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Report on the European Economy 2006

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Economic Outlook

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Global Imbalances

CHAPTER 3
Economic Growth in the EU

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Education Policy in Europe

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Competition Policy in Europe

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Foreword

This edition marks the fifth annual report of the European Economic Advisory Group (EEAG) at CESifo. CESifo is one of the world's prominent research networks of professional economists incorporating more than 430 university professors from 24 countries. Its home base includes the Ifo Institute for Economic Research and the Center for Economic Studies (CES) of Ludwig Maximilian's University, Munich, with about 90 researchers in all fields of economics.

The EEAG which is in toto responsible for this report consists of a team of eight economists from eight European countries. It is chaired by Seppo Honkapohja (Universities of Cambridge and Helsinki) and includes Lars Calmfors (University of Stockholm, vice chairman), Giancarlo Corsetti (European University Institute, Florence), John Kay (St. John's College, Oxford), Jan-Egbert Sturm (ETH Zürich, KOF – Swiss Institute for Business Cycle Research), Gilles Saint-Paul (University of Toulouse), Xavier Vives (IESE, INSEAD, ICREA-UPF), and myself. All members participate on a personal basis. They do not represent the views of the organisations they are affiliated with.

The aim of this report is to comment on the state and prospects of the European economy. With the support of the Ifo Institute it provides a European business forecast and discusses topical economic issues which are of general interest to policy makers, managers, academics and the European public in general.

I wish to thank the members of the group for investing their time in a challenging project and I also gratefully acknowledge valuable assistance provided by Doina Radulescu, Tobias Seidel and Frank Westermann (assistants to the group); Gebhard Flaig, Wolfgang Nierhaus, Timo Wollmershäuser and Oliver Hülsewig (business forecast); Ludger Wößmann (comments); Paul Kremmel (editing); as well as Elsita Walter (statistics and graphics) and Elisabeth Will (typesetting and layout).

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Munich, 1 March 2006

Executive Summary

This is the fifth annual report by the European Economic Advisory Group (EEAG) at CESifo. It contains five chapters addressing the economic situation and different topics of policy concern for the European Union and the euro area. This executive summary provides a synopsis of the analysis and policy proposals of the report.

Chapter 1 discusses the short-term macroeconomic outlook and policy options for the European economy. As a main scenario, it is forecasted that GDP in the euro area will grow in 2006 at around 2.0 percent which is faster than the rate of 1.4 percent for 2005. Overall, European growth remains lower than in most other parts of the world and our forecast assumes favourable developments in the rest of the world. The chapter points to the risk of an undesirable mix between monetary and fiscal policies in the euro area: the ECB is likely to tighten monetary policy in response to the cyclical upswing, whereas the stance of fiscal policy will probably remain more or less unchanged. Instead, for reasons of long-run sustainability, structural budget deficits in the euro area should be reduced. This would leave room for a looser monetary policy than would otherwise be possible. Key to a better policy mix is a restoration of incentives for fiscal discipline, which have been significantly weakened by the 2005 reform of the Stability and Growth Pact.

Chapter 2 reviews the current debate about global imbalances, which have emerged as a result of large and persistent current account deficits of the US. The chapter presents and assesses different views about the nature of the required global adjustments and the extent of foreseen depreciation of the dollar. The US deficits are largely matched by large surpluses in Asia, oil-producing countries and a few European countries. Though the euro area as a whole has a close-to-balance external position, the possible correction mechanisms imply major challenges to policy-makers in Europe. The risks include a prolonged fall in the external demand for European products, increasing competition by US firms and negative wealth shocks due to a possible further fall of the dollar that would reduce the value of Europe's external assets. The risk of financial crises increases if the fall in the dollar is very pronounced and adjustment takes the form of a hard landing leading to a US and worldwide output contraction. There could also be a reversal of US attitudes towards free trade with negative consequences for Europe, if sluggish US external adjustment and over-cautious policy corrections by China and other Asian emerging markets strengthen the political weight of protectionist positions in the US.

The other chapters of the report consider selected aspects of the general theme "growth and competition in Europe".

Chapter 3 analyses the growth performance of different EU countries. While growth has been sluggish in France, Germany and Italy in the past ten years, several other EU countries have done well. The successful countries can be divided into two groups. One group, consisting of Finland, Ireland, Sweden and the UK, has relied strongly on the introduction of new high technologies, in particular information technology (IT). On the other hand, Greece and Spain have also grown well, but they have relied on traditional sources of growth – capital accumulation and increased labour input. The different experiences and the recent enlargement of the EU suggest that the Lisbon strategy for growth and employment should be replaced by a flexible approach: countries on the technology frontier should rely strongly on IT and other knowledge-based sources of growth, while other countries should rely on accumulation of traditional capital and labour and use technology transfer to achieve a gradual transformation towards high-tech industries. Such an approach can incorporate the differences among EU countries in the degree of technological advance. The key areas for growth policy include improvement of education – especially tertiary education – and IT diffusion, together with measures that enhance competition among firms in the economy. Improving competition

is vital for increased innovativeness and entrepreneurial activities in the EU.

Chapter 4 discusses primary and secondary educational systems in the EU, as education is a major determinant of economic growth. Education is a public quasi-monopoly in most EU countries. There are large disparities between countries in terms of achievements in reading, mathematics and science. These disparities occur among countries that are similar in economic and demographic terms. The amount of resources devoted to education does not seem to have a large impact, whereas the structure of school systems seems to matter a lot. On the basis of empirical studies, we argue that simply devoting more resources to education spending, or naïve targets such as reduction of class sizes, are not an effective way to improve school systems. Instead, policies should focus on better organisation of schools. Increasing parental choice and fostering competition among students to get into good schools and among schools to attract good students seem to be more effective policy reforms. If designed well, such reforms do not lead to unfair or non-egalitarian practices.

Chapter 5 considers merger control and competition policy in Europe, where merger activity is gathering pace. Earlier, mergers were mainly an Anglo-Saxon phenomenon. Higher merger activity in Europe is driven by a combination of the long-term effects of market integration and globalisation, strong corporate profits and cheap credit. Globalisation imposes restructuring in many sectors, and mergers are a prime instrument. The policy challenge is how to allow the needed restructuring and potential increase in firm size in some sectors, while at the same time protecting competition. This chapter discusses the trends of merger activity as well as the rationale for it and the main principles for an effective competition policy. The main conclusions are as follows. First, a vigorous competition policy is needed, but care must be taken not to try to enforce low concentration in natural oligopoly industries, where only a limited number of players can survive. Second, obstacles to hostile and cross-border mergers should be removed. Third, the 2004 reform of the merger control procedure in the EU was a step in the right direction, but the current structure of decision-making should be strengthened to improve checks and balances and minimise the lobbying influences by national governments and large firms.

The European Economy: Macroeconomic Outlook and Policy (Chapter 1)

Rises in oil prices are not likely to cause as high levels of inflation in the industrialised world as in the past. One reason is that central banks have over time managed to keep inflation expectations at low and stable levels. Furthermore, globalisation and – in Europe – still relatively low capacity utilisation prevent firms from fully passing on energy price increases to consumers. Overall, there are no clear tensions in labour, goods and service markets. This explains why in the euro area core inflation, as measured by the HICP excluding energy and unprocessed food, actually fell somewhat from 2.1 percent in December 2004 to 1.4 percent in December last year. Headline inflation in the euro area is expected to reach an average of 1.9 percent this year.

With respect to fiscal policy, industrial countries, on average, stayed on a more or less neutral course. Monetary conditions in the US and in Europe moved in opposite directions in 2005. The European Central Bank left its target rate again unchanged at 2 percent until December 2005, while the US Federal Reserve kept raising its funds rate. Assuming overall stable oil prices and exchange rates, world economic growth in 2006 will probably be slightly lower than in 2005.

The US appears to be on a stable expansion course, supported by all major demand components. Tightening of monetary policy will, however, slow down US growth somewhat to 3.4 percent. Especially private consumption is expected to expand at a slower rate.

In China, the government will continue its efforts to dampen investment demand in certain industries to support a more balanced growth pattern. Together with a small appreciation of the renminbi against the US dollar, this will probably imply that Chinese growth will be slightly lower than before, but remain on a high level of approximately 8$^1/_2$ percent.

During the first half of 2005, Japan continued its recovery. So far, it has mainly been based on export growth, as the country benefited from strong developments in the rest of Asia and in particular China. Growth during the first half of 2005 was supported by domestic demand. As this is expected to continue, the overall expansion of the Japanese economy will – with a rate of 2.4 percent – be at a slightly higher pace than last year.

In the rest of Asia, GDP growth is likely to slow down somewhat in 2006 as compared to 2005. The revival of the global IT cycle at the end of 2005 and the beginning of 2006 could support exports from the region. However, the high oil price will – given the high energy intensity of production in many Asian countries – probably lead to a further tightening of monetary policy. Furthermore, demand impulses from the US are expected to subside somewhat.

In the EU, the slow recovery, which started during the second half of 2003, made way for another phase of weak growth already after one year. This lasted for a good part of 2005 and was caused by a slowdown in domestic demand and, in particular, a near standstill of private consumption. During the course of 2005, the recovery in the European economy gained pace again. Annualised quarter-to-quarter growth in the euro area reached 2.6 percent in the third quarter, thereby allowing annual real GDP growth to reach 1.4 percent.

Since 2001, Germany has been characterised by very weak consumption demand due to unfavourable income developments and (political) uncertainty. Of the larger EU countries, only Spain has experienced strong consumption demand. This is to a large extent supported by the continued real estate boom, but if the boom comes to a sudden stop, there could be a rapid slowdown in consumption demand and overall activity.

In contrast to consumption, equipment investment in the euro area continued its upward trend in 2005. Given low inflation expectations and the continued cyclical slack, wage demands were moderate. This contributed to creating favourable conditions for investment financing. On the other hand, fierce competition faced by European firms in export and home markets, together with rising energy prices, put pressure on profit margins. Furthermore, European enlargement has shifted a greater share of total business investment to accession countries where labour costs are much lower. Investment in the euro area could therefore remain lower than in previous economic recoveries.

Current and leading indicators point to improving cyclical conditions in the last half of 2005 and the first half of this year. Net exports are expected to contribute to GDP growth by 0.2 percentage points. Stable oil prices will allow profit margins to improve. Together with increased foreign demand as well as continued favourable financing conditions, we expect that investment will grow at a rate of 3.0 percent, which is stronger than in the recent past.

Gradually improving labour market conditions and moderate wage increases will allow private consumption growth to increase somewhat in the course of 2006. Due to the continued recovery of the European economy, cyclical slack will fall to approximately half a percent of potential GDP. Growth of the euro area is still lacking the dynamics observed elsewhere in the world. On average, real GDP growth in the euro area is expected to increase to 2.0 percent this year. Growth will thereby be somewhat above trend. The growth gap between Europe and the United States will narrow somewhat.

The still weak cyclical recovery in the European economy raises fundamental macroeconomic policy issues. One is how much the aggregate stance of monetary and fiscal policy in conjunction should be tightened. Another issue concerns the appropriate monetary-fiscal policy mix. For reasons of long-term sustainability – associated with future demographic developments – there is a strong need for fiscal consolidation in the euro area. However, aggregate government net borrowing is at present very close to the three-percent-of-GDP limit in the Maastricht Treaty. The situation is not likely to improve much in the next few years. In fact, the 2005 reform of the Stability Pact has considerably weakened the incentives for fiscal discipline: the possibilities of extending deadlines for eliminating excessive deficits have increased, and the scope for discretionary decision-making in the enforcement procedure has been significantly widened.

As a consequence, a cyclical upswing in the euro area is likely to trigger a tightening of monetary policy rather than of fiscal policy, resulting in a growth-unfriendly policy mix. In addition, there are fears that the ECB may be about to restrain aggregate demand too much by forcing core inflation too far below 2 percent.

The risk of an undesirable policy mix in the euro area has been emphasised in a large research literature. The original establishment of the Stability Pact could be seen as a way of preventing such a situation from occurring. The de facto collapse of the pact will make this very hard to achieve. It is vital to restore stronger incentives for fiscal discipline, but it is far from clear how this could be achieved over the

next few years. A re-establishment of such incentives in the longer term would require bold political initiatives: these could involve (i) stronger fiscal-policy frameworks at the national level; (ii) enhanced fiscal policy co-operation in a smaller group of fiscally responsible EU states; or (iii) attempts to coordinate monetary policy and fiscal policy reform at the EU level, for example by the ECB offering governments a monetary-policy reward, in the form of an upward revision of its inflation target, as a response to a restoration of a stricter fiscal-policy framework.

Global Imbalances (Chapter 2)

The large and persistent current account deficits run by the United States from the second half of the 1990s have generated widespread concerns about the sustainability of current macroeconomic imbalances at the global level and the risk of disorderly adjustment and slowdown in macroeconomic activity. This chapter reviews the current debate and discusses the implications of global adjustment for European macroeconomic developments and policy-making.

Currently, large external deficits in the US are matched by large surpluses in Japan, Asian emerging markets, oil-producing countries and a few European countries. However, the euro area as a whole is close to external balance. The composition of external financing of the US deficit has changed significantly after 2000 with a falling share of private capital inflows (accounting for 90 percent of total inflows in 1997–1999, but only for 40 percent in 2003–2004) and an increasing share of public inflows. A further dimension of current global imbalances concerns the high level of international reserves held in dollar assets. At the same time, there has been a strong expansion of cross-border holdings of financial instruments, which have doubled since 1990 from about 60 percent of world GDP to above 120 percent now.

Though the US current account deficit is large in terms of US GDP, it is small relative to the stock of US foreign gross assets. The US typically borrows from international markets by issuing dollar-denominated assets but lends abroad mostly by acquiring equities and foreign-currency denominated bonds. Therefore, dollar depreciation leaves the dollar value of US liabilities unaffected but raises the dollar value of US assets and improves the US net foreign asset position.

There are a number of views on the causes of current imbalances, with quite different implications for the need for corrective policy measures.

1. A widespread view attributes the persistent US current account imbalances to low US national savings. Private savings in the US have been trending downward for some time and US public savings have also deteriorated markedly since 2000. Some studies suggest that the impact of fiscal consolidation in the US on external trade is limited in the short run, but greater fiscal discipline would certainly help reduce imbalances in a longer-term perspective.

2. A second view of the US external deficits argues that they are essentially driven by expectations of high future growth. This view has two important policy implications. First, it is not appropriate to talk about "imbalances", as trade flows are in fact balanced in an intertemporal perspective. Second, significant dollar depreciation in real terms may not be required for some time and should therefore not be expected. However, current expectations about high US growth in the future may be too optimistic. If and when expectations are revised downwards, restoring US external balance would then require a sharp correction of spending plans, possibly implying large movements in exchange rates and relative prices.

3. A third view of US current account deficits argues that the deficits are a mirror image of a "saving glut" in the rest of the world. A variant of this view is that there is an "investment drought" outside the US. This view offers a potential explanation of the simultaneous occurrence of low real interest rates and low investment. According to this argument, one may expect interest rates to rise as soon as investment picks up again.

4. A fourth view suggests that a desire for "export-led growth" and a build-up of currency reserves in Asian emerging markets have substantially contributed to the current global imbalances. In particular, imbalances are due to China's exchange rate policy and its strong influence on the policies of the other emerging markets in the region. China's formal abandonment of the inflexible peg against the US dollar has not led to any significant appreciation of the renminbi so far. However, given the internal

consequences of distorted relative prices, due to an artificially low exchange rate and the threat of protectionist measures by the US, one should expect some noticeable correction in the near future.

Predictions of further sizeable depreciation of the dollar in real effective (multilateral) terms emphasise the need for a fall in the relative price of US non-tradables, which is tantamount to a reduction in US income relative to the rest of the world. According to some studies, the required real rate of depreciation of the dollar might be quite large, depending on several factors that ultimately affect the elasticity of substitution between traded and non-traded goods in the US and between US and foreign traded goods, as well as on the impact on the level of economic activity. Many studies suggest that adjustment could necessitate a protracted period of real dollar weakness.

According to the consensus view, the most important policy contribution to adjustment should come from a reduction in the US fiscal deficits. Without any fiscal rebalancing in the US, a reduction in Asian saving, possibly associated with a slowdown or reversal in reserve accumulation, increases the risks of financial strain in the global currency and asset markets. Looking at the adjustment of global imbalances from a "euro" viewpoint, there may or may not be further dollar depreciation vis-à-vis the euro. However, correcting the US current account deficit in any case requires an improvement in US net exports, and Europe is likely to experience a drop in external demand with negative effects on European growth.

It is possible that the resolution of current imbalances will proceed relatively smoothly. However, it is also possible that the current build-up of imbalances will be followed by one of the "hard landing" scenarios. Suppose that there is a disorderly adjustment with strong relative price and exchange rate movements and financial turmoil across markets. In this scenario, it is highly plausible that European financial and non-financial firms would suffer from strong deterioration of their balance sheets and liquidity shortages. This scenario would call for European monetary and supervisory authorities to stress-test their institutional framework. If the financial crisis is moderate, the euro system may be able to contain it. However, if the financial crisis is sufficiently severe, monetary authorities may face difficult trade-offs between financial stability and price stability. Governments may then have to shoulder large fiscal costs to stave off a serious financial crisis. This would raise important issues regarding the distribution of fiscal costs across countries that policies to mitigate a serious crisis would entail. In this scenario, the relatively weak public finances in many European countries are an aggravating factor, as they would imply undue constraints on emergency financing in the case of a crisis. Increasing the fiscal room of manoeuvres in a possible future financial crisis adds a strong precautionary motive for stronger fiscal discipline now.

Even if European monetary authorities were successful in fighting financial contagion and other undesired effects of liquidity shortages in the event of a worldwide financial crisis in the context of an unwinding of global imbalances, the euro area would still in such a situation face a severe aggregate demand problem. It would be difficult to deal with this problem under the current framework for monetary and fiscal policy. Perhaps the most important risk for Europe associated with global imbalances is to become exposed to a severe downturn without having access to effective policy instruments to stabilise the economy.

Economic Growth in the European Union (Chapter 3)

Economic growth has been sluggish in many EU countries. Up to the 1990s, levels of GDP per capita in Western European countries were catching up with that of the US, but this tendency was dramatically reversed in the 1990s. In particular, France, Germany and Italy have started to fall further behind the US. The European growth problems have led to major political discussions within the EU. The 2000 Lisbon strategy for growth and employment was an expression of the concern about low growth.

This chapter analyses the reasons behind the varying growth performance of EU countries. Our first observation is that slow growth is not a universal phenomenon among the old EU countries. Some countries – notably Ireland, Finland, Greece, UK, Spain and Sweden – have performed well over the last decade. We are also beginning to see "growth miracles" in several new EU member countries. Second, a process of convergence in per capita incomes in the EU is taking place. This process is

largely driven by the convergence between the EU-15 and the new member countries, that is, living standards in the new EU countries appear to be catching up with the old EU members in a long-term perspective.

Determinants of economic growth are analysed by decomposing GDP growth into the contributions from growth of labour input, IT capital input, non-IT capital input and technological progress (total factor productivity). Growth accounting reveals that the unsuccessful countries, France, Germany and Italy, have been growing mostly through traditional capital accumulation and to a much smaller extent through general technological progress. Labour input often played a substantial negative role, particularly in Germany.

In contrast, there have been different roads to prosperity in the successful countries. In one group, consisting of Ireland, Finland, the UK and Sweden, there has been a large increase in the contribution by IT capital growth, though all production factors have made a positive contribution in these countries, including labour input for most episodes. In addition, relatively rapid IT capital growth has been coupled with relatively high total factor productivity (TFP) growth in these countries. The best performer, Ireland, has had rapid growth in all factor inputs. Spain and Greece make up a second group of success cases, which have primarily grown through conventional capital accumulation and labour input growth.

There are large variations among countries in the determinants of growth in capital and labour inputs and in factors that influence technological progress. Finland, the UK and Sweden had higher shares of IT capital relative to other capital already before, so the recent fast accumulation of IT capital has for this reason resulted in larger contributions to growth. These countries are also at the top in terms of indicators of IT diffusion. Determinants of technological progress are likely to have been quite diverse, as technological progress is influenced by a number of factors such as education and innovativeness of the economy. Finland and Sweden had the highest levels of education spending (relative to GDP) among EU countries, but there appear to be no systematic relationships between this factor and growth for EU countries. The amount of regulation is one determinant of the degree of competition among firms, which in turn influences innovativeness. In many, though not all cases, the successful countries have done well in terms of indicators of deregulation, venture financing and R&D spending.

Our analysis leads to several policy conclusions. First, we recommend that the Lisbon strategy should be modified. The Lisbon strategy argues for the creation of a uniform model of a high-tech information society for the EU, whereas the European experiences suggest that there are different routes to success. Instead, the EU should allow for a flexible strategy for growth, in which there is scope for high-tech driven growth as well as growth based on more traditional means of capital accumulation, increased labour input and imitative adoption of new technologies from the leaders.

One key element in growth policy is improvement of the educational systems. This should be done at both the national and EU levels. Education influences growth through the accumulation of human capital, and there are also important complementarities between education and the ease of adoption of innovations and new technologies. An important question concerns the level of education at which improvements should be focused. Countries that are close to the frontier should specifically focus on improving the tertiary education system, as high-technology innovations require more advanced skills than lower-level innovations. The latter are often process improvements and rely on imitative adoption of known technologies.

While the US does not stand out in the quality of secondary education, it is well ahead of EU countries in university education, which is likely to matter the most for economic growth of the most advanced countries. The best universities in the US compete strongly with each other for the best graduate students and researchers. In European countries, the university system is largely not exposed to strong competition, though the UK with its national research and teaching quality audits is partly an exception.

A third policy conclusion concerns the potential to increase labour input to enhance economic growth. In most EU countries, labour input has not grown much, and in some countries labour input growth was even negative for some periods. Labour input can be raised through labour market reforms such as lower unemployment benefits, employment tax credits, lower marginal tax rates on labour and pension

reforms providing incentives to a longer working life. Decentralised collective agreements that allow lengthening working hours (as in Germany) and reversals of earlier legislated working time reductions (for example in France) are other desirable measures.

Another policy conclusion concerns the regulatory policies in the EU. Europe tends to have a relatively high level of regulations that limit competition by restricting entrepreneurial activities, entry and labour market adaptability, which in turn can suppress innovation and technological advancements. Growth effects of competition appear to depend on the distance of the industry from the technology frontier, so that increased competition yields the largest productivity gains in sectors that are far behind the frontier. Technology policy should focus on provision of opportunities for creation of new firms and industries and less on glorifying national champions. Improvements of venture capital financing and R&D continue to be important policy areas for the EU countries. There are big variations in the amount of venture capital investments in the EU, and Europe is lagging behind the US in this respect. Also, competition policies should focus more on facilitating entry of new firms to improve innovativeness of European economies.

Reduction of trade barriers to competition and entry in the service sector is important, as exporters of services tend to be subjected to national regulations in both the country of origin and in the host country. Since the service sector makes up around 70 percent of both GDP and employment in the EU-15, lower trade barriers for services have potentially large growth effects. For this reason, it is important that the new EU Services Directive under discussion is not watered down. A related issue is that the imposition of national pay conditions on posted workers from other EU member states prevents effective cross-border price competition. This limits the gains from trade in services to economies of scale, more effective organisation and greater product diversity. It also means that the old EU member states forsake the welfare gains that could come from allowing service providers from the new member states to compete effectively by compensating for lower productivity through lower wages. Such competition is a natural exploitation of different comparative advantages. It is not "unfair wage dumping". Wage competition among countries in trade with services should be allowed in the same way as in trade with goods.

Growth-enhancing policies for new EU member countries include facilitating technology transfer and improvement of productivity in industries that are mostly behind the high-technology frontier. Education policy and financing of new firms and innovations continue to be major items in the policy agenda for the new EU members.

Prospects for Education Policy in Europe (Chapter 4)

Education is an important productive input into the wealth of a nation. It enhances individual productivity, which shows up in higher wages. The rate of secondary enrolment comes out as one of the significant determinants of differences in GDP per capita across countries. Also, an educated workforce is a valuable asset at times of rapid technological change, because educated workers are better at adopting new technologies.

In most European countries, the public sector holds a quasi-monopoly on the provision of education. While government intervention may be justified on the grounds that education has social aspects and that parents' decisions may not reflect their children's best interest, it is not clear that direct provision is the adequate form of government intervention. One may consider a more decentralised approach that would contain costs and allow for greater diversity of individual choices.

In many countries, primary and secondary educational systems are under pressure. On the one hand, the costs of education are soaring as both enrolment rates and the length of studies trend upward, while the cost per pupil grows as fast as GDP per capita. On the other hand, there is a perception that standards and achievements are going down.

Some argue that in order to solve these issues, one should spend more resources on facilities, hire more teachers to reduce class size, and perhaps employ more staff to take care of discipline and other non-curricular aspects. Others insist that educational systems can be made a lot more efficient by relying on competition and free parental choice.

What does the evidence say?

We observe large disparities between countries in terms of achievements in reading, mathematics, and

science. These disparities occur among countries that are similar in economic and demographic terms. Therefore, the way schools are organised seems to matter a lot. Furthermore, the amount of resources devoted to education does not seem to have a large impact. In a cross section of countries, it only has a small impact on achievements; the US spends a large amount per student, but does worse than the Slovak Republic that spends only little. Econometric studies at the individual level suggest that traditional recipes based on increased spending fail. For example, there is hardly any evidence that reducing class size has any impact on achievement. These findings are confirmed by event studies such as those of the unsuccessful French "Zone d'Education Prioritaire" experience.

On the other hand, a growing body of empirical studies that compare similar groups of pupils exposed to different policies suggests that enhancing competition between schools has positive effects on achievements. Competitive mechanisms re-allocate resources from the worse to the best schools by allowing parents to choose and by adjusting school resources so that the successful schools can grow to accommodate increased demand.

These mechanisms can take different forms: they can rely on the private sector to different degrees and involve different compensation mechanisms in order to offset potential unwanted effects on the distribution of income. For example, vouchers of some amount can be given to attend private schools. The amount of vouchers can be adjusted to reflect distributional concerns. It has been shown that such schemes also benefit pupils who continue to attend public schools, because these are disciplined by competition from private schools. Hence, even students that are too poor to attend a private school, despite the voucher, indirectly benefit from school competition. But one can also think of other mechanisms where parental choice is increased and management is decentralised to the school level, but where there is less reliance on monetary rewards and smaller distributional effects.

The organisation of public schools has a large impact on achievements. Mere increases in spending, in particular in the form of smaller classes, seem to be an inefficient way of raising achievements. In contrast, substantial improvements can be obtained if one fosters competition, both among students to get into the good schools and among schools to attract the good students. The available evidence suggests that while raising performance, such policies would not be particularly "unfair" or "non-egalitarian" relative to current practices.

Mergers and Competition Policy in Europe (Chapter 5)

Merger activity is gathering pace in Europe. 2005 has seen large-value mergers or acquisitions such as Italy's Unicredito of Germany's HVB in the banking industry and France's Pernod Ricard of the UK's Allied Domecq in the food and drink sector. The pace of activity in utilities has been especially hectic and France's Suez has acquired Belgium's Electrabel, France Telecom has bought Spain's Amena and Telefónica (Spain) has launched a bid for O_2 (UK). Within Spain, Gas Natural has also announced its intention to take over Endesa in the largest operation of the year. At the same time, private equity firms (mostly British and American) are buying up firms, in particular conglomerates, with a view to restructure them and sell them for a profit. Not so long ago, mergers were basically an Anglo-Saxon phenomenon. However, the end of the millennium merger wave was driven, at least in terms of cross-border operations that have been gaining weight in the total, by activity in the EU-15.

This reflects the long-term effects of market integration in Europe. But broader trends in the world economy are also important – the revolution in information technology, the widening of markets, the strength of corporate profits and the availability of cheap credit. Globalisation, especially in the form of competition from emerging economies like China and India, has induced restructuring and redeployment to increase productivity, and mergers are an integral part of these processes.

Mergers raise a host of public policy issues. It is not clear that mergers create value for shareholders and consumers. A consolidation wave poses a threat to competition, which is the main driver of economic efficiency and productivity growth. The preservation of competition in different markets is of utmost importance. Domestic mergers are generally more threatening to competition than cross-border ones. It may be agreed that globalisation lessens the need for merger control, but it is important to establish that European merger control is up to the task of ensur-

ing that the merger wave is good not only for investment bankers but also for consumers.

A related issue is that many European governments have a protectionist instinct and view with suspicion foreign takeovers of their national champions or of firms that are considered to be in strategic sectors. Banking and utilities are often viewed as examples of such sectors. France and Italy tend to protect their firms, as shown by, for example, the discussion over whether French Danone could be taken over by PepsiCo, and the obstacles put by the former governor of the Bank of Italy to the foreign takeover of Antonveneta and BNL. France has issued a list of strategic sectors where national interests are to be protected. Despite this, the trend towards cross-border mergers seems robust. The public policy question is whether ownership matters and whether Europe needs either national or European champions.

Globalisation is associated with technological change, with decreases in trade and transport costs of goods, capital, people and information, and with liberalisation and market integration that simultaneously enlarge the market and increase competitive pressure. In many sectors, the number of firms will have to be reduced in an integrated or enlarged market to reap economies of scale. At the same time, a sufficient level of competition is needed for innovation, and the timely termination of bad projects drives productivity growth. Furthermore, domestic competition is a key to international success and competitiveness, whereas fostering national champions may be self-defeating. The policy challenge is how to allow the needed restructuring and potential increase in firm size in some sectors, while at the same time protecting competition.

Our first conclusion is that a vigorous competition policy is needed, but care must be taken not to try to enforce low concentration in natural oligopoly industries where only a limited number of firms can survive. Furthermore, merger control should take into account the need of a larger firm size in several industries and the potential dynamic efficiencies (for example innovation) generated by mergers.

A second conclusion is that artificial obstacles to hostile and cross-border mergers should be removed in Europe. Hostile takeovers are a sign of health of the market for corporate control. Cross-border mergers should proceed without regulatory obstacles as they may keep in check the increase in domestic concentration. We acknowledge that ownership is not neutral, in particular, in some industries like banking where relationships are important, but on balance this is insufficient justification for protectionism. European as well as national competition policy must play a major role in keeping markets open.

A third conclusion is that care must be taken in not promoting European champions that end up being effectively protected from closure. Can the independence of competition policy be maintained given the politics of the Commission? States can lobby Commissioners and other Directorates than the one for competition (like Industry or Energy) to further national policies. Such lobbying would be hard to resist if it is done simultaneously by more than one large EU member state. An independent institutional body might protect competition policy from these industrial policy pressures.

Fourth, the 2004 reform of the merger control procedure in the EU was a step in the right direction, increasing checks and balances for merging parties and the role of economic analysis. However, the guarantees for the parties, the quality of analysis and decision-making, as well as the protection against the lobbying pressures of national governments and firms could still be improved. One example of an independent institutional body would be an administrative panel, which is located within the Commission and recommends or even decides on merger cases. Another possibility would be a European Competition Agency.

The European Economy: Macroeconomic Outlook and Policy*

In 2005 the world economy still developed strongly, but, with GDP growth of 4 1/2 percent, at a somewhat slower pace than in 2004. Developments still differed substantially among major regions. Whereas output continued to increase in a robust and strong manner in the US and it showed a clear upward, but still somewhat volatile trend in Japan, European real GDP grew only at a moderate pace.

This year the world economy is expected to grow at an almost unchanged pace of around 4 1/2 percent, but this time with a somewhat more even distribution across the major regions. In the US, the expansion of real GDP is expected to slow down somewhat, not least due to a less accommodative monetary policy. Japan is likely to continue its recovery, but the Chinese economy remains the engine of economic growth in Asia, although the fast pace of expansion is expected to weaken slightly. The pace of expansion in the European economy will increase somewhat. In the euro area, real GDP growth is, with a rate of 2.0 percent, forecasted to exceed potential growth somewhat. Economic activity in Europe will be supported by strong, but in the course of this year moderating, export growth. Domestic demand will accelerate gradually, offsetting the slowdown in external demand.

The chapter points to the risk of an undesirable mix between monetary and fiscal policies in the euro area: the ECB is likely to tighten monetary policy in response to the cyclical upswing, whereas the stance of fiscal policy will probably remain more or less unchanged. Instead, for reasons of long-run sustainability structural budget deficits in the euro area should be reduced.

* The forecast is based on data available until January 31st 2006.

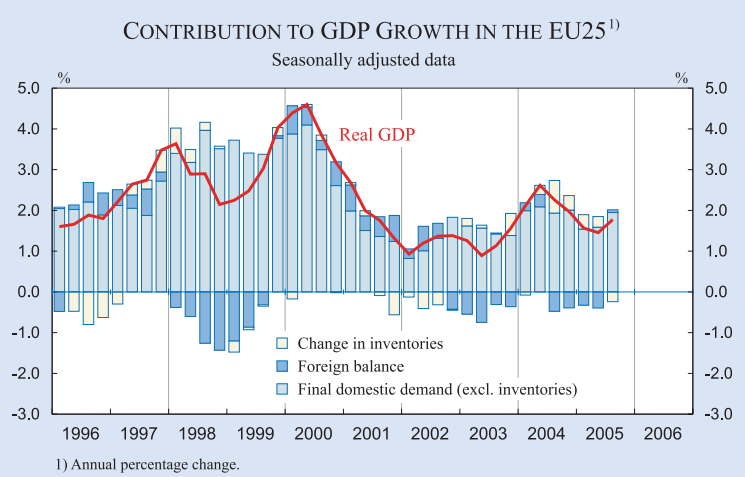
1. The current situation

1.1 The European economy in 2005

In the *European Union* the slow business cycle recovery, which started during the second half of 2003 already after one year made way for another phase of weak growth (see Figure 1.1). In the *euro area,* the annualised quarter-to-quarter GDP growth rates from the third quarter of 2004 until the first quarter of 2005 did not exceed 1.5 percent, whereas the average was 2.5 percent in the four preceding quarters. During the course of 2005, the recovery in the European economy gained pace again. Annualised quarter-to-quarter growth reached 2.6 percent in the third quarter, thereby allowing annual real GDP growth to reach 1.4 percent.

The initial weakening of especially domestic demand in 2005 was mainly caused by feeble growth of private consumption (see Figure 1.2). Since 2001, *Germany* is characterised by severe restraint in consumption due to unfavourable income developments and (political) uncertainty. In the *UK*, private consumption hardly grew in 2005. The previously supporting increases in house prices subsided; the situation in the real estate market calmed down substantially. Out of the group of larger EU countries, only *Spain* experienced strongly expanding consumption demand. Because

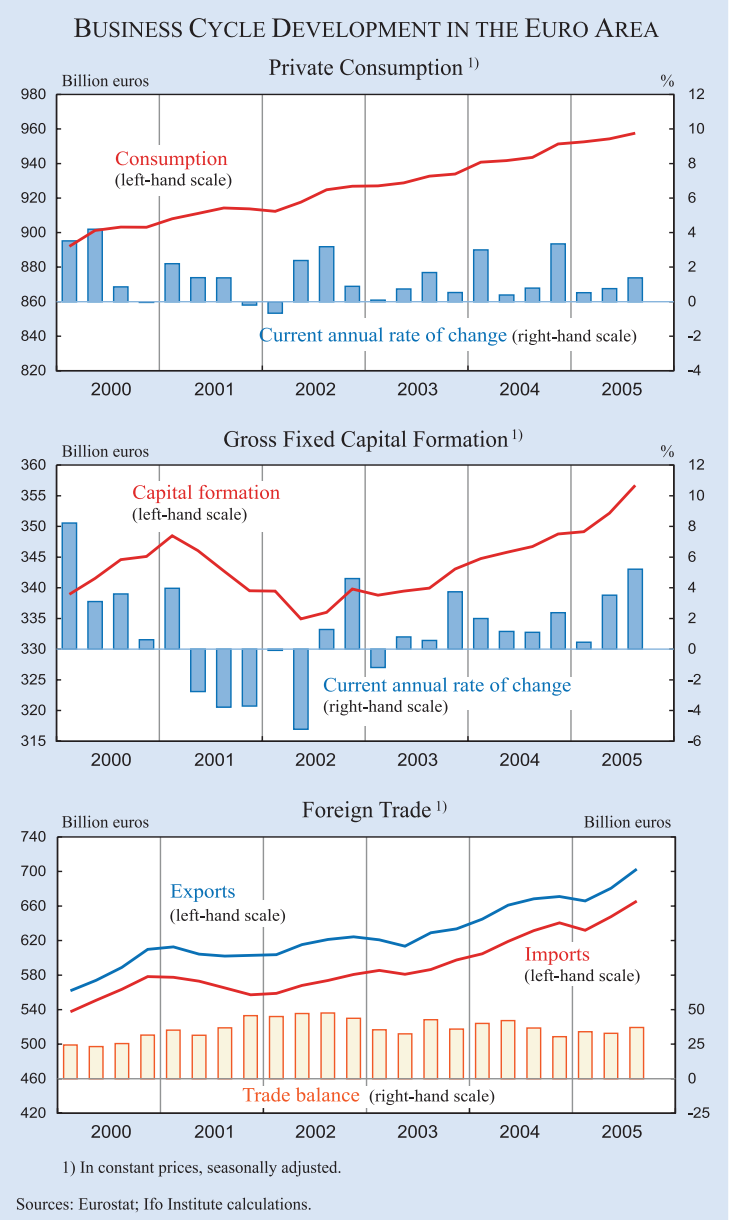
Figure 1.1



1) Annual percentage change.

