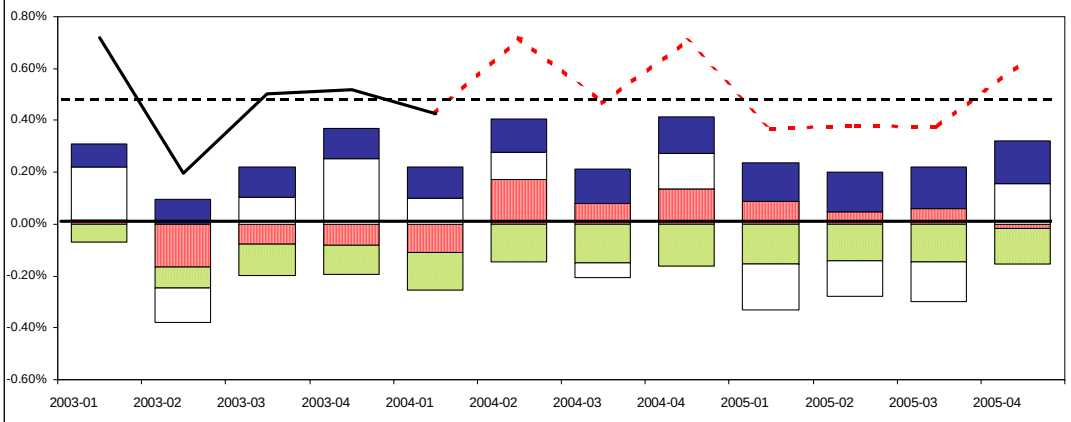


Figure 1.6 Year-on-year rate of euro-area inflation and contributions of main components



Source: EUROSTAT, IFL & UC3M Date: September 16, 2004

Figure 1.7 Contributions to the seasonally adjusted quarter-to-quarter rate in the euro area.



* The contributions refer to the deviations of inflation rate from their mean.

** Oher variables contain: Inflation transitory dynamics, desviations from unit labor cost and effects explained at sectoral levels.

Date: September 16th 2004

Core inflation in the euro area has been below that of the US – using an homogeneous measure for both areas - for several years before 2002. But in 2002 and 2003 euro-area core inflation was nine tenths and seven tenths of a percentage point higher than US core inflation, respectively. This is an indication that monetary policy possibilities in the two countries have been different in this period.

A tighter monetary policy can be expected in the second half of 2005

Breaking down the total inflation forecasts by means of an econometric model in terms of the contributions of the explanatory variables, it can be seen (see figure 1.7) that throughout 2003 and in the first quarter of 2004, the effect of monetary policy which has been pushing up inflation has been compensated by the effects in the opposite direction due to changes in import prices and the output gap. This suggests that a looser monetary policy could have been possible during this period. However for the rest of 2004 and the first part of 2005 import prices will add additional pressure to inflation which will not be compensated by the output gap effects. At the end of 2005 the inflation-lowering effects of the output gap on inflation will be reduced. All this suggests that there is no room for a looser monetary policy for the time being and that a tighter monetary policy can be expected in the second half of 2005.

Inflation in non-energy goods prices will be higher in 2005 than in 2004

The reduction of the inflation rate in 2005 is due to a reduction in the rate of growth of energy and tobacco prices. All other prices of goods will experience slightly higher rates of growth than in 2004 and service prices will maintain a rate around 2.6%. In the US, total inflation will increase to 2.7% in 2004 to drop to 1.9% in 2005. In this case the effect of energy prices on the fall in inflation is greater than in Europe, due to the fact that these prices fluctuate much more in the US than in Europe, because they include less indirect taxation. US core inflation is expected to increase around half a percentage point in 2005.

Different inflation rates in euro area countries are reflected in different actual real interest rates and investment opportunities, but the range is narrowing

Inflation forecasts for the euro area reveal significant differences between countries, leading to a range of actual real interest rates across the member countries. For the one year horizon, these go from negative values in Luxembourg (-0.91%), Ireland, Spain (-0.62%), Portugal and Italy (-0.19%) to positive values in Finland (1.80%), Germany (0.98%), France (0.71%), Austria, Netherlands and Belgium (0.14%). This range is narrower than in past years and, in fact, except in Finland all member countries are experiencing near zero or negative real interest rates, which should favour business investment. On the consumption side, these real interest rates are bringing considerable pressure to bear on housing prices.

Low or negative real interest rates are pressing on housing prices and these are not included in the HICP

As opposed to the consumer price index in the US, the HICP in the euro area does not include owner's equivalent rent of primary residence, which represents around 20% of the CPI in the US. Furthermore, in the euro area there is not yet an index of owner-occupied housing prices, from which an inflation measure for this sector could be derived. Since the ECB should control prices in the whole economy, this type of index is certainly needed. Information on housing prices in different member countries show high inflation rates in recent years in this market, with possible bubbles in some of them. It seems that the exclusion of prices of owner-occupied houses from the HICP is generating a downward bias in consumer inflation rates.

Since May 2004 eight Central European and two Mediterranean countries have joined the European Union. The impact on the euro area for 2004 and 2005 is small. Even the long run economic effects on the current members are minor (see the EFN spring report of 2003). This is also true for the short run, more so as the institutional integration is not a one-off event but a process that takes place in the years before and after the accession date.

The EFN outlook and forecasts for the euro area are summarized in Table 1.3.

Table 1.3: Economic outlook for the euro area

	2001	2002	2003	2004:	2004: annual		2005: annual	
				1st half	Point Forecast	Interval Forecast	Point Forecast	Interval Forecast
GDP	1.6	0.8	0.5	1.6	1.8	1.6 2.1	1.9	1.3 2.5
Potential Output	2.5	2.4	2.2	1.8	1.8	1.6 1.9	1.8	1.2 2.3
Private Consumption	1.8	0.5	1.0	1.0	1.3	1.1 1.6	1.8	1.2 2.4
Government Consumption	2.5	3.0	1.9	1.7	1.5	1.3 1.7	1.4	1.0 1.9
Fixed Capital Formation	-0.3	-2.9	-0.6	0.6	1.0	0.0 1.9	3.0	0.3 5.7
Exports	3.3	1.5	0.1	5.6	6.0	5.4 6.6	6.4	4.5 8.3
Imports	1.7	0.3	1.9	4.6	5.6	4.9 6.4	7.0	5.0 9.1
Unemployment Rate	8.0	8.5	8.9	9.0	9.0	8.9 9.1	9.0	8.7 9.4
NAIRU	8.6	8.4	8.3	8.4	8.5	8.4 8.6	8.7	8.5 8.9
Labour Cost Index	3.4	3.5	2.7	2.1	2.2	2.1 2.4	2.7	2.2 3.1
Labour Productivity	0.3	0.2	0.0	1.4	1.7	1.4 2.1	1.9	1.1 2.7
HICP	2.3	2.2	2.1	2.0	2.1	1.6 2.6	1.9	1 2.9
IPI	0.5	-0.5	0.4	4.01	2.3	1.2 3.4	2.4	1.3 3.5

Percentage change in the average level compared with the same period a year earlier, except for unemployment rate and NAIRU that are expressed in levels. Labour productivity is measured as a long run concept and refers to employment potential. Point forecasts and 80% confidence bounds are taken from the EFN forecasting model and are based on 2000 stochastic simulations.

Comparison with alternative forecasts

Compared to other forecasts, the EFN is slightly more pessimistic about investment, …

The forecasts presented above were obtained from the EFN macroeconometric model, described in detail in the Spring 2002 report. Table 1.4 shows a comparison of the EFN forecasts for the main macroeconomic aggregates with other forecasts, notably those of the European Commission, the IMF, the ECB, the OECD, and Consensus Economics Inc.

Due to different information sets, the forecast comparison is biased. For example, the EFN forecast is based on a dataset including the 2nd quarter of 2004, which has been available only since September. However, for both years of the forecasting horizon, the EFN outlook is slightly more pessimistic, in particular regarding the development of gross fixed capital investment. This outlook seems plausible, given that investment expanded in the first quarter of 2004 only very modestly and that leading indicators point to a slow revival. While investment and private consumption are on a lower path than in other forecasts, our outlook for government consumption is higher. These issues are related, as government has behaved counter-cyclically in the past. Hence, if the outlook for domestic demand is more pessimistic, government consumption is likely to be stronger. Also, because at present the Stability and Growth Pact is de facto in abeyance, its restrictions appear to be less binding.

… and estimates slightly more inflation for 2004 and 2005

Our inflation forecasts are slightly higher than those from other institutions, possibly because we are given an individual treatment to energy prices in the HICP. Our forecasts, like all others, suggest a fall in inflation in 2005, but as we explain above, this is due to energy and tobacco prices and that for other non-energy goods prices inflation increases slightly in 2005.

Table 1.4 Comparison of EFN forecast with alternative forecasts

	EFN		EU		IMF		ECB		OECD		Consensus	
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
GDP	1.8	1.9	1.7	2.3	1.9	2.4	1.7	2.2	2.0	2.6	1.8	2.0
Private Consumption	1.3	1.8	1.6	2.3	1.3	2.2	1.2	2.0	2.1	2.6	1.3	1.8
Gov. Consumption	1.5	1.4	1.2	1.3	1.5	1.4	1.4	0.9	0.7	1.1	1.4	1.4
Fixed Capital Form.	1.0	3.0	2.4	3.6	2.7	3.5	1.8	3.5	3.1	4.4	1.4	3.0
Unemployment rate	9.0	9.0	8.8	8.6	9.1	8.9	na	na	8.8	8.5	9.0	8.8
HICP	2.1	1.9	1.8	1.6	1.7	1.6	2.1	1.7	1.7	1.4	2.1	1.8
Industrial Production	2.3	2.4	na	na	na	na	na	na	na	na	2.1	2.5

EU: European Commission, European Economy, No. 2, 2004 (Spring); IMF: World Economic Outlook, April 2004; ECB: ECB Monthly Bulletin, June 2004, OECD: OECD Economic Outlook, No. 75, June 2004; Consensus: Consensus Economics Inc., Consensus Forecasts, September 2004. IMF forecasts for demand components refer to the European Union. ECB figures correspond to their macroeconomic projections. Numbers in the table refer to the mean of the respective projected interval.

BOX 1.1: VARIABLES OF THE WORLD ECONOMY

Important variables indicating the state of the world economy are shown in the table below. For the US and Japan, an upswing is expected, in particular for 2004. This is reflected in an increase in GDP growth rates, while inflation will remain moderate. At the end of 2004, the oil price is forecast at 39 US dollar per barrel, and a weak relaxation is expected for 2005. The euro is predicted to depreciate slightly in 2005 against the US dollar and the Yen, in line with the international parity conditions. In particular, purchasing power parity holds as a long run relationship.

Table 1.5 Variables of the world economy

	2004	2005
US GDP Growth Rate	4.3	3.5
US Consumer Price Inflation	2.7	2.4
US Short Term Interest Rate	2.0	3.0
US Long Term Interest Rate	4.7	5.2
Japan GDP Growth Rate	4.3	1.8
Japan Consumer Price Inflation	0.1	0.0
Japan Short Term Interest Rate	0.1	0.1
Japan Long Term Interest Rate	1.7	1.8
World Trade	7.8	8.2
Oil Price	39	35
USD/Euro Exchange Rate	1.23	1.19
100Yen/Euro Exchange Rate	1.29	1.18

Apart from the development of world trade and nominal exchange rates, all variables are exogenous to the EFN forecast, and taken from Consensus Economics, Forecasts September 2004. Oil prices, interest rates and exchange rates refer to the end of the period. The oil price is in US dollars per barrel, all other variables in percent.

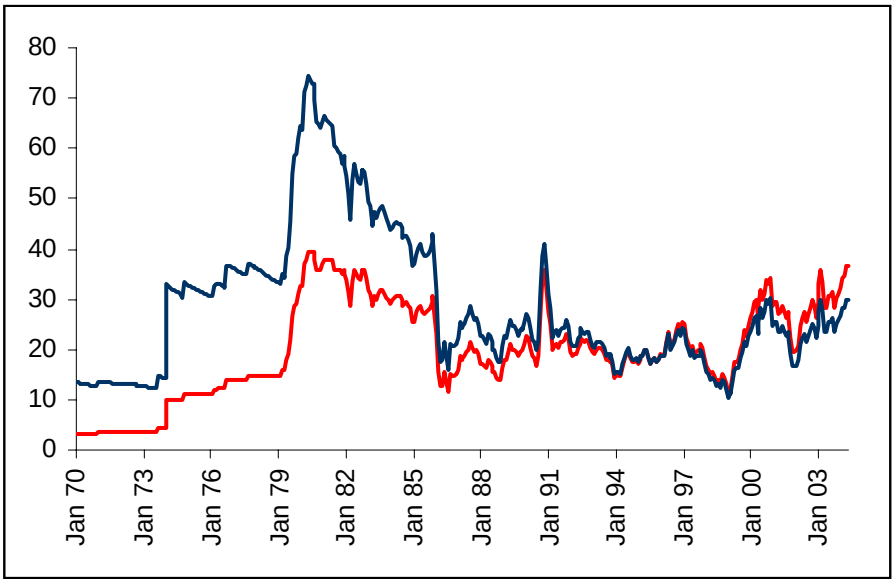
BOX 1.2: IMPACT OF A RISE IN OIL PRICES ON THE ECONOMIC OUTLOOK

In this box, a quantitative assessment of the impact of higher oil prices on GDP growth and inflation is provided. Since January 2002, oil prices have more than doubled. In August 2004, the oil price has reached its all time high in nominal terms at about 43 US dollars per barrel (Brent). The hike is partly caused by worries about stability in the Middle East, about a possible disruption of supplies from Russia due to the Yukos crisis, and about the political turbulences in Venezuela. In addition, a key determinant for the oil price development is the strong growth in demand, driven in particular by the US and China. Both political risks in important oil producing countries and growth processes in North America and Asia are likely to last, and therefore oil prices will probably stay significantly higher than during the 90s. In the 1970s, two oil crises led to significant downturns of economic activity. Thus, the worldwide upswing and the economic recovery in the euro area appear to be endangered.