Sources: EcoWin, Eurostat; Ifo Institute calculations.

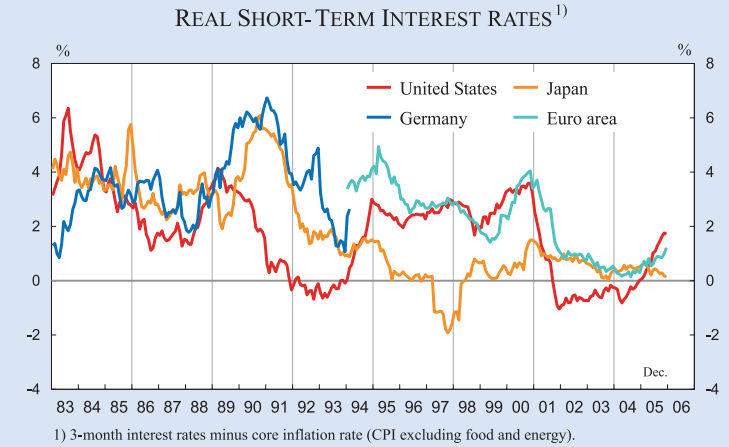
Figure 1.2



1) In constant prices, seasonally adjusted.

Sources: Eurostat; Ifo Institute calculations.

Figure 1.3



1) 3-month interest rates minus core inflation rate (CPI excluding food and energy).

Sources: Deutsche Bundesbank, European Central Bank, Eurostat, Federal Reserve Bank of St. Louis, Federal Statistical Office, OECD; Ifo Institute calculations.

this was to a large extent supported by a continued real estate boom, there appear to be considerable downside risks there.

In contrast to moderately growing consumption demand, equipment investment in Europe continued its upward trend. Slower export growth and the renewed deterioration of capacity utilisation in manufacturing restrained the willingness to invest in the beginning of last year. During the second half of 2005 investment grew strongly, but without reaching two-digit growth levels.

Not only domestic, but also foreign demand showed a weak development during the first half of last year. Exports only grew at a moderate pace in the second half of 2004 and even fell somewhat during the first quarter of last year. Yet, they subsequently recovered and were a driving force behind the higher growth in the second half of 2005.

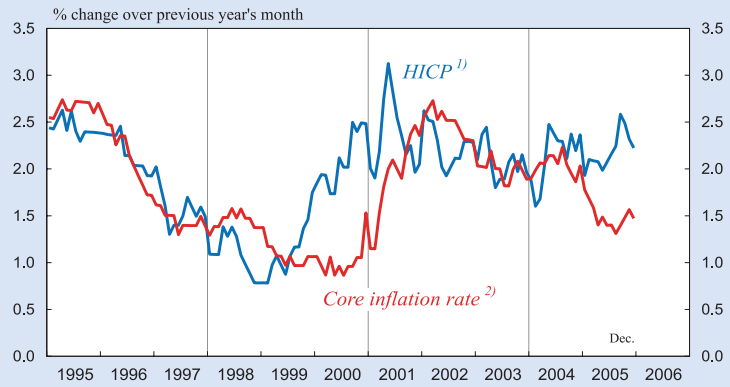
Throughout most of last year, the ECB kept its main refinancing rate at 2.0 percent, implying real interest rates close to zero (see Figure 1.3). Only in December did the bank increase its main interest rates by 25 basis points. The clear appreciation of the real effective exchange rate of the euro by 12 and 4 percent in 2003 and 2004, respectively, was to a certain extent corrected last year, leading to overall looser monetary conditions in the *euro area*.

Economic developments in individual countries remained rather diverse. Whereas *Spain* again experienced high real GDP growth, *Italy* barely recovered from a recession. Also in *Germany* and in the *Netherlands*, economic growth was low during 2005. The driving forces behind

business cycle developments in Europe differed substantially. Overall, countries with stronger growth have seen higher increases in domestic demand, which has been stimulated by either increased labour income or rising real estate prices.

Figure 1.4

PRICE DEVELOPMENTS IN THE EURO AREA



1) Harmonised Index of Consumer Prices.
2) HICP excluding energy and unprocessed food.

Source: Eurostat.

In *Germany* and *Austria*, foreign demand was the main supporting factor. Whereas the contribution of the net foreign balance to economic growth gained in significance here, its importance decreased in most other countries within the *euro area.* The latter can be explained by the unfavourable composition of the export basket and a reduction in price competitiveness against, in particular, the Asian economies. The differing export dynamics are also reflected in the differing developments of industrial production, which in both *Germany* and *Austria* was stronger than in the rest of the *euro area.* Against the background of moderate economic growth, employment initially increased only slightly. This is explained primarily by developments in *Spain* and – despite the weak business cycle – in *Italy*. The *euro area* unemployment rate, which slowly started decreasing again in the autumn of 2004, equalled 8.6 percent in June 2005, as compared to 8.8 percent at the end of 2004. Employment growth, however, accelerated somewhat in the second half of 2005, helping to reduce the unemployment rate to 8.3 percent towards the end of the year.

Overall there were no clear inflationary tensions in markets for labour and for goods and services. Together with so-called base effects with respect to specific administrated prices, this explains why in the *euro area* core inflation, as measured by the HICP excluding energy and unprocessed food, actually fell somewhat from 2.1 percent in December 2004 to 1.4 percent in December last year (see Figure 1.4). Mainly due to increases in oil prices, headline inflation is expected to end up at 2.2 percent in 2005 (as compared to 2.1 percent in 2004).

As in the previous years, and despite rising energy prices, overall wages increased moderately. However, substantial differences emerged on a country level. Whereas average wages in *Germany* remained more or less unchanged and wage increases in *Italy* were kept below the euro area average, the rate of wage increase was as high as 3 percent in *Spain* and in *France* (see Table 1.1).

In the majority of the new EU member countries annual economic growth was lower in 2005 than in the previous year. Real GDP increased by 4.2 percent on average. This reduction from an average growth rate of 5.1 percent in 2004 is mainly attributable to *Poland*, where especially private consumption grew only moderately. With the exception of *Hungary* and the *Slovak Republic,* investment levelled off. Lower domestic demand increases had its impact on import growth. Output growth was also dampened by subdued export performance due to somewhat weaker worldwide growth.

Some of the central banks in this region lowered their interest rates in the course of last year. This was also possible because currencies of some of the larger countries appreciated, which alleviated inflation pressures caused by oil price developments. In response to accelerating inflation, only the central bank of the *Czech Republic* raised its repo rate in autumn. However, at 2 percent it is still well below the level of 2.5 percent at the beginning of 2005.

Since accession in May 2004, the ten new member states have seen a clear increase in trade with the *euro area.* Especially imports from the euro area in the new member countries have seen an upward level shift (see Figure 1.5). This is associated with substantial current account deficits in many of the new member states. The growth slowdown at the end of 2004 and during the first half of last year clearly left its mark on trade between these blocks. The composition of exports and imports between the new member states and the

Table 1.1

The development of various measures of wages and wage costs
average annual changes in per cent

		Nominal wage[a)]	Real wage[a)b)]	Labour productivity	Unit labour cost[c)]	Relative unit labour cost[c)d)]	Export performance[e)]
Euro area	2002–2004	1.7	– 0.4	0.6	1.3	7.7	na
	2005	1.6	– 0.1	0.5	1.1	– 2,5	na
Germany[f]	2002–2004	1.0	– 0.1	0.7	0.3	1.4	– 0.8
	2005	0	– 0.3	1.0	– 1.0	– 5.2	0.1
France	2002–2004	2.7	1.0	1.5	1.4	3.9	– 4.4
	2005	3.1	1.8	1.6	1.7	– 1.2	– 2.8
Italy	2002–2004	2.6	– 0.3	– 0.4	3.2	6.1	– 6.2
	2005	3.4	0.7	– 0.4	3.8	2.7	– 6.0
Finland	2002–2004	2.8	2.5	2.8	– 0.3	2.7	– 2.5
	2005	3.5	1.4	0.7	3.5	– 0.1	– 1.6
Netherlands	2002–2004	2.7	0.3	1.1	2.5	5.2	– 0.7
	2005	0.9	– 0.7	1.1	0.4	– 1.3	– 1.6
Ireland	2002–2004	3.1	0.0	3.1	0.5	3.7	– 1.0
	2005	5.2	2.9	1.0	4.1	1.7	– 1.2
Spain	2002–2004	3.0	– 1.1	0.5	2.8	3.0	– 1.1
	2005	3.5	– 0.1	0.7	2.8	– 0.4	– 4.6
United	2002–2004	3.3	0.6	2.0	2.4	1.5	– 3.5
Kingdom	2005	3.6	1.6	1.1	2.9	– 1.4	– 1.2
Sweden	2002–2004	2.4	0.7	3.1	– 0.5	– 1.6	– 0.1
	2005	3.3	2.0	2.5	0.9	– 1.9	– 3.0
Poland	2002–2004	1.3	– 0.3	5.0	– 3.9	– 12.4	3.2
	2005	3.8	– 2.3	1.6	0.9	13.4	1.9
Hungary	2002–2004	7.2	0.7	na	3.3	8.2	3.9
	2005	6.5	4.5	na	2.4	1.3	3.9
United States	2002–2004	2.8	0.7	3.2	0.6	– 5.5	– 2.9
	2005	5.3	2.5	2.1	3.2	– 0.6	– 0.7
Japan	2002–2004	– 1.4	– 0.1	1.9	– 2.7	– 3.3	1.8
	2005	0.5	1.5	2.1	– 1.3	– 6.2	– 1.3

[a)] Business sector. – [b)] Nominal wage deflated by GDP deflator (*i.e.,* real product wage). – [c)] Manufacturing sector. – [d)] Competitiveness– weighted relative unit labour costs in dollar terms. – [e)] Exports relative to export markets, a positive number indicates gains in market shares and a negative number indicates a loss in market shares. – [f)] The figures for Germany are compensations per employee and not wages.

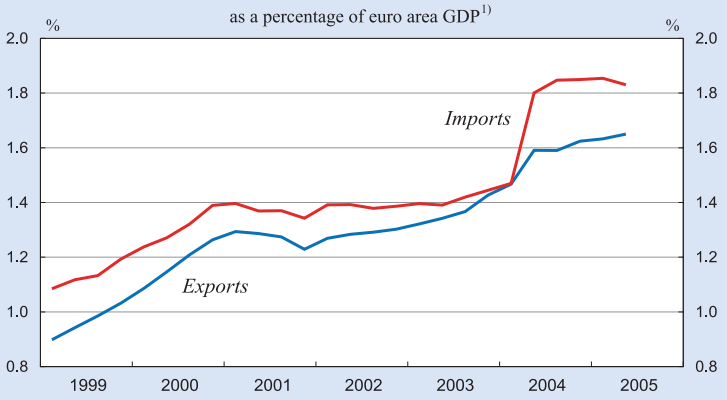
Source: OECD Economic Outlook 78 database.

euro area has, however, so far not been affected by accession. With a share of around 60 percent of all trade, intermediate goods are by far the most important component of trade. The remaining part is more or less equally split between capital goods and consumption goods and services.

Up until the end of 2001, the three largest new member countries, *Poland*, the *Czech Republic* and *Hungary*, each held a share of approximately 26 percent of total exports to the euro area coming from the ten new member countries. After that, the relative position of *Hungary* gradually deteriorated to around 22 percent, whereas the shares of the other two countries rose to around 28 percent in the last few years. The relative importance of the remaining seven new member states roughly stayed the same. With respect to imports from the *euro area*, a similar picture emerges. Whereas the *Czech Republic* took a gradually increasing share of total imports, *Hungary* experienced a steady decline. But as this country also experienced a level shift in especially imports from the *euro area* in the second quarter of 2004, its accession stimulated trade: the

Figure 1.5

FOREIGN TRADE OF THE TEN NEW EU COUNTRIES WITH THE EURO AREA
as a percentage of euro area GDP[1)]



1) At current prices, seasonally and working-day adjusted.
Sources: EcoWin, Eurostat; calculations by the EEAG Group.

speed of (trade) integration, however, seems to lag behind those of the others. The *Czech Republic,* on the other hand, appears to be doing rather well on this front.

1.2 The global economy

United States

The US economy seems to be on a stable expansion course. Except for the last quarter of 2005, annualised quarter-to-quarter growth rates of real GDP have been above 3.3 percent for ten quarters in a row. Neither hurricanes nor high oil prices appear to have affected the dynamics of the US economy noticeably. US GDP growth in 2005 reached 3.5 percent (after 4.2 percent in 2004).

Growth was supported by all major demand components. Households increased their spending by a solid and stable 3.6 percent in 2005. The reduction in purchasing power of households due to increased energy prices has been compensated by an increase in disposable income and a further reduction in the already low saving rate. The latter can be partly explained by the further increase in real estate prices. Moreover, labour market conditions improved. The number of employees in non-agricultural sectors increased as compared to 2004 by 1½ percent at the end of last year. However, the substantial rise in employment only reduced unemployment to a small extent, as the number of people searching for jobs increased as well. The unemployment rate was, on average, 5.1 percent, implying a decrease of 0.4 percentage points over the year.

Although fixed investment could not quite keep up with the high quarterly growth rates of 2004, it still contributed strongly to overall growth in 2005. Especially growth in equipment and software investments remained strong. Apparently, firms still feel the need to invest, possess the necessary financial means and harbour positive sales expectations. Furthermore, residential investment expanded very strongly – despite its already high level – in particular during the first half of 2005. However, slower growth rates during the second half of 2005 and recent survey results point towards the long-expected correction of residential investment.

During the first part of 2005, the trade balance started to contribute positively to GDP growth for the first time in almost two years. Hence, overall exports grew at a slightly faster pace than imports, which allowed the current account deficit to (temporarily) stabilise at around 5½ percent of GDP. Whereas exports, however, only grew moderately in the second half of 2005, imports surged by roughly 9 percent in the final quarter of 2005.

In spite of considerable economic growth, core inflation, that is inflation corrected for its volatile components energy and food, remained fairly stable. One of the reasons is that the Federal Reserve, from June 2004 until January 2006, increased the federal funds rate in 14 small steps up to 4.5 percent. The Fed has thus reversed the expansionary stance of monetary policy taken since the recession of 2001. Monetary policy in the US is soon about to reach an approximately neutral course, according to most judgements. This reversal could not prevent inflation expectations from increasing and oil price hikes from causing substantial increases in headline inflation, reaching a peak in September with a rate of 4.7 percent.[1] In November, headline inflation decreased to 3.5 percent.

Japan, China and other Asia

During the first half of 2005, *Japan* continued its recovery, which was only shortly interrupted by a mild recession during the second half of 2004. Output growth reached a record annualised quarterly rate of 5.7 percent in the first quarter. It remained close to that level during the second quarter, but dropped substantially to levels of around 1 percent during the subsequent quarters. GDP growth will probably be close to 2½ percent for the year as a whole (after 2.3 percent in 2004). Nominal GDP did not grow as strongly, indicating that deflation has not fully stopped yet. However, as compared to 2004, deflation is likely to have fallen further to an annual rate of close to 1 percent. Producer price indices already have shown increasing prices since early 2004. Also the fall in land and real estate prices seem to have ceased in some areas like Tokyo.

The Japanese recovery has since its beginning in 2002, mainly been based on export growth. *Japan* has benefited to a large extent from strong developments in Asia and especially in China. During the second half of 2004, however, exports started growing at a slower pace, which – given the increased imports – implied a

[1] According to the September consumer survey of the University of Michigan, inflation expectations increased to 3.2 percent, a value not reached in the last ten years. Furthermore, the difference between the nominal interest rate on non-indexed bonds and the real interest rate on indexed-linked government bonds (which is a measure of expected inflation) widened last autumn.

Box 1.1

Oil price developments

Prices of crude oil continued their upward trend throughout the year. Damage to oilfields and refineries caused by the hurricanes in the US induced further hikes in prices of oil and related products like petrol. Despite the moderate slowdown of world economic growth, as compared to 2004, actual prices are still high (see Figure 1.6). It is to be expected that other reasons beside developments in world, particularly Asian, oil demand are behind this. Actual prices, however, do not appear to any large extent to be driven by speculation; the share of non-oil-sector-related traders with crude oil futures is not larger than usual. Another plausible explanation could be a further increase in the geo-political risk premium. However, such risks have probably already been discounted in the price for some time and are probably not higher than during the time of the US invasion in *Iraq*. A possibility might be that the high degree of liquidity in financial markets worldwide also affects markets for crude oil – as it has for real estate prices. What appears to be the most likely explanation though is a large risk premium as a result of an uncertain outlook with respect to future developments in oil production. Speculation about a soon-to-be-reached peak in non-OPEC production cannot be easily dismissed. Furthermore, whereas worldwide oil reserves on average increased by approximately 1.7 percent in the previous ten years, it almost stagnated last year. Finally, cost increases of production and exploration might also have led to an overall higher level of oil prices.

Nevertheless, in the industrialised world higher oil prices will not cause as high levels of inflation as was the case in the past. One reason is that central banks have over time managed to keep inflation expectations at low and stable levels. Furthermore, increased competition due to globalisation and – in Europe – still relatively low capacity utilisation also prevent firms from fully passing on energy price increases to consumers.[a)]

[a)] For more details on this issue we refer to OECD (2005b).

negative contribution to growth from net exports. This development continued during the first quarter of 2005. After that, exports accelerated again partly due to increased foreign demand for Japanese cars.

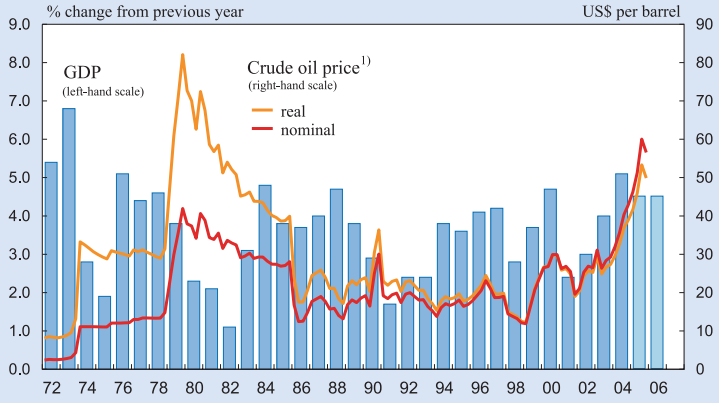
High growth during the first half of 2005 was thus mainly supported by domestic demand. After exhibiting, on average, almost zero growth during the last three quarters of 2004, private consumption increased by respectively 4.9 and 2.9 percent during the first two quarters of 2005. The improvement in consumer confidence was backed by an increase in employment during the first half of 2005. Both higher labour demand and demographic developments explain the reduction in the rate of unemployment. Since early 2003 it has decreased by more than 1 percentage point to 4.6 percent in November last year. In particular higher bonus payments due to increased firm profits caused nominal wages to increase during the first half of 2005.

Private equipment investment, too, revived after a weak second half of 2004. This development is mirrored by deliveries of capital goods, which also show that in particular industrial demand increased strongly. The Tankan report of the Bank of Japan (2005) of December last year no longer sees the over-capacity of manufacturing as excessive and records a slight increase in business confidence.

In the rest of *Asia*, year-to-year economic growth during the second half of 2004 until the first quarter of 2005 fell somewhat. After that it increased slightly again. The cause of the slowdown was a less strong increase in exports (partly due to the continued weakness of the global IT cycle), which caused growth in investment demand to fall substantially in some of the Asian economies. After the summer of 2005, trade with IT goods picked up again. However, due to the high energy intensity of production in many Asian countries, like *South Korea* and *Thailand*, the oil price increase has proven to be a new burden for these economies. Being an oil-exporting economy, *Indonesia* was the only Asian economy to experience increased growth in 2005. With the exceptions of *Thailand* and *Indonesia*, trade surpluses increased substantially,

Figure 1.6

WORLD ECONOMIC GROWTH AND CRUDE OIL PRICE IN US$ PER BARREL



1) Average: Dubai, Brent and WTI, deflated with the US GDP deflator.

Sources: HWWA, U.S. Department of Commerce, IMF: World Economic Outlook Database, September 2005; Ifo Institute calculations and forecast.

thereby financing a considerable part of the trade account deficit of the US.

An important exception to this general tendency is China. Official year-to-year real GDP growth rates in the first two quarters of 2005 were 9.4 and 9.5 percent, respectively. The annual growth rate for 2005 will equal 9.3 percent. In conformity with the objective of the Chinese government to dampen the investment boom in especially the steel, aluminium and cement sectors, investment growth decreased to around 27 percent. Private consumption, however, expanded steadily and exports continued to grow fast (with an average growth rate of more than 30 percent). Import growth, on the other hand, saw a decline until mid-2005, which was one of the reasons for the relatively weak export performance of other Asian economies. The current account surplus of *China* exceeded 8 percent of GDP in the first half of 2005.

China (as well as *Malaysia*) gave up the fixed conversion rate of the domestic currency to the US dollar in July 2005. The policy change created leeway for future monetary policy change and may be an important step towards the integration of the Chinese financial sector into the international capital markets. The official exchange rate regime is now one of managed floating against a basket of foreign currencies. At least for the time being, this has not led to a substantial appreciation of the renmimbi against the US dollar (see Box 1.2).

After the high levels during 2004, inflation in China has stabilised. In other Asian economies, oil price increases led to higher inflation rates. In many of these countries, central banks reacted to this by increasing their key interest rates.

The rest of the world

The business cycle upturn of 2004 in *Latin America* slowed down somewhat during 2005 partly because prices of raw materials (except for oil and gas) did not increase by as much as in 2004. Furthermore, increased inflation risks affected the business climate. Especially in *Brazil*, but also temporarily in *Mexico*, central banks raised interest rates in response. This also restrained domestic demand. In most Latin American countries, fiscal policy is oriented towards reducing budget deficits. Overall, the investment climate in many of these economies nevertheless remained favourable.

The moderate slowdown in economic growth in *Russia* starting in mid-2004 continued throughout 2005. Real GDP increased by 5¾ percent. Export growth declined partly due to the reduced growth in foreign demand for crude oil, but mainly because of the real effective appreciation of the ruble by more than 15 percent. The turbulence surrounding the oil

Box 1.2

Chinese exchange rate reform

China's increasing foreign exchange reserves have for a long time pointed towards the renminbi being highly undervalued. Some calculations suggest that the renminbi is undervalued by as much as 30 to 40 percent. A revaluation of the renminbi against the dollar to head off protectionist moves by the US Congress and to stem foreign speculative capital flows, which are partly responsible for the boom in capital investment in *China*, was generally anticipated. Such a revaluation against the dollar, by 2.1 percent, took place on 21 July 2005.[a] To increase flexibility, the People's Bank of China (PBoC) also announced at the same time that it will abandon its eleven-year-old peg with the US dollar and move to a managed float against a (still unrevealed) basket of currencies. It was indicated that this reference basket is dominated by currencies of China's major trading partners, which are the US dollar, the Japanese yen, the euro and the Korean won.

Each trading day, the PBoC will set the value of the renminbi relative to the reference basket. Unlike the old system, where the central parity remained fixed, the closing rate of each trading day becomes the next trading day's fixed parity. Each day, there is a ± 0.3 percent trading band around the US dollar. Theoretically, the exchange rate vis-à-vis the US dollar can therefore move as much as ± 1.5 percent per week or ± 6 percent per month. Until the end of 2005, however, the PBoC only allowed the renminbi to appreciate another ½ percent against the US dollar since 21 July. It is suggested by the PBoC that trading prices of the non-US dollar currencies against the renminbi are also allowed to only move within certain bands. However, these bands have not been made public. Actual exchange rate developments show much larger fluctuations of the renminbi with respect to other currencies and appear to suggest that the bands vis-à-vis the US dollar are the effective ones. Floating exchange rates between these other currencies and the US dollar imply that a system of multiple exchange rate bands for the renminbi cannot function.

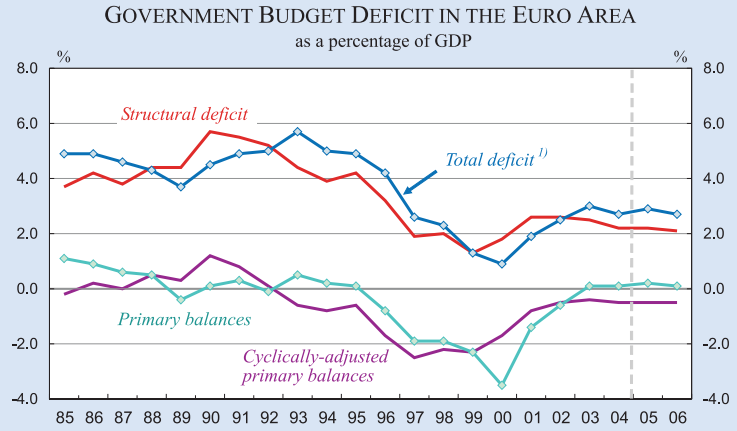
Therefore, at present the new Chinese exchange rate regime looks very much like the old. The appreciation against the dollar is too small to have a noticeable effect on the Chinese-American trade balance. However, *China* has created itself more room for manoeuvre in the future. While the PBoC will continue to come under pressure to further revalue the currency, it is clear from official statements made in the days after the initial revaluation that there are also counter pressures. The PBoC is pressed to protect exporters against both the loss of competitiveness and a rising renminbi debt burden for the Chinese economy.

This suggests that the PBoC is likely to allow the currency to appreciate very gradually within the new framework for the next few years. But such modest changes are unlikely to make a big difference to the Chinese-American trade balance.

[a] The Chinese decision was almost immediately followed by Malaysia. It also moved from a fixed exchange rate regime against the US dollar to a managed float against a basket of currencies. Also other Asian currencies rose along with the renminbi against the US dollar.

company Yukos may have had a negative effect on oil production as well as on the willingness to invest in Russia. Domestic demand nevertheless expanded substantially. This was mainly caused by the continued strong expansion of private consumption. As a large fraction of the oil revenues goes to the public sector, they generated a government budget surplus of 5 percent of GDP in 2005.

Figure 1.7



1) Excluding one-off revenues from the sale of the mobile telephone licenses in 2000.

Source: OECD, Economic Outlook 78, December 2005, Annex Table 27, 28, 29 and 30.

1.3 The international policy mix

Fiscal policy

With respect to fiscal policy, industrial countries on average stayed on a more or less neutral course. Just like in 2004, government deficits in many economies hardly changed. Most governments are still concerned about stabilising and eventually reducing deficits.

In the *euro area,* the aggregate structural and actual deficits – despite the need for fiscal consolidation in especially *France, Germany* and *Italy* – remained broadly constant, that is between 2 and 2 1/2 percent of GDP for the structural and around 2.9 percent for the actual deficit (see Figure 1.7).[2]

For most member states, budget deficits only changed by up to 1/2 percentage point in either direction (see Table 1.2). Four exceptions, however, were *Greece, Italy, Portugal* and *Ireland*. *Ireland* moved from a budget surplus of 1.4 percent of GDP to a deficit close to 1/2 percent of GDP, but stayed well below the Maastricht ceiling of 3 percent of GDP. Portugal – already at that ceiling in 2004 – increased its deficit to 6.0 percent of GDP, which is the highest level recorded since 1994. In *Italy*, the budget deficit in percent of

[2] The structural deficit is obtained by estimating government revenues and expenditures assuming the economy is producing at its potential level. We follow here the approach used by the OECD. See also Chapter 2 of our 2003 report.

Table 1.2

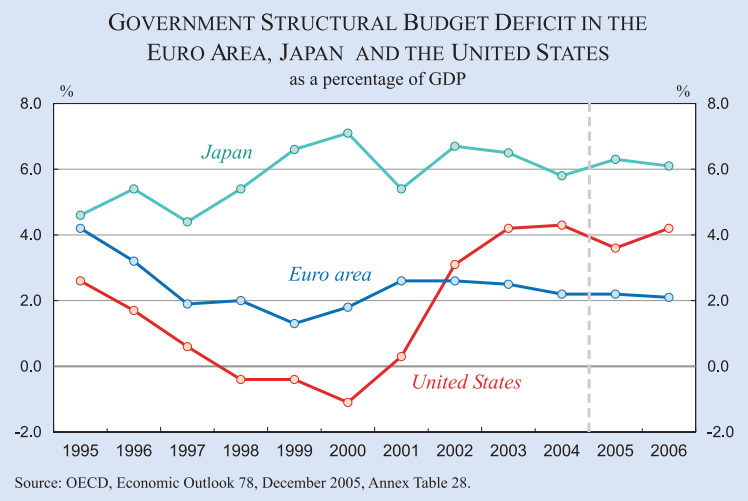
Public budget indicators in the euro area

	Gross debt[a]					Financial Balance[a]				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
Germany	61.2	64.8	66.4	68.6	70.0	– 3.8	– 4.1	– 3.7	– 3.9	– 3.7
France	58.8	63.2	65.1	66.5	67.1	– 3.2	– 4.1	– 3.7	– 3.2	– 3.5
Italy	108.3	106.8	106.5	106.6	108.3	– 2.7	– 3.2	– 3.2	– 4.3	– 4.2
Spain	53.2	49.4	46.9	44.2	41.9	– 0.3	0.0	– 0.1	0.2	0.1
Netherlands	51.3	52.6	53.1	54.0	54.2	– 2.0	– 3.2	– 2.1	– 1.8	– 1.9
Belgium	105.4	100.4	96.2	94.9	91.1	0.0	0.1	0.0	0.0	– 0.3
Austria	66.7	65.1	64.3	64.3	64.2	– 0.4	– 1.2	– 1.0	– 1.9	– 1.8
Greece	111.6	108.8	109.3	107.9	106.8	– 4.9	– 5.7	– 6.6	– 3.7	– 3.8
Finland	42.3	45.2	45.1	42.8	41.5	4.3	2.5	2.1	1.9	1.9
Ireland	32.4	31.5	29.8	29.0	28.7	– 0.4	0.2	1.4	– 0.4	– 0.3
Portugal	56.1	57.7	59.4	65.9	69.8	– 2.8	– 2.9	– 3.0	– 6.0	– 5.0
Luxembourg	6.8	6.7	6.6	6.8	7.0	2.1	0.2	– 1.2	– 2.3	– 2.0
Euro area	69.2	70.4	70.8	71.7	71.7	– 2.5	– 3.0	– 2.7	– 2.9	– 2.8
United Kingdom	38.2	39.7	41.5	43.1	44.3	– 1.6	– 3.3	– 3.1	– 3.4	– 3.3
Sweden	52.4	52.0	51.1	50.6	49.4	– 0.3	0.2	1.6	1.4	0.8
EU–15	62.5	64.0	64.3	65.1	65.2	– 2.2	– 2.9	– 2.6	– 2.7	– 2.7

[a] As a percentage of gross domestic product and according to the definition in the Maastricht Treaty. Financial balances without the special revenue gains from the sales of mobile phone licences in 2000–2002.

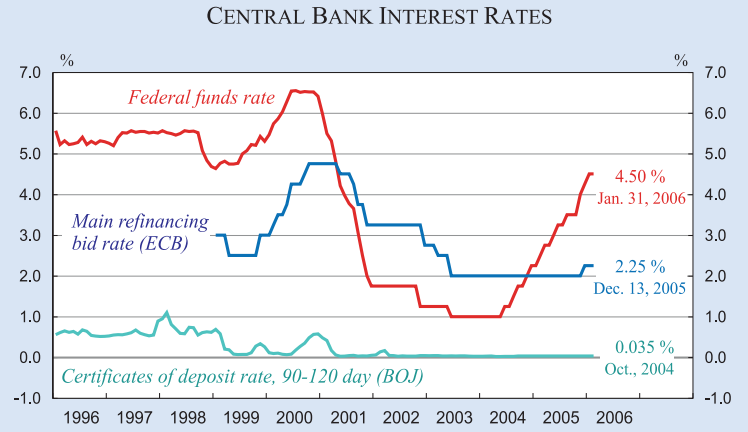
Source: European Commission.

Figure 1.8



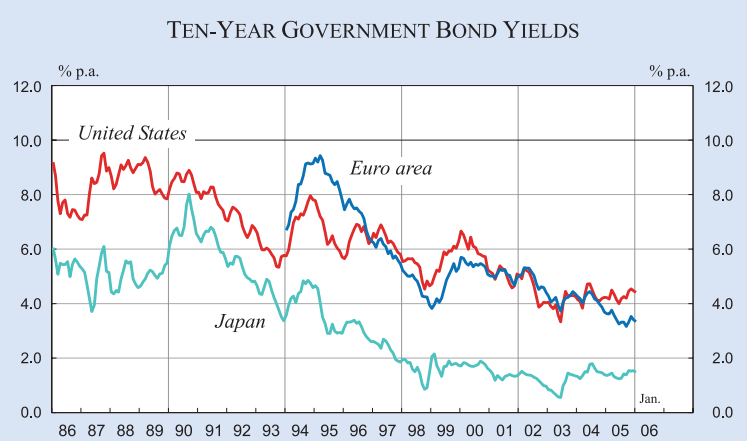
Source: OECD, Economic Outlook 78, December 2005, Annex Table 28.

Figure 1.9



Sources: Bank of Japan, European Central Bank, Federal Reserve Bank of St. Louis.

Figure 1.10



Source: National Central Banks.

GDP is likely to have increased from 3.2 in 2004 to at least 4.3 last year. A revision of the Greek general government accounts in the autumn of 2005 showed that the budget deficit was as large as 6.6 percent of GDP in 2004. Thus, a deficit of probably between 3½ and 4 percent of GDP in 2005 will represent an improvement in the public sector fiscal balance.

Fiscal policy in the *United Kingdom* was on an expansive course during 2005. The budget deficit turned out to be 3.4 percent of GDP.

From 2001 to 2004, the fiscal policy stance in the *United States* was expansionary. In the 2005 fiscal year (which ended September 2005), fiscal policy was slightly restrictive. The clear decline of the federal budget deficit from 3.6 percent of GDP in 2004 to 2.6 percent in 2005 can be mainly attributed to a substantial increase in income and corporate tax receipts and is therefore not reflected in the structural budget deficit (see Figure 1.8).

Japan continued to run the largest structural fiscal deficit among the OECD countries. In 2005, both structural and actual deficits amounted to around 6 percent of GDP. These deficits are clearly unsustainable.

Monetary conditions and financial markets

Monetary conditions in the United States, on the one hand, and in *Japan* and the *euro area,* on the other, moved in opposite directions for most of 2005. While the European Central Bank left its target rate again unchanged at 2 percent until early December and the Bank of Japan continued its zero interest rate policy, the US Federal Reserve kept raising the Federal funds rate (Figure 1.9). In the *United Kingdom,* a cooling down of the economy last year made the Bank of England reverse its course in August and decrease its main interest rate by 25 basis

points to 4.5 percent. However, as the inflation rate has been declining only recently and modestly, while retail sales have strengthened somewhat, it is not likely that an additional interest rate decrease will follow soon.

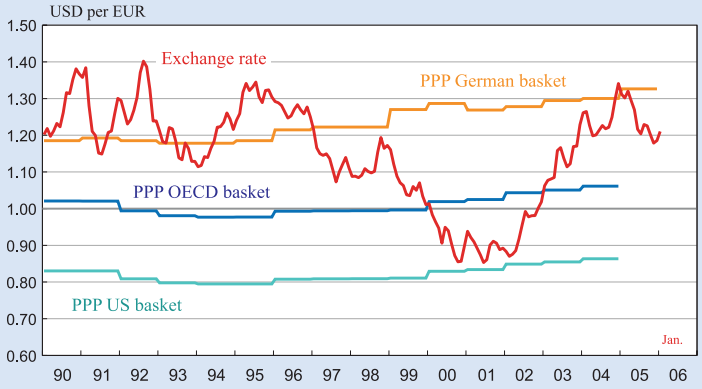
The slowdown of economic growth in the euro area since the second half of 2004 and until summer last year has been stronger than expected in our last report. Despite the record level of consumer prices for petrol and fuel oil, the prospects for a stable price development did not deteriorate. The depreciation of the euro against the dollar by more than 12 percent (see Figure 1.11) has led to more expansive monetary policy conditions than we predicted last year. This, together with improved business cycle conditions in the second half of last year and the more optimistic economic outlook, induced the ECB to raise its main interest rates by 25 basis points in December 2005. This policy move is discussed in greater detail in Section 3.1.