From a global perspective, the economic costs of higher oil prices are not so obvious because, naturally, a higher price not only means higher costs for the buyer, but also higher revenues for the seller. In the long run there can be a global loss of output if more resources are allocated to use energy more efficiently. In the short run, the world economy has to bear the costs of adapting to an abruptly changing price system. In addition, importing regions like the euro area suffer from a deterioration of their terms of trade. Due to higher oil prices, disposable incomes of households in importing countries are reduced, and profits of firms are squeezed. As a consequence, macroeconomic demand falls. While in the very short term, the price level goes up because of higher oil prices, weaker demand soon puts a downward pressure on inflation. Therefore, the long term inflation rate will not rise as a consequence of the impact of the oil price hike on the price level. Thus, provided that unions do not begin a wage-price spiral by trying to achieve a compensation for the decrease of real wage income, restrictive measures in response to an oil price hike are not the appropriate monetary reaction. This is specifically true for the ECB because of the fragile situation of the euro area economy.

The actual price jump appears, however, less dramatic, when the change in the overall price level is taken into account, see figure 1.7. It shows that real oil prices are 50 percent below their peak in 1980. Moreover, the increase in oil prices shown in figure 1.7 is exaggerated for the euro area, as the euro has appreciated against the US Dollar by more than 30 percent since 2002.

Figure 1.7: Oil prices in nominal (red) and real (blue) terms, US Dollar



Real series: nominal series deflated by the US consumer price index (1995=1), all items

Table 1.6: GDP growth and HICP inflation effects of an increase of the oil price to 50 USD per barrel

	2004	2005	2006	2004-2008
GDP growth	-0.1	-0.3	-0.3	-0.8
HICP	0.2	0.3	0.1	0.7

Differences to baseline in percentage points. Results based on the EFN macroeconometric model for the euro area.

Apparently, higher oil prices exert negative impacts on the macroeconomic evolution. While the contemporaneous effects appear to be negligible, GDP growth (inflation) is 0.3 percentage points below (above) the baseline in the year after the shock. The losses in real GDP growth cumulate to almost 1 percentage point over a 5-year horizon[1]. The magnitude of these effects is broadly in line with those reported in a number of other recent studies, including Global Insight (2004), Oxford Economic Forecasting (2000), and International Energy Agency (2004).

Although the effects appear to be quite substantial, they seem to be lower when compared to the past experience. According to the Deutsche Bundesbank, each of the two oil crises in the 1970s led to cumulative losses in German output growth in the range of 4 percentage points. One reason for the smaller effect of an oil price hike today may be that due to the liberalization of international capital markets, the windfall profits of oil producing countries can be transferred more easily to consumption and investment spending, whereas in the 1970s, the so-called recycling of the petrodollars turned out to be a serious problem, caused by the change in the income distribution between oil producers and oil importers. Moreover, the industrialized countries have become more efficient in their use of energy, and the abilities of end-users to switch away from oil have increased markedly. As a consequence of these developments, the amount of oil needed to produce one unit of GDP roughly halved since the 1970s.

Generally, the vulnerability of oil importing countries to higher oil prices depends on their energy intensity of production, which is larger in developing countries. For example, oil consumption per unit of real GDP exceeds the OECD average by a factor of 2 in China and 3 in India. Consequently, the adverse impacts on macroeconomic performance are probably twice as large as in their developed world, see International Energy Agency (2004).

[1] As the foreign countries (US, Japan) are endogenously detrmined, the effects are larger than in previous reports

BOX 1.3: AN EVALUATION OF LEADING INDICATOR FORECASTS

Since the pioneering work of Mitchell and Burns (1938) and Burns and Mitchell (1946), leading indicators have attracted considerable attention, in particular from politicians and business people, who consider them as a useful tool for predicting future economic conditions. Economists and econometricians had developed more mixed feelings towards the leading indicators, starting with Koopmans's (1947) critique of the work of Burns and Mitchell, considered as an exercise in "measurement without theory". The resulting debate has stimulated the production of a vast literature that deals with the different aspects of the leading indicators, ranging from the choice and evaluation of the best indicators, possibly combined in composite indexes, to the development of more and more sophisticated methods to relate them to the target variable. Marcellino (2004) provides a summary updated guide for the construction, use and evaluation of leading indicators and, more important, an assessment of the most relevant recent developments in this field of economic forecasting.

In this box we summarize the performance of leading indicator based forecasts for the latest recession in the US, dated from March to November 2001 by the NBER. It is interesting to mention that the CEPR dating committee did not spot a similar event for the euro area, in line with the findings based on formal analysis by Artis, Marcellino and Proietti (2003). Yet, these authors pointed out that if the focus is on the deviation cycle rather than on the classical cycle, then a trough in 2001 is identified also for the euro area.

Filardo (2002) found that the two-month negative growth rule applied to the Conference Board's Composite Leading Indicator, CLI_{CB}, worked well in predicting the 2001 US recession, but sent out several false alarms in the '90s. A probit model with a 3-month forecast horizon and the term spread, corporate spread, S&P500 returns and the CLI_{CB} as regressors also worked well, predicting the beginning of the recession in January 2001 using a 50% rule (namely, indicating a recession when the predicted probability is higher than 0.50). By contrast, Stock and Watson's (1989) Composite Recession Indicator (CRI) did not perform well.

Stock and Watson (2003) analyzed in detail the reasons for the poor performance of their indicator, concluding that it was mostly due to the particular origin of the recession (coming from the decline in stock prices and business investment), which is not properly reflected by most of the indicators in their CRI. In particular, the best indicators for the GDP growth rate were the term spread, the short term interest rate, the junk bond spread, stock prices, and new claims for unemployment. Notice that most of these variables are included in Filardo's (2002) probit models. Moreover, they found that pooled forecasts worked well, but less well than some single indicators in the list reported above.

Dueker (2003) found that his Qual-VAR model, a combination of a binary model and a linear VAR estimated with Bayesian techniques, predicted the timing of the 2001 recession quite well relative to professional forecasters, while the evidence in Dueker and Welshe (2001) is more mixed. Dueker (2002) noticed that a Markov Switching probit model with the CLI_{CB} as regressor also worked rather well in this occasion, providing a 6-month warning of the beginning of the recession (but not in the case of the previous recession).

Overall, there are differences in the ranking of models and usefulness of the leading indicators because of the choice of the specific coincident and leading variables, sample period, criteria of evaluation, etc. Yet, a few findings are rather robust. First, indicator selection and combination methods are important, and there is hardly a "one size fits all" choice, even though financial variables and the equal weighted CLI_{CB} seem to have a good average forecasting performance. Second, the model that relates coincident and leading indicators also matters, and a Markov Switching feature is typically helpful. Finally, in general, pooling the forecasts produces good results, even though there is only a limited evidence as far as turning point prediction is concerned.

References

Artis, M.J., M. Marcellino and T. Proietti (2003), “Dating the euro area business cycle”, CEPR Discussion Paper no. 3696.

Burns, A. F. and W. C. Mitchell (1946), "Measuring business cycles", NBER Studies in Business Cycles no. 2 (New York).

Dreger, Christian, 2002, “A macroeconometric model for the euro economy”, unpublished paper, Institute of Economich Research Halle, Germany.

Dueker, M. J. (2002), "Regime-dependent recession forecasts and the 2001 recession", *Review (Federal Reserve Bank of St. Louis).*

Dueker, M. J. (2003), "Dynamic forecasts of qualitative variables: a Qual VAR model of US recessions", *Journal of Business and Economic Statistics*, forthcoming.

Dueker, M. J., and K. Wesche (2001), "Forecasting output with information from business cycle turning points: a qualitative variable VAR", Working Paper (Federal Reserve Bank of St. Louis).

Filardo, A. J. (2002), "The 2001 US recession: what did recession prediction models tell us?", Manuscript (Bank for International Settlements).

Global Insight (2004): What if oil prices stay at $40?

International Energy Agency (2004): Analysis of the impact of high oil prices on the global economy, www.iea.org/dbtw-wpd/textbase/papers/2004/high_oil_prices .pdf

Jiménez-Rodriguez, R. and M. Sánchez (2004), “Oil price shocks and real GDP growth. Empirical evidence for some OECD countries”, ECB working paper No. 362.

Koopmans, T. C. (1947), "Measurement without theory", *Review of Economics and Statistics* 29: 161-179.

Marcellino, M. (2004), "Leading indicators: what have we learned?", in preparation for *The Handbook of Economic Forecasting*, eds. G. Elliott, C.W.J. Granger, and A. Timmermann, 2006. Elsevier.

Mitchell, W. and A. F. Burns (1938), "Statistical indicators of cyclical revivals", NBER (New York), reprinted in: G. H. Moore, ed., (1961), *Business cycle indicators*, Princeton University Press (Princeton), ch. 6.

Oxford Economic Forecasting (2000): World Economic Prospects, Monthly Review, September

Stock, J. H. and M. W. Watson (1989), "New indexes of coincident and leading economic indicators", in: Blanchard, O., and S. Fischer, eds., NBER Macroeconomics Annual, MIT Press (Cambridge, MA): 351-394.

Stock, J. H. and M. W. Watson (2003), "How did the leading indicator forecasts perform during the 2001 recession?", Federal Reserve Bank of Richmond Economic Quarterly 89: 71-90

Chapter 2
Conjunctural analysis for the New Member States

GDP growth will jump to at least 5.2% in 2004 and remain over 4% in the following years

While the combined economic weight of the ten New Members might seem relatively small compared to the EU-15, the dynamics of growth, commitment to internal reforms, and desire to close the income gap with the rest of the EU may well provide a key impulse to future economic development in Europe. Even before their accession, most of the key economies in the region were recording improved performances, with GDP growth accelerating in the first quarter of 2004. Average annual GDP growth in the region is bound to recover from a preliminary 4.5% in 2003. According to our latest forecasts, GDP growth will jump to 5.2% this year, driven by strong performances in Poland and Slovakia, recoveries in growth in the Czech Republic and Hungary and the continued boom in the Baltics, see table 2.1. Our projections for 2004 may well be pushed upward even further based on the very positive results that were recorded in the first six months of the year.

Net exports and investments are the key drivers

Our growth forecast for 2004 and beyond is somewhat more optimistic than in our last report. Growth has surprised us on the upside in the first half of 2004, mostly in the case of the economies that have relied on net exports as the key driver of growth in the last several quarters. The delayed rebound in investment spending has not precluded Poland and Slovakia from recording solid expansion, based predominantly on identifying and exploiting existing niches in West European markets despite the still lacklustre growth in demand for imports there. When supported by an anticipated boom in investment spending that should be at least partially supported by funding from the EU's regional and cohesion funds, the outlook for growth for all of the New Member States is very buoyant with annual rates in the 4-4.5% range in the coming years.

There is a modest acceleration of inflation, but without risks of a major resurgence

The delayed effects on prices of food products of drought conditions across the continent in the summer of 2003 continued to influence inflationary pressures in early 2004. In addition, and far more importantly, world market crude oil prices edged up to levels considered very high even by historical standards. Many of the New Member States also embarked on a major process of adjustments in VAT and excise tax rates in order to harmonize their tax regimes with EU requirements. Finally, the EU accession itself resulted in a short-lived surge in prices for selected products, mostly food. All these factors together led to a modest acceleration of inflation in all of the New Member States. Despite these recent developments, the risk of a major resurgence in inflation in the New Member States is not significant in the short- to medium-term future. Despite the persistently high cost of oil in international markets, the inflationary pressures in the global economy remain subdued. The period of extraordinarily low

interest rates is clearly coming to an end. The same applies to most of the economies of the New Member States. Overall inflation rates are likely to peak sometime later this year and start declining again in 2005 and beyond. In most cases, inflationary performance is not likely to constitute an obstacle in the New Member States' quest for future membership in the Economic and Monetary Union (EMU).

The New Member States aim at joining the Economic and Monetary Union, but few of them are expected to qualify by 2007-2008

For the New Member States, entry into the European Union is considered only a stepping stone towards further economic integration that would culminate in the adoption of the euro and full membership in the EMU. The obvious advantages of entering the EMU are viewed as outweighing the challenges along the way. Among these challenges, achieving the nominal convergence of key economic indicators with those of the other countries in the euro area is still a distant prospect for many countries, although it should be noted that the criteria with respect to fiscal deficits and public debt were applied flexibly in the case of the existing members of the EMU. While the smaller New Member States, such as the Baltics, Slovenia, Cyprus and Malta can conceivably adopt the euro as early as in 2007-2008, the four largest, Poland, the Czech Republic, Hungary and Slovakia, have their work cut out for them for the next several years, with the prospect of adopting the euro now being pushed back as far as to 2010. Continued problems in containing fiscal deficits are at the core of this challenge. The current fiscal ills in the region are not going to disappear in the short-to-medium term unless growth reaches 4-5% annually across the region and budget spending is seriously curtailed. Furthermore, transfers from the EU will require the governments to allocate amounts of matching funds within the budget, putting an additional strain on public finances. For these economies, the chances of bringing public sector deficits below 3% of GDP any time soon are becoming increasingly remote.