Not only money market, and thereby short-term, interest rates stayed at a low level in the euro area (see Figure 1.3). Also long-term interest rates did not reverse course during most of the year. On the contrary, despite stable money market rates, continued strong demand led to an additional fall of long-term government bond yields by another 0.5 percentage points until September 2005 in the *euro area* (see Figure 1.10). In the *United States,* long-term interest rates hardly changed. Together with the increased money market interest rates, this led to an even stronger flattening of the yield curve than in Europe. In the past years, the yield curve in the *United States* was always steeper than in the euro area. Since the beginning of 2005 this no longer holds. In the final quarter, long-term interest rates picked up worldwide, induced by somewhat rising yields on US government bonds, as some concerns about inflation risks were spreading. Between November and the end of 2005, however, yields declined again by about half of their previous rise. Despite the robust economic growth and strong increases in energy prices, long-term inflation pressures hardly appear to be a concern in financial markets.

Probably triggered by the increasing US money market interest rates, the US dollar left its depreciation course of the past three years and appreciated against all major currencies, including the euro, during most of 2005 (see Figure 1.11). Only between the end of July, when the Chinese government gave up the fixed exchange rate of the renminbi to the US dollar, and the beginning of September, did the US dollar lose part of its previous gain. This development does not suggest that financial investors are very concerned about the large current account deficit of the US (see Chapter 2 for further discussion). For the euro-dollar exchange rate an obvious explanation is the increase in the interest rate differential in favour of the dollar.

Figure 1.11

EXCHANGE RATES OF THE EURO AND PPPS[1)]

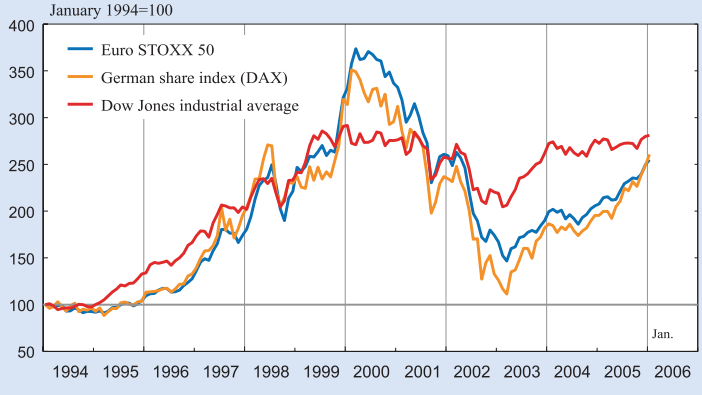


1) Exchange rate are monthly data, while PPPs are given at an annual frequency. Different PPPs are computed with respect to the different consumption baskets in the United States, the OECD and Germany. See Note 8, Chapter 1, EEAG Report 2005.

Sources: European Central Bank, Federal Statistical Office, OECD, Ifo Institute calculations.

Figure 1.12

DEVELOPMENTS IN STOCK MARKETS



Sources: Deutsche Bundesbank, Dow Jones & Co., Inc.

Stock markets tended to rise throughout 2005 (see Figure 1.12). Like in 2004, the rise was not comparable to the strong recovery in 2003. However, while the Dow Jones Industrial Average Index hardly went up, both the German DAX share index and the Euro Stoxx 50 developed roughly as strong as in 2003. Unexpectedly high business profits and persistently low interest rates were the driving forces behind this. Even the terrorist attacks in London in early July and the appreciation of the Chinese renminbi did not affect stock markets in a significant way. Initially, the increasing oil prices also did not appear to worry investors. However, when in August the price for crude oil surpassed the 60-dollar threshold and threatened to rise above 70 dollars, markets were affected, causing many stock market indices to temporarily lose part of their previous gains.

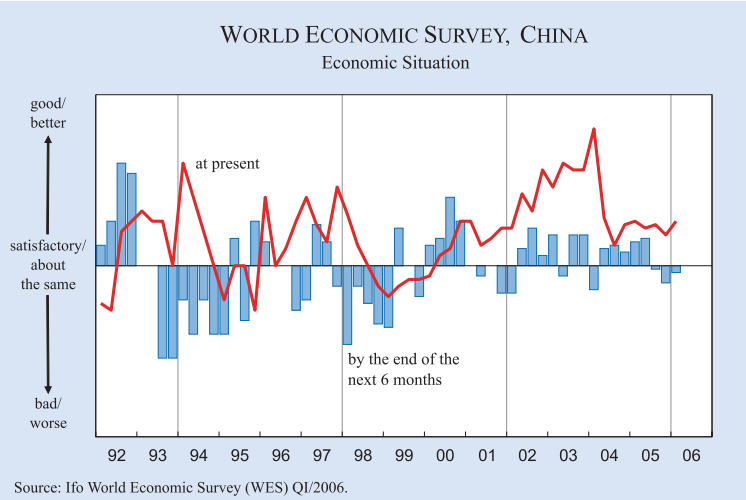
2. The economic outlook for 2006

2.1 The global economy

Economic growth in the European Union is expected to continue at a moderate pace in 2006. This is based on the following assumptions and assessments:

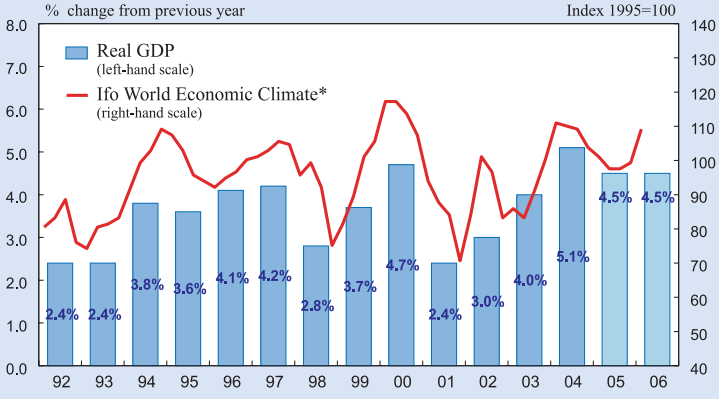
- During the first half of 2006, the US Federal Reserve will further increase its key interest rates somewhat. The Bank of Japan will, in the current year, gradually reduce the unusually generous supply of liquidity without increasing its key interest rate.
- The ECB is expected to further increase its interest rates during 2006. However, it has made clear that the decision in early December 2005 is not necessarily the start of a series of interest rate increases as was the case in the *US*. The exact timing will probably, to a large extent, depend upon exchange rate and oil price developments. Long-term interest rates on both sides of the Atlantic will follow monetary policy decisions, keeping the yield curve relatively flat but stable.
- Fiscal policy will in most industrialised countries have a more or less neutral stance (see Figure 1.8). In the United States, expenditures on "freely disposable" items outside the defence ministry are scheduled to be reduced. However, at the same time the government is aiming for additional tax cuts. The additional expenditures reserved for the damages caused by the hurricanes make it uncertain whether the slightly restrictive fiscal policy stance of last year will be maintained in the near future. In the *United Kingdom,* a slight tightening of fiscal policy is scheduled. The government plans to reduce the budget deficit to a level of below 3 percent of GDP during the fiscal year 2006. In the *euro area,* existing structural deficits are likely to remain more or less unchanged (see Section 3). The consolidation of public finances in Japan will be reinforced substantially.
- GDP growth in Asia in 2006 is likely to be more or less the same as last year. The revival of the global IT cycle at the end of 2005 and the beginning of 2006 could support exports from the region. However, the high oil price – given the higher energy intensity of these countries as compared to the OECD – will most likely lead to a further tightening of monetary policy. Fiscal consolidation in many Asian economies will keep the room for fiscal stimuli quite restricted. Furthermore, expansionary impulses from the *US* will subside somewhat. In China, the government will continue its policy of dampening investment demand in specific industries to achieve a more balanced growth pattern. Partly due to a small further appreciation of the renminbi against the US dollar, Chinese growth will be slightly lower than before. This assessment is confirmed by the 4th quarter 2005 Ifo World Economic Survey results for China (see Figure 1.13).
- The oil price will fluctuate around its present level of 60 US dollars per barrel.

Figure 1.13



Source: Ifo World Economic Survey (WES) QI/2006.

Figure 1.14



- The euro/dollar exchange rate will fluctuate around its present level of 1.20 dollar per euro (see Figure 1.11).
- Given the above assumptions and the slightly less optimistic expectations as reported by participants of the Ifo World Economic Climate survey, world economic growth is likely to slow down somewhat during the course of 2006. Relatively higher growth at the end of last year implies a similar annual growth rate as last year, that is 4½ percent (see Figure 1.14). World trade is expected to expand by around 7 percent in 2006.

Given the monetary and fiscal developments, the *US* will grow less strongly in 2006 than in 2005. Especially private consumption is likely to expand at a slower rate. As increased interest rates will make consumer credit more expensive and dampen growth in real estate prices, the saving rate is expected to gradually increase. Inflation will cause real disposable income to grow at only a moderate pace. Higher long-term interest rates and slightly deteriorated sales and profit expectations will reduce investment growth only slightly as business expectations are still favourable. The current account deficit might improve somewhat due to lower domestic demand growth and a small effective depreciation of the dollar. Overall, with a rate of 3.4 percent in 2006 (after 3.5 percent in 2005), actual growth will be roughly equal to potential growth in the *US*. With an expanding labour force, unemployment is expected to hardly decrease. The inflation rate will, in the course of this year, decrease somewhat to below 3 percent.

Supported by domestic and foreign demand, the overall expansion of the Japanese economy is expected to continue at a similarly high pace as last year. Improved labour market conditions and increased income will stimulate private consumption. Investment will rise strongly in view of the improved sales and profit expectations. In addition, the banking sector has experienced higher returns in the recent past, allowing it to expand lending. Real GDP is expected to grow by 2.4 percent in 2006. *Japan* appears to have overcome its structural problems to a large extent and is heading for relatively stable growth. The negative effects of deflation will gradually abate as inflation is expected to be 0.3 percent this year.

Overall, growth in *China* will – despite somewhat lower investment growth – hardly weaken. The measures taken by the Chinese government to prevent the economy from overheating seem to be sufficient. In 2006, GDP is likely to expand by 8½ percent (as compared to 9.3 percent last year).

The economic expansion of the other Asian economies will accelerate somewhat. Real GDP of the region is expected to increase by approximately 4½ percent this year, as compared to 4 percent last year.

Stability-oriented fiscal and monetary policies in most parts of the Latin-American region improve its economic outlook. In several Latin-American countries, government budget deficits are being reduced and foreign reserves are increasing. Current accounts mostly show surpluses. The high prices of raw materials keep benefiting countries like *Brazil* with heavy such exports. Real GDP growth in Latin America will slow down somewhat overall from 4 percent last year to 3½ percent this year.

The further expected strong appreciation of the rouble will make the Russian economy less competitive. This effect is partly alleviated by much more expansive fiscal policy. Part of the stabilisation funds in which some of the oil receipts flow will be used to improve the health care system. Furthermore, salaries

in the public sector will increase sharply. In *Russia*, economic growth will fall from 5 3/4 percent last year to 5 1/2 percent this year.

Risks and uncertainties

The forecast risks are basically the same as last year. The internal buoyancy forces in the *European Union* and *Japan* are still not strongly fortified and the situation in markets for crude oil stays tense. Government bond yields are extremely low, real estate prices have kept rising in a large number of countries and the US current account deficit is not expected to decrease significantly this year. Existing external imbalances could trigger, for instance, a sharp depreciation of the dollar. Such a sudden correction would have strong effects on both financial markets and the real economy (see Chapter 2 for further discussion). Moreover, the Chinese economy could face a hard landing rather than the assumed soft slowdown. This would also reduce world economic growth. Hence, the following forecast for the European economy is based on relatively favourable external assumptions, and major downside risks remain. These risks are difficult to quantify.

2.2 The European economy in 2006

Supply-side improvements and risks

Despite the continued recovery of the European economy, the cyclical slack will remain large. Potential growth is still lacking the dynamics observed elsewhere in the world, as extensively discussed in Chapter 3. Whereas reducing cyclical slack requires that the overall stance of macro policies is not tightened too quickly in the upswing, the achievement of high potential growth requires further structural reforms. These should aim at improving the functioning of markets both for labour (by eliminating rigidities, as recommended in earlier EEAG reports, and by increasing the efficiency of education, as discussed in Chapter 4 of this report) and for products and services (by lowering barriers for competition, as discussed in Chapter 5 of this report).

Business conditions have improved significantly over the last couple of years. Equity prices have been trending upwards since early 2003 and real interest rates have been historically low since the end of 2001. Given low inflation expectations and the continued cyclical slack, wage demands are moderate. As a result, unit labour costs have been restrained. These conditions will remain throughout 2006 and keep conditions for investment financing quite favourable (see Table 1.1).

However, so far these developments have hardly been reflected in actual business investment. The fierce competition faced by European firms in export and home markets together with the rising energy prices have put pressure on profit margins. This can at least partly explain why the expected rise in fixed investment did not materialise in Europe last year.

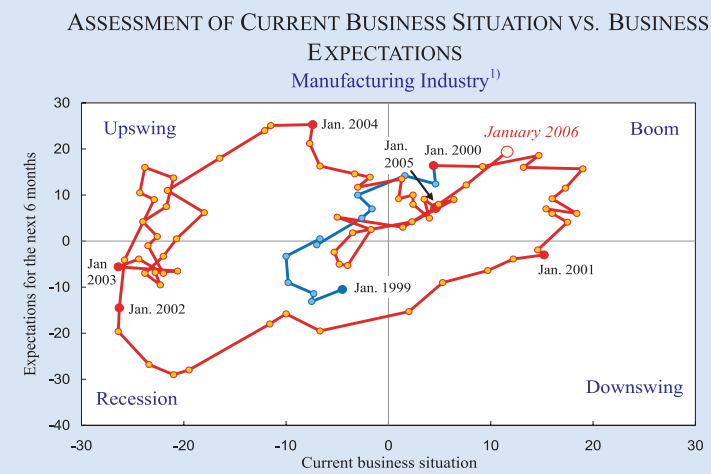
Another more structural cause could be that with European enlargement and the ongoing globalisation process, a greater share of total business investment has and will be shifted to the new EU countries and Asian countries, where labour costs are much lower. Investment in the *euro area* could therefore remain lower than in previous economic recoveries.

Recognising the need to adapt to changing world economic conditions, a number of European countries have implemented – or are still in the process of implementing – reforms to make especially labour markets more flexible and to reduce overall red tape. However, it will require time for these new measures to become effective and the amount of reforms is still insufficient (see Chapter 3 of this report). Nevertheless, labour market developments in the euro area during 2005 were somewhat stronger than expected in our report last year. As aggregate demand did not outperform our expectations, we reckon that these can be seen as first moderate signs of success, indicating that political opposition against such reform efforts should be resisted. Further structural reforms – as proposed in previous EEAG reports – are urgent in order to further raise employment rates over the medium term, in particular as the employment target set in Lisbon in 2000 to increase the total employment rate (of those aged 15 to 64) to 70 percent by 2010 still seems out of reach. In 2004, the total employment rate in the euro area stood at 63 percent, which implies that each year this ratio is required to increase by, on average, more than 1 percentage point if the Lisbon goal is to be achieved. Since 2000, the average increase has been less than 0.4 percentage points per year.

Development of demand components in the euro area

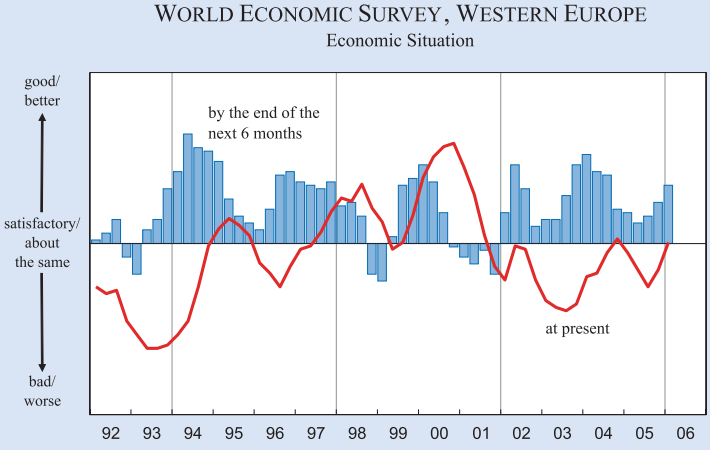
This year the restraining effects of higher oil prices are likely to gradually abate. Current and leading indicators point towards an improved business cycle development in the last part of 2005 and the first half

Figure 1.15



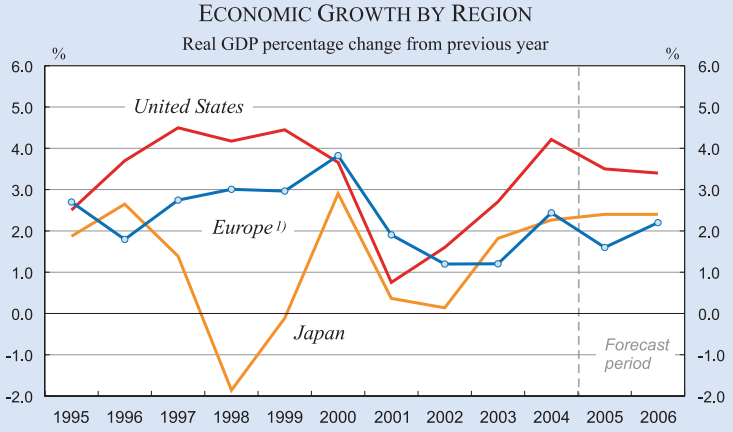
1) Manufacturing industry excluding food, beverages and tobacco. Balances, seasonally adjusted data.
Source: Ifo Business Survey, Germany.

Figure 1.16



Source: Ifo World Economic Survey (WES) QI/2006.

Figure 1.17



1) European Union 25.
Sources: Eurostat, ESRI, US Department of Commerce; Ifo Institute forecast.

of this year. For instance, survey data compiled in the last quarter of 2005 show that assessments of actual and future business situations have improved (see Figure 1.16). Even for *Germany* both dimensions of recent business survey results point to an upturn in the manufacturing industry (see Figure 1.15).

The depreciation of the euro last year has improved competitiveness of the *euro area.* Also given the continued strong world economy, exports are expected to grow at increasing rates. Improved domestic demand will also stimulate imports. Export growth will be higher than import growth, thereby letting net exports make a positive contribution to GDP growth with 0.2 percentage points (as compared to a contribution of – 0.1 percentage points in 2005). However, a good part of European exports is intra-European, and as Europe is forecasted to remain less dynamic than other regions in the world (see Figure 1.17), the export markets of European countries will expand less than world trade.

Stable oil prices will allow profit margins to improve. Together with increased foreign demand as well as continued favourable financing conditions, we expect – with a growth rate of 3 percent – a stronger increase in investment than we have seen in the past five years. However, due to cyclical slack most investments will not be intended to increase capacity, but rather to rationalise and modernise existing capital to be able to sustain the increased global competition. Given weak investment over the past years, there is mounting pressure to modernise the capital stock.

Gradually improving labour market conditions and moderate wage increases will allow private consumption growth to increase somewhat in the course of the year. On average, private consumption is expected to increase

by 1.4 percent in 2006, as compared to 1.3 percent last year. The energy price increases will continue to have a negative aftereffect on consumption during the first half of this year.

Growth, employment and inflation

Leading indicators point to some improvement in cyclical conditions over the near term. Real GDP growth in the euro area is expected to increase to around 2 percent this year, as compared to 1.4 percent in 2005 (Figure 1.18). Growth will marginally exceed its earlier trend, so the output gap (measured relative to trend output) will start to shrink. The growth gap between the *European Union* and the *United States* will narrow somewhat. For the fourth year in a row, Japan is likely to outperform Europe when it comes to overall GDP growth (Figure 1.17).

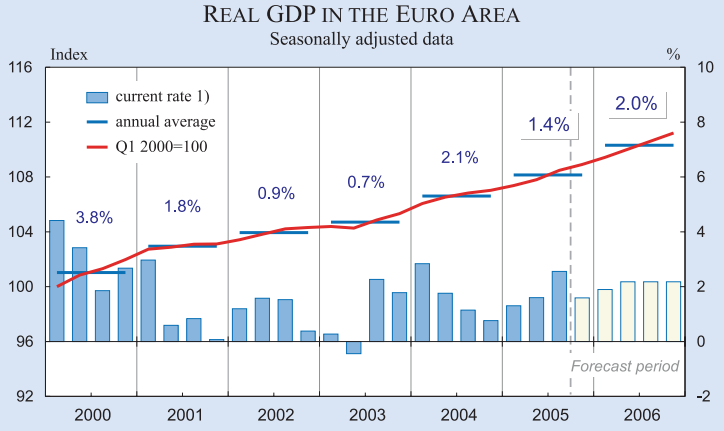
After a significant decrease during 2005, the unemployment rate in the *euro area* will only be reduced slightly this year as employment growth is expected to remain modest (Figure 1.19). The unemployment rate will decline moderately to a level of somewhat above 8 percent in the *euro area* at the end of the year (see Figure 1.20).

Assuming a stable oil price, the annual inflation rate in the *euro area* over the year will fall back to slightly below 2 percent for this and the next year, after 2.2 percent last year.

Differences in output growth within Europe

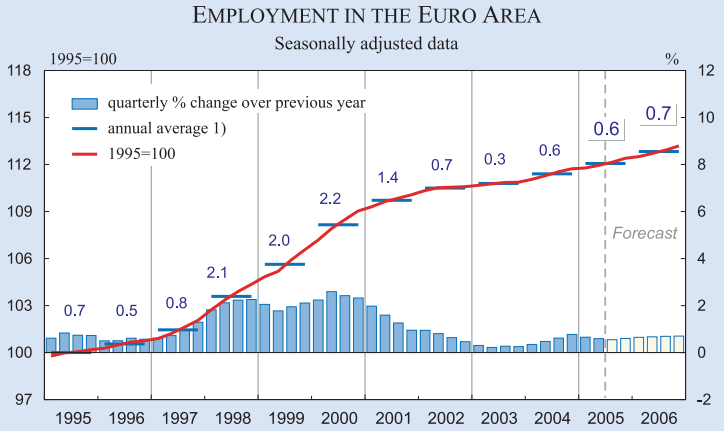
Despite the general recovery in the *euro area* (and in the *European Union* as a whole), there are significant differences in the growth performance among countries (see Figure 1.21). Whereas *Ireland, Luxembourg, Finland, Spain* and *Greece* will keep experiencing growth rates above 3 percent, *Italy, Portugal* and *Germany* will remain well below the European average.

Figure 1.18



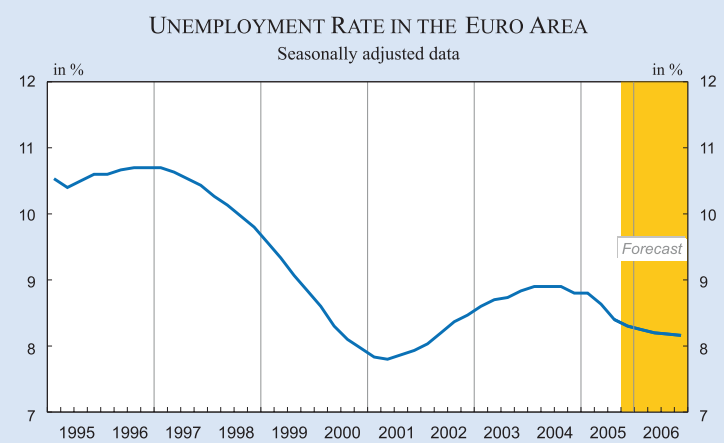
1) Change on previous quarter, expressed as an annual rate, right-hand scale.
Sources: Eurostat; Ifo Institute calculations and forecast.

Figure 1.19



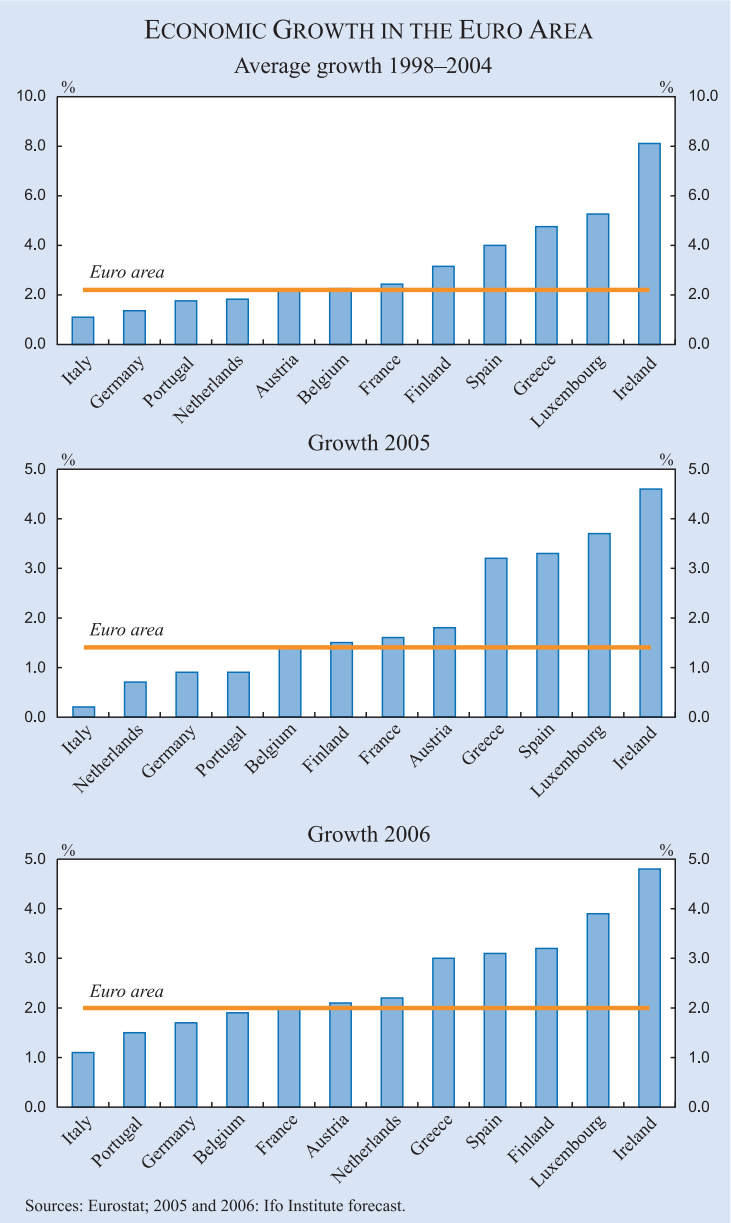
1) Figures: annual % change against previous year.
Sources: Eurostat; Ifo Institute calculations and forecast.

Figure 1.20



Sources: Eurostat; Ifo Institute calculations and forecast.

Figure 1.21



Sources: Eurostat; 2005 and 2006: Ifo Institute forecast.

Beside cyclical slack, structural problems appear to be a main cause of the low-growth performance of *Italy, Germany* and *Portugal*. Despite the fact that previous labour market reforms have caused employment in *Italy* to expand significantly, there is still a high degree of resistance against removing rigidities in labour, product, and services markets and reducing red tape. The initial decline in interest payments in Italy's fiscal budget due to lower interest rates accruing from EMU qualification has over time been used to finance additional spending without reducing the high debt burden to a sufficient degree. Also in *Germany*, the fiscal deficit appears to a large extent to be of a structural nature. Key factors here are the weakness in labour markets and the need for continued wage moderation. As tax and social security revenues rely heavily on wage income, the revenue base of the public sector is eroding. At the same time, high and long-lasting unemployment benefits and social transfers put pressure on expenditure. This shows that important synergies exist between public finances, the labour market, and social security reform. In *Portugal*, lagging productivity growth, strong wage increases in the past, and rising competition from emerging market countries have eroded external competitiveness. In *Italy, Germany* and *Portugal*, domestic demand remains relatively weak.

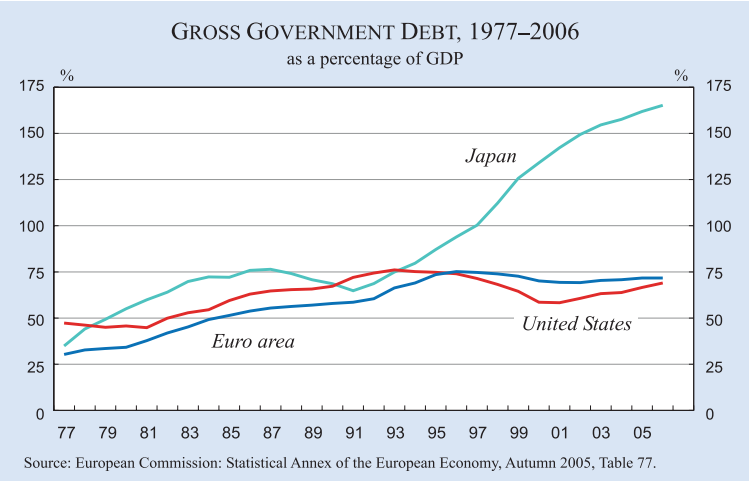
The near-term outlook for *France* has improved and GDP growth is expected to average about 2 percent this year. Improvements in the business environment will help sustain investment, and the weaker euro will draw in additional external demand.

Real GDP growth in the *UK* will increase to 2.4 percent this year (after 1.7 percent in 2005). Increasing disposable income will stimulate consumption and nevertheless allow room for the saving rate to rise again. Investment is likely to recover.

Economic growth in the new EU member states will revive somewhat in 2006. Real GDP is expected to increase, on average, by around 4½ percent (as compared to 4.2 percent in 2005). Private consumption growth will accelerate and investment – also due to the more expansionary monetary policy stance in many of these countries – will expand strongly. Increased international trade with the *euro area* in particular will stimulate these economies. Inflation will be moderate, but probably higher than is allowed according to the convergence criteria for EMU entry.

In the *Czech Republic* further interest rate increases will put upward pressure on its currency. The resurgence in private consumption and capital investment

Figure 1.22



Source: European Commission: Statistical Annex of the European Economy, Autumn 2005, Table 77.

will keep growth at a level of around 4 1/2 percent. Not only monetary policy but also productivity improvements will keep inflation low. As domestic demand strengthens, the current account deficit will increase further.

Economic growth in the largest new EU member state, *Poland*, is forecasted to increase to 4 percent this year. Inflation will remain low as high unemployment continues to limit inflationary pressures.

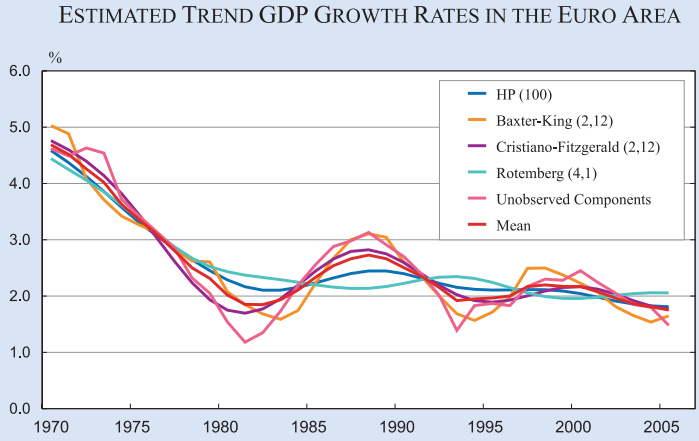
3. Macroeconomic policy

Our macroeconomic forecast is thus one of a modest recovery in the *euro area* in 2006, with actual output growing slightly faster than potential output (see Box 1.3). In 2007, the pace of the recovery is likely to be similar. As compared to other regions in the world, the cyclical upturn is fairly modest. At the same time potential growth is relatively low.

Raising potential growth in the *euro area* will require structural reforms in labour, product and services markets. This has been a recurrent theme in previous EEAG reports. In this report, growth-enhancing reforms in product and services markets as well as of education systems are analysed in Chapters 3–5. Many of these reforms can be accomplished at low budgetary costs and can therefore be pursued despite tight fiscal positions in most member states. Progress with product market reforms to reduce prices will also help cushion the impact of wage moderation – assisting firms to survive in globalised markets – on worker real incomes.

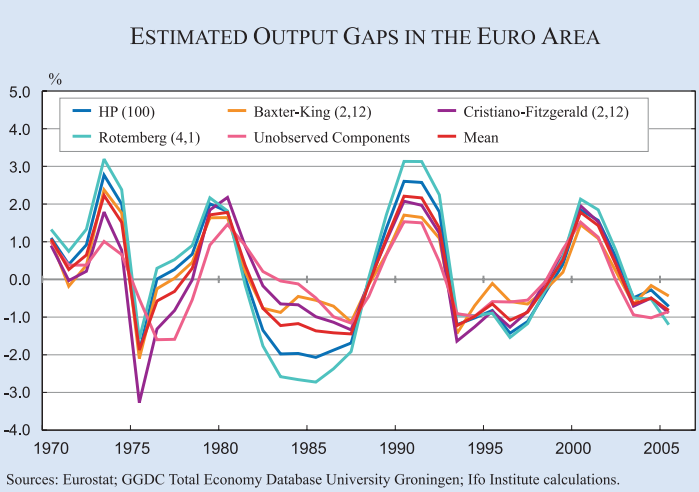
With respect to cyclical stabilisation, there are two fundamental issues to be addressed. The first concerns the appropriate aggregate stance of demand policy. For that we need to analyse the demand effects of monetary and fiscal policy in conjunction. The second issue con-

Figure 1.23



Sources: Eurostat; GGDC Total Economy Database University Groningen; Ifo Institute calculations.

Figure 1.24



Sources: Eurostat; GGDC Total Economy Database University Groningen; Ifo Institute calculations.

Box 1.3

Trend and cycle in the euro area

For the evaluation of monetary and fiscal policy, it is necessary to assess potential GDP and the output gap (the difference between actual and potential output). In the following, using different time-series methods, a decomposition of real GDP for the *euro area* into trend and cyclical components is carried out for the period 1970 to 2005.

The most used procedure for the extraction of the trend component from the observed time series of real GDP is the Hodrick-Prescott (1997) filter (HP). The trend is determined such that, on the one hand, it does not deviate too far from the actual development and, on the other hand, displays a smooth course. The relative weight of the second requirement (smoothness of the trend component) is controlled via a smoothing parameter that must be set *á priori*. For annual data a parameter value of 100 is usually set (HP100).

The Rotemberg (1999) filter (RO) is constructed – similar to the Hodrick-Prescott filter – such that the trend has a smooth course; the smoothness parameter is calculated such that the change of trend growth within n years is independent of the current cyclical component. On the other hand, the covariance between the cyclical components in a specified time distance k is to be minimal. The Rotemberg filter produces, as a rule a very regular course of the trend growth rates. In accordance with Rotemberg's proposal, values of four years for k and one year for n are used (RO(4.1)).

Another class of filters is based on the idea that time series can be represented as the sum of oscillations of different frequencies. It is often argued that the cyclical component consists of all oscillations with periodicities of between two and eight years (Baxter and King 1999). Estimates with this setting, however, display trend growth rates for euro area GDP that again have strong oscillations with a periodicity of about 9 years. For this reason the results for the cyclical component presented in the following are based on extracted oscillations of between 2 and 12 years. Since an "ideal" filter for the measurement of the cyclical component requires an infinitely long observation period in theory, it cannot be constructed in practice. Therefore a number of approximation methods are proposed. The Baxter and King filter (BK) is based on the approach that sets the cyclical component (and symmetrically also the trend component) as a finite moving average with symmetrical weights. For the extraction of the unobserved components, Baxter and King recommend using three years before and three years after the respective date. At the end of the sample, a component calculation is thus no longer possible. The problem is "solved" by employing forecasted values for three years. With the Christiano and Fitzgerald (1999) filter (CF), the trend component depends on all observed values of the sample. With this procedure, component estimates without additional forecasting can be carried out at the end of the sample. However, these estimates are extremely unreliable.

Finally a univariate unobserved components model (UC) is estimated. Here the observed time series of real GDP is decomposed into a trend component, a cyclical component and an irregular component. Every one of these components is specified as a stochastic process and the model is estimated by using the Kalman filter. The results presented in the following are based on a model in which the trend component is specified as a random walk of the second order and in which two cycles are allowed. The estimated periodicity of the short cycle is about 4 years; that of the long cycle about 9 years.

For the calculation of the Hodrick-Prescott filter, the Rotemberg filter, the Baxter-King filter and the Christiano-Fitzgerald filter for the year 2005, predicted values are used for real GDP in 2006-08. A growth rate of 2 percent is assumed for 2006, and 2.2 percent for 2007 and 2008. Lower growth rates alter the results for 2005 only slightly.

Figure 1.23 and Figure 1.24 show that the individual methods supply different results. A general result is that the trend growth rate declined in the past five years. In 2000 the estimates were between 2.0 and 2.5 percent (at an average value of 2.2 percent), in 2005 between 1.5 and 2.1 percent (average value: 1.75 percent). The trend growth rate decreased in the past five years by nearly half a percentage point.

cerns the appropriate balance between monetary and fiscal policy. The first issue is more difficult to analyse in view of the uncertainties regarding future price and output developments. It is easier to form a view on the appropriate monetary-fiscal-policy mix, but difficult to see how it would be implemented.

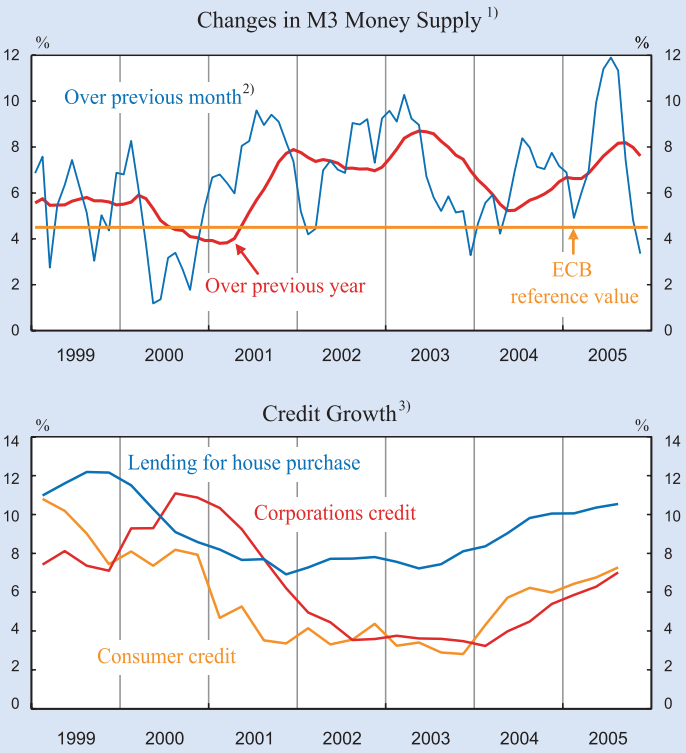
3.1 Monetary policy

The overall fiscal policy stance in the *euro area* – as measured by cyclically adjusted government net lending – is expected to remain more or less unchanged over 2006–07 (see Figure 1.7). Under that – from our point of view – realistic assumption, changes in the aggregate demand policy stance will mainly be determined by monetary policy. A lively discussion on this was triggered by the decision of the ECB in December last year to raise its refinancing rate from 2 to 2.25 percent. Although the President of the ECB made clear in the accompanying press conference that the move did not signal any *ex-ante* decision to initiate a series of increases, it is generally believed that a further tightening of monetary policy is likely.

The ECB has motivated the interest rate rise by upside inflation risks relating to "uncertainties arising from oil market developments, the pass-through of previous oil price increases to consumers via the domestic production chain, the possibility of second-round effects in wage and price-setting behaviour, as well as further increases in administered prices and indirect taxes" (ECB 2005). In addition, reference was made to large increases in monetary aggregates related to high credit demand (in particular for mortgage loans) (see Figure 1.25). The immediate aim of the policy change was presented as "keeping medium to long-term inflation expectations anchored at levels consistent with price stability".

It is, in our view, difficult to gauge whether or not the interest rate rise was premature given the definition of price stability (an inflation rate below, but close to, two percent in the medium term) chosen by the ECB.

Figure 1.25



1) M3=Currency in circulation, overnight deposits, deposits with agreed maturity up to 2 years; index, seasonally adjusted, 3-month moving average in % (centred).- 2) Extrapolated to annual rates.- 3) Changes over previous quarter; corporate credit = credit to nonfinancial corporations; Lending to house purchase = credit to private households and NPISH.

Sources: European Central Bank; Ifo Institute calculations.

What is clear, however, is that the interest rate move raises a number of questions which should be openly discussed.[3]

A first issue concerns the responses to the oil price increases. If one regards them as a temporary supply shock, an overshooting of the inflation ceiling has to be accepted in the short run. Some reaction to a temporary supply shock can be part of the policy response. Monetary policy should react strongly to any increases in inflation expectations above target but only moderately to changes in output gap expectations. The choice of speed of adjustment back to equilibrium can be an additional consideration. According to the ECB's own forecast after the December 2005 interest rate increase (assuming an unchanged interest rate in the future), headline inflation in 2007 will be between 1.4 and 2.6 percent (the mid point of the band thus being exactly 2 percent). This is in line with our estimate of 1.9 percent for this and next year. The ECB does not itself publish output gap calculations, but according to our own estimates there will still be a negative gap of 1/2 percent of potential GDP this year, which will then approximately close in 2007. These forecasts do not give clear guidance to assessing the appropriateness of the interest rate increase in December 2005 by the ECB. This is because inflation expectations are at best only slightly above target, whereas output gap forecasts are slightly negative. A further question to be asked is whether it would have been more appropriate to trade off a slower reduction of inflation against an even smaller loss of output over this horizon. The counter-argument would be that this potentially allows inflation expectations to surge.

Similar issues concern the monetary policy responses to VAT changes. It is estimated that the planned German VAT increase of three percentage points in 2007 will have a non-negligible effect of approximately 0.3 percentage points on headline inflation in the euro area.[4] Interpreting the VAT increase as a supply shock suggests that a direct response to it is not necessarily inappropriate. However, the more important issue is whether the VAT increase leads to higher inflation expectations. The 0.3 percentage point increase in the CPI is a purely mechanical calculation that neither takes the demand nor the supply effects into account. The VAT increase could be seen by the private sector as a one-time shock that has only a small effect on inflation expectations. So it is unlikely that expected inflation for 2007 will rise by as much. In addition, the VAT increase also affects the equilibrium level of output, the output gap and expectations of them, but there are no estimates of these effects.

A third issue has to do with the estimates of potential output. The ECB President, Trichet, pointed out at the press conference after the 2005 interest rate rise that there is overall consensus that previous estimates

[3] Here, the ECB's lack of transparency is an obstacle to such an informed discussion, as the bank's deliberations are not fully disclosed. See De Haan et al. (2005) for a further discussion.

[4] This estimate includes the effects of the accompanying decrease in payroll-taxes in Germany on headline inflation.

of potential output growth in the euro area need to be adjusted downwards (from close to 2.5 percent to somewhere closer to 2 percent).[5] This implies that the ECB considers the euro area output gap to have been overestimated in the past. If the downward revisions of potential output growth apply to a longer earlier period, the ECB may even believe that there does not exist any significant negative output gap at present. As elaborated in Box 1.3, we estimate potential output growth to be even below 2 percent. This in turn implies that – given the assumed increases in the ECB's interest rates during 2006 and the forecasted economic development – there will indeed be no output gap left in 2007. Also, if one believes the recent oil price increases to be *permanent*, they may reduce potential output further. This would provide arguments for tightening monetary policy. On the other hand, recent labour market reforms in some countries – although insufficient – may have increased equilibrium employment, which is a key determinant of potential output. This may apply to *Germany* in particular, where unemployment benefit levels have been reduced and stricter requirements imposed on the unemployed. In addition, the productive potential may have increased due to lengthening of working hours in some parts of the economy, as discussed in last year's EEAG report.[6] Although very difficult to estimate, there is a need for an open discussion of how large output gaps are believed to be, since they are crucial for judging future inflation risks.

A fourth issue is how best to deal in actual policy with the uncertainties that always surround output gaps. The Greenspan method in the US in the 1990s was to test the estimates of output gaps "on the upside" by allowing actual output to increase above conventional estimates of potential output (and employment to increase above conventional estimates of its equilibrium level) and then watch what happened to inflation. When it did not increase, the policy experiment could be repeated and employment be allowed to expand further. This policy is often credited with having contributed to high growth in the *US* in the 1990s. The inclination of the ECB seems to be the reverse one of preferring errors "on the downside" and for safety's sake rather accept a negative than a positive output gap. This is understandable in view of the fact that the ECB has not so far been able to bring headline inflation below the two percent ceiling, but it carries with it the risk that demand is held unnecessarily low (even given the structural rigidities characterising the euro area economies). This may be a price that is paid for such a low inflation objective that small deviations of actual inflation from it carry little information regarding the output gap and thus the long-run inflation risks: this would be the case if nominal rigidities make inflation at low rates unresponsive to changes in cyclical conditions, so that small variations in inflation are then mainly determined by "noise".[7]

Another issue is what role the so-called "first pillar" in the ECB's monetary policy strategy is actually playing: according to that, the annual increase of broad money (M3) should not normally exceed a reference value of 4½ percent. Money growth since 2001 has consistently exceeded this value (see Figure 1.25). The monetary pillar has been heavily criticised as a guide for future inflation, because the relationship between money growth and inflation is quite unstable, at least as long as inflation is at moderate levels. At best, the monetary pillar does not add any information additional to that of an inflation forecast based on all relevant factors. Despite that, the ECB has often used monetary developments to *motivate* interest rate decisions, although the monetary pillar does not – according to recent research – appear to have played any significant role for actual policy decisions.[8] Hence, it may not have done much harm. However, in the motivations for the December 2005 interest rate increase, references to recent rapid money growth again featured prominently.

Finally, the way the December 2005 interest rate decision was communicated has been criticised in the media and by ECB watchers. Already a fortnight before the actual ECB Governing Council meeting in which the decision supposedly was made, its President, Trichet, made public statements about the move at hand, which basically did not allow any other decision in December to be made without a loss of credibility. This action was initially seen by many observers as the start of a series of interest rate increases. After the press conference, the opposite belief that no further interest rate changes were to be expected settled in. Additional statements by ECB officials during the next few days were needed to make clear that the ECB, of course, is always committed to increasing interest rates if inflation risks

[5] Trichet (2005).
[6] The fact that hourly wage costs in Germany remained more or less constant in 2005 (see Table 1.1) might be an indication of an increase in the equilibrium rate of employment.
[7] This point has been made by De Grauwe (2002) in particular.
[8] De Haan et al. (2005) report that monetary developments on several occasions have been used to justify interest rate decisions. In an econometric analysis, Berger et al. (2006) show that, despite much discussion devoted to monetary issues in the introductory statements, money growth has hardly affected the overall policy stance and actual interest decisions.

rise. Hence, instead of improving predictability – as was the official position of the ECB – the early statement by the ECB president this time tended to induce confusion.

3.2 Fiscal policy

Fiscal policy in the *euro area* in 2003-05 has been characterised by an aggregate budget deficit close to 3 percent of GDP (see Table 1.2). As a consequence, the earlier trend towards a reduction of the aggregate government debt-to-GDP ratio has been broken and the government debt ratio has started to increase again (reaching close to 72 percent in 2005, see Figure 1.22). Budget developments have differed considerably among countries, but aggregate euro area developments have been dominated by the deficits and debt increases in the three largest economies: *France, Germany* and *Italy*.

A similar situation is likely to prevail in the coming years. Aggregate *euro area* government net borrowing is forecast to remain close to 3 percent of GDP and the aggregate government debt ratio may at best stabilise around the present level.

The *euro area* fiscal situation is worrying. The primary reason is the future budget pressures from demographic developments, as has been discussed in earlier EEAG reports.[9] One important adjustment mechanism is to reduce government debt substantially before demographic pressures set in with full force. There is a serious risk of underestimating the need for this because low interest rates are currently holding down interest costs for government debt. This has been reflected by a reduction in interest payments on government debt by 0.7 percent of GDP (from 3.9 to 3.2) between 2001 and 2005 in the *euro area.* As a consequence, there has been a smaller deterioration in the overall budget balance (from – 1.8 to – 2.9 percent of GDP between 2001 and 2005) than of the primary balance (from 2.0 percent of GDP to 0.3 percent). Although the reasons for the currently low long-term interest rates are not well understood (see our discussion in Chapter 2), it is risky to count on interest rates remaining as low as they are now (relative to GDP growth) (see Figure 1.3).

Government debt developments will be highly vulnerable to rising interest rates. With a government debt-to-GDP ratio of 72 percent in the *euro area,* a rise in the average interest rate on government debt relative to GDP growth by one percentage point would under otherwise equal circumstances cause an increase in the debt-to-GDP ratio by 8 percentage points over a ten-year period. A rise by two percentage points would cause an increase by 17 percentage points.

3.3 The mix between fiscal and monetary policy

One can also view the fiscal policy problem as the result of a *co-ordination failure* with monetary policy. There is ample empirical evidence that monetary and fiscal policies are so-called *strategic substitutes.*[10] This implies both that more expansionary fiscal policy triggers more contractive monetary policy and that more contractive monetary policy triggers more expansionary fiscal policy.[11] The conclusion is that the *euro area* budget deficits during the recent downturn prevented the ECB from lowering interest rates more than was done. At the same time, this monetary policy provided incentives for fiscal policy makers to run larger budget deficits than would otherwise have been the case.

The co-ordination failure of monetary and fiscal policies in the *euro area* is likely to persist during the coming recovery. In the absence of more restrictive fiscal policy, monetary policy will be tightened instead. And the tightening of monetary policy will weaken the incentives for fiscal consolidation. It would be a much better policy mix – in terms of preparing for future demographic pressures and stimulating growth-enhancing investment – to tighten fiscal policy and leave interest rates at low levels.

There are two main arguments against the recommended policy mix. The first is the risk that a failure to raise interest rates enough could add to housing price increases that will prove destabilising: the argument is that the adjustments accompanying a subsequent fall could cause or amplify an economic downturn. Although we do not find strong reasons to believe in housing price bubbles in Europe (see Chapter 5 of last year's report), this risk could be an argument for policies "leaning against the wind" in housing markets. But in view of the large differences in housing price developments among euro area countries, monetary policy is not the most suitable instru-

[9] See in particular Chapter 2 in the 2003 and Chapter 4 in the 2005 report. See also Public Finances in EMU (2005).

[10] See, for example, Mélitz (1997, 2000), Wyplosz (1999) and von Hagen et al. (2000).

[11] The US, where both fiscal and monetary policy were rather expansionary in the recent past, appears to be a clear exception.

ment if one wants to influence price developments in housing markets. Instead, selective fiscal policy measures at the national level, such as variations in stamp duties, would seem preferable.[12]

Another argument against holding back interest rate increases is that current interest rates are so low that there is not much room for lowering them further in the event of a recession (the liquidity trap argument). However, this is rather an argument about what should be the appropriate inflation target, as this in turn has implications for the so-called neutral nominal interest rate (the nominal interest rate the central bank should choose when inflation coincides with its target and output is at the potential level). This will be discussed in the concluding section of this chapter.

Co-ordination failures and the Stability Pact

A suboptimal mix of monetary and fiscal policies in the *euro area* does not come as a surprise. The likelihood of such a co-ordination failure has been pointed out *ex ante* in a large research literature. First, this literature has identified a number of reasons for a *deficit bias* of fiscal policy at the national level.[13] These include myopic behaviour by governments and voters, lobbying of interest groups for specific expenditure increases (common-pool problems), a desire by political parties to favour their own constituencies while in power (strategic considerations), and attempts to raise output above its equilibrium level through aggregate demand increases (time-inconsistency problems). Such a deficit bias of fiscal policy is bound to trigger a contractive monetary policy on the part of a central bank aiming for low inflation.

The literature has emphasised that the deficit bias at the national level may be exacerbated in a monetary union. The argument is that governments will then no longer take full account of the adverse effects of deficit increases, as they can partly be shifted on to other member countries.[14] Notably, the interest rate responses will be attenuated, since the ECB targets *euro area* inflation, and the fiscal policy of each euro country will have only a small effect on that. Hence, anticipated monetary policy responses constrain fiscal policy by much less if a country is a member of EMU than if it is not. The result may be a "bad equilibrium" for the *euro area* as a whole with too expansionary fiscal policy and too contractive monetary policy. This reflects a collective action problem. Governments do not cut deficits because they are not convinced that the ECB will reward such action through looser monetary policy. And the ECB does not loosen monetary policy, because it is not convinced that this will induce governments to cut deficits.

The original establishment of the fiscal rules in the Maastricht Treaty and the Stability Pact can be seen as a way of overcoming both the deficit bias at the national level and the risk that it will be aggravated by the interaction between decentralised fiscal policy and centralised monetary policy in the EMU. The numerical constraints on government deficits and debts worked, in the sense of helping to achieve fiscal consolidation, in the run-up to the EMU in the 1990s, when the prospect of EMU entry represented a large and highly visible "monetary policy reward" for fiscal discipline. Once the EMU started, the constraints gradually lost their bite because of political unwillingness to enforce the rules through the use of the sanction mechanisms in the fiscal policy framework. Under the original Stability Pact, there was in fact only one case, the *Netherlands* in 2003, where the stipulated *excessive deficit procedure* to deal with countries breaching the deficit ceiling of 3 percent of GDP was clearly followed as envisaged. In other cases – *France* and *Germany* being the most conspicuous ones – this did not happen.[15] The *de facto* collapse of the Stability Pact was confirmed *de jure* by the formal revisions agreed by EU finance ministers in March 2005. The most important changes are summarised in Box 1.4.

It has been argued that the breakdown of the Stability Pact is logical.[16] The discretionary, political decision-making in the excessive deficit procedure can potentially handle the problem of fiscal policy spillovers among the EMU countries, but it does not address the national deficit bias problem. Hence, there are strong incentives for EU finance ministers, subject to such a bias, to collude in the Ecofin Council when making decisions on individual countries. Indeed, this was exactly what happened in 2003 when the Council decided to put the excessive deficit procedures against

[12] See HM Treasury (2003) for a discussion of this option.
[13] See, for example, Calmfors (2005) for an overview.
[14] See, for example, Allsopp and Vines (1998), Beetsma and Uhlig (1999), Dixit and Lambertini (2001), Gatti and van Wijnbergen (2002), Allsopp and Artis (2003), and Chari and Kehoe (2004).
[15] In the case of Portugal, the excessive deficit procedure opened in 2002 was closed in 2004, despite that government debt was above 60 percent of GDP and increasing. The cases of Germany, France and Greece are discussed in the text.
[16] See in particular Bonatti and Cristini (2005).

Box 1.4

The reform of the Stability Pact

The so-called Stability Pact (formally the Stability and Growth Pact), originally established in 1997, defines the operational contents of the fiscal rules in the EU Treaty. The pact consists of a *preventive* arm, designed to prevent large deficits from occurring in the first place, and a *corrective* arm, designed to deal with large deficits once they have arisen. EU ministers of finance (the Ecofin Council) agreed on a reform of the Stability Pact in March 2005 (*Ecofin Report* 7423/05). The changes were incorporated into two new Ecofin Council Regulations (1055/2005 and 1056/2005) in June 2005.

The most important changes concern the so-called *excessive deficit procedure* in the corrective arm, that is the procedure that should start when a country has a budget deficit above three percent of GDP and/or a government debt-to-GDP ratio that is above 60 percent and not falling "at a satisfactory pace".[a)]

One set of changes concerns the *exemption clauses*, that is the provisions defining when a deficit exceeding three percent of GDP is permitted. In general, a deficit above the three-per-cent limit is not considered "excessive" if it results from "a severe economic downturn". According to the original Stability Pact, an annual GDP fall of more than two percent was automatically regarded as such a downturn and a fall of more than 0.75 percent could be (after a discretionary decision by the Ecofin Council). After the reform, it is enough with *negative growth* for the cyclical downturn exemption to apply. It will also apply if a large negative output gap develops cumulatively over several years, without any need for negative growth in a single year.

According to the original Stability Pact, "all other relevant factors" should also be taken into account in the evaluation of whether a deficit is excessive. The revised Stability Pact emphasises the importance of this stipulation by enumerating a number of such factors. They include "potential growth, prevailing cyclical conditions, the implementation of policies in the context of the Lisbon agenda and policies to foster R&D and innovation" as well as "fiscal consolidation efforts in 'good times', debt sustainability, public investment and the overall quality of public finances". In addition, the revised pact stipulates that consideration should be given to "any other factors which, in the opinion of the Member State concerned are relevant". These factors are exemplified with "budgetary efforts towards increasing or maintaining at a high level financial contributions to fostering international solidarity and to achieving European policy goals, notably the unification of Europe".

The widened cyclical downturn exemption is reasonably well-defined, but the formulations on "other relevant factors" are so vague and encompassing that they open up for lax interpretations. This is, however, to some extent constrained by a stipulation that "the other relevant factors" shall be taken into account only if the deficit remains "close" to the three-per-cent ceiling and the excess over it is "temporary".

The most radical changes refer to the *deadlines* for correcting deficits that have been classified as excessive by the Ecofin Council. According to the original pact, an excessive deficit in year t, which will normally be identified in year $t+1$, should – unless there are special circumstances" – be corrected in year $t+2$. The revised Stability Pact allows for extended deadlines. First, the possibilities to set the *initial* deadline one year later (in year $t+3$) are increased. This is done through the provision that the existence of "special circumstances" will be judged after a "balanced overall assessment" of the same "other relevant factors" that can justify why a deficit above three percent of GDP should not be classified as excessive in the first place. In addition, an extended initial deadline can be set if an excessive deficit is so large that it cannot be eliminated through an improvement in the cyclically adjusted fiscal balance of 0.5 percent of GDP (net of one-off and temporary measures).

Second, the revised Stability Pact allows for *later-stage* extensions of the deadlines and for *repetitions* of both a recommendation and a notice (which represents a later and stronger request) from the Ecofin Council to a country to correct an excessive deficit. Such later-stage extensions are to be based on considerations regarding the same "other relevant factors" as discussed above. A condition that needs to be fulfilled is that "unexpected adverse economic events with major unfavourable consequences for government finances" have occurred during the course of the excessive deficit procedure. The possible extension is one year, both in the case of a repeated recommendation and in the case of a repeated notice.

In sum, the new possibilities of extending deadlines imply that an excessive deficit that arises in year t may not have to be corrected until in year $t+5$ instead of in year $t+2$ as was the understanding in the original Stability Pact. This represents a fundamental weakening of the rules, as it also postpones the imposition of sanctions if excessive deficits persist. A country with continued excessive deficits may now not have to pay a *deposit* until in year $t+6$ and such a deposit cannot be converted into a *fine* until in year $t+8$.

A number of other changes have also been made. The agreement of the finance ministers calls for an increased emphasis on the debt criterion in the pact (the requirement that a debt ratio above 60 percent of GDP should be "sufficiently diminishing"). The agreement also states the need for "enhanced budgetary discipline in economic good times". The Commission is now obliged always to write a report if a country exceeds the three-per-cent-of-GDP deficit limit (which it needed not do earlier if it considered an exemption clause to apply). The medium-term fiscal objectives according to the preventive arm of the pact (earlier specified as cyclically adjusted budget outcomes of "close to balance or in surplus") will in the future be differentiated among countries (mainly on the basis of differences in potential growth rates and government debt levels) "within a defined range between – 1 percent of GDP and balance or surplus in cyclically adjusted terms". Countries that have not reached their medium-term objectives are to achieve "a minimum annual adjustment" of 0.5 percent of GDP as a benchmark. In case a country deviates significantly from its medium-term objective and risks running an excessive deficit, the Commission is expected to give *policy advice* as a substitute for the previously stipulated early warnings from the Ecofin Council (which have proved difficult to agree on).

The reform of the Stability Pact has been argued to represent a balanced compromise (see, for example, *Public Finances in EMU* 2005 or Buti and Franco 2005), where changes working in the direction of weakening fiscal discipline (those referring to exemption clauses and deadlines) are counterbalanced by other changes helping to strengthen fiscal discipline (those summarised in the preceding section). We do not share this interpretation, since the latter changes all concern the "soft parts" of the pact, where stipulations are not backed by sanction possibilities. The crucial changes are the new possibilities of extending deadlines in the excessive deficit procedure and the associated postponement of sanctions.

The reform of the Stability Pact widens the scope of discretionary, political decision-making in the excessive deficit procedure. The original justification for the EU fiscal rules was to counteract the deficit bias arising from discretionary fiscal policy making at the national level. This constraining force was radically weakened already under the old Stability Pact as decision-making in the excessive deficit procedure gradually became more discretionary. The reform of the Stability Pact does not address this problem. Instead it aggravates it.

It has been argued that more "flexible" fiscal rules would increase their legitimacy and thus facilitate enforcement (see, for example, Buti and Franco 2005). This argument would have carried some weight if the revision of the rules had taken the form of only a few well-defined amendments, introducing transparent contingency clauses. But the argument does not hold when other policy objectives are to be taken into account in a discretionary and loosely defined way. Strict *ex post* sanctions against violations

of rules that are not clearly defined are not likely to command legitimacy. Also, the more discretionary decisions leading to sanctions are, the larger the risk that the state being exposed to them will regard them as "hostile actions" by other member states. This, too, serves to decrease the probability that sanctions will ever be imposed.
The most worrying aspect of the reform of the Stability Pact is not the actual changes that have been implemented. It is the demonstration that the rules are endogenous and likely to change in response to violations of them, at least if the perpetrators are large countries. Hence, the new looser rules are no more credible than the earlier stricter ones.

[a)] See Calmfors (2005) for a more complete analysis of the reform of the stability pact.

France and *Germany* on hold.[17] The reform of the Stability Pact can be interpreted as an extension of such collusion from the level of decisions on individual countries to the level of decisions on institutional design.

As can be seen from Table 1.2, there are at present five *euro area* countries with deficits above 3 percent of GDP. The countries are *France* and *Germany* (since 2002), *Greece* (since 1997, although the excessive deficits were identified first in 2004), *Italy* (since 2003, although the excessive deficits were identified first in 2005) and *Portugal* (since 2005). According to the original Stability Pact, *Greece* in February 2005 was given an extended deadline until 2006 to correct its excessive deficit (two years after the identification) despite a debt-to-GDP ratio of around 110 percent and despite earlier statistical misreporting that had allowed the breaches of the deficit ceiling to go unnoticed for as long as seven years. After the reform of the Stability Pact, *Italy* and *Portugal* have both been given extended deadlines of one year (until 2007 for *Italy* and until 2008 for *Portugal*) to eliminate their excessive deficits.

The three cases of *Greece, Italy* and *Portugal* all set lax precedents for the future: considerations regarding the cyclical situation and the short-term pains associated with large fiscal efforts have been given much larger weight than considerations regarding debt developments and long-term fiscal sustainability. However, the decisions on *France* and *Germany* will be even more important for the future possibilities of enforcing the EU fiscal rules. The formal situation of these two countries has been unclear after the legal dispute regarding the Ecofin Council decision in late 2003 to put the excessive deficit procedures against them on hold. But there appears now to be an understanding that the two countries will be phased into the new fiscal framework in such a way that they get until 2007 to reduce their deficits below 3 percent of GDP. This implies a total extension of the original deadlines (which were set at 2004) by *three years.* As is clear from Box 1.4, this is stretching the revised rules to a maximum, and probably even beyond that, as such a long extension should require the occurrence of new "unexpected adverse events". This will establish a very lax precedent for the future. The consequence will be that the credibility also of the revised Stability Pact is undermined from the very start.

Are there future hopes for a better policy mix?

The watering-down of the Stability Pact leads to pessimistic conclusions on future fiscal discipline and the possibilities to achieve a better balance between fiscal and monetary policy in the *euro area.* The loosening of the pact is now a political fact. It is unlikely to lead to any dramatic consequences in the near future. Weaker incentives for fiscal discipline are instead more likely to produce a "creeping crisis" where government debt levels in some countries may gradually be edging up. The political preconditions for strengthening fiscal discipline again will not emerge until government indebtedness is again widely regarded as a major economic-policy problem.

Still, it could be worth reflecting on various ways of trying to re-establish stronger incentives for fiscal discipline and a more appropriate macroeconomic policy mix. We see basically three kinds of initiatives that could help launch such a process at some point in the future.

A first possibility is a strengthening of national fiscal policy institutions. This could involve a clearer definition of fiscal policy objectives and clearer guidelines for how fiscal policy should be used to stabilise the business cycle as well as the establishment of *national fiscal policy councils* with the task of monitoring that government policies are consistent with pre-set objectives. Earlier EEAG reports have discussed such pro-

[17] Germany then supported France and vice versa. Both countries were supported by Portugal (which was also subjected to an excessive deficit procedure), Italy (which later proved to have exceeded the three-per-cent deficit ceiling already in 2003) and the UK (also with a larger deficit than three percent of GDP in 2003/04). In addition, Luxembourg and Ireland voted in favour of the French and German positions.

posals thoroughly.[18] They would not address the co-ordination problems associated with fiscal policy spillovers across EMU countries, but they could alleviate the deficit bias problem originating at the national level, which has been the root cause of the difficulties of enforcing the Stability Pact.

A second possibility, proposed by Calmfors (2005), is that a smaller group of EU countries could enter into *enhanced fiscal policy co-operation* by undertaking to uphold more stringent provisions than in the watered-down Stability Pact and thereby setting an example of fiscal rectitude for the EU as a whole. The proposal seeks to exploit the fact that different countries may have different interest in supranational rules: in general one would expect smaller countries – that would otherwise have problems asserting their interests – to be more interested in credible rules at the EU level than the larger countries.[19] Possible candidates for participation could be countries like *Austria, Belgium, Denmark, Estonia, Finland*, the *Netherlands, Spain* and *Sweden*; these countries have exerted more fiscal discipline than the larger countries.

Such enhanced fiscal policy co-operation might contain both procedural and policy commitments. The procedural commitments could aim at remedying the current "disconnect" between policy considerations at the EU and the national level. Participating countries could commit to letting the Commission present its evaluations of national fiscal policy (both within the fiscal surveillance process and the excessive deficit procedure) before the national parliaments and to holding parliamentary hearings and debates on the basis of them. As concerns actual policies, the participating countries could commit to correcting excessive deficits promptly, and thus not using the possibilities of extended deadlines in the revised Stability Pact, except in extreme situations.[20]

A third possibility would take the problem of co-ordinating fiscal and monetary policies at its starting point. It is a common view – which we share – that attempts at repeated co-ordination of actual policy decisions (exchanging looser monetary policy for tighter fiscal policy) are dangerous, because they might subject the ECB to undue political pressures and thus compromise its independence.[21] But there may be a stronger case for co-ordination of one-shot institutional reforms. There are good arguments for why the ECB should have a higher (and symmetric) inflation target than today, say 2.5 or 3 percent. This would reduce the risk of deflation and of being caught in a liquidity trap in a recession (because the neutral nominal interest rate would be raised). The aggregate real wage level would fall to the extent that it is now being raised because desired real wage reductions in some parts of the economy are prevented by downward nominal wage rigidity.[22] This would contribute to higher equilibrium employment. And real exchange rate adjustments within the *euro area* would be facilitated to the extent that they are now held back by downward nominal wage rigidity in countries – like *Greece, Italy* and *Portugal* – that need to improve their competitiveness. In the current situation after the loosening of the Stability Pact, a reformulation of the ECB's inflation objective is not possible, because it would involve serious credibility risk. A re-establishment of fiscal discipline would, however, create conditions under which this could be possible. It might be a good idea for the ECB to openly link the prospect of monetary policy reform to such a restoration of a more stringent fiscal framework, thus offering governments the prospect of a "monetary policy reward" in response to a strengthening of incentives for fiscal discipline.[23] Such fiscal policy reforms could entail a rolling back of the possibilities of extending deadlines in the excessive deficit procedure and measures to increase the credibility of the enforcement process as well as the establishment of stronger fiscal policy institutions at the national level.

[18] See in particular Ch. 2 in the 2003 report, but also appendices to Ch. 1 in the 2004 and 2005 reports.
[19] This point has been made by Buti and Pench (2004). They also argue that large deficits are more likely in large and less open economies than in small and more open ones because fiscal policy is relatively more effective in influencing aggregate output in the former because of smaller import leakages. Small open economies instead have a stronger incentive to raise output and employment through structural reform lowering real wage costs, and thus depreciating the real exchange rate, as this has a larger expenditure-switching effect the more open the economy is.
[20] Alternatively, there could be a commitment only to make use of the extension possibilities if that is recommended by a national fiscal policy council (of the type discussed above) or by an independent panel of economists set up in advance under the auspices of the enhanced fiscal policy co-operation.
[21] See, for example, Alesina et al. (2001) and Issing (2002).
[22] The argument has been elaborated by Akerlof et al. (1996, 2000). See also the 2003 EEAG report.
[23] The point that responsible fiscal policy may only be forthcoming in the monetary union if there are sufficient monetary policy rewards has been argued by Gatti and van Wijnbergen (2002) in particular.

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Appendix 1:
Forecasting Tables

Table A1

Real gross domestic product, consumer prices and unemployment rates in European countries.

	Percentage weight in world GDP	Gross domestic product			Consumer prices[a]			Unemployment rate[b] in %		
		percentage change								
		2004	2005	2006	2004	2005	2006	2004	2005	2006
Germany	21.4	1.6	0.9	1.7	1.8	2.0	1.7	9.5	9.4	9.2
France	15..9	2.3	1.6	2.0	2.3	2.1	1.9	9.6	9.5	9.2
Italy	13..0	1.2	0.2	1.1	2.3	2.2	2.0	8.0	7.8	7.5
Spain	8.1	3.1	3.3	3.1	3.1	3.3	3.1	11.0	9.2	8.7
Netherlands	4.7	1.7	0.7	2.2	1.4	1.6	1.3	4.6	4.7	4.5
Belgium	2.7	2.6	1.4	1.9	1.9	2.5	2.1	7.9	8.4	8.1
Austria	2.3	2.4	1.8	2.1	2.0	2.1	1.9	4.8	5.2	4.9
Greece	1.6	4.7	3.2	3.0	3.0	3.3	3.1	10.5	10.0	9.6
Finland	1.4	3.6	1.5	3.2	0.1	0.8	1.3	8.8	8.3	7.9
Ireland	1.4	4.5	4.6	4.8	2.3	2.1	2.0	4.5	4.3	4.0
Portugal	1.4	1.2	0.9	1.5	2.5	2.0	2.1	6.7	7.3	7.1
Luxembourg	0.2	4.5	3.7	3.9	3.2	3.6	3.1	4.8	5.3	5.1
Euro area[c]	74.3	2.1	1.4	2.0	2.1	2.2	1.9	8.8	8.5	8.2
United Kingdom	16.6	3.2	1.7	2.4	1.3	2.0	1.9	4.7	4.6	4.4
Sweden	2.7	3.7	2.5	2.6	1.0	0.8	1.5	6.3	6.3	6.0
Denmark	1.9	2.1	2.4	2.2	0.9	1.4	1.7	5.4	5.0	4.9
EU-15[c]	95.4	2.3	1.5	2.1	1.9	2.1	1.9	8.0	7.8	7.5
Poland	1.9	5.3	3.3	3.9	3.6	2.2	2.3	18.8	17.9	17.5
Czech Republic	0.8	4.4	4.6	4.4	2.6	1.6	2.1	8.3	8.0	7.8
Hungary	0.8	4.6	4.2	4.3	6.8	3.5	3.2	6.0	7.1	6.7
Slovakia	0.3	5.5	5.3	5.6	7.5	2.6	2.9	18.2	16.5	16.0
Slovenia	0.3	4.2	4.0	4.0	3.6	2.4	2.3	6.0	5.8	5.6
Lithuania	0.2	7.0	6.5	6.5	1.1	2.5	2.3	10.9	8.2	8.1
Cyprus	0.1	3.8	3.5	4.0	1.9	1.7	2.1	5.2	6.1	5.5
Latvia	0.1	8.3	8.5	8.0	6.2	6.4	6.1	9.8	9.1	8.5
Estonia	0.1	7.8	8.0	7.0	3.0	3.9	3.2	9.2	7.6	7.8
Malta	0.0	0.4	1.5	1.8	2.7	2.7	2.5	7.6	8.0	7.7
EU-10	4.6	5.1	4.2	4.4	4.1	2.5	2.6	14.2	13.5	13.1
EU-25[c]	100.0	2.4	1.6	2.2	2.0	2.1	2.0	9.0	8.7	8.4

[a] Western Europe (except for Switzerland): harmonised consumer price index (HCPI). – [b] Standardised. – [c] Sum of the listed countries. Gross domestic product and consumer prices weighted with the gross domestic product of 2004 in US dollars; unemployment rate weighted with the number of employees in 2003.

Sources: EUROSTAT; OECD; IMF; 2004 and 2005: calculations by the Ifo institute.