Structural fiscal rigidities relating to bloated and and inefficient social security systems and bureaucratic waste are main problems

Although the sources of the underlying problems (structural fiscal rigidities relating to bloated and inefficient social security systems and bureaucratic waste) are well known to them, these governments find it quite difficult to tackle the problems they are facing. In our Spring 2004 report, we indicated that the fiscal situation across the region was not very rosy. Unfortunately, the situation has not improved much in the interim, see table 2.2. An exception is the Slovak center-right government that took the office in September 2002. It has put forward wide-ranging reforms in the area of taxes, pensions, health care and social policy, aimed at bringing down the public finance deficit, while at the same time simplifying the taxation system, preventing tax evasion and promoting investment. As a result of the reform, Slovakia is likely to be the first of the big four New Member State economies to adopt the euro in 2008-2009.

Fiscal challenges will also make interest rate convergence more difficult. Having switched to a more cautious approach to interest rate reductions during 2003, the monetary authorities in most of the New Member States set a steady course late last year and early this year by keeping rate adjustments to an absolute minimum. While there is arguably still room for further interest rate cuts in many of the countries, most notably

Fiscal challenges will also make interest rate convergence more difficult

Slovakia and Hungary, the authorities could not ignore the first signs of gathering inflationary pressures and the fact that the region's economies are either recording robust growth or signaling that a recovery from the lacklustre performance of the last two years is well underway. Countries that have successfully applied inflation targeting are watching price developments with moderate concern and trying to estimate the destabilizing monetary impact of increased credit activity or weakness in the local currencies.

In all New Member Countries, the authorities are attempting to maintain balance between the expectation of nominal convergence in inflation, exchange rates, and long-term interest rates to EU levels, with the need to counteract excessive market volatility due to external shocks, the unstable situation in public finances, and the influence of the opening of local capital markets on currency stability. In all of these cases, a moderate tightening of monetary conditions would have a marginally negative effect on economic growth rates.

Table 2.1

	Real GDP Growth in %					Avg. CPI Inflation in %				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Cyprus	4.0	2.0	2.0	3.5	3.3	2.0	2.8	4.1	2.0	2.2
Czech Republic	2.6	1.5	3.1	3.6	4.0	2.0	2.8	4.1	2.0	2.2
Estonia	6.4	7.2	4.9	6.4	5.9	5.8	3.6	1.3	2.3	3.4
Latvia	8.0	6.4	7.5	7.4	6.3	2.5	1.9	2.9	4.7	3.5
Lithuania	6.4	6.8	9.0	6.6	5.3	1.5	0.3	-1.2	0.9	1.1
Hungary	3.8	3.5	2.9	3.6	3.7	9.2	5.3	4.7	6.9	4.6
Malta	2.3	-1.7	3.4	3.3	3.2	2.9	2.2	1.3	2.6	2.3
Poland	1.0	1.4	3.7	6.0	5.4	5.5	1.9	0.7	3.6	3.2
Slovakia	3.8	4.4	4.2	4.6	5.0	7.3	3.3	8.5	7.6	3.8
Slovenia	2.9	3.2	2.3	3.5	3.7	8.4	7.5	5.6	3.9	3.5

Table 2.2

	Unemployment rate in % of labor force					Public Sector Deficit in % of GDP				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Cyprus	3.3	3.3	3.3	3.3	3.3	-2.8	-3.6	-5.9	-3.6	-3.1
Czech Republic	8.5	9.2	9.9	10.3	10.1	-6.5	-6.4	-13.0	-5.4	-4.7
Estonia	12.6	10.3	10.0	9.5	9.3	0.3	1.8	2.6	1.2	0.3
Latvia	7.7	8.5	8.6	9.2	9.0	-1.6	-2.7	-1.8	-1.7	-1.8
Lithuania	12.5	13.8	12.4	11.8	11.2	-2.1	-1.4	-1.7	-1.3	-0.8
Hungary	5.7	5.8	5.9	5.9	5.8	-4.4	-9.3	-5.9	-5.1	-4.2
Malta	5.2	5.6	5.3	5.1	5.1	-6.4	-5.7	-9.7	-5.5	-4.5
Poland	19.4	20.0	20.0	19.2	18.5	-4.8	-5.5	-5.3	-5.7	-4.9
Slovakia	18.3	17.8	15.2	14.6	14.0	-6.0	-5.7	-3.5	-3.8	-4.1
Slovenia	6.4	6.3	6.7	6.7	6.6	-2.7	-1.9	-1.8	-1.4	-1.5

Chapter 3
What success has been achieved in hitting the Lisbon targets?

In the 2000 Lisbon Council the heads of European Union countries stated as their goal the establishment of the "most competitive and dynamic knowledge-based economy in the world" by 2010

In the 2000 Lisbon Council the heads of European Union countries stated as their goal the establishment of "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" by 2010. To achieve this, it was intended that an array of economic and structural reforms called the Lisbon Strategy would be implemented. At the time the macroeconomic backdrop to the proposals were particularly propitious; with hindsight it is apparent that the world economy was at a cyclical peak. After four years of poor economic performance the euro area is now recovering on the back of a strong revival in the US and Asia. However, the coordination of fiscal policy through the mechanism of the Stability and Growth Pact is in tatters and 6 countries have deficits in excess of 3 % of output.

Setting a date of 2010 by which time the necessary supply side changes had been implemented and given an opportunity to boost productive capacity was always very optimistic. However, in political terms a date that fell within the normal political horizon, was more likely to infuse the reform process with a sense of urgency. Subsequently, in many cases the cyclical slowdown since 2000 and rising unemployment has dented any enthusiasm for major change and the supply side reforms – particularly in the large countries of continental Europe – have failed to materialise.

Yet, the current assessment of the progress of the Strategy is rather negative, in particular for the largest countries in the euro area

Some perspective on the Lisbon process can be gained from an inspection of developments since the inception of the single market process at the beginning of the 1990s. Reviews of the progress made by the Strategy have been made on a regular basis. An annual assessment by the European Commission considers fourteen structural indicators within all seven main areas of the Strategy. These are based on officially published statistics. The conclusions of the most recent study is that performance is mixed: Denmark, Luxembourg, the Netherlands, Austria, Sweden, and the United Kingdom have achieved relatively better progress in achieving the Strategy's goals, while Greece, Italy, Spain, and Portugal have performed relatively poorly.

The question remains whether the better performers would have achieved the same thing even if the Strategy had not been adopted. To answer this we consider data on structural indicators over longer periods, see Tables 3.1, 3.2, 3.3.

Table 3.1 – Total Employment in the EU countries.

	1992	1995	1998	1999	2000	2001	2002	2003
Belgium	56.3	56.1	57.4	59.3	60.5	59.9	59.9	59.6
Denmark	73.3	73.4	75.1	76	76.3	76.2	75.9	75.1
Germany	66.4	64.6	63.9	65.2	65.6	65.8	65.4	64.8
Greece	53.7	54.7	55.5	55.3	55.7	55.4	56.7	57.9
Spain	49	46.9	51.2	63.7	56.2	57.7	58.4	59.7
France	59.9	59.5	60.2	60.9	62.1	62.8	62.8	62.8
Ireland	51.1	54.4	60.6	63.3	65.2	65.8	65.6	65.4
Italy		51	52	52.7	53.7	54.8	55.5	56.1
Luxembourg	61.4	58.7	60.5	61.7	62.7	63.1	63.1	61
Netherlands	64	64.7	70.2	71.7	72.9	74.1	74.7	73.5
Austria		68.8	67.9	68.6	68.5	68.5	69.2	69.2
Portugal	66	63.5	66.9	67.5	68.4	68.7	68.2	67.2
Finland	65.1	61.6	64.6	66.4	67.2	68.1	68.1	67.7
Sweden	75.9	70.9	70.3	71.7	73	74	73.6	72.9
United Kingdom	67.9	68.5	70.5	71	71.5	71.7	71.7	71.8
Norway			76.3	76.2	76.1	75.8	75.4	74
EU15 average	61.2	60.1	61.4	62.5	63.4	64.1	64.3	64.4

Note: Data for all tables is taken from Eurostat

Table 3.2 – Total Employment Rate of Older workers in the EU countries.

	1992	1995	1998	1999	2000	2001	2002	2003
Belgium	22.2	22.9	22.9	24.6	26.3	25.1	26.6	28.1
Denmark	53	49.8	52	54.5	55.7	58	57.9	60.2
Germany	36.2	37.7	37.7	37.8	37.6	37.9	38.7	39.3
Greece	39.8	41	39	39.1	38.6	38	39.7	42.3
Spain	36	32.3	35.1	35	37	39.2	39.7	40.8
France	29.8	29.6	28.3	28.8	29.9	31.9	34.7	36.8
Ireland	37.9	39.2	41.7	43.7	45.2	46.5	47.1	49
Italy		28.4	27.7	27.6	27.7	28	28.9	30.3
Luxembourg	24.9	23.7	25.1	26.4	26.7	25.6	29.5	38.4
Netherlands	28.7	28.9	33.9	36.4	38.2	39.6	42.3	44.8
Austria		29.7	28.4	29.7	28.8	28.9	29.7	30.4
Portugal	47.8	45.8	50	50.3	50.7	50.1	50.9	51.1
Finland	37	34.4	36.2	39	41.6	45.7	47.8	49.6
Sweden	67.3	62	63	63.9	64.9	66.7	68	68.6
United Kingdom	47.6	47.5	49	49.6	50.8	52.3	53.5	55.5
Norway			64.5	64.5	65.4	56.9	66.2	66.9
EU15	36.3	36	36.6	37.1	37.8	38.8	40.1	41.7

Table 3.3 – Total R&D Expenditure as percentage of GDP in the EU countries.

	1992	1993	1995	1998	1999	2000	2001	2002
Belgium		1.71	1.64	1.91	1.96	2.04	2.17	
Denmark	1.68	1.74	1.84	2.06	2.1	2.27	2.4	
Germany	2.48	2.31	2.15	2.33	2.44	2.49	2.51	2.51
Greece		0.37	0.43		0.65		0.64	
Spain	0.7	0.79	0.79	0.9	0.88	0.94	0.95	
France	2.48	2.43	2.3	2.18	2.18	2.18	2.23	2.2
Ireland	1	1.19	1.39	1.25	1.2	1.15	1.17	
Italy	0.98	1.07	1.1	1.07	1.04	1.07	1.11	
Luxembourg						1.71		
Netherlands	1.97	1.91	1.89	1.95	2.02	1.9	1.89	
Austria	1.5	1.45	1.49	1.8	1.86	1.84	1.9	1.93
Portugal	0.53		0.56		0.75		0.85	
Finland	2.08	2.45	2.19	2.9	3.23	3.4	3.41	3.49
Sweden		2.99	3.35	3.62	3.65		4.27	
United Kingdom	2.08	2.11	1.97	1.81	1.84	1.84	1.89	1.84
Norway		1.72	1.7		1.65		1.6	
EU15	1.92	1.94	1.89	1.88	1.92	1.95	1.98	1.99

What success has been achieved in hitting the Lisbon targets?

State aid for non-competitive industries has decreased, but a slow pace

In order to increase EU competitiveness and enhance free trade, the Lisbon strategy argues for a decrease in state aid for non-competitive enterprises and industries. Looking at data for sectoral and ad hoc state aid as a percentage of GDP in the EU from 1990 to 2001, a clear trend emerges: aid has decreased from 1.18% of GDP in 1990 to 0.75% in 2001 with the main change happening after 1997. However, Belgium, Luxembourg, and Finland provide more than 1% of GDP as state aid for ailing sectors and companies and should rethink their policies towards enterprises in trouble. There was also a significant change in the public procurement in this period: its share in GDP has increased from 0.97% in 1993 to 2.67% in 2002. Therefore, in accord with the Lisbon Strategy, governments of the EU countries have made efforts to increase competitiveness and to reduce distortions in their markets.

There was some progress in the development of a single market for telecommunications and utilities, but internet penetration is much smaller than in the US

The Lisbon strategy emphasises that economic growth should be accompanied by improvements in the environment: governments should make efforts to reduce the energy intensity of industries, decrease the volume of waste produced by companies and population, and bring greenhouse gas emissions to the levels of the Kyoto protocol. Based on the emission of greenhouse gas, the EU countries have made more progress to satisfy their targets than the USA: the EU needs to decrease emissions from 98% in 2001 to 92% of the 1990-level in 2010; while in the USA the emission of gas has increased from 1990 to 2001 by 14%. Thus, the EU performs better with respect to sustainable development than the USA.

There has been relatively good performance in the development of a single market for telecommunications and utilities. The price of phone calls and of electricity prices are converging across countries. However, since phone calls' rates are still higher that in the USA, the governments need to implement additional reforms to reduce barriers. Unfortunately, the EU countries have not made such progress in the development of an information society: internet penetration is much smaller than in the USA. Another reason for lower economic growth in the EU in comparison with the USA is the fragmentation of European financial markets. Although the Financial Services Actions Plan was adopted, it needs to be implemented more effectively to improve conditions to conduct business in the EU area.

The employment rate has increased, but the target of 67% in 2005 will be missed

Therefore, the performance of EU countries in market liberalization and the creation of a single market is mixed. In comparison to the USA, among the key disadvantages of the EU is that in the European market it takes longer to process and disseminate information because of lower internet penetration. The Lisbon targets for developing a single market can be achieved only if governments make provisions to deepen the effects of reforms.

What would have happened if the Lisbon Strategy had not been adopted?

Two main objectives of the Lisbon strategy are to achieve long-term real economic growth rate of 3% and to have average employment rate of 70% by 2010. Despite a cyclical downturn, the total employment rate, has increased from 63.4% in 2000 to 64.3% in 2003 in the EU countries. However, this is still well short of the intermediate target of 67% in 2005. Moreover, performance varies considerably across countries: from 56.1% in Italy to 75.1% in Denmark (Table 3.1).

Additional reforms in labour markets are needed…

Countries with employment rates in excess of or close to 70% in 1992 have remained the best performers in 2003, while in the countries with the lowest employment rates in 1992, total employment has hardly changed and in Germany and Belgium employment rates have decreased since 2000. Only Spain and Netherlands, who implemented structural reforms of labour markets, have experienced an increase of more than 10 percentage points in people employed. These figures suggest that the adoption of Lisbon Strategy has led to no significant improvements in this particular labour market indicator. This emphasizes the need for urgent reforms in labour markets if the Lisbon target to be fulfilled.

…and now products and industries should be developed

Another way of creating new jobs is through the development of new products and industries. The Lisbon Strategy postulates a target for research and development (R&D) expenditures to be 3% of GDP by 2010. In 2002, average R&D expenditures were only 1.99% of EU GDP. This is much smaller than the 2.64% in the USA and 3.07% in Japan. Among the EU countries the range of R&D expenditures is also very wide with the highest level observed in Germany, France, Finland and Sweden. These countries have traditionally strong high technological and pharmaceutical industries which require a lot of research. Similar to the previous two indicators, there are no significant improvements in the expenditures since 1992. This points out that more reforms are necessary to achieve the Lisbon target.

But R&D expenditures are lower than in the US, and the rate of early school is high

An important factor of production is human capital. Since labour productivity in the EU is smaller than in the USA, the quality of the labour force can be a major factor in GDP growth. Recognizing this, the Lisbon strategy sets a (maximum) 10% target for the rate of early school leavers. The worst performers based on this measure are the South European countries in which around a quarter of young people leave school education, while quite a few countries are already close to the target. Therefore, more efforts should be made in Spain, Italy, and especially, Portugal to achieve the Lisbon target. There are no pronounced changes in the levels of this indicator in the period from 1992 to 2003. Only in Luxembourg has dramatic change occurred: the rate of school drop-outs has decreased from 42.2% in 1992 to 17% in 2003 due to massive reforms in school education at the beginning of the 1990s.

Finally, the adoption of the Lisbon Strategy has not influenced the euro area's attraction for business

These indicators for human capital and innovation show that the adoption of the Lisbon strategies has not led to dramatic changes. In the total number of people employed and R&D expenditures, the tendency to increase has been observed from 1992, while the number of early school leavers has decreased in the same period. Thus, the Lisbon strategy should not break this trend and should focus on the countries, which under-perform such as the Southern European countries.

In addition to the official data, the Growth Competitiveness and Business competitiveness indicators from the *Global Competitiveness Reports* show that the adoption of the Lisbon Strategy has not influenced the euro area's attraction for business. These indicators are constructed based on the official statistics and replies to the global survey of business leaders. Based on replies, countries are ranked by their ability to provide favourable conditions for business. The rankings for 1996 to 2003 shows that there were no significant changes in countries' competitiveness in this period: Scandinavian countries have had highest ranking among the EU countries in this period, while Greece has had the lowest. It would seem that the perceptions of business leaders of European economies have not been affected by the adoption of Lisbon Strategy.

Chapter 4
Rethinking the monitoring of the Lisbon Strategy's targets

The key point of the Lisbon Strategy is to become the most competitive and dynamic knowledge-based economy in the world

To measure and monitor this strategy, a complex system of hundreds of indicators was developed

The Commission reduced the list up to only 14 Structural Indicators, that are related to the five main areas of the Lisbon Strategy and to the General Economic Background

In 2000, the Lisbon European Council decided to launch a ten year-strategy focused in reaching a leadership economic position in dynamic and competitive terms. The implementation of these policies would result in sustainable and non-inflationary growth with lower unemployment rates and more sustainability of public finances.

In order to achieve these objectives, the European Union (EU) has established in different European Councils (Lisbon, 2000; Stockholm, 2001; Gothenburg, 2001; Barcelona, 2002; Brussels, 2003) several objectives, grouped in five dimensions - *Employment* **(A),** *Innovation and research* **(B),** *Structural economic reforms* **(C),** *Social cohesion,* **(D)** *and Environment* **(E)** - and quantified by a set of comparable structural indicators, with a ten year temporal threshold of policy ciphers that allows policy makers to evaluate the evolution of the overall strategy. Roughly speaking, all generic objectives have a list of specific objectives that ensure the completion of the initial concept that faces the strategy. These specific objectives are: *More and better jobs for Europe: developing an active employment policy* **(A.1)**; *Information society for all* **(B.2)***; Establishing a European Area of Research and Innovation* **(B.3)***; Education and training for living and working in the knowledge society* **(B.4)***; Creating a friendly environment for starting up and developing innovative businesses, especially SMEs* **(C.5)***; Economic reforms for a complete and fully operational internal market* **(C.6)***; Efficient and integrated financial markets* **(C.7)***; Coordinating macro-economic policies: fiscal consolidation, quality and sustainability of public finances* **(C.8)***; Modernising social protection* **(D.9)***; Promoting social inclusion* **(D.10)***; and, A strategy for sustainable development* **(E.11)**.

At the Lisbon Special European Council held in March 2000, a need was identified to regularly discuss and assess progress made in achieving the strategic goal for the next decade of "becoming the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion". The Council invited the Commission to draft an annual synthesis report (*Spring Report*) on progress towards this goal, on the basis of commonly agreed structural indicators which would ensure necessary coherence and standard presentation. In order to meet the request of the European Council, since 2000 the Commission presents annually, at the end of the year, a communication named "Structural Indicators" with a set of indicators to be used in the synthesis report for the respective Spring European Council.

The progress of the strategy is clear according to the Commission: more than six million jobs, reduction of long term unemployment, the knowledge-based economy is becoming a reality, sustainable development is being taken more fully into account

… But major problems are the need for public finances to be viable, the unsatisfactory contribution of employment and productivity to growth, the disappointing development of the internal market, and the lack of sustainability of growth

Although the list of 14 indicators is the result of a hard work, a continuous revision of it is needed

Although the list of indicators developed by the Commission involves more than a hundred indicators, the Commission has reduced this list to only 14 Structural Indicators in the 2004 Report. The indicators are related to the five main areas of the Lisbon Strategy (Employment, Innovation and Research, Economic Reform, Social Cohesion, Environment) and to the General Economic Background. In Figure 4.1 we present a chart with the whole set of indicators (Structural and Complementary Indicators). In bold you will find the indicators that are included in the list of 14 indicators.

Implementation, albeit partially, of the reforms under the Lisbon Strategy has started to bear some fruit as regards the initial objectives. As the Commission says in the last report to the European Council (COM-2004, 29 final), the overall progress already made in four years is proof of this: i) More than six million jobs have been created since 1999, and the long-term unemployment has dropped sharply; ii) Several key markets have been completely or partially opened up to competition; iii) The knowledge-based economy is becoming a reality, with strong Internet take-up in schools, businesses, public administration and households, and thanks to the gradual development of the European Research Area; iv) The sustainable development approach is being taken more fully into account in policymaking; and, v) Some one hundred regulations, directives and programmes have been adopted in different fields but all pursuing the Lisbon goals.

An analysis of the progress made highlights the relatively positive developments but also the major problems which need to be tackled urgently: i) The need for public finances to be viable; ii) The unsatisfactory contribution of employment and productivity to growth; iii) The disappointing development of the internal market; and, iv) Absence of sustainable growth.

Moreover, labour participation remains low and unemployment high, while competition in many markets, such as services is still low. These problems are particularly severe in the largest countries of the euro area. In sum, the revision of the Lisbon Agenda shows a slow progress in most of the areas under consideration, much slower than desired. After analysing the position in a ranking for each country of each structural indicator in the last year available, we have observed that, briefly, in 2001 there are three countries, namely Denmark, Netherlands and Sweden, which present good positions in a majority of indicators. In contrast, we find in 2001 Greece, Spain, Italy and Portugal with relatively bad positions for most of the indicators. Taking into consideration the relative changes of every country position between 1995 and 2001, we see how Denmark, Ireland, Netherlands, Finland and Sweden have experienced an improvement of their positions in the structural indicators rankings, while France, Germany, Italy and Austria have worsened in relative during the six years considered.

The information given by the Commission on the state of the play of the different countries and the EU as a whole in order to evaluate the objectives of the Lisbon Strategy is merely based on in the evolution of the different indicators.

However, in our belief, a deeper analysis consisting of the implications that the evolution of these indicators may have on economic growth could provide a richer explanation on the role that these aspects are having in EU development and growth.

Figure 4.2. Denmark. 2001 relative position.

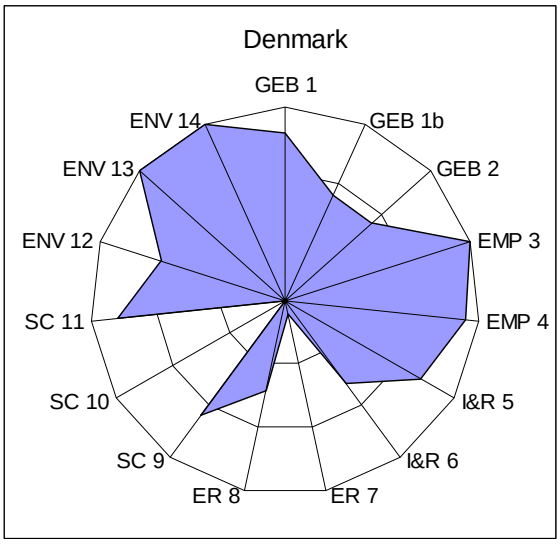
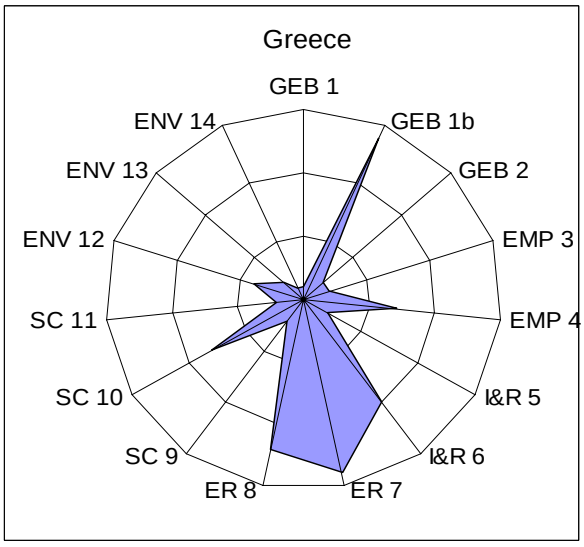


Figure 4.3. Greece. 2001 relative position.



Note: These figures show the position in a ranking for each country of each structural indicator in the last year available. This way, the length of the bar for one indicator shows the position of this country in the ranking of this indicator. If the bar is the longest it can be, it would imply that this country keeps the best position in this indicator, and with no bar (just in the central point) the country would present the worst position. An additional indicator has been added (GEB1b) which refers to GDP pc growth, as a dynamic indicator of the GEB.

GDP pc growth of EU15 has been positively correlated with growth in terms of human capital, employment and business investments

On the contrary, this growth has been accompanied with relative growth in prices, and it seems hardly sustainable

Some 'poor' countries grew more, reflecting a clear catch up process

Although we can assume that the list of indicators is the result of intensive investigation, we also consider the need to revise the overall indicators strategy by computing a set of basic statistics. Thus, we have computed the cross and serial correlations of structural indicators with the general economic background indicators, which are thus to be considered a summary of the overall objective of the Lisbon Strategy, namely, to become a global economic leader. Additionally, we are interested in knowing whether general growth of the economies has been accompanied by a similar growth on employment, knowledge and human capital, investments or social cohesion among others. In order to do this, and focusing exclusively on growth of GDP per capita, we have also computed the correlation between this variable and the evolution of the structural indicators. All of these correlations were computed taking into account the relative size of every country. Detailed results are shown in the annex to this chapter, which is available on the EFN website (www.efn.uni-bocconi.it).

Following this analysis we can conclude that, in general terms, GDP per capita growth of EU15 countries during the nineties has been positively correlated with growth in terms of human capital and, especially, employment (total and for older workers) and business investments; that is, factors that reveal themselves as solid forces of economic growth. In addition, this growth has not implied a worsening in social cohesion, at least, on the lines of evolution of long-term unemployment. On

the contrary, this growth in GDP per capita has been accompanied by relative growth in prices, and it seems hardly sustainable since it has lead to a general increase in the greenhouse gases emissions (with the negative consequences in terms of potential impact on climate change) and in the general degree of congestion and pollution (as a consequence of rising volumes of traffic and a certain decoupling of freight transport growth from real GDP growth).