Table A2

Real gross domestic product, consumer prices and unemployment rates

	Percentage weight in world GDP	Gross domestic product percentage change			Consumer prices percentage change			Unemployment rate in %		
		2004	2005	2006	2004	2005	2006	2004	2005	2006
EU-25	35.1	2.4	1.6	2.2	2.0	2.1	2.0	9.0	8.7	8.4
Switzerland	1.0	2.1	1.2	1.7	0.8	1.2	0.8	4.4	4.2	4.0
Norway	0.7	2.9	2.8	2.8	0.4	1.9	2.1	4.4	4.3	4.1
Western and Central Europe	36.8	2.4	1.6	2.2	1.9	2.1	2.0	8.8	8.5	8.2
USA	32.0	4.2	3.5	3.4	2.7	3.2	3.0	5.5	5.1	4.9
Japan	12.8	2.3	2.3	2.4	0.0	– 0.3	0.2	4.7	4.4	4.1
Canada	2.7	2.9	3.0	3.1	1.8	2.3	2.3	7.2	6.8	6.6
Industrialised countries total	84.5	3.1	2.5	2.7	1.9	2.1	2.1	6.9	6.5	6.3
Newly industrialised countries										
Russia	1.6	7.2	5.7	5.4	11.0	13.0	12.0	8.3	8.0	8.0
East Asia[a)]	4.7	5.5	4.0	4.5	.	.	.	.	.	.
China	4.5	9.5	9.2	8.5	.	.	.	.	.	.
Latin America[b)]	4.9	5.9	4.0	3.6	.	.	.	.	.	.
Newly industrialised countries total	15.5	7.0	5.7	5.5	.	.	.	.	.	.
Total[c)]	100.0	3.7	3.0	3.1	.	.	.	.	.	.
World trade, volume		8.0	6.5	7.0	.	.	.	.	.	.

[a)] Weighted average of: Korea, Taiwan, Indonesia, Thailand, Malaysia, Singapore, Philippines. Weighted with the gross domestic product of 2004 in US dollars. – [b)] Weighted average of: Brasil, Mexico, Argentina, Columbia, Venezuela, Chile, Peru. Weighted with the gross domestic product of 2004 in US dollars. – [c)] Sum of the listed groups of countries. Weighted with the gross domestic product of 2004 in US dollars.

Sources: EU; OECD; IMF; National Statistical Offices; 2005 and 2006: calculations by the Ifo Institute.

Table A3

Key forecast figures for the euro area

	2004	2005	2006
	Percentage change over previous year		
Real gross domestic product	2.1	1.4	2.0
Private consumption	1.5	1.3	1.4
Government consumption	1.2	1.2	1.2
Gross fixed capital formation	2.2	2.0	3.0
Net exports[a)]	0.1	– 0.1	0.2
Consumer prices[b)]	2.1	2.2	1.9
	Percentage of nominal gross domestic product		
Government financial balance[c)]	– 2.7	– 2.9	– 2.8
	Percentage of employees		
Unemployment rate[d)]	8.8	8.5	8.2

[a)] Contributions to changes in real GDP (percentage of real GDP in previous year). – [b)] Harmonised consumer price index (HCPI). – [c)] 2005 and 2006: forecast of the European Commission. – [d)] Standardised.

Source: Eurostat; 2005 and 2006: forecasts by the Ifo institute.

Appendix 2:
Ifo World Economic Survey (WES)[24]

In October 2005 the World Economic Climate slightly improved, after a year of economic cooling. The climate indicator stands at 99.3 (after 97.5 in July: 1995 = 100), considerably above its long-term average (1990–2004: 94.0). The improvement of the overall climate index was due to better assessments of the current economic situation. According to the expectations for the coming six months, the global economy is foreseen to stabilise in the first half of 2006 at the current favourable level. In the following, we summarise the results of the latest survey. The two components of the climate indicator, the assessment of the current situation and the expectations for the next six months are depicted in the diagrams below.

World economy: stabilisation at a favourable level

The latest survey results have confirmed the July survey expectations that the global economic slow-down that set in at the beginning of 2004 will level off by the end of 2005. The current economic situation in October was judged somewhat better than in July and again above "satisfactory". The economic expectations for the first half of 2006 point to further economic stabilisation. However, the interpretation of the recent results must take into consideration that the underlying economic trends strongly differ between the regions. The economic climate declined somewhat in October in the *United States*. However, in other parts of the world, primarily in *Western Europe* and *Japan,* the economic climate improved, pointing to a solid economic stabilisation in the first half of 2006. Global GDP is expected to continue to grow robustly: We project global growth of about 4 1/2 percent for 2005 and the same for 2006. But high oil prices remain a burden on the global economy. Particularly during the winter months in the Northern hemisphere, the recent surge in energy prices, exacerbated by the shutdown of oil platforms and refineries due to the hurricanes in the *United States*, is seen as a constraint to a stronger global economic expansion.

Western Europe: the economy remains on recovery course

According to the recent survey results, both the assessments of the current economic situation and the economic expectations for the next six months point to an improvement of the economic climate in Western Europe.

Although the economic climate improved, on average, in the euro area in October, the vast majority of WES experts surveyed in this region still judged the present economic situation of their countries to be below a "satisfactory" level. In particular, in *Portugal, Italy, Germany* and *France* the assessments of the present economic situation – despite a reported improvement – remained in the negative territory, indicating that the economic recovery is still hesitant. However, in all these countries the outlook for the first half of 2006 is very optimistic. In other countries of the *euro area – Belgium, Austria, Spain* and *Greece* – assessments of the present economic performance were more or less at a satisfactory level. A particularly favourable economic climate was again reported for *Ireland* and *Finland*. Though, according to the official figures, unemployment is declining in most Western European countries, for example in *France* and *Germany*, adding to signs that economic growth is gathering pace, it is still considered to be the most important economic problem at present. Another important economic problem in the *euro area* remains insufficient demand. It was considered particularly problematic in *Austria, Germany, Italy* and the *Netherlands*.

In the countries outside the *euro area, Denmark, Norway, Sweden* and *Switzerland*, the present economic situation was assessed considerably above "satisfactory". The panel's forecast for the coming six months reflects a stabilisation of the current positive state. In contrast, in the *United Kingdom* the overall climate index deteriorated strongly in the course of 2005. According to the latest results, business senti-

[24] The World Economic Survey (WES) assesses worldwide economic trends by polling transnational as well as national organizations worldwide on current economic developments in their respective countries. This allows for a rapid, up-to-date assessment of the economic situation prevailing around the world. In October 2005, 1,100 economic experts in 91 countries were polled. WES is conducted in co-operation with the International Chamber of Commerce (ICC) in Paris and receives financial support from the European Commission. The survey questionnaire focuses on qualitative information: assessments of a country's general economic situation and expectations regarding important economic indicators. It has proved to be a useful tool, since it reveals economic changes earlier than conventional business statistics. The individual replies are combined for each country without weighting. The grading procedure consists in giving a grade of 9 to positive replies (+), a grade of 5 to indifferent replies (=) and a grade of 1 to negative (–) replies. Overall grades within the range of 5 to 9 indicate that positive answers prevail or that a majority expects trends to strengthen, whereas grades within the range of 1 to 5 reveal predominantly negative replies or expectations of weakening trends. The survey results are published as aggregated data. The aggregation procedure is based on country classifications. Within each country group or region, the country results are weighted according to the share of the specific country's exports and imports in total world trade.

ments brightened somewhat in October. However, the survey economists expect a slowdown in consumer spending and corporate investment to remain sluggish into 2006.

North America: the economic climate deteriorates

According to the latest survey results, the economic climate indicator in North America deteriorated in October. Both components – assessment of the current economic situation as well as economic expectations – have been downgraded. Undoubtedly, the socio-economic damages caused by the autumn hurricanes have depressed business confidence in the *United States*. However, the current economic situation is still regarded as above "satisfactory" by the majority of WES experts in the US. Both capital expenditures and consumer spending kept momentum, and the outlook for the coming half year is solid. Among the most important economic problems the surveyed economists again named the public deficits and lack of confidence in the government's economic policy.

In *Canada*, the economic climate remained favourable. The current economic situation has again been rated above the "satisfactory" level. Economic expectations, though slightly downgraded here as well, point to economic stabilisation in the first months of 2006. Lack of international competitiveness was seen by surveyed experts to be the most important problem in the Canadian economy.

Eastern Europe: economic stabilisation

The overall economic climate stabilised in October at a "satisfactory" level, with the assessments of the current economic situation continuing to improve and economic expectations for the coming six months pointing to further economic stabilisation. WES experts surveyed in the region forecast a marked increase in the foreign trade sector (with rising exports and imports) for the coming six months.

The present economic situation in the eight Eastern European countries that joined the European Union – *Poland, Hungary, Czech Republic, Slovakia, Slovenia, Estonia, Lithuania* and *Latvia* – has been assessed considerably above the "satisfactory" level, according to economic experts polled by WES in the region. Only in *Hungary* have the marks for the current economic performance again slipped below this level. In *Latvia* and *Slovakia*, the economic climate index also declined somewhat, but remained in positive territory. The near-term prospects remained generally positive in all new EU members except Slovenia. However, the high unemployment that is substantially above the levels prevailing in the Western countries of the European Union poses the number one economic problem in the Eastern European transition economies, according to WES experts.

In the other Eastern European countries outside the EU, diverging economic trends predominate. In *Albania, Bulgaria* and *Romania*, the present economic situation was assessed as "satisfactory" with prospects for future development remaining highly positive. In contrast, in *Croatia* and in *Serbia and Montenegro* the present economic situation was seen as below the "satisfactory" level. But WES experts are confident of an improvement in the near term. Not so in *Bosnia-Herzegovina*, where no turnaround of the presently unfavourable economic situation is expected in the next six months.

CIS: the economic climate is satisfactory

The economic stabilisation in *Russia* continues, according to the recent WES results. After a slight deterioration of business confidence during 2004, the economic climate indicator in Russia stabilised in 2005, with both the assessment of the current economic situation and economic expectations being in the positive zone. However, as the world's second largest oil producer after *Saudi Arabia, Russia's* economic performance is closely tied to rather volatile oil prices. Whereas the oil sector is currently booming, the majority of the other economic sectors is having difficulty competing with products and services from abroad. Thus, as a present economic weak point, WES experts named again "lack of international competitiveness". Also "lack of confidence in government's economic policy" was cited as an important problem. The latter also holds true in *Ukraine*, where the economic climate deteriorated somewhat and also the economic outlook became somewhat clouded. A highly favourable economic climate has been reported again for *Kazakhstan*. With regard to the future economic development, the participants are fairly confident. High inflation has been named as one of the most important present constraints to economic growth in the country though the inflation rate in *Kazakhstan* is significantly lower than in *Russia*.

Asia: optimistic forecasts

According to the October survey results, the economic climate in Asia improved slightly, compared to the preceding July survey. For the first time since the end of 2004 the assessments of the present economic situation have been upgraded. The economic expectations for the first half of 2005 point to further stabilisation. However, this pattern does not apply to all countries surveyed in the region.

Japan's economy in particular seems to have strengthened in the second half of 2005: both components of the economic climate indicator bounced back strongly after this year's spring lull. The present economic situation is now rated as above "satisfactory" and the prospects for the coming year are highly optimistic. An improved economic situation has been reported by WES experts in *Hong Kong,* though the overall climate index slightly slipped due to somewhat less optimistic near-term expectations. *China's* very high economic growth rates are expected to moderate in the near future. However, the business sentiments in the country remained favourable according to the October results. Among common economic problems, unemployment remained the main challenge in the country despite its strong economic dynamics. The economy in *India* maintained its expansion course also in October, according to economists surveyed in the country. Though both components of the economic climate index have been slightly downgraded, the marks for the present economic situation were the highest in the region, and also the expectations for 2006 point to further economic expansion. However, despite real GDP growth rates at about seven percent per annum, the growth in agriculture remains weak; *India's* farm sector accounts for nearly a quarter of India's gross domestic product and employs about two-thirds of the workforce in the country.

In *South Korea* business confidence is now at a two-year high, raising hopes that a broad-based recovery is under way in Asia's third-largest economy. Private consumption is still regarded as weak, but exports are expected to strengthen further in the coming months. In *Singapore*, the *Philippines* and *Pakistan* improved assessments of the present economic performance were contrasted with cautious expectations regarding the near-term economic development. Both components of the economic climate index improved in *Thailand* and *Vietnam*. The current economic situation is rated as satisfactory and the economic expectations point to stabilisation in the course of the next six months. An unchanged favourable economic climate was also reported for *Malaysia*. In *Indonesia* the economic climate index slightly deteriorated due to less positive expectations, but remained in a "satisfactory" zone. In the Asian region only in *Taiwan* did the surveyed experts assess the overall economic situation as below the "satisfactory" level and the near-term expectations remained cautious.

Oceania: economic rebound in Australia

In 2005 the panel's responses for *Australia* and *New Zealand* reflected an economic slow-down, starting from a relatively high level: In the July survey the economic climate index slipped marginally. However, the economic patterns of the two countries of the region seem to show diverging economic trends. While the assessments of the current economic situation improved considerably in *Australia*, the present economic performance continued to deteriorate in *New Zealand,* according to the polled economists. Also the business outlook in *Australia* for the first half of 2006 brightened. In particular the export sector is expected to regain new strength. For a net gas and coal exporter such as Australia, increased export earnings from gas and coal exports partially offset the negative impact of higher oil prices. In contrast, in *New Zealand* the polled experts remained cautious: according to the panel's forecast, the economic cooling phase will last into the first half of 2006.

Latin America: stabilising markets

The latest survey results confirm economic stabilisation in Latin America. Both, the current economic situation and economic expectations have been upgraded, though to a slightly lesser degree than in other WES regions.

Increasing business confidence was reported by experts in *Brazil*. The assessments of the present economic situation are above satisfactory, and the prospects for the next six months point to further economic growth. The government's economic policy seems to enjoy public confidence in the country. A bright picture of the economic climate has again been drawn by experts in *Chile*. The economic performance in the country is remarkably strong, since

all demand aggregates are performing satisfactorily and are expected to stabilise further in the first half of 2006. The October survey results confirmed that *Peru's* economy is one of the most vibrant in Latin America. Economic growth is fuelled by strong capital expenditures and private consumption and a buoyant foreign trade sector. *Uruguay* also counts among the group of buoyant economies. The present economic performance is seen to be above "satisfactory" and is expected to remain on the upward trend.

The economic climate in *Argentina* stabilised at a "satisfactory" level. Although both the current economic situation as well as the near-term expectations have been slightly downgraded, the corporate expenditures are still regarded as weak. However, some strengthening is foreseen by the surveyed economists for the foreign trade sector as well as for private consumption. The present economic situation in *Mexico* also stabilised at a favourable level in the course of 2005, according to the experts polled in the country, but the expectations for 2006 remained cautious.

Although there were no further improvements of the economic climate in *El Salvador* and *Colombia* in October, experts questioned in the survey basically confirmed the favourable results of the preceding July survey. In *Costa Rica* the surveyed experts assessed the present economic situation as somewhat below "satisfactory". Also the outlook for the coming six months suggests a rather sluggish economic development. In contrast, *Venezuela's* economy has a tailwind from record high oil prices and the panel's responses suggest that a recovery from the deep recession caused by the oil strike of 2002–2003 is gaining strength. The assessments of the present economic situation have now reached a "satisfactory" level and the forecast of the panel points to further economic rebound. Also the economic climate in *Bolivia* remains stable, despite a tense political situation in the country. The assessments of the country's present economic situation have been maintained at the "satisfactory" levels and the expectations for 2006 remained positive.

Among all countries of the region, only in *Ecuador* and *Paraguay* did the present economic performance still receive negative marks from the surveyed experts. However, in *Paraguay*, both assessments of the present economic situation as well as economic expectations for the comings six months have been upgraded, promising more dynamic development in 2006.

Near East: the economic climate remains favourable

According to WES experts the economic climate in the Near East remained favourable. Though the assessments of the present economic situation deteriorated slightly since this year's July poll, the outlook for the coming six months improved somewhat.

The current economic situation continues to be good particularly in *Saudi Arabia, Kuwait* and in the *United Arab Emirates.* Also the expectations for the next six months stayed bright in these countries.

The assessments of the present economic situation in *Turkey* remained above the "satisfactory" level, according to the October results. The prospects for future development promise further economic strengthening in the coming six months. Overall, the last two years' WES survey results suggest that *Turkey* has entered an era of economic stability. In *Israel* the assessment of the present situation improved considerably. The majority of WES experts polled in *Israel* assessed the current economic situation as "good". Also the outlook for the next six months is optimistic – private consumption and capital expenditures are expected to strengthen and the export sector is also expected to pick up somewhat, signalling that economic recovery is underway. However, terrorist threats and the security situation in general remain the main constraints to a quicker economic revival.

The economic situation in *Jordan, Bahrain, Lebanon* and also in *Iran* is now regarded as "satisfactory". However, in *Iran* according to WES experts the economic outlook for the coming months appears to be clouded. In the other countries, WES experts are fairly confident concerning a positive economic development in the beginning of 2006.

Africa: Diverging economic trends predominate

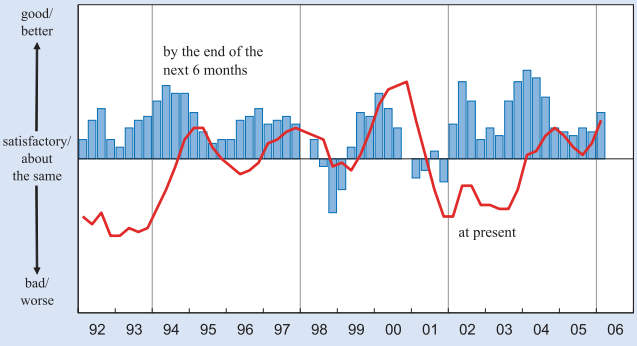
Africa remains a region with very diverging economic trends. Thus, an aggregated climate index for countries surveyed by WES on this continent makes little sense, and the following analysis will focus on particular economic trends in individual countries.

The economic climate index in *South Africa* stabilised during 2005 at a highly favourable level, after a decade of economic expansion. According to the

October survey, business sentiment concerning the current economic situation remained positive, while the economic expectations have improved further. In contrast, the economic recovery in *Egypt* is still rather sluggish, according to economists surveyed in the country. The present economic situation is still assessed as far below "satisfactory". The economic expectations, though slightly downgraded, still raise hope for an economic turn-around in 2006. The worst economic situation of all 90 countries covered by WES was again reported from *Zimbabwe* where the outlook also remained very bleak. All the surveyed experts gave the most negative marks that are possible on the WES-scale for both present economic situation and expectations.

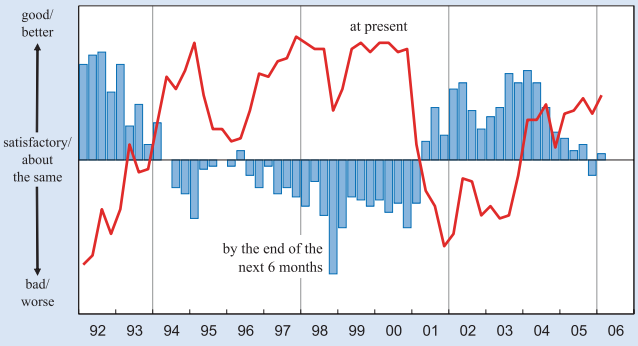
IFO WORLD ECONOMIC SURVEY (WES)

WORLD ECONOMY
Economic Situation



Source: Ifo World Economic Survey (WES) QI/2006.

USA
Economic Situation



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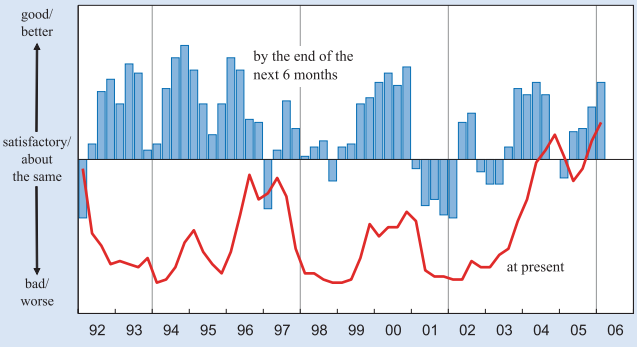
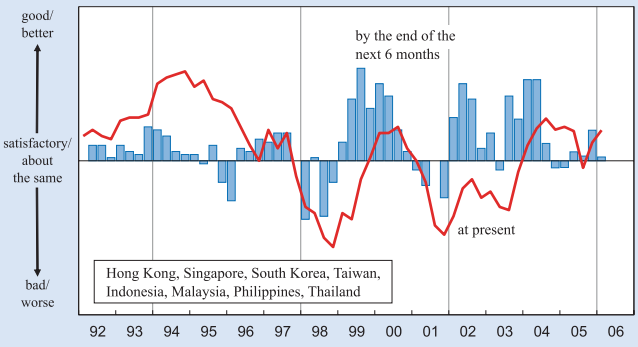
JAPAN
Economic Situation



Source: Ifo World Economic Survey (WES) QI/2006.

ASEAN AND EAST ASIAN NICS
Economic Situation

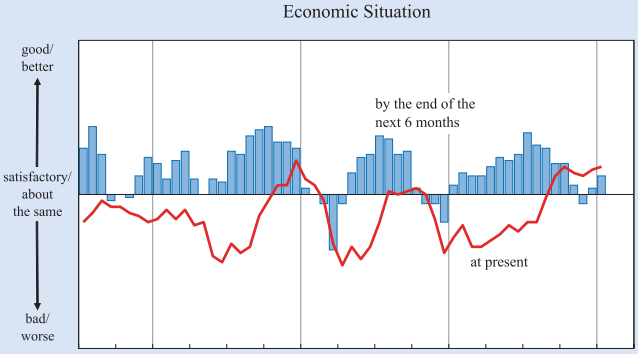


Source: Ifo World Economic Survey (WES) QI/2006.

CIS
Economic Situation

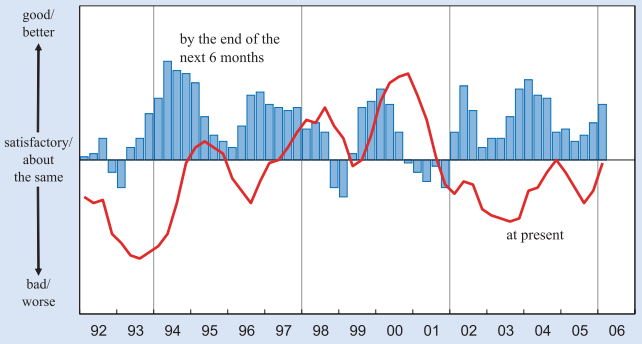
Source: Ifo World Economic Survey (WES) QI/2006.

LATIN AMERICA
Economic Situation



Source: Ifo World Economic Survey (WES) QI/2006.

EUROPEAN UNION (15)
Economic Situation



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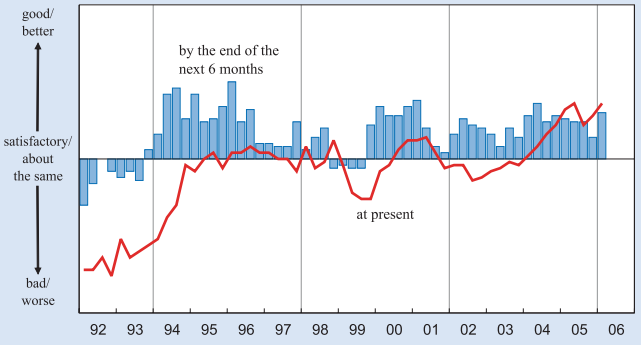
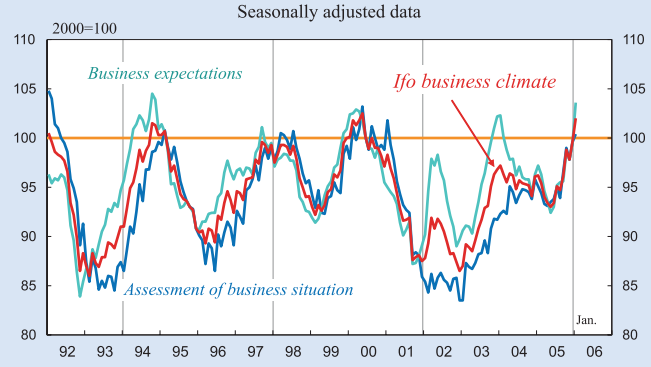
EASTERN EUROPE
Economic Situation



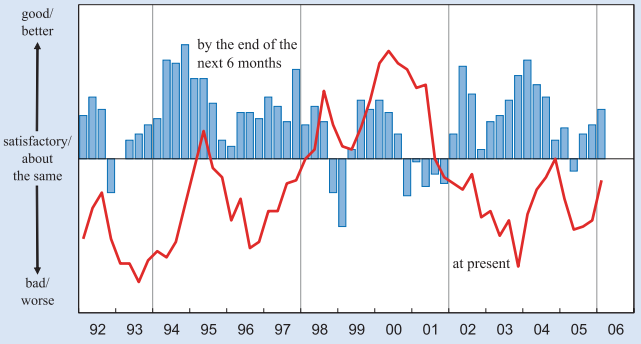
Source: Ifo World Economic Survey (WES) QI/2006.

GERMANY: IFO BUSINESS CLIMATE [1)]
Seasonally adjusted data



1) Manufacturing industry, construction, wholesale and retail trade.
Source: Ifo Business Survey.

FRANCE
Economic Situation



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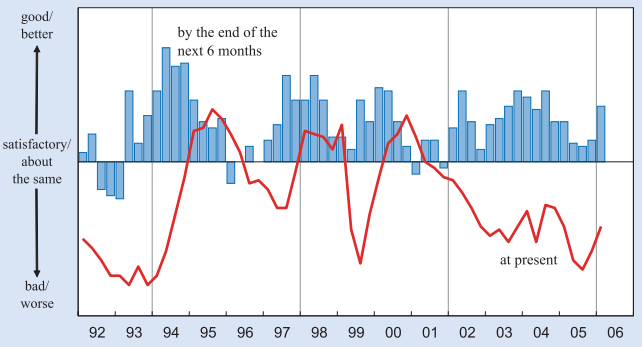
ITALY
Economic Situation



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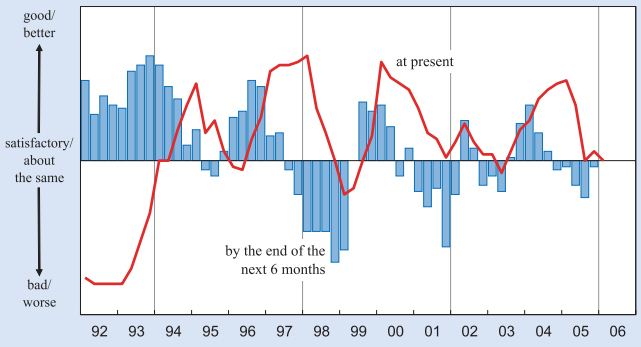
UNITED KINGDOM
Economic Situation



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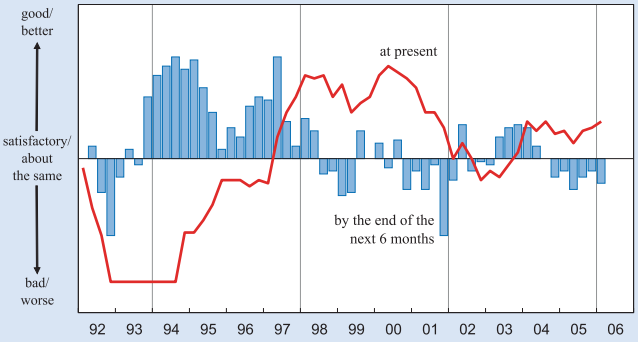
SPAIN
Economic Situation



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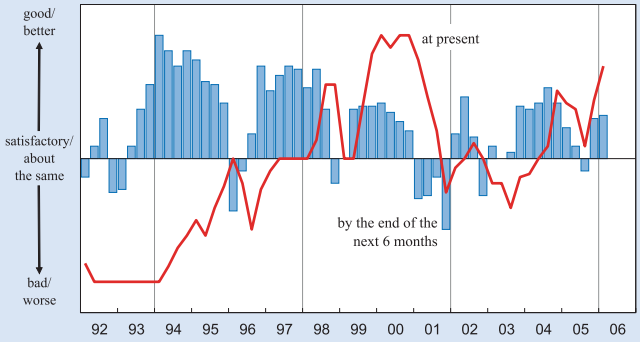
SWEDEN
Economic Situation



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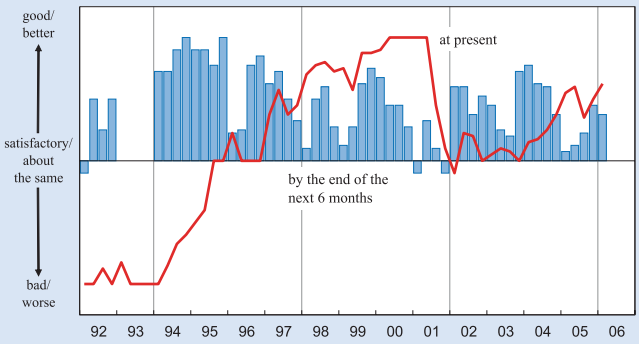
FINLAND
Economic Situation



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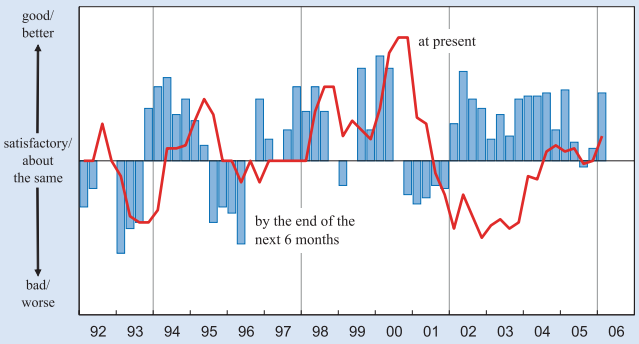
AUSTRIA
Economic Situation



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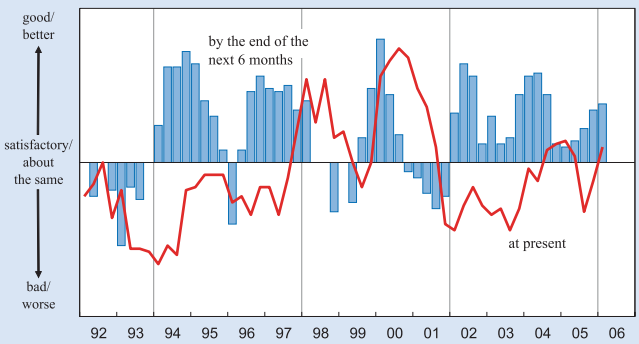
BELGIUM
Economic Situation



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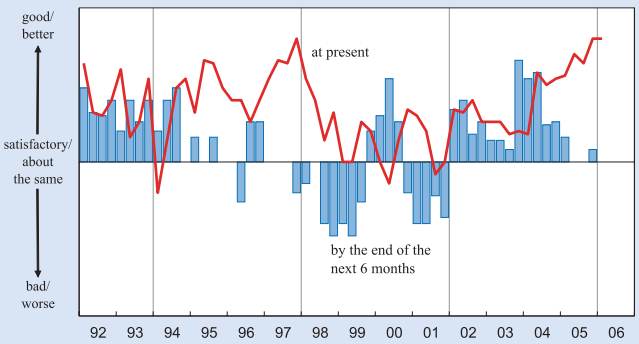
DENMARK
Economic Situation



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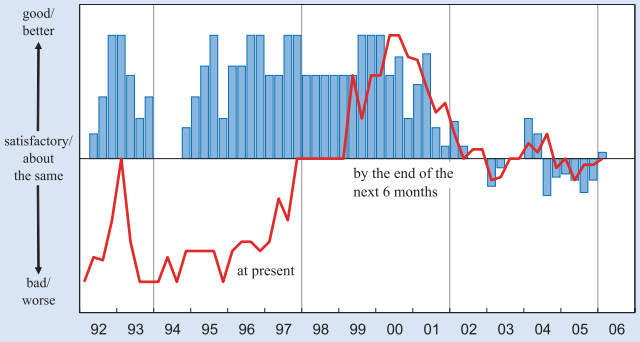
GREECE
Economic Situation



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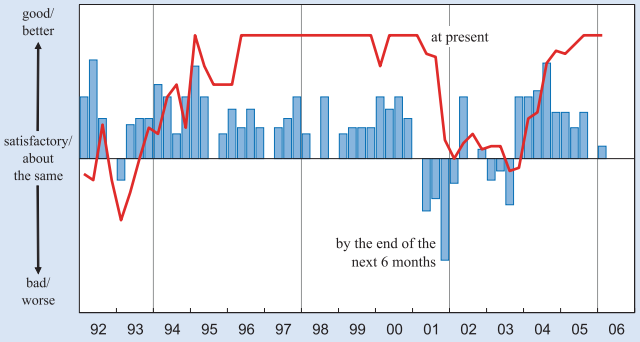
IRELAND
Economic Situation



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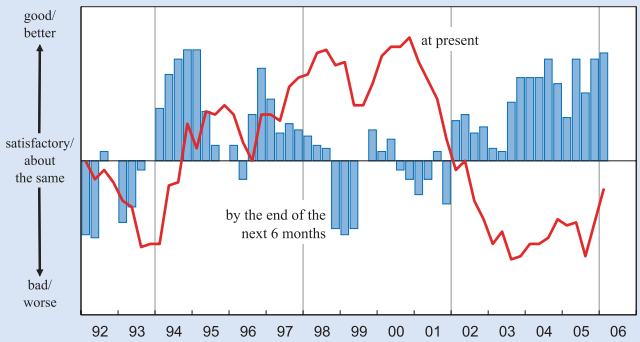
NETHERLANDS
Economic Situation



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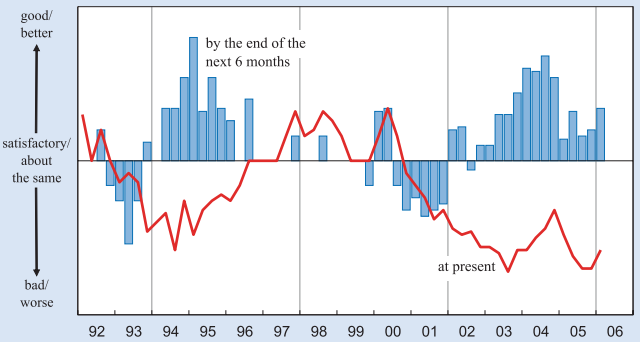
PORTUGAL
Economic Situation



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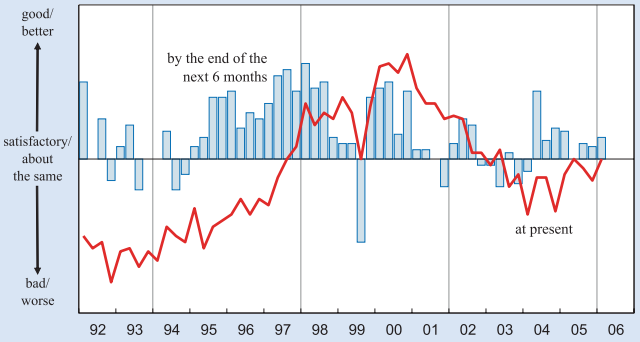
HUNGARY
Economic Situation



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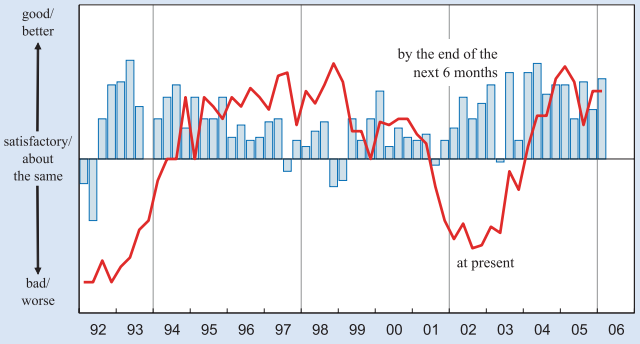
POLAND
Economic Situation



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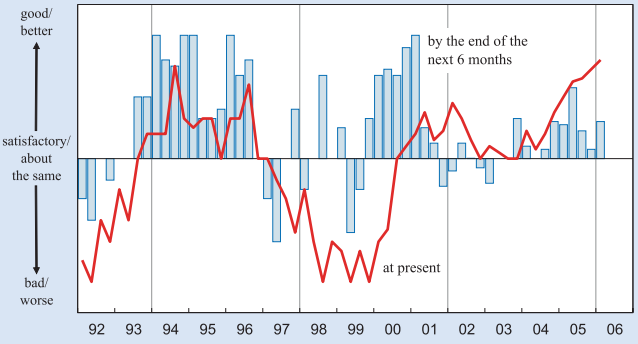
CZECH REPUBLIC
Economic Situation



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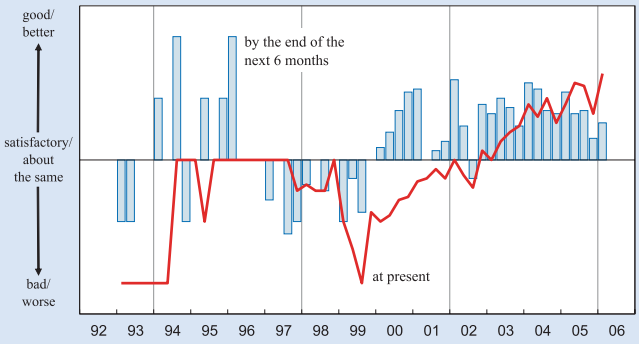
SLOVAK REPUBLIC
Economic Situation



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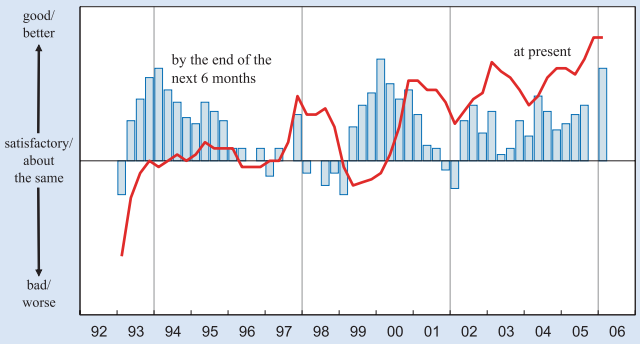
ESTONIA
Economic Situation



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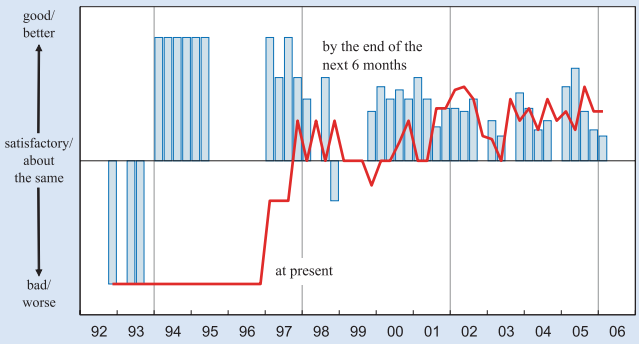
LATVIA
Economic Situation



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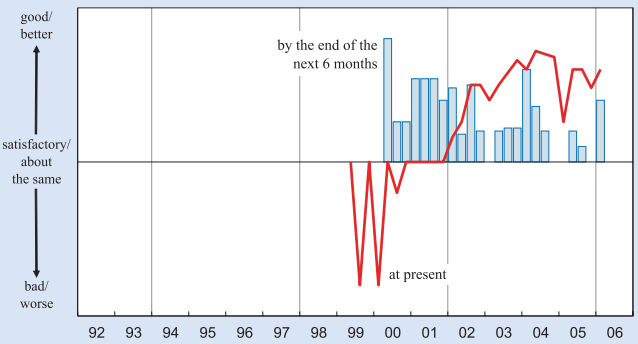
LITHUANIA
Economic Situation



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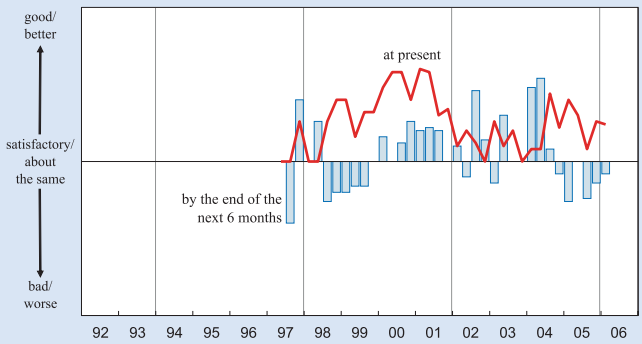
SLOVENIA
Economic Situation



Source: Ifo World Economic Survey (WES) QI/2006.

GLOBAL IMBALANCES

1. Introduction

The large and persistent current account deficits run by the United States from the second half of the 1990s have generated widespread concerns about the sustainability of current macroeconomic imbalances at the global level. To what extent is the US trade deficit sustainable? If not, what will global adjustment require? In particular, to what extent will the dollar depreciate? Will adjustment lead to global recession? What are the appropriate fiscal, monetary and financial policies to minimise the risks of disruption? Many observers (for example, Roubini and Setser 2004a,b, 2005a,b) fear that the correction of global imbalances could lead to a period of disorderly adjustment, characterised by turmoil in currency and asset markets, a slowdown in economic activity, and ultimately large welfare costs for the world economy as a whole.

Currently, large external deficits in the US are matched by large surpluses in Japan, Asian emerging markets, oil producing countries and a few European countries. However, the *euro area* as a whole is close to external balance. In light of this, the question is whether adjustment of global imbalances will affect Europe only marginally, since the heart of it will consist in rebalancing the position of the US vis-à-vis the surplus regions, especially Asia.

The goal of this chapter is to review the current debate on the causes and nature of global imbalances, assess policy options currently on the table, and more specifically discuss the implications of global adjustment for the European economy and European policy-making.[1] We argue below that despite the close-to-external-balance position of Europe a rebalancing of the US deficits will create major policy challenges to European policy-makers.

[1] Recent theoretical, empirical and policy-related contributions to the debate on global imbalances can be found on the website 'Current Account Sustainability of Major Industrialized Countries' at the University of Wisconsin, Madison, http://currentaccount.lafollette.wisc.edu/.

2. Basic facts about global imbalances

We begin by considering three facts defining the nature of current global imbalances: the size and persistence of the US current account deficit; the rising share of official capital flows from emerging markets and Japan, and the increasing importance of "valuation effects" of exchange rate and asset prices movements in determining the real burden of a country's external debt. Throughout this chapter we will complement data from traditional sources (such as OECD and IMF) with the dataset on the "Wealth of Nations" computed by Lane and Milesi-Ferretti (2006). The distinctive feature of this data set is that (estimated) capital gains and losses on the external portfolios of financial assets and liabilities have been taken into account when calculating net foreign asset positions.

2.1 The size and persistence of the US current account deficit

The single most quoted fact characterising global imbalances is the size of the US current account deficits (relevant definitions are presented in Box 2.1). The US current account deficit grew from 1.6 percent of US GDP in 1997, to 4.2 percent in the year 2000. It kept increasing afterwards: at the time of writing, the 2005 deficit is estimated at above six percent of US output, around 800 billion dollars.

To get a sense of how large the US current account deficit is, consider that the US has about 110 million households: thus, an 800 billion dollar deficit means that, during 2005, the net external debt per household increased by 7,200 dollars!

As a result of current account deficits, and changes in the values of US assets and liabilities, the estimated value of US net debt at the beginning of 2004 was around 23 percent of US GDP. If the US keeps borrowing at the current rate, the external net debt of the US could approach 100 percent of GDP in about a decade.

Figure 2.1a shows the evolution of the current account balance in percentage of *world* GDP

Box 2.1

External imbalances, the current account balance and the balance of payments

To understand global imbalances, it is useful to keep in mind that there are three ways of looking at the current account balance.
First, the current account balance of a country is the sum of the trade balance (exports minus imports of goods and services), income from foreign assets held by residents (net of interest paid on the country's foreign liabilities), and net labour income from residents working abroad:

Current account balance = Trade balance (goods and services) + Income from net foreign assets + Net labour income

This accounting relation makes it clear that the accumulation of foreign wealth by a country is related to its capacity to generate positive net exports of goods and services, income from capital lent abroad and labour services supplied by domestic residents employed in a foreign country. Movements of the current account are usually dominated by the trade balance component, but not to the extent suggested by national accounts. The reason is that official statistics include income payments from net foreign assets, but do not account for capital gains and losses on such assets. At times, these may be substantial (throughout this chapter we use the dataset constructed by Philip Lane and Gian Maria Milesi-Ferretti, who reconsider current account balance and portfolio positions accounting for capital gains and losses on foreign assets and liabilities).
Second, the current account is also equal to the difference between national saving and investment:

Current account balance = Saving – Investment = Private saving + Public saving – Investment

This accounting relation makes it clear that external imbalances result from intertemporal choices by firms and households regarding how much to consume and invest in the current year as opposed to future years, as well as by government decisions about the size of the budget deficit (that is, the time profile of taxes and expenditure). Clearly, for the world economy as a whole, saving must equal investment, although the sum of current account balances rarely adds up to zero because of statistical errors.
Third, the balance-of-payments identity equates surpluses in the current account balance to the accumulation of net foreign assets, recorded in the capital account:

Current account balance = Increase in private net foreign assets + Increase in official net reserve holdings (Official reserve settlement balance)

This identity makes it clear that current account deficits must be financed by capital inflows and/or changes in the stock of reserves held by monetary authorities. So, a current account deficit by one country generates a demand for foreign capital, which must be matched by the portfolio decisions of foreign private agents and public institutions to acquire assets issued by that country.
The above are not three alternative views of the current account balance; they are three identities.
A country is solvent when, at the market interest rate, the present discounted value of future surpluses of the balance of trade in goods and services and net income from labour supplied abroad, is not smaller than the current net value of liabilities:

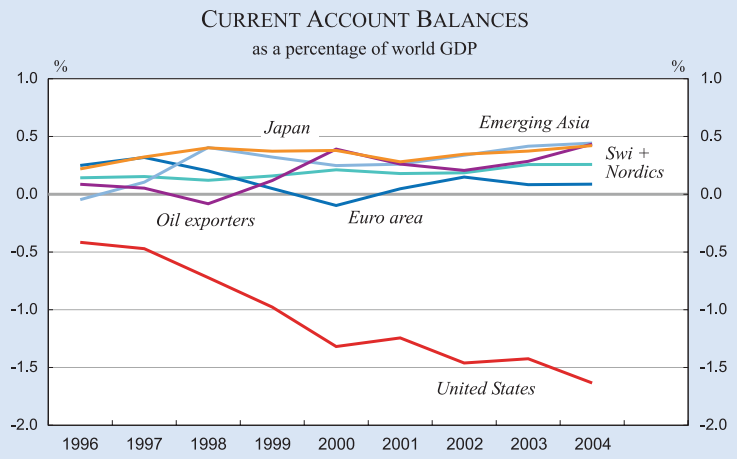
Value of net foreign liabilities $\leq$ Present discounted value of surpluses in the current account excluding income from net foreign assets

So, if a country is currently running current account deficits and is a net debtor, foreign lenders expect that country to generate positive net exports (in trade and services) and net labour income in the future, corresponding to a positive difference between net saving and investment. If this were not the case, some creditor country must be willing to finance the entire interest bill by the debtor country in the indefinite future. The debtor country would be playing a so-called Ponzi game: it would try to finance the interest bill on an ever-increasing stock of debt by further borrowing.
In the international financial markets, the supply of assets by a borrower must be matched by the world demand for them. Sustainability of a country's debt cannot be defined independently of the equilibrium structure of international portfolios. In particular, given demand and supply conditions, the equilibrium price at which a country's debt is traded determines the risk premium that a country must pay on its external liabilities. The main challenge in understanding sustainability of external debt thus consists in understanding the factors underlying the desired portfolio composition by international investors.
Recent episodes of financial and currency crises have arguably pointed to the possibility that frictions in financial markets may cause sudden changes in asset demands and the emergence of binding constraints limiting the extent to which a country can borrow. This could be the case, for instance, if co-ordination problems among international investors long in short term debt issued by a country lead to liquidity runs similar to bank runs. When markets co-ordinate on an equilibrium characterised by a run, the debtor country is forced to come up quickly with external resources to close any "financing gap" which may result. International runs (panics) can easily have potentially high costs in terms of consumption, output and overall welfare for international debtors.

between 1996 and 2004, for the US, the euro area, Japan, Switzerland and the Nordic countries, Asian emerging markets, and oil producing countries. In terms of world GDP, the US external deficit grew from less than half a percent before 1997 to 1.6 percent in 2004.

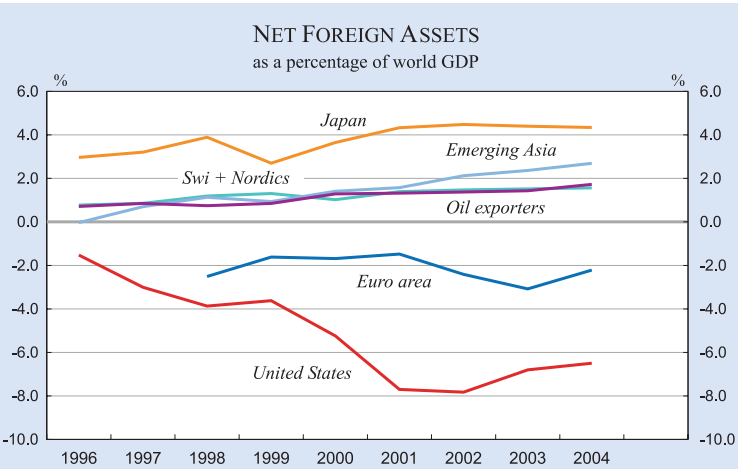
Figure 2.1a emphasises that all other regions shown have recently been in surplus. In 2004, the US deficit was as high as 668 billion dollars. The combined surplus of Asian emerging markets and oil producing countries (358 billion dollars) accounts for more than 50 percent of it. Japan's surplus (172 billion dollars) accounts for about 25 percent; the surplus by Norway, Sweden and Switzerland (141 billions) accounts for another 20 percent. The small positive current account surplus for the euro area accounts for the remaining five percent of US deficit.

Figure 2.1a



Note: The emerging Asia group includes China, Hong Kong SAR, Taiwan, Korea, Malaysia, Singapore and Thailand. The Swi + Nordics group includes Norway, Sweden and Switzerland. Oil exporters includes Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Saudi Arabia, Syria, United Arab Emirates and Yemen.
Source: Lane and Milesi Ferretti (2006).

Figure 2.1b



Note: The emerging Asia group includes China, Hong Kong SAR, Taiwan, Korea, Malaysia, Singapore and Thailand. The Swi + Nordics group includes Norway, Sweden and Switzerland. Oil exporters includes Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Saudi Arabia, Syria, United Arab Emirates and Yemen.
Source: Lane and Milesi Ferretti (2006).

Table 2.1
Private and official financing of the US current account deficit (in billion of dollars)

	1997–1999	2000–2002	2003–2004
Current account deficit	218	427	594
Total net capital inflows	176	462	573
Net private inflows	160	404	233
Of which:			
Direct investment	34	38	– 109
Portfolio investment	126	366	343
Net official inflows	15	59	340

Source: Own calculations based on Congressional Budget Office (2005).

From a global perspective, the US is borrowing resources from all the other five regions in the diagram, including regions at a relatively early stage of industrialisation.

However, the US is not the only industrial country to run a current account deficit. Persistent imbalances are also run by Australia and New Zealand (together they borrowed 45 billion dollars in 2004), and by a few countries in the euro area. The deficits by Greece, Portugal, Spain, and the United Kingdom altogether totalled 124 billion dollars in 2004. Italy's deficit has also been increasing steadily, reaching 15 billion dollars in 2004, and showing no sign of reduction in 2005. While deficits by some of these countries are not too distant from the US if, for instance, net borrowing is scaled by the size of the population of GDP, their sizes are typically small in absolute terms.

2.2 International reserves accumulation and the rising share of official financing after 2000

An important change in the composition of external financing of the US deficit occurred around 2000. From 1997 to 2001, that is, between the Asian crisis and the end of the period of asset market exuberance, private investors mostly financed the US deficits as they systematically rebalanced their portfolios in favour of US dollar-denominated assets, especially equities. The importance of private inflows has diminished substantially since 2001.

As shown in Table 2.1, in the period 1997–1999 average net capital inflows into the US were as high as 176 billion dollars per

Table 2.2
Official reserves in per cent of total foreign liabilities for developing countries

1980–84	14.7
1985–89	13.5
1990–94	15.6
1995–99	18.6
2000–04	26.4

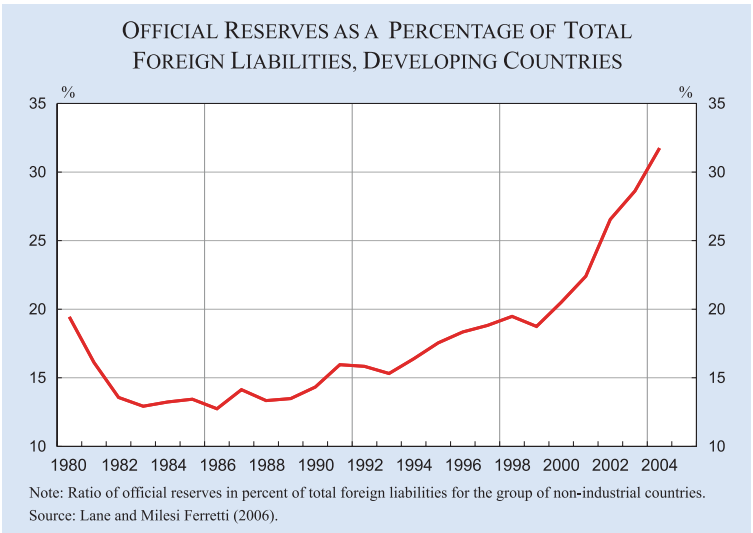
Source: Own calculations based on Congressional Budget Office (2005).

year: private inflows accounted for 90 percent of the total. In 2003 and 2004, average net capital inflows into the US were as high as 573 billion dollars: the share of private capital dropped to 40 percent. In terms of net flows, the US external imbalance is now mainly financed through foreign official lending, in large part corresponding to the build-up of official reserves by five Asian economies: Japan, China, Hong Kong, Taiwan and South Korea.

The above observation stresses a second striking dimension of current global imbalances, that is, the high level of international reserves in the form of dollar assets. Official reserves held by the five Asian countries mentioned above (consisting to a large extent of dollar-denominated assets) grew from 1.16 trillion dollars in 2000 to 2.66 trillion dollars in 2004. China is reported to own reserves up to 800 billion dollars in the last months of 2005 (see Genberg et al. 2005 for a detailed analysis of reserves policies).

From a more general perspective, Table 2.2 and Figure 2.2 show the growth of total official reserves by developing countries in percent of their liabilities: official reserves have grown from 15 percent in the 1980s, to an average of 26 percent after the year 2000, up to 32 percent in 2004. Now, developing countries pay a high risk premium on their liabilities but earn a low interest rate on their official reserves. Since in 2004 foreign official reserves accounted for about one third of developing countries' foreign liabilities, one out of three dollars that relatively poor countries borrowed from rich countries at high interest rates was thus lent back to rich countries at relatively low interest rates. Rodrik (2006) estimates that the financial cost of holding reserves is now currently close to one percent of developing countries' GDP.

Figure 2.2



Note: Ratio of official reserves in percent of total foreign liabilities for the group of non-industrial countries.
Source: Lane and Milesi Ferretti (2006).

2.3 Financial globalisation and the increasing importance of capital gains and losses due to exchange rate movements

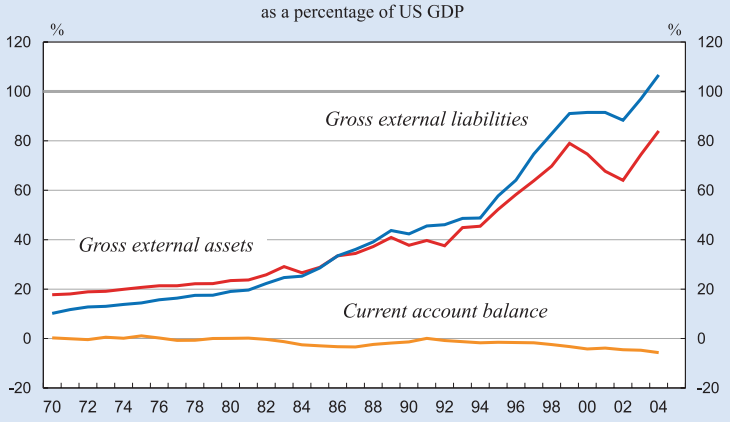
The emergence of external imbalances at the end of the last decade occurred in the context of a strong expansion of cross-border holdings of financial instruments. Indeed, in terms of world GDP, the total stock of foreign assets (= liabilities) in the world is currently above 120 percent, twice as much as at the beginning of the 1990s.

So, while the US current account deficit is large in terms of the US GDP, it is small relative to the stock of US foreign assets. This point is clearly shown by Figure 2.3, plotting the US current account between 1970 and 2004 together with the stock of US gross external assets and liabilities. In 2004, the US "owed" more than 100 percent of its GDP to foreigners, but also owned claims to foreign output equivalent to about 80 percent of its own output. The difference is the US net debt.

The large expansion of gross portfolio holdings is responsible for a third, important dimension of current global imbalances. The change in net external debt between two dates depends not only on the *flow* of net exports during the period but also on changes in the value of the country's foreign assets and liabilities, reflecting both asset price and exchange rates movements: the larger the *stock* of foreign assets and liabilities, the larger are these "valuation effects". Valuation effects in the asset markets were clearly much smaller in previous episodes of current account ad-

Figure 2.3

US CURRENT ACCOUNT BALANCE VERSUS US STOCK OF FOREIGN ASSETS AND LIABILITIES
as a percentage of US GDP



Source: Lane and Milesi Ferretti (2006).

justment, before capital liberalisation had led to large cross-border holdings of financial assets. Paradoxically, in a financially globalised economy, a country with a balanced current account may be subject to large swings in its net external position, because of price fluctuations in financial and currency markets.

Figure 2.1b shows the evolution of net foreign assets for the same regions as in Figure 2.1a. As mentioned above, the figures underlying this graph are from the dataset on the "Wealth of Nations" by Lane and Milesi Ferretti (2006), specifically built to account for capital gains and losses on the external portfolios. Figure 2.1b shows that, in the second half of the sample period, both the euro area and the US had negative net asset positions (they are net debtors), whereas the other macro regions had positive net asset positions (they are net creditors in the world economy).

Comparing Figures 2.1a and 2.1b, one can appreciate an apparent anomaly in the evolution of the net foreign asset position of the US and the euro area after the year 2002. After 2002, the current account of the US is negative and large, yet its foreign asset position was stable, even improving. The euro area has been running a surplus, yet its foreign asset position has worsened.

This observation provides a striking illustration of the effects of capital gains and losses from exchange rate movements on external imbalances. The US typically borrows from international markets by issuing dollar-denominated assets but lends abroad mostly by acquiring equities and foreign-currency denominated bonds. About two-thirds of US foreign assets are denominated in foreign currency. Because of this particular currency composition of the US external portfolio, a falling dollar has an automatic stabilising effect on the real value of the US net foreign debt. Dollar depreciation leaves the dollar value of US foreign liabilities unaffected but raises the dollar value of US foreign assets: overall, the US owes less to the rest of the world in terms of real resources (see the discussion in Tille 2003).

To get a sense of the potential magnitude of these effects, recall that, at the end of 2004, US gross foreign assets were about 80 percent of US GDP. As two third of these were denominated in foreign assets, a 10 percent depreciation of the dollar would reduce US net debt by $0.1 * 0.8 * 2/3$, equivalent to more than five percent of US GDP: approximately the size of the US external deficit![2] Note that these gains are increasing in the size of US gross assets, independently of US gross and net debt.

The above net gains are however calculated *ex post,* that is, for given stocks of assets and liabilities. The gains are clearly smaller if currency depreciation is anticipated by financial markets. If this is the case, *ex ante* US interest rates would rise relative to foreign ones. This would raise the growth rate of liabilities in terms of GDP, so that depreciation-related capital gains on US assets would be at least in part compensated by a higher stock of US gross debt. To complete our back-of-the-envelope calculations, suppose that, at the beginning of 2004, markets attached a 25 percent probability to a ten percent fall in the value of the dollar by the end of the year. Abstracting from any risk premium, one-year interest rates on US liabilities would have increased by 2.5 percentage points. Now, at the beginning of 2004 the stock of US gross liabilities was close to 95 percent of GDP (clearly higher than the stock of assets). Assuming for simplicity that all US liabilities had one-year

[2] The mechanism benefiting the US is the same (but with an opposite sign) as the mechanism raising financial and macroeconomic risks in emerging markets: as these borrow by issuing debt denominated in foreign currency, domestic devaluation in response to negative shocks magnifies macroeconomic adjustment problems by raising the real burden of external debt (see Chapter 6 of the 2004 EEAG Report).

Box 2.2

Real return differentials in favour of the US

The US enjoys an important advantage in international capital markets. Historically, the rates of return earned by the US on its external assets are above the rates of return the US pays on its liabilities. For instance, taking five-year averages, the return differentials in favour of the US between 1995 and 2004 vary between one and approximately eight percentage points.

What explains these positive return differentials? Potential explanations include the following. First, a large share of US foreign assets consists of equities, while US liabilities consist mostly of debt instrument with a large short-term component: the US benefits from the fact that equities earn a premium over bonds. Second, since dollar-denominated bonds are traded in deep liquid markets, they earn a liquidity premium: the US can borrow at particularly low interest rates. Third, dollar monetary assets are an important component of international liquidity, providing the US with seigniorage revenue. Because of positive rate of return differentials, total income from net foreign assets earned by the US was still positive in 2005, even though the country is a large net debtor in the world economy. This may soon change as the stock of US liabilities keeps increasing.

The fact that the US has long earned a positive income from its net foreign assets has recently been used to suggest the following provocative thesis: because an international debtor should pay an interest income to its creditor; the fact that the US is actually receiving income from abroad means that it cannot be a net debtor. By way of example: in 2004, the US earned 300 billion dollars. Capitalised at 5 percent, this means that the US should actually have positive net foreign wealth of 600 billions (see Cline 2005 and Hausmann and Sturzenegger 2006).

But how can the US be a net foreign creditor after running large current account deficits for so many years? Hausmann and Sturzenegger call the difference between recorded US net debt and their estimate of positive US net wealth "dark matter". Dark matter is a colourful label pointing to under-reporting of US exports of knowledge (via foreign direct investment), liquidity (the US issues widely traded assets) and insurance (dollar assets are sought after as official reserves). The existence of "dark matter" implies that the value of US foreign assets and liabilities must be well above their market value (estimated by Lane and Milesi-Ferretti 2006). Does "dark matter" exist? If it does, there would be no need for global adjustments of the type discussed in the text. Unfortunately, the calculations underlying estimates of "dark matter" completely ignore the basic fact that different assets can pay different rates of return, depending on their risk and maturity. Why should one apply the same rate of capitalisation (5 percent) to all the assets and liabilities in the US external portfolio? Moreover, the debt figures presented in this chapter are all estimated taking into account market valuation in stocks and bonds markets, as well as exchange rates in the currency markets. Why should one distrust market prices completely, and put one's faith on a simple capitalisation exercise at an arbitrary rate of return?

maturity, higher interest rates would have raised the stock of US gross debt by an extra 2.4 percentage points, halving the net ex-post gains from dollar depreciation.[3]

Moreover, it is well known that US foreign assets have a large equity component. This component exposes the US to market risks, due to sizeable changes in asset prices that may accompany rebalancing. In fairly extreme scenarios of the adjustments (for example, a worldwide recession), it is likely that there would be significant declines in equity values. Then, for a given exchange rate, US assets abroad would fall in value relatively more than foreign investors' holding of US assets. This would seem to offset some of the advantages that the US has from exchange rate depreciation.

[3] When market expectations anticipate depreciation, the size of net gains also depends on the maturity structure of debt.

3. What has caused the current imbalances?

There are a number of views on the causes of current imbalances, with quite different implications for the need for corrective policy measures and different predictions about the costs of adjustment. In this section we briefly discuss a representative set of these theories, grouping them under four main headings depending on their focus: insufficient US savings, productivity growth differentials, excessive savings outside the US, and exchange rate policies pursued by Asian countries.

3.1 Low US saving

A widespread view attributes the persistent US current account imbalances to structural factors and policies lowering US national savings.

As is well known, private savings in the US have been trending downward for quite some time. Possible factors likely to have influenced this trend include population ageing; structural changes in financial markets, boosting the use of credit cards and consumer credit; and, in the framework of deregulated credit markets, the recent strong dynamics of housing prices.

Last, but not least, private spending in the US has long been sustained by easy monetary policy. While the US monetary stance has been progressively tightened in 2005 (see Section 1.2 and Figure 1.9 in Chapter 1 of this report), long-term interest rates have remained low. For this reason, and because of tax advantages benefiting mortgages, the US housing market remained overall strong through 2005, helping to offset the demand effect of the monetary contraction.[4]

[4] Some sign of house price stabilisation has been detected throughout the year (see the Economist 2005). House prices have been high and rising through the last few years also in some of the other industrial countries that, like the US, have a persistent current account deficit. This applies to Australia, New Zealand, Spain and the UK. See also Chapter 5 of the 2005 EEAG Report.

Box 2.3
Useful exchange rate and international relative price definitions

The *nominal exchange rate* is the price of one currency (the dollar) in terms of another (the euro). In January 2006, one euro is worth approximately 1.20 dollars. An increase in this figure would correspond to a nominal appreciation of the euro (one euro buys more dollars), that is, a nominal depreciation of the dollar. The external value of a currency can be calculated with reference to many currencies. In this case one talks of a multilateral (as opposed to a bilateral) exchange rate. Multilateral effective exchange rates are calculated as weighted averages of bilateral exchange rates (the euro against the dollar, the yen, the sterling pound etc.), weighted by importance of foreign trade with different trade partners. Alternative weighting schemes can be based on GDP or financial portfolios.

The *real exchange rate* is the price of consumption in one country relative to the price of consumption in another country. A real depreciation (or a depreciation in real terms) indicates that the consumption basket in one country become less expensive relative to that in another country (or group of countries). According to its definition, the real exchange rate is calculated using consumer prices. As an indicator of competitiveness, it is sometimes calculated using producer prices or labour costs (usually per unit of product)..

The consumer price index includes the price of both goods that are traded internationally and goods that are not traded internationally (commonly refereed to as non-tradables or non-traded goods). A good is not traded internationally when, given technology and relative prices, its value is small relative to transportation and trade costs, so that its shipment abroad is not economically viable. Given the price of tradable goods, a fall in the price of non-tradables in a country (which lowers the domestic consumer price index) implies a real depreciation (that is a depreciation of the real exchange rate).

The *terms of trade* are the price of exports relative to the price of imports. The terms of trade worsen, or deteriorate, when the price of imports rises, or the price of exports falls.

US private savings have, however, followed a rather stable pattern, compared to US public savings, which have deteriorated markedly since 2000 (see Chapter 1 of the report). The relaxed fiscal policy adopted by the Bush administration has been blamed for worsening the external position of the country, when other factors (essentially, exuberant expectations in the asset market) were no longer influencing domestic spending and international investment. Recent imbalances would thus validate the "twin deficits" hypothesis, that is, the idea that fiscal shocks raising the budget deficit also raise the current account deficit.

An important question is whether the recent US budget and current account deficits are efficient ways to finance the costs of the wars in Afghanistan and Iraq, as well as the costs of dealing with terrorist threats and unexpected events such as the Katrina hurricane in 2005. Through domestic and foreign borrowing, US residents can in fact smooth their consumption and investment in the case of government spending hikes, avoiding highly distortionary peaks in tax rates.

The argument of tax and consumption smoothing has strong theoretical foundations. Yet the implied benign view of the US external imbalance is not warranted. In particular, the argument disregards the basic fact that most of the US budget deficits result from tax cuts which the Bush administration has been struggling to make permanent. While current tax cuts mainly benefit current generations, future generations will have to service the interest bill on the higher domestic and external debt. The argument of efficient tax smoothing in the face of temporary spending hikes does not apply. Rather, what is at stake is re-distribution across income classes and across generations in a direction that amplifies long-run fiscal and macroeconomic concerns about population ageing (see Chapter 4 of the 2005 EEAG Report).

The view attributing external imbalances to low public savings in the US has been recently challenged by some researchers, who point out that fiscal shocks and autonomous changes in spending appear to have only limited quantitative effects on the current account. According to that argument, the impact of fiscal shocks on US investment and saving is so high that at the margin only 20 cents out of each deficit-financed dollar translates into excess demand for foreign imports (see Bussière et al. 2005, Chinn and Ito 2005, Erceg et al. 2004 and Ferguson 2005 among others). Some authors go as far as to question the validity of the "twin-deficit hypothesis" altogether (see Kim and Roubini 2003).

However, even if current fiscal changes that increase budget deficits had no sizeable contemporaneous effects on the current account, budget deficits would still have important effects on the sustainability of the US current account. As argued by Corsetti and Mueller (2005), the return to capital in an open economy generally responds to fluctuations in the real exchange rate: fiscal shocks leading to real appreciation lower the return to current investment and hence cause crowding-out effects. To the extent that fiscal deficits crowd out private investment, a lower stock of capital in the future would reduce the ability of the US economy to meet its external interest bill without reducing domestic consumption. In other words, consumption of goods or leisure would have to be cut in the future to service foreign debt.

Thus, whether or not a policy correction to the US fiscal stance has an immediate impact on the US external trade, greater fiscal discipline would surely help reduce imbalances in an intertemporal perspective.[5]

3.2 Expectations of sustained US productivity growth

A different argument emphasises expectations of sustained productivity growth differentials in favour of the US. Expectations of high productivity growth have arguably played an important role in generating strong US domestic demand in the second half of the 1990s, while making investment in the US relatively attractive to foreigners. The question is whether and to what extent this factor is still important.

We have seen in the previous section that private capital inflows into the US have fallen after 2000. As shown by Table 2.1, the average net inflow of foreign direct investment actually turned negative after 2003, while foreign demand for US equities levelled off, mostly because of a shift in the demand by Europeans (Congressional Budget Office 2005). Figure 2.4 shows that, on balance, the stock of US net equity and cumulated FDI positions decreased rapidly in the 1990s and became negative after 2000; since then, however, it has been increasing again. This evidence is inconsistent with the hypothesis that international investors are currently "chasing investment opportunities" in the US, motivated by superior productivity performance.

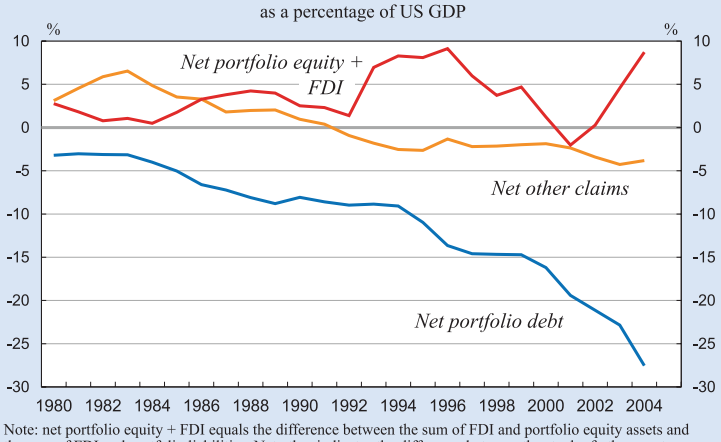
Nonetheless, expectations of high productivity and income gains in the future may be a factor underlying the low saving rates (discussed above), a point stressed by Ferguson (2005). In the same vein, Engel and Rogers (2005) focus on the US share in output produced by advanced countries (including the G7 plus Switzerland, Sweden and Norway).[6] This share fluctuates between 38 and 40 percent before 1990; it then trends upward, reaching 44 percent in 2004. Most importantly, current forecasts imply a further increase along the same trend. According to the calculations by Engel and Rogers, the US is expected to account for 49 percent of developed countries output by 2017. In light of such forecasts, current account deficits up to five to seven percent of US GDP may be rationalised in terms of efficient consumption smoothing: US households are simply taking advantage of borrowing opportunities to consume part of their anticipated future income gains now.

The view that US external deficits are essentially driven by expectations of high future growth in income has two important policy implications. First, it is not appropriate to talk about "imbalances", as trade flows are in fact balanced in an intertemporal perspective. Running a deficit today, US residents are increasing current expenditure by borrowing resources from foreign residents, in exchange for future resources capitalised at the market interest rate. Second, little or no dollar depreciation in real terms may be required for some time. In the Engel and Rogers' version of conventional open macro analysis, the dollar is strong (in real terms) during the phase of high external deficits, and will weaken once the US share in the advanced countries' GDP stabilises. As stressed by these authors, such stabilisation will happen quite a few years from now. Moreover, when it comes, there would be nothing dramatic in the real dollar depreciation that will accompany the US current account reversal.[7] But, as mentioned above, it is unclear why the optimistic forecasts of future growth driving

Figure 2.4

UNITED STATES: NET PORTFOLIO DEBT AND EQUITY CUM FDI POSITIONS

as a percentage of US GDP



Note: net portfolio equity + FDI equals the difference between the sum of FDI and portfolio equity assets and the sum of FDI and portfolio liabilities. Net other indicates the difference between the stock of other assets and other liabilities, and net portfolio debt assets and reserves and the stock of portfolio debt liabilities.