Finally, it should be noted that some countries that grew more in terms of GDP per capita during the last ten years showed, at the beginning of the period, relatively low employment rates (Spain, Ireland and Greece), low levels of expenditures on R&D (Greece, Spain, Portugal or Ireland), youth educational attainment levels (Portugal, Luxemburg and Spain) and business investments (Ireland, Greece or Finland) or high levels of long-term unemployment levels (Ireland or Spain), reflecting a clear catch up process.

One of the most important growth factors is the innovation and research process

Looking at correlations, increases in patents, in youth education attainment level and in science and technology graduates have run parallel to growth rates, while increases in the spending on human resources seem not to

The analysis we have conducted can be complemented with a discussion of the implications that the evolution of these indicators may have on economic growth. Since the economic literature considers the innovation and research process as one of the most important growth factors, as a first stage, we compute several correlation measures to analyze the link between economic growth and the level and growth of the innovation and research indicators. Many of these correlations are low while we expected higher values. Increases in patents, both in the European and US cases, in youth education attainment level and in science and technology graduates have run parallel to growth rates over the whole period. This positive relation is observed for the increases in the indicator but not for the level, which would indicate that the important issue is the effort made in patenting and getting higher education levels more than the initial level. Increases in spending on human resources seem however not positively correlated with output growth rates, if anything the opposite is observable. Finally, for the cases of evolution of both gross domestic expenditure on R&D and venture capital no relationship is observed.

We estimate a growth equation, and only 2 indicators present significant positive parameters: patents and youth educational attainment level

We estimate a growth equation for the sample of 15 countries of the EU for which we can get information for the whole period between 1994 and 2003. In order to avoid heteroskedasticity problems the estimation method is weighted least squares with population as the weighted variable:

$$g_{GDP} = a - (1 - e^{-\beta T})\log(GDP_{i0}) + \gamma\, Service_{i0} + \rho\, g_{I\&R} + u_i$$

that includes a random error term which proxies the transitory shocks, where g_{GDP} is relative growth of *GDP* between periods 0 and T, the variable *Service* is the share of value added in service sectors as a proxy of the sectorial structure of the economy and $g_{I\&R}$ is the growth rate of each one of the indicators in the area of "Innovation and Research" of the Lisbon Strategy. The subscript i denotes the country, T is the final year under consideration and 0 the initial one. The growth rate of GDP is obtained for the period 1994-2003, whereas the growth rate of the innovation and research indicators are given

Composite indicators also signal the relevance of Innovation and Education

for the period 1994-2001.The results are depicted in Table 4.1. Thus, as may be observed in column 1, absolute convergence is shown, given the negative value of the level of GDP in the initial year. Only three indicators present significant parameters in the growth equation. Increases in "Spending on human resources" (column 2) seem to affect negatively and significantly GDP growth rates, whereas "Patents in the European Patent Office" (column 5) as well as "Youth educational attainment level" (column 9) present a positive effect on economic growth rate. The indicators for innovation (Gross domestic expenditure in R&D, Science and technology graduates and Venture capital investments) are not significant.

Computing the convergence equation, a positive influence of both I&R components is found, although no overall convergence arises from the estimates

Also, the convergence process which was observed before introducing the innovation indicators is not maintained in the three cases in which these indicators are significant. This fact points to the ideas expressed by endogenous growth models in which decreasing returns seem not to operate, probably due to technological growth which will not be putting general limits on growth. As a consequence convergence is not observed in general terms.

Concerning the possibility of building composite indicators on the knowledge-based economy, as stated in the Communication from the Commission COM-2003 585, we have followed a double strategy for reducing the multidimensionality. Firstly, we considered a set of composite measurements based on principal components analysis, which minimizes the loss of common information. Secondly, we use a structural index methodology, as in Royuela, Suriñach and Reyes (2003), which tries to pick up *all* the information belonging to the variables considered, while the other methodology considers, generally speaking, the information *common* to all variables. This second alternative can be considered more appropriate than the first, in order to assume a multidimensional framework: if there are several dimensions of innovation and research that are not statistically correlated, the principal components approach could not lead to any reasonable solution, while the second approach can be perfectly reasonable.

After choosing the list of final variables, we have computed the principal component analysis. The two first principal components explain 64% of the total variance of the 13 indicators.

The current analysis complements the Commission's review of the evolution of different indicators, and offers a rather pessimistic view

The second strategy computes indices of two composite measurements of innovation and research, and considered the ad hoc separation of the indicators. The selection of the final structure was made after the inspection of the former correlations between structural indicators and the global list of Innovation and Research indicators. These correlations led us to grouping Education indicators against Innovation indicators, following, indeed, the Commission selection of the two structural indicators: GERD (say, Innovation) and Youth Education Attainment Level (say, Education).

Thus, we finally considered on the one side Education indicators: Science and technology graduates and Youth education attainment level; while for the other vector we have the Innovation indicators: Spending on human resources, Gross

domestic expenditure on R&D, Patents EPO and Patents USPTO, and Venture capital investments. Taking all these results into consideration we have computed again the convergence equation, against growth of Innovation and Research indicators, but now being computed as composite measurements. What we finally find is a positive influence of both Education and Innovation on GDP per capita growth, although no overall convergence process is found.

In summary, from a policy point of view the annual reports of the Commission that only review the evolution of the different indicators could be complemented with a discussion of the implications that the evolution of these indicators may have for economic growth, along the lines followed in this chapter.

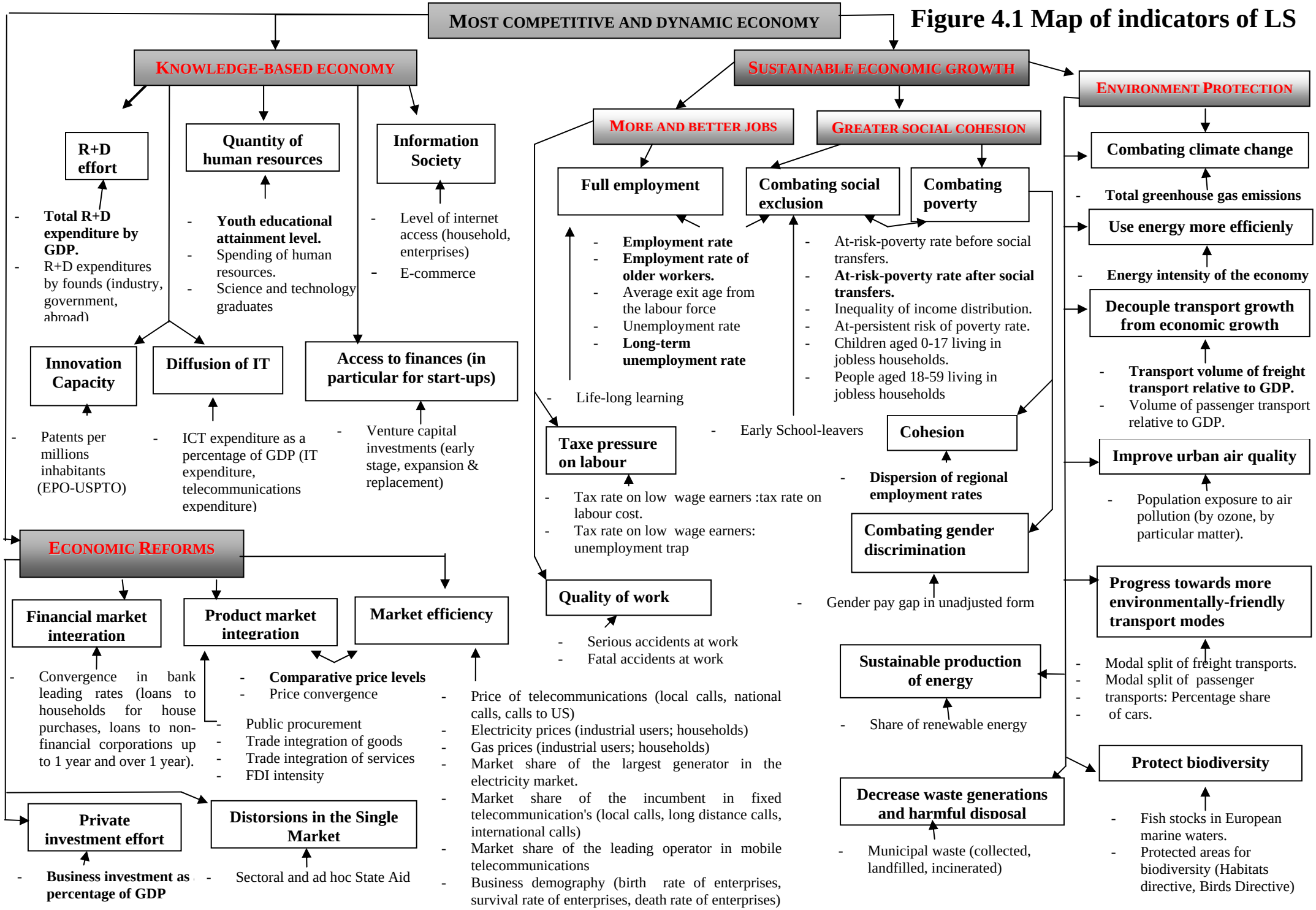
Table 4.1. Estimation of the growth equation against I&R indicators

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Spending	GERD	Science and technology graduates	Patents EPO	Patents USPTO	Venture capital (early stage)	Venture capital (expansion)	Youth education attainment level
Constant	4.530***	-1.289	3.891***	-1.187	-1.867***	-2.727***	3.364***	3.517***	-1.817**
	(0.579)	(0.946)	(0.648)	(0.729)	(0.577)	(0.606)	(0.621)	(0.627)	(0.593)
Ln GDP_0	-0.484***	0.249*	-0.372***	0.277***	0.273***	0.461***	-0.354***	-0.364***	0.339***
	(0.582)	(0.122)	(0.053)	(0.082)	(0.086)	(0.672)	(0.059)	(0.059)	(0.071)
Service	0.748***	-1.149**	0.48	-1.707***	-0.848**	-2.001***	0.569*	0.487	-1.707***
	(0.245)	(0.387)	(0.457)	(0.170)	(0.383)	(0.222)	(0.281)	(0.270)	(0.175)
I&R Indicator		-0.310*	-0.118	-0.045	0.125**	-0.053	-0.000	-0.001	0.244***
		(0.162)	(0.101)	(0.025)	(0.041)	(0.0.043)	(0.001)	(0.004)	(0.076)
R^2	0.860	0.938	0.838	0.969	0.899	0.896	0.830	0.828	0.942
Loglikelihood	20.769	25.322	24.888	22.979	26.925	23.273	23.017	22.939	25.537

Note: Endogenous variable: growth rate of GDP. Standard errors in brackets.

***, **, * significant at 1%, 5% and 10%, respectively. Weighted LS. Weight variable is population

Figure 4.1 Map of indicators of LS



Chapter 5
Supply-side reforms in Europe: Can the Lisbon Strategy be repaired?

Economic reforms are not being implemented or they are enacted too slowly

As noted in the previous Chapter, the progress of the Lisbon Strategy is rather slow and there is little sign that Europe's economic decline is stopping or turning around, particularly in the large countries of continental Europe. There is also substantial agreement on what should be done to improve the long run economic outlook, at least at a general level. Yet, the economic reforms that are needed are not being implemented, or they are enacted too slowly. What can be done to speed up the pace of reforms? What are the most urgent priorities? In particular, what role should the EU play in bringing about supply side reforms? In which areas of supply side policy, if any, is the need for European coordination more acute? How can the current institutional framework for coordination of supply side policies be improved? These are the issues addressed in this Chapter.

There is no general case for coordinating supply side policies, except to guarantee equal access to the Single market

We start by discussing the rationale for coordinating supply side policies. We conclude that, with one important exception, there is no general case for supply-side policy coordination. The presumption is that each country benefits from conducting effective supply-side policies without hurting its partners, possibly even bringing general benefits. Competition via supply-side policies is *a priori* desirable, since countries can learn from each other's experiments and have stronger incentives to compete and enact efficiency enhancing policies. The exception concerns policies that enforce and guarantee equal access to the Single market to all producers, such as policies that fight state aid or other competitive distortions. Here there is a clear benefit from centralization, which alone can exploit the conflict of interest among organized interests located in different countries.

Three specific policy areas in need of reform:labour market institutions, deregulation and completion of the single market, and research and higher education

We then consider the recent macroeconomic performance of the EU, comparing it to that of the US and reviewing labour markets performance and productivity growth. We identify three specific policy areas in need of reform: labour market institutions, deregulation and completion of the single market, and policies towards research and higher education. For each of these areas, we ask what should be the role of the EU level of government and how the Lisbon strategies can be improved. We reach three main conclusions.

First, centralization is certainly needed in the area of the Single Market. Here the main challenge is to complete the integration of the single market in services, public utilities,

Centralization is needed to complete the integration of the Single market in services, public utilities, and energy

energy. This means dismantling barriers that achieve market segmentation along national borders, opening up markets for services to foreign providers, facilitating cross border mergers, shutting down state aid and regulations that prevent foreign entry, in some cases forcing divestitures and privatizations. To achieve this goal, the soft approach of the Lisbon Strategy should be abandoned, in favour of a stronger delegation of enforcement and regulatory powers to the European Commission (or possibly to European independent agencies). A single European policymaker is less likely to be captured by national lobbies than national governments, because it will face countervailing pressures from a variety of producers throughout the EU. Moreover, its mission can be easily defined according to technical or efficiency criteria, so that one of his main goals is to strengthen and enforce the integration of segmented national markets.

No need of centralization in the area of labour market, where the challenge is to remove specific distorsions from each national market

Second, centralization cannot and should not be strengthened in the area of labour markets. Here the challenge is not to achieve market integration, but rather to remove specific (and idiosyncratic) distortions from each national labour market. The EU can only have a limited role, both because there are no or few externalities, and because policy decisions entail delicate tradeoffs between efficiency and redistribution that can only be made through the national political process. Only national governments and legislatures have the political legitimacy to make final decisions in this controversial area. Nevertheless, the OCM can be reinforced, essentially by adding national political pressure to the peer pressure already present in the Lisbon Strategy. This can be achieved by sharpening the focus of the OCM around a few important benchmarks and indicators of labour market performance, and then forcing national parliaments to debate the performance of their governments in light of these European comparisons.

In the area of research and higher education, the national governments should pursue bold reforms through the creation of new universities and research centers

Third, in the area of research and tertiary education, governments should be encouraged to pursue bold reforms through the creation of new universities and research centres. Gradual and piecemeal reforms are unlikely to work, both because of internal opposition from the establishment, and because success is more likely if scarce resources are concentrated in the few institutions that can attract a critical mass of researchers. Governments should learn a few lessons from their experience with labour market reforms. In this politically difficult area, successful reforms have been implemented through the creation of dual structures: the rights of the insiders have been preserved, while new and more flexible legislation changed the rules for new employees. The same dual approach should be pursued in the area of research and education. Rather than trying to radically change existing universities, member states should set up new research institutions under new rules and with additional resources. Here too, the initiative should mainly come from member states, not from the EU. But this novel approach should be encouraged at the European level, through some coordination and by providing matching grants for the countries that are willing to go along this path.

Chapter 6
The impact of ICT on hourly labour productivity

This chapter proposes an accounting assessment of hourly labour productivity growth, in an international perspective, focusing on information and communication technologies (ICT)

Three factors contribute to hourly productivity growth: capital deepening, labour quality and total factor productivity (TFP)

Hourly labour productivity gains are comparable across the United States, the United Kingdom, Germany and France, but the highest contribution of ICT in the United States (0.91 point of percentage) and in the United Kingdom (0.85 point) is compensated then by lower TFP gains in both countries

This paper proposes an accounting assessment of hourly labour productivity growth, in an international perspective, focusing more particularly on information and communication technologies (ICT). ICT, viewed as all-purpose technologies, is associated with a third industrial revolution, as these increase growth potential and bring about productivity gains. Therefore, ICT is a key element within the Lisbon Strategy.

Three factors contribute to hourly productivity growth: capital deepening (the ratio between capital services and hours worked), labour quality (labour services divided by hours worked) and total factor productivity (TFP). Factor quality (capital and labour) is taken into account through a translog function. Non residential capital is broken down into six assets: three ICT assets (hardware, software, communications equipment) and three non ICT assets (transport equipment, other equipment and structures). Hours worked are also decomposed by gender, age (4 categories) and education (6 categories). These decompositions allow then the contributions of the various characteristics to the hourly labour productivity to be computed and the "quality" of each factor of production to be enhanced.

In this type of exercise, price measurement is quite essential to explain what is at stake, as the quality of ICT capital keeps increasing over time. Hedonic methods, used to estimate the price of ICT, allow the dramatic fall in hardware prices and the corresponding increase in volumes to be identified. These methods, widespread in the United States, are still less popular in Europe. In order then to harmonise price measurement with the US, it was decided to apply the ratio of American ICT prices to non ICT prices to the other countries' non ICT price series.

The results for: the United States, the United Kingdom, Germany and France reveal a split line between countries. The four countries display total factor productivity gains but paradoxically, over the 1995-2001 period, they are the weakest in the United States and the United Kingdom. Over the nineties, TFP gains accelerate in France, in Germany and in the United States. In contrast, they slow down in the United Kingdom, although from a high level over the 1990-1995 period. Hourly labour productivity gains are comparable across the four countries, but the highest contribution of ICT in the United States (0.91 point of percentage) and in the United Kingdom (0.85 point) is compensated then by lower TFP gains in both countries. The evolution of the labour quality contribution underlines too the possible mismatch between labour and capital, entailing then lower TFP gains, as the increase in unskilled labour (as measured by education) in the United

States brings about a deterioration of labour quality over the 1995-01 period. In France, the fall in labour quality is due to demographics, with the workers aged 54 and more leaving the labour market.

This having been said, allowing for the heterogeneity of sectors, it cannot be concluded yet that there is no correlation between ICT investment and productivity gains.

The sectoral analysis carried out for France, the United Kingdom and the United States shows that productivity gains were especially large in ICT-producer industries, in each of these countries

The sectoral analysis carried out for France, the United Kingdom and the United States shows that productivity gains were especially large in ICT-producer industries, in each of these countries. Hourly labour productivity in the ICT producing sector grows by between 12 and 14 % in the three countries between 1995 and 2001. Productivity gains show also a marked acceleration over the nineties. Accordingly, TFP gains increase also at a sustained pace.

In the ICT-user sector, entailing service industries, the productivity acceleration over the second half of the nineties is generalised and strong (except in the United Kingdom in terms of hours)

In the ICT-user sector, service industries, the productivity acceleration over the second half of the nineties is generalised and strong (except in the United Kingdom in terms of hours). In the United Kingdom, and even more in the United States, the levels reached during the past period are astonishing for industries belonging to the service sector, with average yearly gains by respectively 2.41 and 3.87% for hourly labour productivity, 1.65 and 2.54 points of % for TFP. These unusual levels suggest huge productivity spill-over effects linked to ICT are underway, to the extent that the contribution of ICT capital deepening is great in both cases (0.66 and 0,99 point of % per year respectively). It is noteworthy that the strong TFP gains recorded in the user sector in these two countries point to spill-over effects not limited to the producer sector.

Large productivity gains are mainly found in trade and banking

Large productivity gains are mainly found in trade and banking and this is in accordance with the findings by Bosworth and Triplett (2003) for the US. Business services record negative productivity gains in all countries.

Strikingly enough, these large productivity gains in terms of TFP are not found in the French user-sector (-0.61 point of %). They are indeed negative in all the user industries except trade, namely in banking and finance (-3.65 points), although the ICT capital deepening contribution is very high in this industry. This result may not be robust due to measurement issues and the different methods applied across countries to measure production of services. But there can also be some rigidities in French markets that prevent productivity gains to spill over.

The spill-over effects found in the US and UK may, indeed, have benefited from a more competitive environment in both countries

The spill-over effects found in the US and UK may, indeed, have benefited from a more competitive environment in both countries. As a matter of fact, regulation of activities that hinders the creation of firms, price setting and the mode of providing services could have a negative impact on employment and innovation in new sectors. If competition is stifled, then the urge to invest in new technologies that would pop up in a competitive context is

crushed. It could limit too the need to enlarge the variety of services offered to customers through electronic commerce.

In France, the negative productivity gains in the banking and finance sector and the weakness of those in the trade sector compared with the United States can also point to rigidities in the labour market on the one hand and to a different structure of industries on the other hand. As a matter of fact, longer opening hours of shops have an impact on work organisation and can contradict the labour legislation. Moreover, in France, the structure of the retail trade industry is quite different than the one prevailing in the United States, as the French industry entails much smaller units. As for the banking industry, its apparent capital and labour mismatch will be alleviated by demographics, to the extent that the exit out the labour market by senior workers will be supplemented by entries of more skilled newcomers.

France should invest more in ICT in the future to manage the set-up of new organisations and then this will in turn help maintain productivity gains at a high level

France has, nevertheless, dramatically relaxed market regulations over time. It should then invest more in ICT in the future to manage the set-up of new organisations and then this will in turn help maintain productivity gains at a high level.

Chapter 7
Does deregulation in factor markets affect the path of long term growth?

According to modern growth theories, policy and institutional settings have an impact on the path of long term economic growth. To some extent, regulation is necessary to ensure the functioning of market economies, for example in the areas of competition, consumer protection, property rights and environment. Institutions can increase efficiency by correcting market failure. On the other hand, overregulation might worsen resource allocation and the incentives for innovation, thereby exerting adverse effects on long term growth.

Institutional reforms can lead to static and dynamic efficiency gains

Institutional reforms change the overall framework of economic activities. They operate through different channels. First, a higher degree of competition forces prices to converge to marginal costs. Factor inputs are used more efficiently, and the allocation of goods and services is improved. Companies are encouraged to reorganize work and reduce slack. Lower entrance barriers move market shares from firms with lower productivity to more competitive ones. Second, incentives to research and innovate may be improved. The absorptive capacities of firms to learn about advances in the leading edge and to move the technological frontier are extended. Advances in the allocation of resources and output are static, as they represent one-time changes in the productivity level. Thus, the acceleration of productivity growth is limited to a relatively short period. In contrast, gains from innovation are dynamic and can boost productivity over a longer period of time. Innovation involves complementarity of goods, positive spillovers to other industries, and the diffusion of new ideas. Apart from private returns, high macroeconomic returns on R&D and education are expected.

Institutions should have an impact on long term economic growth, but empirical evidence is missing

Properly designed institutions support economic growth mainly through these channels. While this fact is well established by sound theoretical models, empirical evidence is not so clear-cut. Thus, the paper focuses on the empirical link between institutions and growth. Due to data availability, regulations on factor (labour, capital) markets are considered. Series are taken from the database of the Fraser Institute. Models of conditional convergence are used to assess their impact on GDP per capita growth. Here, the average rate of economic growth is explained by the level of initial income, deregulation indicators and other determinants of the countries' individual steady state positions.

Different panel estimation methods employed to get robust evidence, leads to contradictory results

Different panel estimation techniques are applied to obtain robust results. For random effects and pooled regression models, the results suggest that stronger deregulation will support long term growth, if reforms take place on the labour market. This effect is lost in fixed effects models, see Table 7.1. The different outcome might be explained by the fact that institutions do not show sufficient variation over the sample period. They behave almost like constants, implying multicollineariy problems in the fixed effects setting. Furthermore, measurement errors might have biased the results. In particular, the composition of the regulation indicators has changed over time: variations in individual countries ratings may not imply a change in the degree of regulation, but rather the fact that some components of the index are missing in some years and in others not. To overcome this problem, the overall index of economic freedom is considered. This index is unbiased, as it has been computed backwards in a consistent way. But it is not strictly limited to the deregulation issue. The overall index includes the government size, the legal system and security of property rights, the access to sound money and freedom to trade with foreigners as additional series. As these series do not differ very much across the EU countries, the overall index can be considered as a proxy for regulation.

Results eventually biased due to varying composition of deregulation indicators

If measurement errors are controlled for, results seems to be unique. More deregulation fosters growth, in particular through the capital deepening channel

If measurement errors are controlled for, the random and fixed effects models lead to similar results, see Table 7.2. Lagged income exerts a stronger negative impact on average GDP per capita growth, and advances in deregulation will improve the macroeconomic record. Therefore, the insignificant or even reversed findings in previous studies are likely affected by measurement errors.

Using a growth accounting framework, the impact of institutions is expected to materialize mainly through the capital deepening channel, while the impact on the TFP rate is negligible, see Tables 7.3 and 4 in the long version of the paper. This points to the relevance of institutions during the catching-up process to the technological frontier. In contrast, the impact of institutions on steady state growth seems to be almost insignificant. In fact, the link to the TFP rate might be more complex and may be transmitted through the determinants of technological progress, including R&D and human capital accumulation.

Table 7.1: Impacts of factor market deregulation on income per capita growth

A. Random effects specification

	Constant	Y(-t)	CMR	LMR	R-squared
4-year averages	0.126	-0.007	0.001		0.16
	(0.081)	(0.005)	(0.001)		
	0.152	-0.009		0.003	0.15
	(0.072)	(0.004)		(0.001)	
8-year averages	0.262	-0.014	-0.001		0.46
	(0.079)	(0.005)	(0.001)		
	0.306	-0.018		0.002	0.45
	(0.071)	(0.004)		(0.001)	

B. Fixed effects specification

	Constant	Y(-t)	CMR	LMR	R-squared
4-year averages	Individual constants	0.011	-0.000		0.20
		(0.007)	(0.002)		
		0.015		-0.003	0.21
		(0.007)		(0.002)	
8-year averages		0.002	-0.005		0.49
		(0.006)	(0.002)		
		0.002		-0.003	0.49
		(0.006)		(0.002)	

Regressions explain the average growth rate of GDP per capita, where the average is computed either over a 4- or 8-year period. Y(-t) is log per capita income t=4 or t=8 years ago, respectively. CMR, LMR= labour, capital market deregulation, R-squared is the adjusted coefficient of determination. Standard errors in parantheses.