Source: Lane and Milesi Ferretti (2006).

[5] An interesting analysis discussing US fiscal policy in relation to the possible asset market bubble in the 1990s is Kraay and Ventura (2005).

[6] Engel and Rogers (2005) carry out their analysis in terms of net GDP. This is derived by subtracting investment and government final consumption of goods and services from output. In intertemporal models of the current account, net GDP measures the flow of resources that households can devote in each period either to current consumption or to the acquisition of foreign assets to finance future consumption.

[7] Such a portfolio perspective on dollar adjustment dynamics is discussed by Blanchard et. al (2005).

US consumption would not also cause foreign direct investment into the US and/or acquisition of US equities by foreigners.

Most importantly, current expectations about US differential growth may be too optimistic (after all, expectations systematically underestimated prospective US growth rates in the early 1990s). If and when expectations are revised downwards, restoring US external balance (in an intertemporal perspective) would require a sharp correction of spending plans, possibly implying large movements in exchange rates and relative prices (as discussed later on in this chapter). Note that the above view completely downplays the role of US government budget deficits in generating the current account deficits.

3.3 Excess saving outside the US: the "saving glut" or "investment drought" view

Another view, which also downplays the idea of insufficient US savings, interprets the US current account imbalance as the mirror image of excess supply of saving in the rest of the world: according to Bernanke (2005), the US current account deficit is the counterpart of a global saving glut. This corresponds to an increase in saving in excess of investment in emerging markets after the series of currency and financial crises throughout the 1990s. The glut is magnified by rising surpluses in oil-producing countries that benefit from high oil prices.

The saving glut is essentially caused by "self-insurance" policies pursued by many emerging-market economies to minimise the risks of future crises and liquidity runs. In practice, many countries have pursued macroeconomic policies that turned external deficits into surpluses, while building extremely large stocks of international reserves.

One may object that excess saving in emerging-market economies could be matched by relatively small deficits in all industrial countries, rather than by a large deficit in one country only. To address this objection, the saving glut view points to differences in the macroeconomic, legal and institutional environment in which national financial markets operate: because of these differences, international investors perceive US assets to have higher "quality" than the assets of other countries. For instance, asset quality depends on the extent to which investors' rights are protected: since the US offers a high level of such protection, US assets are preferred by world savers looking for opportunities of portfolio investment and diversification. According to this view, the US deficits mainly depend on the fact that excess world savings are channelled preferentially to the US.

An obvious problem with this view is that while it can rationalise the increasing role of monetary institutions in providing financing to the US as a consequence of self-insurance policies pursued by many governments in emerging markets, it cannot explain the increasing disaffection of *private* investors towards US equities (see Table 2.1 and Figure 2.4). While the saving glut idea may have had some merit before 2000, it needs to be refined to fit recent global portfolio patterns.[8]

Moreover, some observers (notably Roubini and Setser 2004a,b and 2005a,b) emphasise that the saving-investment imbalance outside the US is to a large extent due to abnormally low investment rates: thus, it should be labelled an "investment drought" rather than a "saving glut" (see also the evidence in Chinn and Ito 2005). With the exception of China and a few other countries, investment rates have fallen markedly across emerging markets.[9] In South-East Asian economies, the drops have been as high as 10 percentage points of GDP from the peak in the first half of the 1990s. One may argue, however, that the rate of investment corresponding to those peaks was not sustainable (see Corsetti, Pesenti and Roubini 1999). Investment rates have also fallen in Japan and most noticeably in the euro area.[10] Low capital accumulation may be due to the need by many corporations to clean up their balance sheets after the financial turmoil around 2000 (International Monetary Fund 2005) or simply to "animal spirits" of entrepreneurs.

In either case, the "investment drought" view offers a potential explanation of the observed low levels of real interest rates. The standard textbook model predicts that an exogenous drop in investment demand indeed reduces the equilibrium rate of interest (by

[8] Caballero et al. (2006) reconsider this issue in a model with three regions: a fast-growing US-type region, a slow-growing Europe-type region, and an industrialising region with exceptional growth opportunities, modelled to reflect Asian emerging markets. Notably, in the latter region, financial markets cannot supply quality assets because there are frictions generating constraints on asset supply. For this reason, in this region investment is mainly financed by firms' managers/owners, without the participation of savers. The model can do reasonably well in accounting for recent patterns of global financial flows. According to this analysis, both a slowdown in the Europe-type region and a crash in the asset market in the emerging-market region can cause an external deficit in the US-like region. Either shock produces a prolonged period of low real interest rates.

[9] See Chapter 2 of International Monetary Fund (2005) for a detailed analysis.

[10] Some of the investment fall can, however, be attributed to a secular decline in the relative price of investment goods.

how much depends on the interest elasticity of savings). As an implication, one may expect interest rates to rise as soon as investment picks up again.

3.4 Chinese economic policy and Asian currency pegs

The view that Asian emerging markets have substantially contributed to generating current global imbalances emphasises both a trade channel (related to the size of the Asian external surplus) and a financial channel (related to the increasing weight of official lending by Asian countries in international net capital flows).

The main focus is, however, on China's exchange rate policy and its strong influence on the policies pursued by the other emerging markets in Asia. Formally, China abandoned its inflexible peg against the US dollar in July 2005, when it switched to a managed float, allowing the renminbi to fluctuate inside a small band around the dollar parity (see Box 1.2 of Chapter 1 of this report). Despite such reform, the Chinese renminbi hardly appreciated through the second half of 2005. Reserve accumulation has kept outpacing the trade and FDI surpluses by a large amount.[11]

The dollar peg regime is an important element in China's strategy to achieve rapid industrialisation, which also includes strict capital controls de-linking the domestic financial and banking sector from the rest of the world, thus allowing Chinese authorities to pursue country-specific credit policies and retain some control over domestic monetary policy.[12]

Standard growth models predict that a financially closed economy (such as China), converging to the higher income level of industrial countries should generate high investment and saving rates (see, for example, Cuñat and Maffezzoli 2004). Indeed, Chinese investment and saving rates are high by international standards: official sources reported gross investment to be 43 percent of GDP in 2003 (recent GDP revisions, however, may lower this percentage significantly). Obviously, to generate external surpluses, China has engineered even higher saving rates.

As the Chinese economy has been growing at a sustained rate of around 9 percent per year, households can reasonably be expected to have a strong incentive to borrow against higher future income. How can extraordinarily high growth rates be reconciled with low consumption and excess saving? Traditional explanations point to credit policies pursued by Chinese banks, firmly directed towards the growth objectives of the government in terms of industrialisation and export. Recent views also stress that with the recent transformation of the business sector, Chinese employees face the need to finance their retirement, the education of their children, and health services, as state-owned companies no longer provide support in these areas (Chamon and Prasad 2006; Blanchard and Giavazzi 2005). With an increase in lifetime income uncertainty, high savings may correspond to an inefficiently high level of self-insurance. Finally, by worsening the country's terms of trade, undervaluation of the exchange rate reduces the purchasing power, and therefore the wealth of domestic households. Overall, a strategy of export-led rapid industrialisation appears to be accompanied by policies discouraging domestic (consumption) demand.

These considerations help address a rather puzzling feature of the Chinese dollar peg, that is, the extent to which Chinese authorities have managed to avoid overheating and relative price correction for so many years. Despite the high GDP growth rates, there has so far been little evidence of inflationary pressure and overheating leading to revaluation in real terms: in 2004 overall CPI inflation rose significantly (reaching a peak as high as 5 percent in the third quarter of the year), but it subsequently fell below 2 percent in 2005. According to available statistics, wages and non-traded goods prices do not show appreciable changes. As often argued, an important reason has been an extremely elastic supply of labour (see, for example, Dooley et al. 2005). But in light of the arguments above, structural factors and policies containing domestic demand have also played a role.

Overheating and inflation risk, however, is only one possible undesired effect of the Chinese exchange rate and export promotion policies. Price competitiveness as well as tax and credit incentives for exporting firms have arguably distorted the allocation of capital and employment. In this respect, some studies report that Chinese total factor productivity has fallen between the first and the second half of the 1990s. Blanchard and Giavazzi (2005) attribute such a fall mostly to misallocation, that is excessive investment in the

[11] Dooley et al. (2003 and 2004) interpret the current international monetary and exchange rate regime with dollar pegs and large dollar reserve accumulation as a revised Bretton Woods regime. See Roubini and Setser (2005a) for a critical view.

[12] A weak currency feeds a strong external demand for Chinese products, encouraging investment, but it also raises prices of imported intermediate and capital goods. However, the bulk of infrastructure building is based on local and non-traded goods, and FDI flows have remained substantial.

export sector. The financial side of real distortions is excessive exposure of Chinese banks and financial institutions to low-return firms, whose profitability would be completely compromised were the exchange rate to appreciate. Many observers argue that the stock of non-performing loans by the state-owned Chinese banking system is already large: the persistence of distorted relative prices may bring it to quite dangerous levels. Rising financial risks imply a rising fiscal risk for the Chinese government.

The policy pursued by China and other Asian countries has global implications for world demand and international prices. High rates of Chinese growth have raised world demand for some capital goods as well as for commodities, especially energy, which are necessary to sustain the expansion of infrastructure and productive capacity. On the other hand, excessive saving (relative to investment) has limited the Chinese contribution to the world demand for consumption goods at large, possibly reducing the relative price of consumption in terms of investment goods. This has had a selective impact on the profitability of investment in industrial countries (countries specialised in light manufacturing and consumer goods have obviously suffered the most).

It is important to distinguish between long-run effects of the ongoing integration of China and other emerging markets into the world economy and the short- and medium-run effects of the exchange rate and macroeconomic policies described above. As regards the long run, classical trade theory offers precise predictions about the economic repercussions of integrating large regions with abundant labour and a small capital stock: as the global supply of labour (and especially of low-skilled labour) rises faster than global capital, the world economy will experience a fall in the relative price of (unskilled) labour relative to capital and a fall in the relative price of labour-intensive goods. The integration process could make unskilled workers in industrial countries worse off while making capital owners better off than would otherwise be the case (the policy issues implied by these movements were addressed in Chapters 2 and 3 of the 2005 EEAG report).

In the short and medium-run, most estimates of the equilibrium exchange rates between China and the rest of the world point to *undervaluation* of the renminbi in real terms: estimates vary between 20 and 40 percent. Undervaluation creates a cost advantage to Chinese exporters on top and above what is implied by their comparative advantages but also keeps Chinese terms of trade abnormally low and distorts the internal relative price between traded and non-traded goods. A 20-40 percent real exchange rate appreciation would not wipe out export growth of China nor eliminate the need for adjustment in the production structure of industrial countries. Such a correction would nonetheless rebalance the Chinese macroeconomy in a decisive way.

There are several reasons to expect revaluation of the Chinese currency in the coming months. First, after a period of extraordinary expansion of China's manufacturing base, the benefit of further expansion may be low relative to the costs of allocation distortions (including environmental costs). Second, revaluation could prevent the build-up of protectionist pressures in the US, sheltering the Chinese government from charges of currency manipulation. While improving the US trade deficit, however, a renminbi revaluation may also be associated with a substantial slowdown in the rate of reserve accumulation, that is, it may reduce the contribution of official inflows to finance current US imbalances.

It is unclear at what speed, if any, China will undertake some steps towards liberalisation of capital flows. Concerns about the health of its financial institutions may induce caution in exposing Chinese financial markets to the risks of volatile capital flows.[13] At this stage, an asymmetric relaxation of controls on capital inflows is a relatively low-risk option because of widespread revaluation expectations. In general, capital controls are notoriously difficult to implement: they may become less and less stringent over time, or even force Chinese authorities to accelerate the pace of liberalisation of capital movements.

4. What does global adjustment require?

Concerns about US current account imbalances are often played down by stressing that, thanks to financial globalisation, markets can finance increasingly large imbalances, and let "adjustment" proceed smoothly and gradually (an influential view voiced by Greenspan 2004). According to this argument, rela-

[13] By reducing profitability of firms now exporting thanks to subsidies and a low exchange rate, a revaluation may generate bankruptcies and costs for financial institutions. To the extent that the banking system is public, these costs will deteriorate the fiscal balance of China. In addition, a revaluation will create capital losses on the vast reserve holdings by the Chinese central bank (now around 40 percent of GDP).

tive to the pre-globalisation world, market depth and efficiency reduce the need of domestic governments to implement policy corrections.

As discussed above, financial globalisation has led to unprecedented cross-border holdings of foreign assets and liabilities, whose value fluctuates with the exchange rate. The importance of capital gains and losses in determining the real burden of a country's debt has led many observers to talk about a new "valuation channel" in the adjustment process, which complements adjustment via net exports. In the case of the US, the valuation channel functions as a shock absorber, providing an additional reason to expect a smooth resolution to the problem of stabilising the US external debt, as was discussed in Section 2.3.

However, financial globalisation raises the possibility of large reversals in capital flows, because international investors (perhaps led by hedge funds and other large active players in international markets) may all at the same time attempt to shift out of US short- and medium-term bonds. In the presence of sudden capital flow reversals, current account and trade adjustment become central. If the US needs to increase its net exports over a short period of time, reducing imports and boosting exports will require a downturn in economic activity and/or a sharp downward movement of the US dollar. In this section we reconsider this debate and its implications for the external value of the dollar in detail.[14]

4.1 Real dollar depreciation: the goods market and the domestic demand channel

What is the size of dollar real depreciation consistent with correcting US imbalances? In a series of papers, Obstfeld and Rogoff (2001, 2004, 2005) have addressed this question by focusing on the equilibrium relative price adjustment required to eliminate the US current account deficit (say, because a sudden reversal of capital flows prevents the US from rolling over its debt). The relative prices of interest include the terms of trade, that is the price of exports in terms of the price of imports, and the price of non-traded goods in terms of the overall CPI, or in terms of the price of internationally traded goods entering the US CPI. Relevant definitions of these prices are provided in Box 2.3 of this chapter.

To focus sharply on movements in these relative prices, Obstfeld and Rogoff propose a stylised model calibrated to the US economy in which employment and capital in the traded goods and in the non-traded goods sectors, and therefore also the outputs produced in the two sectors, are kept constant. The authors study the changes in the consumption level, consumption composition (between the two types of goods) and relative income (the value of US output relative to the rest of the world) necessary to eliminate the current account deficit.

The adjustment mechanism is as follows. To fill its external financing gap, the US needs to raise its net exports, that is, export more of the tradables produced and import less foreign tradables. This means that the demand for tradables by US firms and households must fall and that the demand for US tradables by the rest of the world must increase.

Selling more US output abroad requires a drop in the relative price of US tradable goods in the world market. By definition this is a deterioration of the US terms of trade. As traded output in the US and abroad is held constant in the calculation, the size of price adjustment will depend on the price elasticity of the world demand for US tradables.

However, note that a fall in the price of US tradables *per se* would raise, instead of reduce, the demand for them by US firms and households. This is the reason why adjustment also requires an even larger fall in the price of US non-tradables, redirecting US demand towards these goods. As a result, real depreciation "switches" US consumption demand away from both US and foreign tradables, in favour of US non-tradables. This consumption "expenditure-switching" effect corresponds to a change in the composition of consumption.

Moreover (and this is perhaps the most important point), once the dollar has fallen in real terms US households are poorer: the value of US non-tradable output falls in terms of foreign goods, as does the value of US tradables (the value of the latter falls with the deterioration of the terms of trade). As US income falls relative to the rest of the world, US consumption also falls. In this model, a real depreciation thus causes a US income and demand slow-down.

According to Obstfeld and Rogoff, most of the required adjustment in the US real exchange rate is attributed to the need for a fall in the relative price of

[14] Recent contributions discussing alternative scenarios of adjustment include Adalet and Eichengreen (2005), Clarida et al. (2005), Croke et al. (2005), Edwards (2005), Faruqee et al. (2005), Freund and Warnock (2005), Hunt and Rebucci (2003), Mann (1992) and Mann and Plueck (2005).

US non-tradables. In extensive quantitative experimentation, these two authors calculate the overall depreciation of the dollar in real trade-weighted terms required to improve the US trade balance by about five percentage points of GDP. The required real rate of depreciation ranges between 15 and 34 percent, depending on the elasticity of substitution between tradables and non-tradables as well as between domestic and foreign tradables. Conversely, adjustment in the terms of trade is quite contained, ranging between four and seven percent. In other words, at most one third of the adjustment can be attributed to adjustment in the international prices of US tradable goods.

The size of adjustment estimated by Obstfeld and Rogoff is quite large, but not unusual as compared to the swings that major currencies have experienced over the last decades. Between its peak in 2002 and the end of 2005, the dollar depreciated in real effective terms by 24 percent (based on IMF data). The corresponding nominal depreciation was as high as 31 percent. A revaluation by China and other Asian countries will also contribute significantly to correcting the external value of the dollar in real effective terms.[15]

The time horizon for the correction makes a difference. In the above model, import demand from the US falls with a large real depreciation of the dollar, because a real depreciation (at constant output and employment) implies a contraction in US income relative to the rest of the world. But in the short run, adjustment in US external demand may well be driven by a slowdown in output and employment (see Edwards 2005). A contraction in the production of non-traded goods would reduce, at the margin, the pressure on the exchange rate: with less non-tradables produced, their relative price will have to fall by less to match the increased demand by US households. However, if the slowdown spills over to the traded good sector (despite the favourable relative price movements), this will add to depreciation pressures. This is because with less tradables to exports, US imports must fall by more, creating the need for sharper depreciation in equilibrium.

In the medium run, employment and capital allocation are bound to change (with consumption). First, part of the adjustment may take the form of an increase in hours worked and labour participation, instead of a drop in consumption (after all, a deterioration in the US terms of trade means that households are poorer relative to other countries: labour supply may increase in response to this negative income shock). Second, production will be re-allocated across sectors, in response to the increase in the relative price of tradables, raising the overall supply of US exports.

As regards the dynamics of net exports and terms of trade, an important issue is the extent to which external adjustment will occur via an increase in the quantity of goods already exported, as opposed to an increase in the range of exports (that is, the extent to which adjustment will be at the "intensive" as opposed to the "extensive" margin). The main point here is that any exogenous shock to the ability of the US to borrow ultimately leads to a larger external demand for US goods. This can stimulate the supply of US goods and goods varieties that were not previously exported. In equilibrium, the terms of trade are likely to move less when new goods are exported than when adjustment only takes place at the intensive margin (exporting more of a given set of goods). In other words, adjustment at the extensive margins can further reduce or prevent altogether a fall in the terms of trade, reducing the required equilibrium real depreciation (Corsetti, Martin and Pesenti 2005, 2006).

Unfortunately, empirical studies on the US point to worrisome regularities regarding the response of US imports to exchange rate and income movements. Recent studies confirm the asymmetry between the US and other countries first noted by Houthakker and Magee (1969): the income elasticity of US imports well exceeds the income elasticity of other advanced countries' imports from the US. Thus, a given fall in the imports-to-GDP ratio requires a much stronger income slowdown in the US than abroad. By the same token, US import price elasticities are quite low.[16] Chinn (2005) finds that one sixth of US imports are apparently insensitive to exchange rate variations (although another finding is that non-oil, non-computer imports are much more sensitive to exchange rate changes than aggregate imports).

An important lesson from these considerations is that adjustment will require a protracted period of real dollar weakness, but the magnitude of further dollar depreciation (that is whether and by how much the dollar should further depreciate) is quite uncertain.

[15] The share of Asia in US imports was in fact as high as around 28 percent in 2004, up from 25 percent in 2000 (the share of US exports to Asia is much lower and quite variable).

[16] See Hooper et al. 1998 and the quantitative analysis by Corsetti et al. 2004.

The analysis by Obstfeld and Rogoff points to the need for further real depreciation, but their approach focuses on price elasticities between traded and non-traded goods, whose estimates in the literature vary markedly. Other complementary studies look into other adjustment margins: consumption, the level of employment, sectoral allocation of production, as well as the composition of exports (intensive versus extensive margins). The implications for equilibrium movements in the dollar real exchange rate are quite disparate.

Second, the main reason for expecting sharp dollar depreciation, laid out in detail above, is that a sharp dollar fall is required to drive down the price of US non-tradables. So, while adjustment may well require large depreciations of the dollar in real trade-weighted terms, movements in the relative price of US exports may actually remain quite small. What needs to be sizeable is the correction in US net external demand, but not necessarily the correction in US export prices.

4.2 Dollar depreciation: portfolio valuation effects

We have already observed that, because of the particular currency composition of US foreign asset and liabilities, dollar depreciation automatically reduces the real net debt burden of the US.[17] The larger the valuation effects from depreciation, the larger the fall in the real value of US net liabilities. Note that a fall in the dollar helps the US external position through two channels. The first is the traditional channel, through which dollar depreciation encourages US net exports, improving the competitiveness of US exporters, while discouraging US imports. The second channel consists of valuation effects, which raises the dollar value of US foreign assets, improving the net external position of this country. For this reason, valuation effects tend to reduce the magnitude of dollar depreciation required to achieve external adjustment, relative to the case in which only the first channel is active. For instance, in the model by Obstfeld and Rogoff described above, valuation effects from dollar depreciation could reduce the required rate of real effective dollar depreciation by about five percentage points. These effects may help address current imbalances but clearly are no substitute for net export correction (see Obstfeld 2004).

[17] See Section 2.3 above.

Interestingly, as argued by Cavallo and Tille (2005), valuation effects may do more than reducing the overall magnitude of adjustment in trade: they can actually play a substantial role in smoothing the dollar decline along the path of adjustment. In the experiments by these two authors, the US is assumed to stabilise its stock of net external debt relative to GDP. In the long run, the required rate of real dollar depreciation is 27 percent (in their baseline estimate). In the short run, sizeable capital gains on gross external liabilities allow US households and firms to sustain current imports, reducing pressures on the exchange rates. Hence dollar depreciation is below 10 percent, and around 15 percent in the first two years of external adjustment. An important difference between short- and long-run effects is that, over time, depreciation expectations driving interest rates raise the cost of debt, and therefore tend to reduce the overall magnitude of valuation effects (see Section 2.3 of this chapter).

Nonetheless, some authors claim that advantages of valuation effects are a stable long-run feature of US borrowing, allowing the US to pay effectively negative returns on its net liabilities, a point forcefully stressed by Gourinchas and Rey (2005a,b). In some respects, this position is consistent with the evidence on rate of return differentials in favour of the US, which imply that this country can borrow on better terms (discussed in Box 2.2 of this chapter). But the fundamental issue is the extent to which a debtor can count on valuation effects to depreciate systematically the real value of its liabilities. While asset pricing may have played a large role in adjustment historically, it is unlikely that a permanent net-debt devaluation strategy is sustainable. Sooner or later, international investors will price the risk of valuation effects, leading to higher interest rates on the US debt.

So far, however, US long-term interest rates have not moved significantly away from comparable euro area rates. In the same spirit as a previous exercise by Krugman in the 1980s, Obstfeld (2005) looks at the return on inflation-indexed bonds issued in dollars and in euros: in 2005 the return differentials between the US and French 30-year debt instruments are just a few basis points. In other words, markets do not seem to attach any significant probability to the event of a sizeable real depreciation of the dollar. The dollar even appreciated during 2005 and earlier forecasts

of sharp redirections of portfolio flows away from the US have so far been proven wrong.[18]

This is clearly a puzzle for those observers who believe that further dollar depreciation and international portfolio rebalancing is needed. If, as many believe, markets are indeed mispricing adjustment risks (it would not be the first time), the macroeconomic consequences of market 'inattention' can be quite far-reaching. To the extent that asset prices suggest to policymakers that no correction is urgent or necessary, imbalances may keep growing, making adjustment much harsher and deeper in the future.

4.3 Demand policies (fiscal correction in the US)

Even if revaluation of Asian currencies realign international relative prices in a way that is consistent with a reduction in the current global imbalances, it is doubtful that substantial correction will take place without appropriate demand policies.

Conventional wisdom suggests that "expenditure switching policies" (essentially, exchange rate revaluation by Asian countries and benign neglect by the US vis-à-vis a weak dollar) should be complemented by "expenditure changing policies". In China, for instance, a renminbi revaluation should be accompanied by measures to sustain domestic demand (or at least to remove current distortions that generate very high savings). A reduction of Chinese national saving would contribute to world demand, lowering this country's surplus more than implied by the loss of "competitiveness" due to revaluation. It could also help contain the strain on the Chinese economy due to relative price changes.

The most important contribution to adjustment should, however, come from a reduction in the US fiscal deficits, which requires a revision of tax policy. Without any fiscal rebalancing in the US, a reduction in Asian saving, possibly associated with a slowdown or reversal in reserve accumulation, increases the risks of financial strain in the global currency and asset markets, due to disorderly adjustment characterised by a loss of confidence in the dollar and financial turmoil.

In principle, a pick-up in European demand could also provide a valuable contribution to global rebalancing. There is, however, considerable scepticism about such a possibility. In many European countries, private consumption growth has been persistently low (see Chapter 1), for reasons that are not entirely understood. As argued in Chapter 1, high debt levels in the euro area in combination with future demographic strains imply that there is little or no room for fiscal stimulus in Europe.

5. A European perspective

This chapter has analysed various adjustment scenarios and policy options for reducing the macroeconomic risks associated with increasing global imbalances. Reducing the size of the US current account deficit does require an increase in US saving (both public and private) relative to the rest of the world, and/or an increase in spending in the rest of the world relative to the US. Depending on its intensity, adjustment may produce a slowdown in US growth and/or a prolonged period of dollar weakness in real terms. Both factors will contribute to a drop in US net imports. As is well known, the response of the trade balance to real exchange rate changes usually takes time: in the case of the US the lag is traditionally quite long (see Krugman 1991) for an analysis of the so-called J-curve effect in the US).

While there is considerable uncertainty as to the timing and intensity of adjustment, most of the scenarios reviewed above have potentially negative consequences for the European macroeconomy. Europe is likely to face a further weakening of external demand for its products, as well as increasing competitive pressure from the US (although the overall consequences of adjustment for Europe will also depend on the intensity of policy correction in Asian countries: higher demand in these countries would obviously have some positive effect on European net exports). In addition, portfolio rebalancing, redirection of capital flows and the associated swings in asset prices and exchange rates may have important effects on the value of European assets and liabilities, raising the likelihood of financial turmoil involving European firms and banks. We consider these arguments in detail below.

[18] In his blog (http://www.rgemonitor.com/blog), Roubini lists a series of contingent factors which may explain the strengthening of the dollar in 2005. The list includes: widening of short-term interest rate differentials between, on the one hand, the US and, on the other, the euro area and Japan; growth differentials in favour of the US; the effect of temporary measures, such as the Homeland Investment Act, providing a tax incentive for profit repatriation; political factors related to the constitutional referendum failures in Europe; and increasing reservations about the pace and depth of the European integration process.

To begin with, even though the overall European current account imbalance with the US is small relative to other macro regions, the external performance of individual European countries is quite diverse. The new EU members (as expected) run external deficits.[19] Some old EU members (notably Germany) enjoy a strong export performance, while some others (notably Italy) have experienced a deterioration of their competitiveness. In this context, the real and financial dimensions of global adjustment are likely to have asymmetric effects on the European economy.

Adjustment of global imbalances may or may not require further dollar depreciation vis-à-vis the euro. However, even if adjustment takes place with no further fall in the dollar and/or with limited movements in international prices, correcting the US current account deficit does require an improvement in US net exports. It follows that Europe is likely to experience a drop in external demand even if the associated exchange rate movements are not as large as many fear. In addition, an important question is whether the US will decide to reverse its attitude towards free trade, generating a new wave of protectionism. If this is the case, we may witness some reduction in trade among macro regions, with uncertain effects on the cohesion of the European economy.

Through valuation effects, further dollar depreciation will make Europe poorer relative to the US. It is true that Europe has a small net foreign asset position, but the magnitude of valuation effects depends on the size of the stocks of gross assets and liabilities. With financial globalisation, these gross stocks are several times larger than the net asset position. These effects may also create asymmetric effects across Europe, depending on the size of a country's total foreign assets and liabilities, as well as on the currency and maturity structure of these portfolios.

The last few years have been characterised by very low long-term interest rates in real terms, lower than predicted by standard economic models (and conventional wisdom). This may change with the start of an adjustment process leading to a reduction of the US current account. The reversal of capital flows and portfolio allocation may lead to the emergence of larger risk premia (also within the euro area) and upward pressure on interest rates. The risks associated with high prices in the housing markets of many countries have been frequently discussed (see Chapter 5 of the 2005 EEAG Report). Increases in long-term interest rates could clearly cause substantial falls in housing prices.

Further depreciation of the dollar in real effective terms, associated with rising interest rates and the emergence of interest rate differentials also among European countries, could clearly exacerbate business cycle and inflation differentials in Europe. Past experience and common sense suggest that consumer prices and growth may respond more intensely to euro exchange rate movements in smaller and more open European economies than in the large economies.

The resolution of current imbalances may well proceed rather smoothly. But it is also possible that the current build-up of imbalances will lead to 'hard landing' scenarios. What risks do European policymakers face?

Consider first the possibility of a disorderly adjustment, if and when international financial markets become unwilling to roll over their credit to the US. This means a US current account reversal associated with strong relative price and exchange rate movements, creating financial turmoil across markets: risk premia will rise markedly, housing markets may collapse, US demand could falter, and the dollar may fall dramatically.

In this scenario, it is highly plausible that European financial and non-financial firms would suffer from strong deterioration of their balance sheet and liquidity shortages. This scenario would call for European monetary and supervisory authorities to stress-test their institutional framework. The 2003 EEAG report analysed the regulatory and supervisory framework for European financial markets (see Chapter 4 of that report), assessing its effectiveness in intervening in defence of the European payment and financial system, and in reducing the liquidity costs for firms of financial turmoil. The report pointed out concerns related to the decentralised structure and complexity of the framework.

Technically, interventions providing emergency liquidity to firms and financial markets do not need to compromise the ability of the ECB to retain control over aggregate liquidity in the euro area. Injections in one region could be compensated with opposite interventions somewhere else. On the other hand, if the magnitude of financial crisis is large enough to generate substantial uncertainty about default rates by

[19] See Chapter 5 of the 2004 EEAG report.

firms and banks, monetary authorities may face difficult trade-offs between financial stability and price stability, as monetary interventions may not be effective in preventing widespread default. Governments may then have to shoulder large fiscal costs to avoid a chain of destabilising bankruptcies. This raises important issues about the distribution of possible fiscal costs across countries. The deteriorating public finances in many European countries, which were discussed at length in Section 3.3 in Chapter 1 of this report, are an aggravating factor in this context. Weak public finances may create undue constraints on emergency financing in the case of a crisis associated with a "hard" unwinding of global imbalances. This provides yet another argument for fiscal discipline now as a precaution against future financial crisis.

In the event of a sharp correction of the dollar and a deep US recession, monetary authorities in Europe (the ECB and the national central banks in the countries outside the eurozone) must react to deflationary pressure (coming from likely falls in export prices and export volumes) by loosening the monetary stance. The timing of intervention will be an issue, as proactive pre-emptive interest rate cuts may be warranted in such a situation.

Overall, however, even if European monetary authorities are successful in fighting financial contagion and other undesired effects of liquidity shortages due to large price swings in asset markets, Europe would still face a severe aggregate demand problem well beyond the reach of monetary policy and, as argued in our previous reports, also of fiscal policy. Perhaps the most important risk for Europe associated with global imbalances is that of facing a severe crisis without effective policy instruments to stabilise the European economy.

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Economic Growth in the European Union

1. Introduction

Sluggish economic growth in many EU countries has been a major concern in Europe in the past ten to fifteen years. In the post-war period up to the 1990s European countries appeared to be catching up with the United States as the gap between GDP per capita in the US and West European countries gradually narrowed. This tendency was dramatically reversed in the 1990s. The catching-up process appears to have come to an end and several EU countries, in particular France, Germany and Italy, have started to fall further behind the US.[1]

The European growth problems have led to major political discussions within the EU and achievement of fast economic growth has become a key policy objective. A notable expression of the concern for growth was the March 2000 meeting of 15 EU leaders that was held in Lisbon. The agenda set in Lisbon is very clear in its emphasis on economic growth: by 2010 the EU should become *"the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment".*[2]

The disappointing growth performance in several EU countries has, however, not been a universal phenomenon. Some EU countries – notably Ireland, Finland, Greece, UK, Spain and Sweden – have performed well in the last ten years. In addition, we are beginning to see "growth miracles" in several new EU member countries, though the short time-span since the start of the EU membership negotiations limits the possible conclusions about economic growth in the new member states. The striking differences in the growth experiences in the EU over the past decade are the motivation for focusing several chapters of this year's report on the topics that are important for growth and competitiveness of the EU.

The purpose of this chapter is to set the stage for the subsequent chapters by providing an overview of economic growth that is at first hand descriptive but also provides insights into growth processes that are important for policy relevant conclusions. More specifically, we will look at the following questions.

(i) How fast is the current speed of convergence in per capita incomes in the EU, particularly in Eastern European countries?
(ii) How does Europe as a whole compare to the United States?
(iii) What are the main factors behind the different growth performances of the most successful and the most unsuccessful EU countries?

As an answer to the first question, we show that convergence in per capita incomes in the EU is indeed taking place, although it is largely driven by the convergence between the old EU-15 and the new member countries. The annual convergence rate among the EU-25 is – depending on the measurement technique – between 1.7 and 1.9 percent a year, while it is only 0.9 percent among the old member countries.[3] All three figures fall somewhat behind the results typically reported for a larger set of OECD countries and over longer time periods.

We then analyse the key determinants of economic growth by looking at growth accounting computations that for each country decompose GDP growth into the contributions of labour input, non-IT capital input, IT capital input and total factor productivity. To highlight the big differences between EU countries, we separately investigate the successful cases of Ireland, Greece, Finland, Spain, Sweden and the UK, and the countries that have since the 1990s experienced substantial growth problems, that is Germany, Italy and France. As a benchmark, we compare the EU with the US.

[1] For example, see EEAG (2002), Chapter 5 for the data documenting convergence before the 1990s and divergence since the 1990s.
[2] See p. 8 of EU (2004).

[3] Various concepts of convergence will be discussed in more detail in the following sections. 1.7 refers to the annual reduction in the variance of the growth rates across countries, while 1.9 is the rate at which the initially lagging countries are closing the gap to the leading countries in terms of per capita incomes per year.

While there exist, of course, many country-specific factors, one can argue that as a whole the unsuccessful cases have been growing mostly through traditional capital accumulation and somewhat through general technological progress (total factor productivity growth). Labour input, measured by total hours worked, plays a substantial negative role (except for Italy). Particularly in Germany, the decline in labour input has made a sizeable negative contribution to economic growth.

There have been different roads to prosperity in the more successful countries. In Ireland, Finland, the UK and Sweden, there has been, since the mid 1990s, a large increase in the contribution by IT capital growth. However, it is remarkable that all production factors have made a positive contribution in these countries, including labour input for most episodes. In these countries, relatively rapid IT capital growth seems to have been coupled with relatively high total factor productivity (TFP) growth. On the other hand, two other success cases, Spain and Greece, have grown fast primarily due to more traditional factors, that is capital accumulation and labour input growth. Data limitations preclude a correspondingly detailed analysis of the new EU member countries and we consider their recent performance only in terms of crude indicators for sources of economic growth.

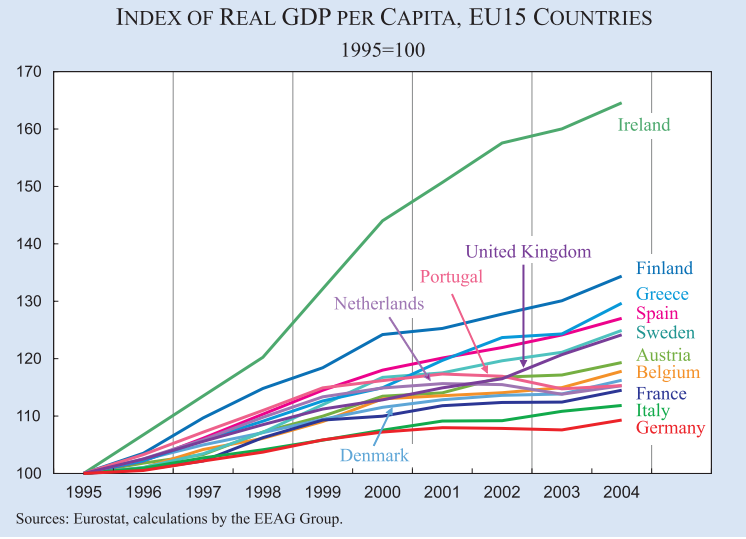
After the comparison between successful and laggard cases, we analyse further the performance of the EU countries in terms of the sources of economic growth. We emphasise a number of policy-relevant factors that can influence the rate of general technological progress. The concluding section draws together the different results and makes suggestions for re-orientation of the EU policies to improve economic growth.