Table 7.2: Impacts of the economic freedom index on income per capita growth

A. Random effects specification

	Constant	Y(-t)	EFI	R-squared
4-year averages	0.445	-0.029	0.009	0.23
	(0.100)	(0.007)	(0.002)	
8-year averages	0.620	-0.040	0.009	0.52
	(0.098)	(0.006)	(0.002)	

B. Fixed effects specification

	Constant	Y(-t)	EFI	R-squared
4-year averages	Individual constants	-0.043	0.014	0.25
		(0.016)	(0.004)	
8-year averages		-0.060	0.015	0.53
		(0.015)	(0.004)	

Regressions explain the average growth rate of GDP per capita, where the average is computed either over a 4- or 8-year period. Y(-t) is log per capita income t=4 or t=8 years ago, respectively. EFI= index of economic freedom, chain version, R-squared is the adjusted coefficient of determination. Standard errors in parantheses.

Chapter 8

The impact of institutions on the employment performance in European labour markets, 1979-2001

Employment record in Europe quite weak, with high long term unemployment rates and relatively low participation rates

Rigidities in national labour markets are widely seen as responsible for the weak employment performance in Europe. The average unemployment rate is around 8 percent, and is predicted to be stable at this level for the near future. According to OECD measures, a substantial part is due to long term unemployment: 45 percent of the unemployed are unemployed for longer than 12 month. Despite a gradual decline in the mid 1990s the rates are highly persistent. The high unemployment rates are accompanied by lower employment and participation rates. Currently, EU15 employment rates are 65 percent, which is not far below the Lisbon goal (70 percent). But, the gaps are wider for young people, older workers and women. Long-term unemployment rates exceed the average especially in Germany, Italy and Spain. Employment rates are relatively low in Belgium, Greece, Italy and Spain. The correlation between the long term unemployment and employment rate is –0.8 over the last decade. Hence, the unemployment problem is not caused by higher participation.

Labour markets may be overregulated, can impede the realloacation of labour in response to shocks

To some extent, labour market institutions might account for this outcome. It is widely acknowledged that proper institutions are of key importance for the smooth working of the labour market. Information problems for both workers and firms generate imperfections in matching and monitoring processes. Different degrees of market power of wage contractors and the risk of becoming unemployed require an appropriate mix of the institutional framework. However, regulations also introduce rigidities which can impede the reallocation of labour in case of structural shocks. Overly restrictive elements may actually worsen the employment performance. Examples of labour market institutions include employment protection legislation, the system of wage bargaining including the strength of trade unions and benefits in favour of the unemployed.

Impact of labour market institutions on employment is examined

The focus of this paper is on the impact of institutions on the employment performance, which is measured in different ways. In addition to the participation and part-time rate, the threshold of employment is considered: due to productivity gains, output growth has to exceed a certain level to create new jobs. The threshold is inversely related to the marginal intensity of employment to output growth, that is, the elasticity of employment growth with respect to output growth.

Different measures of employment used to get robust results

As both parameters are not observable they have to be estimated in advance, taking into account their variability over time. The impact of institutions is investigated within a panel econometric model, where country individual fixed effects and business cycle fluctuations are controlled for.

Higher union power, higher taxes and a more generous unemployment benefit system lower the employment rate

The empirical results are more or less reasonable. For example, higher union power and stricter employment protection are expected to lower the employment rate, see table 8.1. This might reflect behaviour of labour demand. Provided that union power increases wages above the competitive equilibrium, employment prospects are worsened, leading to a decline in participation. A rise in the tax wedge and a more generous unemployment benefit system will reduce the employment rate, emphasizing the relevance of policies that increase the incentives for households to work.

Higher union densities raise the threshold of employment, especially when unemployment benefits are more generous, see table 8.2. This effect is partly offset by a high degree of coordination in wage bargaining. An increase in the tax wedge will lower the threshold, because it slows down the TFP rate. In an economic upturn, the threshold is reduced, given that countries do not have extensive employment protection schemes.

Lesser employment protection can increase job content of output growth

Employment protection legislation is most important for the marginal intensity, see table 8.3. Stronger employment protection will reduce the job content of output growth. The best fitting models point to some interaction of employment protection with other institutional and business cycle variables. A decline in the marginal intensity is expected, if union power is high, and the unemployment benefit system is more generous. Higher levels of coordination tend to raise the marginal intensity of employment. A better consideration of the macroeconomic situation in wage negotiations can activate jobs to a larger extent, especially at the lower income range.

Comprehensive political strategy is favoured, interactions between institutions often significant

Policies should be directed to introduce more flexibility in labour markets. Compared to the current setting, a less stringent employment protection legislation is favourable, while both the need for flexibility and security have to be taken into account. The tax and transfer systems should be more aligned to support the incentives for households to work. In addition, fiscal consolidation is important, as it is a precondition for cutting taxes in the medium and long run.

Some progress has been made in recent years due to the liberalisation of temporary contracts with low separation costs and exceptions for small enterprises and business startups. In the field of employment protection legislation, the use of temporary work arrangements has been eased, while protection of regular employment remained mostly unaltered. Instead of partial reforms, the results point to a more comprehensive strategy, as interactions between institutions often turn out to be significant.

Table 8.1: Effects of labour market institutions on the employment rate

	Coefficient	t-value (absolute)
UDS	-0.397	7.92
EPL	-0.045	2.88
TAX*BRR	-0.324	4.02
ALMP*BRR	-0.025	2.04
GP	0.525	5.04
COO*GY	0.177	4.49
Adjusted R^2	0.90	

Table 8.2: Effects of labour market institutions on the threshold of employment

	Coefficient	t-value (absolute)
UDS	0.041	3.49
UDS*BRR	0.117	8.42
COO	-0.005	2.59
TAX	-0.058	4.02
GP	-0.229	4.48
GP*EPL	0.179	6.14
Adjusted R^2	0.81	

Table 8.3: Effects of labour market institutions on the marginal intensity of employment

	Coefficient	t-value (absolute)
COO	0.314	7.06
EPL*UDS	-0.358	3.18
EPL*BRR	-0.476	6.76
GP*EPL	-0.515	1.96
Adjusted R^2	0.80	

Panel stimation with country fixed effects. ALMP=Active labour market policy, BRR=benefit replacement rate, COO =bargaining coordination, EPL=employment protection legislation, TAX=tax wedge, UDS=trade union density, GY=growth rate gross value added, GP= CPI inflation. Employment rates obtained from OECD Labour Market Statistics, Gross value added and CPI from the OECD Main Economic Indicators. Products refer to the interaction of the respective variables**.**

Chapter 9

Competition, markups and the influence of the euro

This chapter considers whether markets in the euro area have become more competitive with the advent of the Euro

This chapter considers the proposition that markets in the euro area economies have become more competitive with the advent of the euro. The increased competition stems from more transparent price comparisons and the removal of both exchange rate risk and the buying and selling spreads in foreign exchange markets. These changes lower the total cost and uncertainty to consumers of purchasing goods produced or sold in other euro area countries and make markets more integrated. How might the increased competition manifest itself? In response to the now relatively cheaper imports, firms may lower their prices and markup. One could imagine the extreme case where prices and the markup fall so that relative prices in each country are unaffected by the introduction of the euro meaning that the distribution of sales remains the same and measures of industry concentration are unaffected. Another response may be for firms to merge which would reduce competition and lead to an increase in prices and the markup. Therefore, there may be two opposing forces on both the markup and competition following the introduction of the euro.

The focus is on the firm's surplus profit, the markup. A fall in the markup signals an increase in competition

The difficulty is to judge whether competition has on balance increased in the face of these opposing forces. One way to proceed is to focus on the market outcome in terms of the firm's surplus profit, or in practical terms, the markup. A fall in the markup implies that there is a net benefit to consumers and a net loss to firms which is consistent with the outcome that would ensue if there was an increase in competition. Therefore, one indirect measure of competition would be the markup such that a decrease in the markup, all else equal, is concomitant with a net increase in competition.

The two panels in Figure 9.1 show the aggregate unit cost markup of the GDP implicit price deflator on unit labour costs for eight of the eleven euro area countries in January 1999. The line labelled 'Euro area 7' on each figure is a weighted average markup of the eight markups less that of Finland. The figures indicate that this measure of the markup (which is the inverse of labour's income share) has varied widely over the past twenty or so years but has in general increased by between 5 per cent (France) and 20 per cent (Italy). Even though there are long periods of decline in the markup for some counties (notably Finland and Spain in the late 1980s and early 1990s), the markup does in general increase for all the countries. This results in the weighted average markup represented as 'Euro area 7' to increase by around 10 per cent between March 1980

A (weighted) average markup for the euro area increased by around 10% between 1980 and 2003…

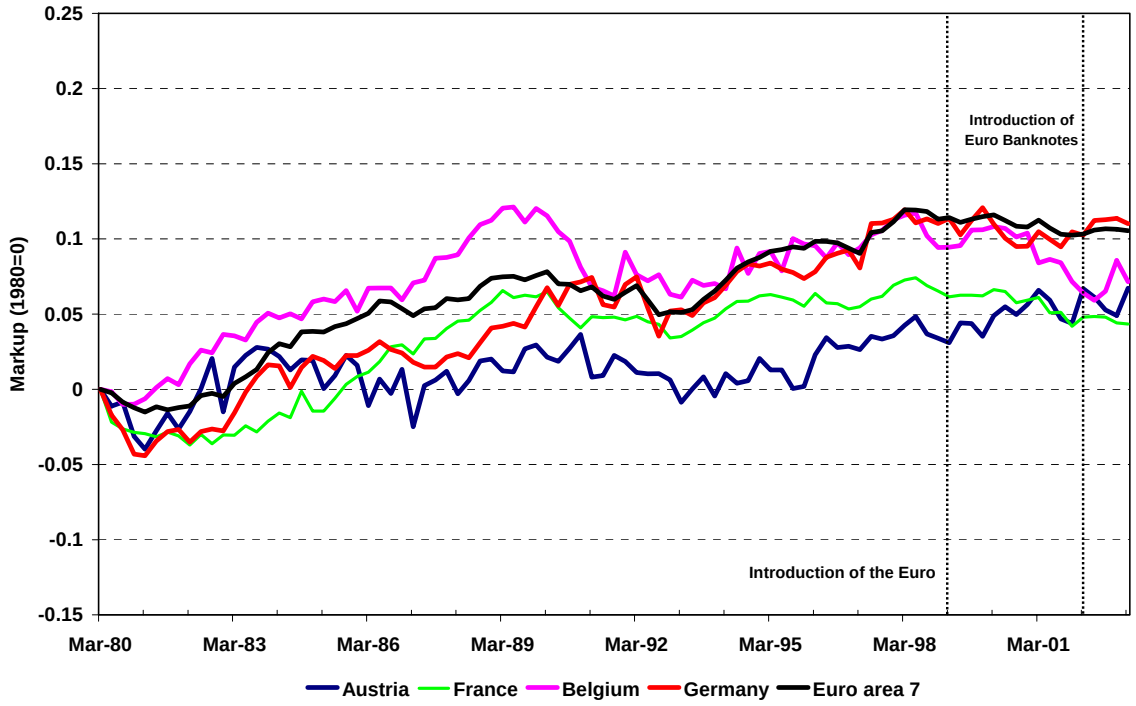
…but it slightly decreased since the introduction of the euro by around 0,75%

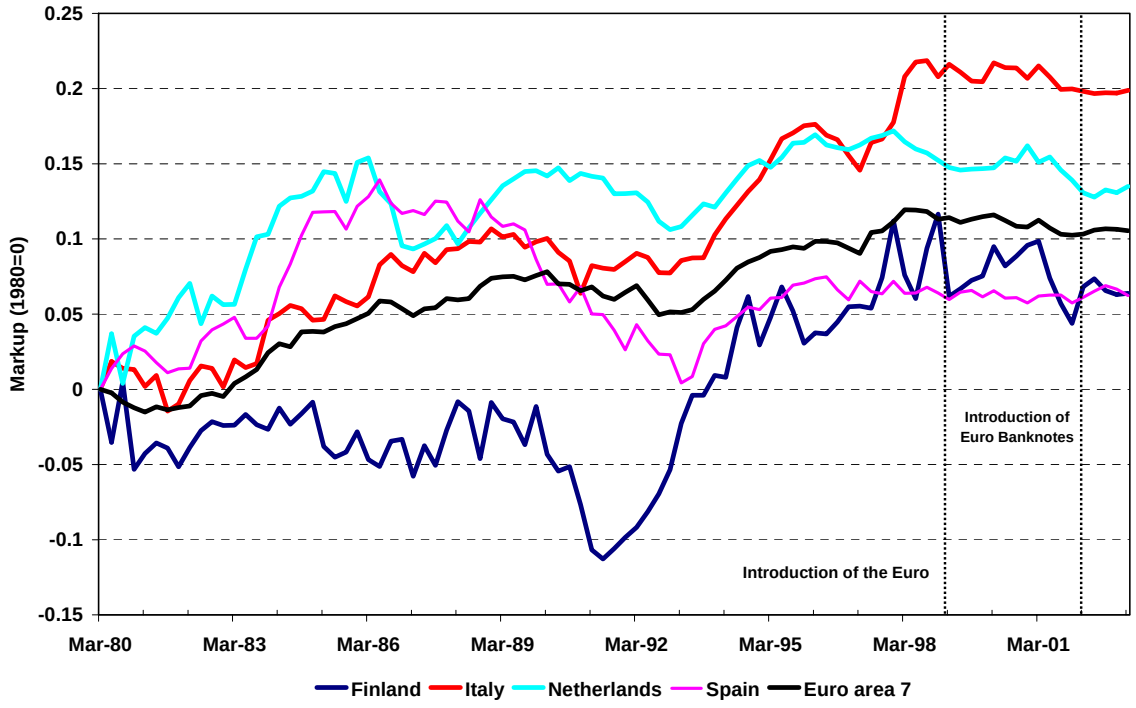
and March 2003. Of some interest is the relative stability of the markup for the countries in the top panel of the figure (Austria, Belgium, France and Germany) compared with the countries in the lower panel (Finland, Italy, Netherlands and Spain).

Of more interest for our purposes is the general decline in the markup that is evident in the figures since the introduction of the euro in January 1999. The markup increased by 3 ¼ per cent in Austria, zero per cent in Germany and fell in the remaining countries. Overall the weighted average markup, 'Euro area 7', has fallen by ¾ of a percentage point between December 1988 and March 2003.

The decline in the markup since the introduction of the euro can be demonstrated more formally by estimating a static model of the markup where the markup is regressed on a constant and two linear trends. The first trend is for the full sample while the other is a short trend, which runs between March 1999, and the end of the sample to model the potential deviation from the first trend caused by the euro.

Figure 9.1: Markup of Price on Unit Labour Costs
March 1980 – March 2003





Note: The markup is measured as the logarithm of GDP implicit price deflator divided by unit labour costs.

The decline of the markup is statistically significant in Belgium, France, Germany, Italy and The Netherlands…

The estimates of the short-trend for each country show that in five of the countries (Belgium, France, Germany, Italy and the Netherlands) the markup declines after the introduction of the euro. This leaves one country where the markup increased after January 1999 (Austria) and two where there is no significant change (Finland and Spain). The weighted average decrease in the markup after the introduction of the euro, 'Euro area 7' is at a rate of around ¾ of a percentage point per annum.

…but it could be due to other factors rather than the introduction of the euro, such as the business cycle and inflation

We might conclude therefore from the figures and the results of the short-trend regressions that there is *prima facie* evidence that there has been a decline in the markup following the introduction of the euro and that this decline is consistent with an increase in competition. However, to examine this issue more fully it is necessary to account for other influences that may have affected the markup since March 1999 so as to determine the extent of the decline in the markup that can be attributed to the introduction of the euro alone. It is these other influences to which we now turn.

The markup is counter-cyclical and empirically is negatively correlated with inflation

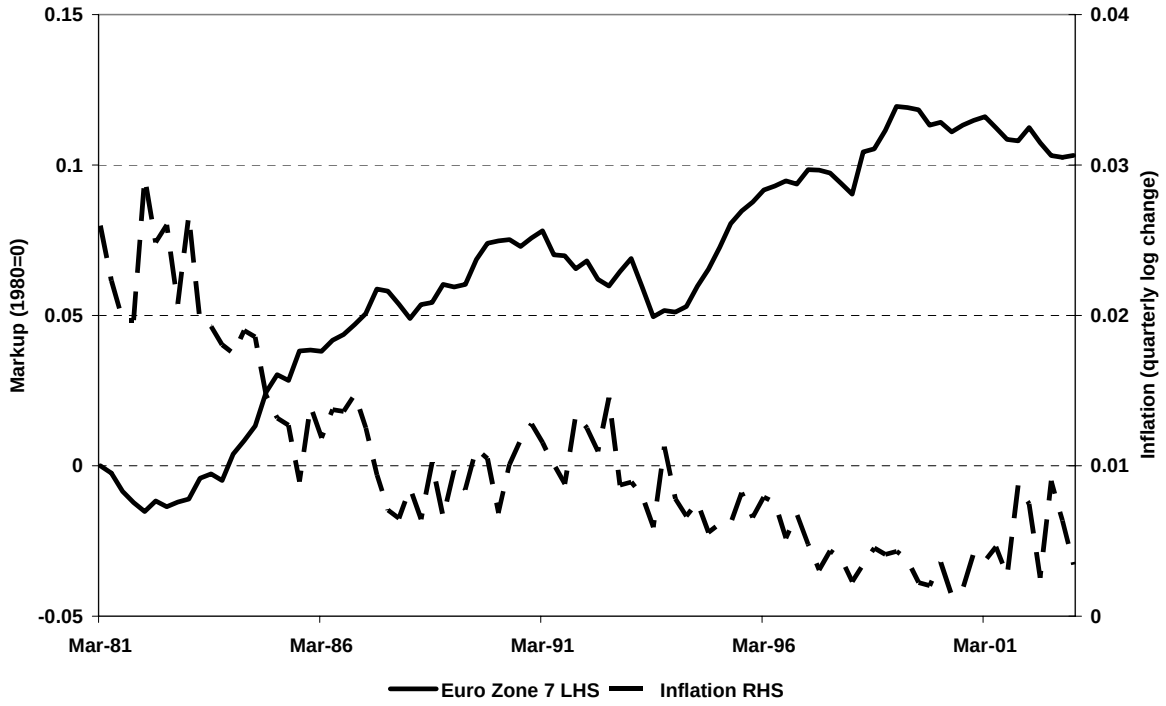
Two major influences on the markup are considered extensively in the literature. The first is the business cycle and the second is inflation. The influences of inflation and the business cycle on the markup are evident in the figures below for the euro area. In Figure 9.2 we can observe the counter-cyclical nature of the markup. In particular the strong upward movements of the business cycle variable coincide with falls in the markup series and *vice versa*. Furthermore, we see in Figure 9.3 that annual inflation declines over the sample by around 15 percentage points accompanied with an increase in the markup of around 10 per cent.

We therefore conjecture that the apparent trend increase in the markup over the whole period can largely be explained by the decline in inflation and does not necessarily reflect structural changes in the economy. Similarly, the change in the behaviour of the markup following the introduction of the euro may also be explained by developments in inflation and the business cycle during this period.

Figure 9.2: The Business Cycle and the Markup
March 1980 – March 2003

Note: the business cycle is defined as actual unemployment rate less Hodrick-Prescott filtered unemployment rate.

Figure 9.3: Inflation and the Markup
March 1980 – March 2003



Econometric evidence suggests that after controlling for the influence of the business cycle and inflation on the markup, the introduction of the euro no longer plays a significant role in reducing the markup

The long-run structure of our model is given by:

$$mu = q - \lambda \Delta p \qquad (1)$$

where mu is the markup of price on unit labour costs, q is the 'gross' markup, λ is the parameter that measures the trade-off in the long run between inflation and the markup and referred to as the inflation cost coefficient, and p is the price level. Lower-case variables denote natural logarithms and Δ represents the first change in the series. The markup is calculated as $p - ulc$ where the price level, p, is the gross domestic product (GDP) implicit price deflator and ulc is a measure of unit labour costs. The long-run can be nested within a single equation error correction model which captures the short-run behaviour of inflation and the markup around the equilibrium. This leads us to estimating the following equation:

$$\Delta mu = \delta_0 + \delta_1 mu_{t-1} + \delta_2 \Delta p_{t-1} + \sum_{i=1}^{j} \Delta mu_{t-i} + \sum_{i=1}^{l} \Delta bc_{t-i} + t + \varepsilon_t \qquad (2)$$

where bc is the business cycle variable measured as the difference between the unadjusted and Hodrick-Prescott filtered unemployment series and *t* is a trend. The model was estimated for the period December 1982 to March 2003 for seven euro area countries: Austria, Belgium, France, Italy, Germany, Netherlands, Spain, and for a weighted average of these seven countries, 'Euro area 7' using quarterly data taken from the OECD data compendium. These seven countries make up around 95 per cent of the euro area measured at constant price GDP in 1995. As we are concerned about the endogeneity status of two of the right hand side variables, namely Δp_{t-1} and bc_{t-1}, we estimate (2) using instrumental variables where lagged values of the regressors are used as instruments.

Estimating (2) should account for the influences of inflation and the business cycle on the markup. Any trending behaviour of the kind discussed in Section 1 due to either structural changes in the economy or the introduction in the euro should therefore remain in the estimated residual series, $\hat{\varepsilon}_t$. Thus regressing $\hat{\varepsilon}_t$ on a constant and shift variable, i.e.

$$\hat{\varepsilon}_t = \gamma_0 + \gamma_1 Shift + \nu_t \qquad (3)$$

should reveal significant coefficients for these right-hand-side variables if a structural component is missing from the model given by (2) which may be consistent with the change in the trending behaviour of the markup with the introduction of the euro.

The results show that for five of the seven countries considered and for the 'Euro area 7' series, inflation and the business cycle have a significant role to play in explaining behaviour of the markup. In more detail we see that that the annualised long-run coefficient on annual inflation ranges between 1.3 and 1.7 which is consistent with results reported in earlier empirical studies. In particular, for the euro area over this period, a fall in annual inflation of 1 percentage point corresponds to a rise in the markup of around 1.3 per cent. We also find that other than for Austria where the markup increases following the

introduction of the euro (at the 10 per cent level of significance), there is no significant shift in the residual series in (3). Consequently, we cannot identify any change in the markup after March 1999 if we control for the effects of inflation and the business cycle.

Taking the markup as a proxy for competitiveness, there is no evidence of a pro-competitive impact of the euro, but this could be due to the transition period

We show that although the markup has varied considerably since the introduction of the euro most of this variation can be explained by the movement of inflation and the business cycle. Therefore if we take changes in the markup as a proxy for changes in competitiveness we do not find any evidence of a pro-competitive impact of the creation of the euro area. This may be due to the fact that we are still in a period of transition or that the data are insufficient for making the kinds of distinctions necessary. The impact of the euro on competition therefore remains an open question and one with considerable interest for policy makers in light of the aims of the Lisbon Strategy.

Chapter 10
Financial Integration Measure and Factor Analysis of European country and sector-based stock indexes

Financial integration is important to achieve the targets if the Lisbon Strategy

This chapter investigates the financial integration process in the euro area compared to the rest of the world over the last decade, an important area for the achievement of the targets of the Lisbon Strategy. Financial integration is expected to have risen more in the European Union due to the removal of various regulatory barriers and to the build up of the monetary union with a single monetary policy. These factors have triggered an impressive convergence of interest rates in the euro area. However the financial integration is debated as far as stock markets are concerned. On the one hand, there has been some integration of stock exchanges (for instance, with the creation of Euronext); on the other one, tax treatments as well as regulations have often remained different across countries. For instance, the tax treatment of domestic stocks returns is generally more favourable than that of foreign stocks returns (the European Commission has recently urged EU members to correct this distortion). Hence there is a debate on whether stock markets are more integrated in the European Union (and more specifically in the euro area) than in the rest of the world.

The euro generated a strong convergence of interest rates, but stock market integration is still an issue

We analyze daily returns for 90 countries and sectors, within and outside the euro area

We analyse the dynamics of daily returns for 90 country-and-sector indices in Europe as well as in the rest of the world. Returns are extracted from the Datastream database. They cover eleven countries from the euro area (all but Luxemburg), three countries from the EU not in the euro area (the UK, Denmark and Sweden), and six other countries or zones (Canada, the United States, Australia, Switzerland, Norway, Japan, and Asia excluding Japan). The time span runs from 1990:1 to 2002:08. In order to cancel out the effect of exchange rate variations, returns are expressed in euros (or Ecus) for euro area countries, and in dollars for all other countries. Hence, the integration measure of each zone (euro area, rest of the world) is not affected by exchange-rate variations.

The econometric analysis detects increasing integration also in stock markets in the euro area…

Dynamic factor analysis allows to identify common factors in the dynamics of daily returns, using a rolling window of one or three years successively. Using the Bai and Ng (2002) information criteria, we show that the number of relevant factors in the euro area has been decreasing over the period. This can be interpreted as higher integration in the euro area. More precisely, the number of factors falls from 4 to 3 in the middle of 1994, and from 3 to 2 at the beginning of 1998.

In a second step, the share of the co-variance matrix explained by the first factor is used as a dynamic measure of integration.

We show that this first factor explains the bulk of the co-movements of all returns, revealing a high degree of integration over the whole sample. However this measure of integration is always higher in the euro area than in the rest of the world. Its fluctuations over time are also more pronounced in the euro area, with a sharp rise in 1998-1999 and a subsequent decline in 2000-2001.

…more so across countries than across sectors

The last step consists in disentangling the contribution of countries and of sectors respectively to the integration measure. To do this, we conduct the same analysis as in the second step, but either on sector indices (which are aggregated across countries) or on country indices (which are aggregated across sectors). It is found that countries play a dominant role in driving the common part of all returns dynamics. For the euro area, our measure of integration across countries rises sharply in 1997-1998; it then declines slightly. For the rest of the world, integration rises only slightly in 1997-1998, and stays constant. We conclude that financial integration has been at play in the euro area in the 1997-1998 period, and that integration has remained at a high level afterwards.

Conversely, the sector-based integration measure tends to decline over the period, both in the euro area and in the rest of the world. The fall is especially marked in 1999-2000, probably due to the burst of the internet bubble.

At the beginning of the period, the sector component is dominant in explaining the co-movements of the returns. This is no longer true at the end of the period for the euro area, due to the scissor evolution of the country-based integration (which rises) and of the sector-based integration (which declines). At the end of the period, the integration measure is about the same for countries and for sectors in the euro area.

Therefore, there is more scope for sector-based portfolio diversification

One implication of our study is that the scope for sector-based portfolio diversification has been rising over time in the euro area compared to country-based diversification. However our orders of magnitude tend to suggest that countries still offer diversification opportunities in the euro area.