2. Overview of growth in the EU

We start our analysis of economic growth in the EU-25 countries by looking at the paths of per capita income. Because comparisons of absolute levels of GDP per capita among countries are difficult due to differences in price levels, we normalise the value of per capita income in 1995 to an index number 100 and show how GDP per capita has evolved in each country.[4] Moreover, the data are not adjusted for purchasing power parity (PPP), because PPP-adjusted data are available only with a lag.

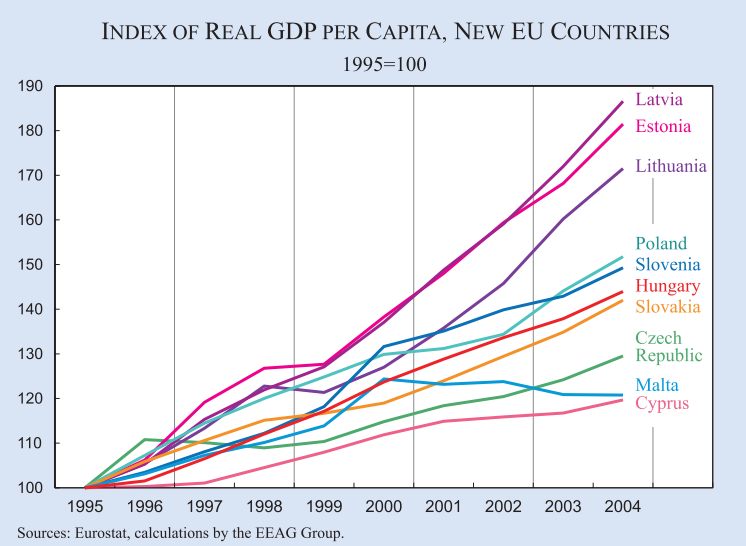
Figure 3.1a confirms that there are remarkable differences among the EU-15 countries in economic growth in the period 1995–2004. On the one hand, we

Figure 3.1a



Sources: Eurostat, calculations by the EEAG Group.

Figure 3.1b

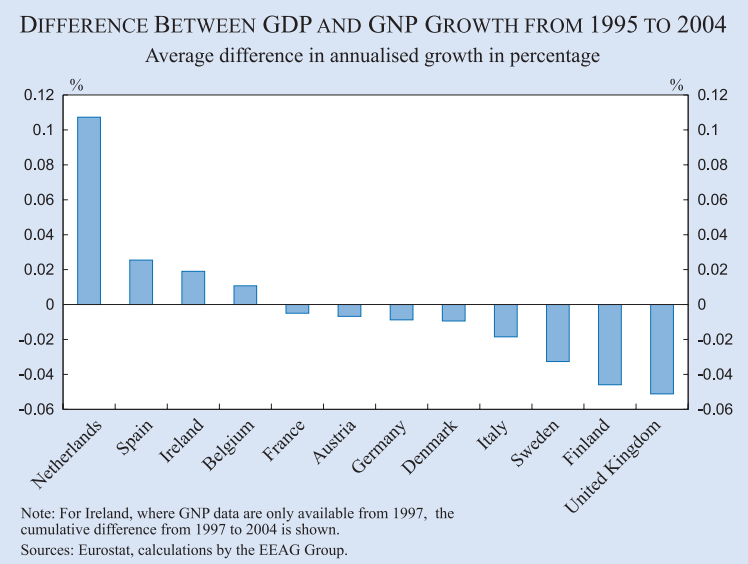


Sources: Eurostat, calculations by the EEAG Group.

[4] Thus, the time series of different countries cannot be used for comparing living standards.

have the Irish miracle, with Finland being a clear second. Economic growth in the UK, Greece, Spain and Sweden has also been fairly rapid. On the other hand, the large economies of Germany, France and Italy are the worst performers in terms of GDP growth among the EU-15 countries. However, country size *per se* cannot be an explanation for these differences, as the UK and Spain were among the best performers and, among the smaller countries, GDP in Belgium and in Denmark grew rather slowly in the ten-year period starting from 1995. Denmark has been hailed as an example of a country that solved its unemployment problem, but it does not stand out as a good model for economic growth.

Figure 3.3



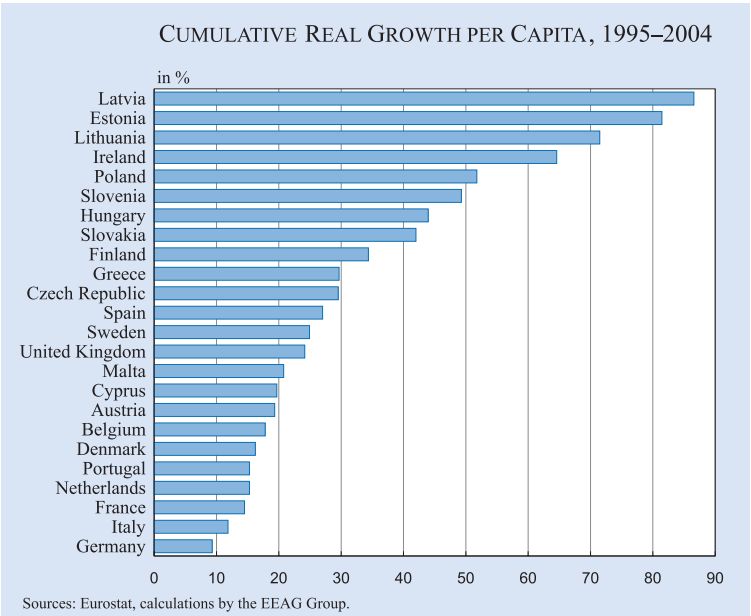
Note: For Ireland, where GNP data are only available from 1997, the cumulative difference from 1997 to 2004 is shown.
Sources: Eurostat, calculations by the EEAG Group.

There are also major differences in the growth performances of the new member countries, though on average these countries do grow faster than the old EU countries. Figure 3.1b shows that the Baltic countries, Estonia, Latvia and Lithuania, have had the best performance, while Malta and Cyprus have had the slowest growth. It should be noted that the starting levels of the latter have been higher. If we exclude Malta and Cyprus, then the Czech Republic has had the slowest growth among the new EU members.

Figure 3.2, showing the cumulative growth in GDP per capita in 1995–2004, puts all the EU-25 countries in a single diagram. The figure shows that the new EU members have mostly done well. They all start, of course, from low levels of living standards as compared to EU-15, a consideration that will be more closely investigated in the section on catching-up and convergence.

To conclude this section, we compare the development of gross national versus gross domestic product. GNP is arguably a better measure of living standards of a country, as it takes into account incomes earned by factors of production owned by the country. Figure 3.3 presents the annual average difference between growth in GDP and GNP for 1995–2004. This difference could be important especially for the countries that have invested abroad or whose residents work abroad. Figure 3.3 shows that GNP growth was indeed somewhat higher than GDP growth for the successful "high-tech" EU countries Finland, Sweden and the UK. In contrast, GDP and GNP growth was almost the same in France and Germany. Italy performed slightly better in terms of GNP than GDP growth. It is also seen that GDP growth for the Netherlands, Ireland, Spain and Belgium overstates the growth in living standards.

Figure 3.2



Sources: Eurostat, calculations by the EEAG Group.

Persistent movements in the terms of trade are another factor that can affect comparisons of different concepts of domestic product versus income. In the last fifteen years the prices of IT goods have fallen rapidly, which has reduced the benefits from fast productivity growth in the IT sector. Thus, real income growth in countries that have relied on IT sector exports has been slower than it would have been without adverse price developments. This effect can be non-trivial: for example, in 1998–2004 Swedish GDP at constant prices rose at an average annual rate of 2.8 percent, whereas the rate of growth of its nominal GDP deflated by the price index for domestic absorption was only 2.2 percent.[5]

3. Convergence in economic growth

A central question is whether economic growth in poorer countries is on average faster than in richer countries. If this is the case, it is said that there is convergence among countries (in levels of GDP per capita), which in turn is an indication that living standards tend to be equalised in the long run. The main reason for the convergence hypothesis is that the technologically most advanced countries are dependent on the development of new technologies, which is both a time- and resource-consuming activity, whereas technological followers can rely on imitation and technology diffusion to achieve technological progress with lower resource costs.[6]

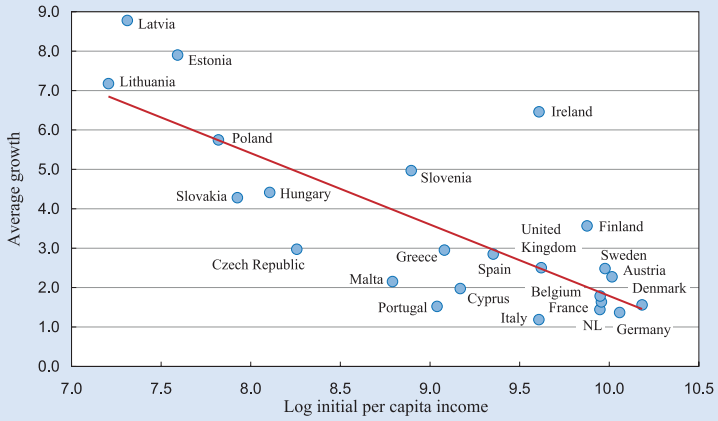
In this section, we investigate the convergence properties of the EU-25 countries. The possibility of convergence can be examined by using different indicators. We look at some well-known concepts of convergence, such as the notions that countries with lower initial per capita incomes have higher growth rates on average (called absolute or beta convergence) and that there occurs a reduction in the dispersion of income levels across countries over time (called sigma convergence). Overall, we find that significant beta and sigma convergence is taking place in the EU, although the rate of convergence is somewhat slower than typically reported for the total OECD.

As a first step, we perform a standard statistical regression analysis that tests for absolute (beta) convergence by regressing the growth rates over the last ten years on the initial (logarithmic) levels of per capita income in 1995 and an intercept. Figure 3.4 demonstrates that there indeed exists absolute (beta) convergence within EU-25. However, the speeds of convergence differ among the EU-25 and the old EU-15 countries. While in the EU-25, the countries are converging at an annual rate of 1.9 percent a year, the convergence rate among the EU-15 countries is only 0.9 percent a year. This suggests that convergence in the EU is mostly driven by the catching-up process of the Eastern European countries to the per capita income levels of Western Europe.

An alternative, non-regression-based method to measure convergence is to examine the development of the dispersion of per capita incomes across countries over time (sigma convergence). This can be done by computing the standard deviation of the per-capita income distribution in the EU-25. Figure 3.5 shows the development of income dispersion over time and confirms the preceding evidence, as we see a clear tendency towards convergence within Europe. Dispersion has declined steadily, except between 1998 and 1999. The convergence rates that can be computed from this diagram are somewhat lower than the previous results from beta convergence. They indicate

Figure 3.4

BETA-CONVERGENCE AMONG EU25 COUNTRIES



Note: The coefficience on the regression line is -1.82 (P-value: 0.00). The convergence rate that follows this coefficient, adjusted for sample size, is 1.93 per cent a year (Among the EU15 countries only, the convergence rate is 0.86 per cent a year).
For computations in finite samples, see Barro and Sala-i-Martin (2003), footnote 4, p. 422.

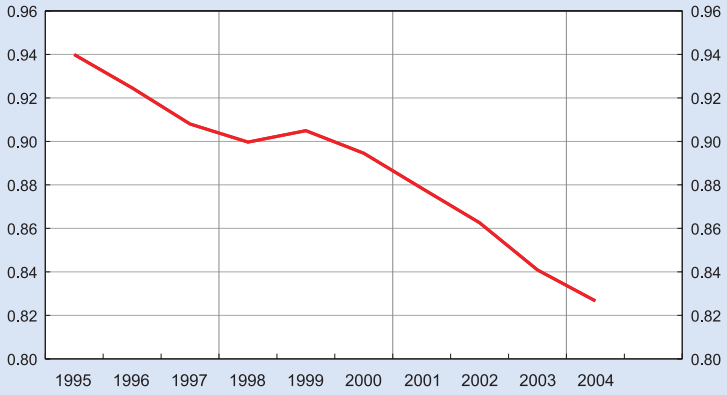
Sources: Eurostat, calculations by the EEAG Group.

[5] Measuring this effect requires an appropriate price deflator for domestic absorption, which is not always available.

[6] Neoclassical growth models also predict, *ceteris paribus,* convergence in levels of GDP. See, for example, Barro and Sala-i-Martin (2003) and Jones (2002) for a further discussion of these concepts.

Figure 3.5

INCOME DISPERSION (SIGMA CONVERGENCE)



Note: The figure shows the standard deviation of log per capita income in the EU25 countries in 1995–2004. Convergence rate: 1.73 percent (the dispersion of per capita income is reduced by 1.73 percent a year).
Source: EEAG Group 2006.

that the income dispersion is declining at a rate of 1.7 percent a year.[7]

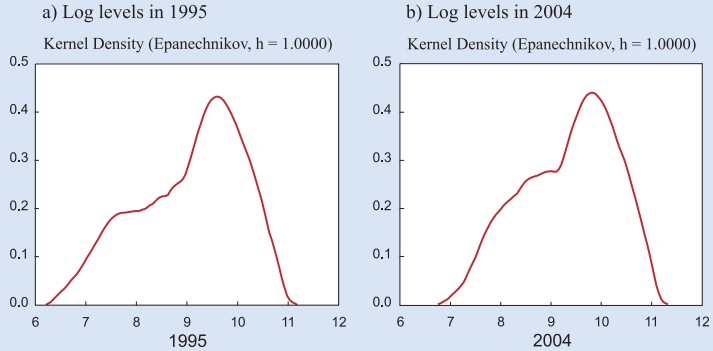
Our findings suggest that convergence with the EU is taking place, though at somewhat lower rates than what has been found in other studies for a larger set of countries. Using both definitions of convergence, Barro and Sala-i-Martin (2003) computed that the convergence rates are between 2 and 3 percent among OECD countries as well as among US states.

Figure 3.5, showing the declining dispersion of incomes per capita in the EU in terms of the standard deviation, does not take into account possible asymmetries. For distributions that are highly skewed, particularly flat or peaked, it is necessary to look at the higher moments, or better still at a histogram of the distribution of incomes per capita. The latter can be described by what is known as the kernel (smoothed density) of the distribution. Figure 3.6 shows the results of kernel density estimations for the distribution of per capita incomes in 1995 and 2004.[8] From these graphs we can see that the distribution of income levels across EU countries has become less asymmetric over time. While in 1995, the income distribution was clearly skewed to the left and almost took the shape of a double-bell shaped function, its counterpart in 2004 indicates a more symmetric distribution around the mean. This again suggests that the convergence process is one of "East" converging to "West". From this graph it is reasonable to expect that in the future there will emerge a clear single-peaked distribution of incomes per capita in the EU countries even before full convergence of the eastern European countries has been achieved.

Our findings can be summarised by noting that the growth process within the EU exhibits clear catching-up of the poorer countries, which are largely the new members from East Central Europe, towards the Western "old" EU countries. This convergence is very gradual and somewhat slower than what appears to hold for the OECD area as a whole. The results show that the major growth policy concerns in the EU should not be the differences between the "old" and "new" EU countries, but rather the sluggish performance of some key Western EU countries. Our descriptive analysis has revealed large differences between the EU-15 countries. It is instructive to evaluate the reasons behind these differences. We next examine growth in the old EU countries more closely.

Figure 3.6

COMPARISON OF INCOME DISTRIBUTION ACROSS THE EU25



Sources: Eurostat, calculations by the EEAG Group.

[7] The standard deviation of log per capita income across countries declines by 1.7 percent a year. Note that this is not the same as the convergence rate reported above. In the case of beta convergence, the convergence rate measures the rate at which the lagging countries are expected to catch up with higher-income countries. Only under specific assumptions about the distribution of growth rates and income levels would the two convergence rates be identical.

[8] The kernel densities are the smoothed versions of a histogram of real per capita incomes.

4. Factors behind growth performance – a growth-accounting perspective

In this section, we look more deeply into the sources of economic growth by performing a growth accounting analysis for selected countries. Our aim is to uncover the differences between the EU countries that have been, respectively, successful and unsuccessful in their growth performance. However, before examining the successful as well as the unsuccessful growth cases in the EU, we look at the US, which is the natural benchmark for growth comparisons. Quite appropriately, the US growth performance has been used as the reference point in policy discussions in Europe.

Table 3.1

Growth accounting for the US

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	4.2	0.9	0.6	1.3	1.5
2000–2004	2.4	0.6	0.4	– 0.3	1.7

Note: The columns in the growth-accounting tables may not add because of rounding.

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

In general, growth accounting tries to uncover the sources of economic growth by considering the production side of the economy, so that growth of aggregate output is decomposed into contributions from growth in factor inputs (capital, labour and other factors) and from general technological change. This approach can be used in a flexible way depending on the availability of data on inputs of productive factors. It is not possible to measure technological change directly, so its effects are shown by the residual in the growth-accounting decomposition.

Our analysis uses data provided by the *Groningen Growth and Development Centre*[9] (see in particular Timmer, Ypma and van Ark 2003, who emphasise the role of information technology (IT) in economic growth). In our computation, overall GDP growth is decomposed into contributions from the growth of labour input, non-IT capital input, IT capital input and total factor productivity (TFP). TFP is a measure of general technological progress. The decompositions are based on the equation:

$$\Delta \ln Y = v_L \Delta \ln L + v_{Kn} \Delta \ln K_n + v_{Kit} \Delta \ln K_{it} + \Delta \ln A,$$

where the v's denote the shares in total factor income, Y denotes GDP, L denotes labour input (measured as total hours worked), K denotes capital, the subscript it denotes the information technology sector, the subscript n denotes the non-IT sector and A denotes Hicks-neutral technological progress that augments the aggregate input.[10]

The results of this exercise can shed light on the question why the economies of some European countries – like Ireland, Greece, Finland, Spain, Sweden and the UK – grew very well, while others – in particular the large economies of Germany, Italy and France – experienced very sluggish growth over the last decade. We begin by establishing a benchmark for our analysis and first consider the US, which over the last ten years has grown remarkably well.

4.1 Benchmark: sources of growth in the US

Applying the basic growth-accounting equation given above to US data, we obtain the results in Table 3.1. The results show that, for example in the five-year period 1995–2000, GDP grew by an average annual rate of 4.2 percent, of which growth of labour input contributed 1.3 percent, growth of IT capital 0.9 percent, growth of non-IT capital 0.6 percent, while general technological progress (TFP growth) on average contributed 1.5 percent per annum. In the latter period 2000–2004, growth was clearly lower than in the preceding five years and it came primarily from the growth of capital inputs (with IT capital again being somewhat more important than non-IT capital) and technological progress. The contribution of labour input was even slightly negative – probably as a result of the downturn in the US economy.[11]

The US benchmark yields several important results. First, the growth rate of the US economy has been quite high, which runs counter to usual notions of convergence. Second, the role of IT capital is quite strong as its growth contribution has been higher than that of other capital. Such a key role of IT is a recent finding in studies of economic growth.[12] A

[9] Their data is publicly available at their web-page at: http://www.ggdc.net/dseries/growth-accounting.shtml

[10] This is equation (6) of Timmer, Ypma and van Ark (2003).

[11] Although the total number hours fell, as indicated in the table, the total number of employed workers increased slightly also in the period 2000–2004.

[12] For a long time, growth accounting studies had difficulties in showing the importance of IT.

third striking feature of US growth is that growth in labour input played a strong positive role in the late 1990s even if it has had a minor negative contribution since 2000.

4.2 The laggard countries: Germany, France and Italy

We next investigate economic growth in the large EU countries that have grown slowly over the period under investigation: Germany, Italy and France. The results of the growth-accounting exercises for these countries are reported in Tables 3.2a–c.

Table 3.2a

Growth accounting for Germany

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non- IT capital growth	Labour growth	TFP growth
1995–2000	1.7	0.3	0.3	– 0.4	1.5
2000–2004	0.5	0.2	0.2	– 0.5	0.6

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Table 3.2b

Growth accounting for France

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	2.7	0.3	0.7	0.2	1.6
2000–2004	1.4	0.2	0.8	– 0.1	0.5

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Table 3.2c

Growth accounting for Italy

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	2.0	0.4	0.7	0.5	0.4
2000–2004	0.9	0.4	0.8	0.8	– 1.1

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

The results suggest a number of important conclusions. The first striking observation is that labour growth contributed negatively in Germany throughout the ten-year period and in France after 2000. This negative contribution is likely to be due to increased unemployment as well as working time reductions. It will be examined further below.

Second, conventional capital appears to have been more important than IT capital for growth in the laggard countries, with Germany being somewhat of an exception in 2000–2004. However, the contribution from growth in IT capital in Germany was very low anyhow. This is in marked contrast to the US, as shown in Table 3.1 above.

Third, total factor productivity has not been a major source of growth in most cases, though France and Germany in 1995–2000 are exceptions. However, in the period 2000–2004, TFP growth was low in both France and Germany. We will discuss possible reasons for slow TFP growth below. The small role of technological progress is particularly marked for Italy, where non-IT capital growth has been the main source of growth, and TFP growth is even negative after 2000. The Italian experience (as well as that of other earlier high-interest-rate countries discussed below) may partly be explained by the introduction of the euro. The common capital market has induced capital flows from former low-interest-rate countries, like Germany, to former high-interest-rate countries, like Italy. With the introduction of the common currency, interest rates have been equalised across the eurozone. We observe today relatively low contributions of non-IT capital growth in the former low-interest-rate (capital abundant) countries and high contributions in the former high-interest-rate (capital scarce) ones.

Fourth, the contribution of IT capital growth has been relatively small in the three laggard countries. Moreover, quite remarkably the share of TFP growth in total GDP growth has declined over time. This suggests that the laggard countries have not been successful in making use of the new opportunities provided by the IT revolution.

4.3 The successful cases: Ireland, Finland, Greece, Spain, Sweden and the UK

Looking at the countries that are usually regarded as the European success stories, it is difficult to find clear patterns that are common to all of these countries. It appears that we can identify two different groups of successful cases. The first group, consisting of Finland, Ireland, Sweden and the UK, has

relied on the IT revolution as these countries have had relatively rapid growth of IT capital. Growth of IT capital has been more important than growth of conventional capital for Finland, Sweden and the UK. However, in Ireland non-IT capital has been relatively more important than IT capital, but the growth rate of IT capital has also been high. Tables 3.3a–d show the results of growth-accounting computations for Finland, Ireland, Sweden and the UK.

This first group of countries is also characterised by the significant role of general technological progress, as indicated by the growth rates of TFP. We can also observe that the increase of labour input has been an important underlying source of growth in Ireland and in the UK. However, this observation does not hold for the Scandinavian countries, as in these countries growth in labour input was negative in 2000–04. The positive contribution in the first period can be largely explained by increased labour utilisation when Finland and Sweden were emerging from the deep recessions in the first half of the 1990s.[13]

The second group of successful countries comprises Greece and Spain, which also grew clearly better than the average EU country. In these two countries, the sources of growth differ quite substantially from the growth patterns from the first group of countries discussed, where growth was largely driven by IT capital and TFP. Tables 3.4a–b give the results of the growth-accounting decompositions for Greece and Spain.

In Spain, labour input has been by far the most important source of growth. This observation indicates that Spain was very successful in recent years in addressing its unemployment problem. Furthermore non-IT capital growth played a major role, which is partly due to a euro-driven single capital market effect, as previously discussed in the case of Italy. In both Greece and Spain, the perceived "country risk premium" in interest rates explained by exchange rate risk has disappeared after the introduction of the euro. The fall in interest rates has stimulated investment and explains the large contribution of non-IT capital growth. In Greece, the contribution from the individual factors of production has been of relatively similar magnitude, though in Greece the contribution of TFP growth was also quite large in the second half of the 1990s (and surprisingly small in the period 2000–2004).

Table 3.3a

Growth accounting for Ireland

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	9.7	0.6	2.3	2.1	4.7
2000–2004	5.0	0.4	2.3	0.5	1.9

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Table 3.3b

Growth accounting for Finland

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	4.9	0.7	0.1	1.0	3.0
2000–2004	2.3	0.6	0.3	– 0.3	1.7

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Table 3.3c

Growth accounting for Sweden

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	3.5	0.8	0.4	0.7	1.7
2000–2004	2.1	0.4	0.2	– 0.4	1.9

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Table 3.3d

Growth accounting for the UK

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	3.3	0.8	0.6	0.7	1.2
2000–2004	2.3	0.34	0.5	0.2	1.3

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

[13] See Honkapohja, Koskela, Leibfritz and Uusitalo (2005) for a discussion of the 1990s crises in Finland and Sweden.

Table 3.4a

Growth accounting for Spain

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	4.0	0.3	1.1	2.8	– 0.3
2000–2004	2.5	0.3	1.2	1.6	– 0.6

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Table 3.4b

Growth accounting for Greece

	GDP growth	Contributions to GDP growth by			
		IT capital growth	Non-IT capital growth	Labour growth	TFP growth
1995–2000	3.8	0.3	0.6	0.7	2.4
2000–2004	4.2	0.4	0.9	1.0	0.3

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

5. Why are there differences in growth performance?

The preceding discussion has shown that, during the last ten years, there have been major differences in rates of economic growth and in the sources of growth between successful and unsuccessful EU countries. It is important to deepen our understanding of the possible reasons for these differences. Investigating them may also provide answers to the crucial question: to what extent can economic policy influence growth and what might be appropriate growth policies? We found in the previous section that the first group of the successful EU countries appeared to have strong growth in IT capital and strong overall technological progress (TFP growth), while the second group of successful countries relied more on traditional engines of growth: non-IT capital and labour. In this section we examine more closely the sources of economic growth for the Western EU countries.

[14] The data here, too, are from the Groningen Growth and Development Centre. See footnote 9.

[15] See Timmer, Ypma and van Ark (2003) for further details on the method of construction of the data.

5.1 Capital formation in the EU countries

Table 3.5 shows the growth rates of IT and non-IT capital services for the EU-15 countries in the period 1995–2004.[14] Capital services are measured using the methodology developed by Jorgenson and Griliches (1967), in which growth rates of different types of capital are weighted using average shares of each capital asset type in the value of the property compensation in terms of rental prices.[15]

Table 3.5 shows that most EU countries invested rather heavily in IT capital, which led to impressive growth rates in IT capital services in the boom period 1995–1999. In the period 2000–2004 IT capital growth slowed down. Interestingly, Ireland, Finland, Sweden and the UK do not stand out according to IT capital growth, even though they had

Table 3.5

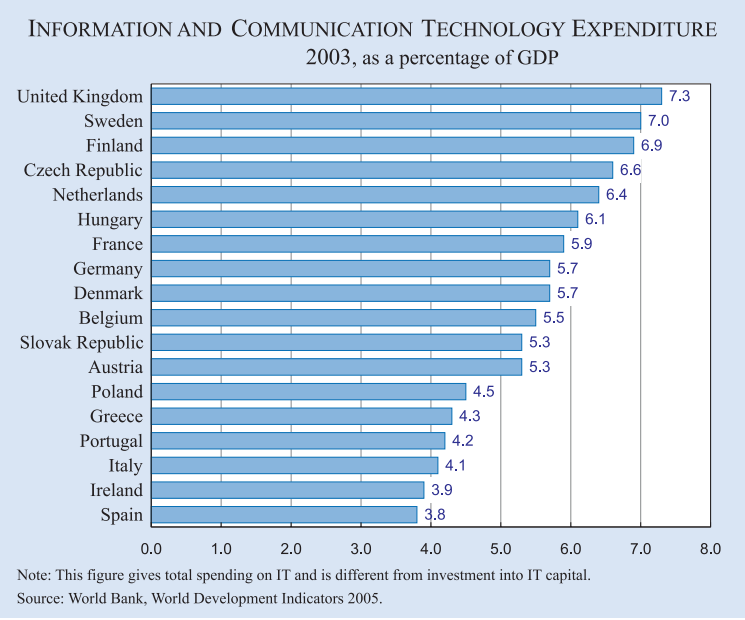
Growth rates of IT and non-IT capital services in EU-15 countries, 1995–2004

	IT Capital	Non-IT Capital		IT Capital	Non-IT Capital
Austria			**Italy**		
95–00	14.5	2.0	95–00	13.6	2.4
00–04	10.9	2.1	00–04	10.0	2.5
Belgium			**Luxembourg**		
95–00	20.3	0.7	95–00	17.0	5.9
00–04	11.0	0.4	00–04	12.9	4.3
Denmark			**Netherlands**		
95–00	10.9	1.4	95–00	21.1	1.8
00–04	17.6	2.9	00–04	9.0	1.1
Finland			**Portugal**		
95–00	13.8	– 0.2	95–00	21.6	4.4
00–04	10.8	0.2	00–04	10.2	2.3
France			**Spain**		
95–00	16.9	2.2	95–00	15.8	3.8
00–04	8.6	2.4	00–04	9.4	3.8
Germany			**Sweden**		
95–00	13.4	1.0	95–00	19.1	1.7
00–04	7.8	0.3	00–04	6.8	0.7
Greece			**UK**		
95–00	18.9	3.8	95–00	20.1	2.1
00–04	15.1	5.3	00–04	8.3	1.1
Ireland			**US**		
95–00	34.6	5.9	95–00	17.9	2.8
00–04	13.5	5.0	00–04	9.1	1.8

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

significant contributions to growth from this source. The explanation, shown in Table 3.6, is instead that these countries already had a relatively high share of IT capital as their technologies had adapted to the relatively high use of IT capital before the mid-1990s. The same applies to the US. Differences in the shares of IT capital are an important explanation of why the recent growth contribution of IT capital has varied among countries. Early users of IT capital benefited from the high-tech boom of the 1990s.

Figure 3.7



Note: This figure gives total spending on IT and is different from investment into IT capital.
Source: World Bank, World Development Indicators 2005.

There is more variation among the EU countries in the growth rates for conventional capital. Ireland, Greece and Spain (as well as Luxembourg and Portugal) have had very high growth rates of non-IT capital. In contrast, the growth of conventional capital has been low for Germany and also Finland, though the latter country is among the success cases in the EU. Finland relied on increases in IT capital for its growth, but this was not the only reason for success. As can be seen from Table 3.3b, TFP growth was a major contributor to growth in Finland. This was in turn a result of structural changes in which low-productivity activities were replaced by new activities with higher productivity (see Honkapohja, Koskela, Leibfritz and Uusitalo 2005 for an analysis of the Finnish case).

Table 3.6
Average share of GDP imputed to IT and non-IT capital, 1995–2004

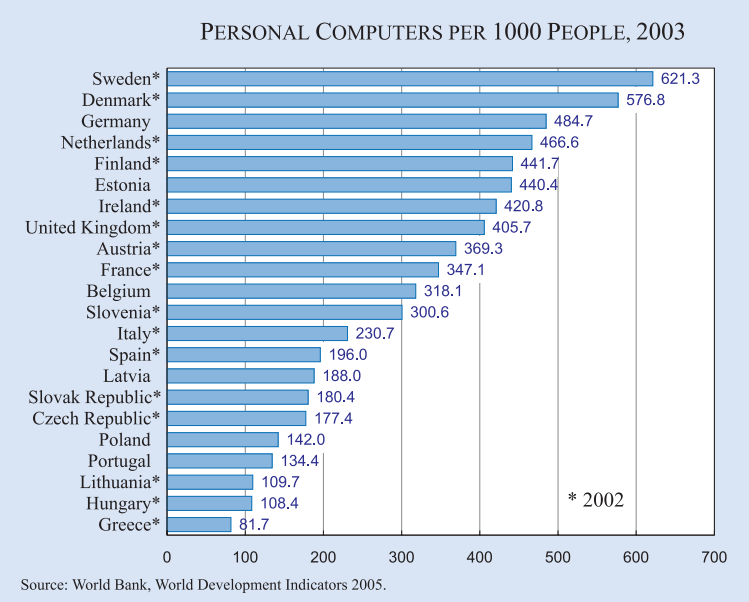
	Non-IT Capital	IT Capital
Austria	32.6	3.5
Belgium	25.1	4.4
Denmark	30.0	5.0
Finland	29.8	4.7
France	33.0	2.4
Germany	29.4	3.5
Greece	20.4	2.3
Ireland	41.4	2.3
Italy	34.9	3.7
Luxembourg	32.3	3.7
Netherlands	26.4	2.8
Portugal	26.2	3.0
Spain	28.9	2.7
Sweden	24.7	5.6
UK	26.7	4.4
US	24.0	6.0

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

Diffusion of IT

Another important aspect concerns how widespread the use of IT is. We compare EU countries, using two broad indicators of IT diffusion. Figure 3.7 describes the share of expenditure (as percent of GDP) on IT in each country, while Figure 3.8 displays the number of personal computers per 1,000 persons. It is evident that Sweden is a clear leader in both these respects. The other high-tech based success cases, the UK, Finland and Ireland are not quite top performers according to these indicators, although on the whole they score well above the average. On the other hand, the other success cases, Greece and Spain, are below average in these indicators, which confirms the view that their success was not based on wide adoption of IT. Of the laggard countries, France and Germany score relatively high – somewhat above average – in

Figure 3.8



Source: World Bank, World Development Indicators 2005.

terms of these indicators, while Italy is well below the average.

5.2 Structure of labour input

The previous section showed that there was no clear pattern among the various groups of countries of how labour growth has contributed to total growth in the economy. Among the successful cases, labour contributed positively to growth in Spain, Greece, Ireland and the UK over the whole 1995–2004 period, but had partly negative contributions in Finland and Sweden. In the group of lagging countries, the contribution was positive in Italy and negative in Germany and France. In this section, we decompose changes in the total hours worked into changes in annual hours per worker (working time) and changes in the total number of employed workers (employment). While a reduction in working time *might* be the outcome of negotiations between unions and employers, and therefore could sometimes even be interpreted positively as a welfare gain, comparable to a wage increase, a reduction in employment would clearly reflect problems in the labour market.[16]

Table 3.7 shows that total annual hours worked have decreased in almost all EU countries over the 1995–2004 period, Belgium, Denmark and Greece being the only exceptions with minor increases. Remarkably, total annual hours also decreased in the United States during the period 2000–04.

Employment (the total number of workers), on the other hand, has increased in almost all countries. The only instances where employment has fallen are Denmark and Germany. This observation explains why Germany has experienced such a large negative contribution of labour growth to output growth as described in the earlier section. While Germany shared in the working time reductions that were common to most of the EU countries, it also experienced a reduction in the total number of employed workers, reflecting both increases in unemployment and reductions in labour force participation. The combination of a decline in working time and employment makes Germany unique in Europe. This development stands in sharp contrast to the US.

As regards the successful countries, Table 3.7 is also interesting. Finland and Sweden, which also experienced negative contributions from total hours worked, both had substantial positive contributions from the total number of employed workers. In both countries, the negative contribution of labour to total growth after 2000 was in both countries due to substantial reductions in hours worked per employee.

5.3 Technological progress

TFP growth can be thought of as a measure of general technological progress, which is not embodied in the explicit factors of production: labour and the various types of capital. The non-measurable factors in TFP include innovations and improvements in general knowledge and the organisation of production. However, since TFP growth is measured as a residual, it also contains other effects such as cyclical ones, pure changes in efficiency, and measurement errors. It can also contain effects from improvements in labour and capital quality, since such quality improvements are difficult to quantify and may not be fully incorporated into factor shares and growth rates of the corresponding productive factors.

[16] Note, however, that in the case of France for instance the reduction in working hours was legislated, rather than the outcome of negotiations. Furthermore, the reduction in working hours is often the response to high unemployment, as work-sharing may be one way to alleviate the consequences. EEAG (2005), Chapter 3 discusses these issues in detail.

Table 3.7
Changes in total annual hours worked, annual hours per employee and number of workers employed, 1995–2004

	Total hours	Annual hours per worker	Total number of workers
Austria			
95–00	– 0.37	– 0.44	0.07
00–04	– 0.22	– 0.46	0.25
Belgium			
95–00	– 0.08	– 1.16	1.12
00–04	0.74	0.30	0.45
Denmark			
95–00	0.6	– 0.4	1.0
00–04	–0.1	0.1	– 0.2
Finland			
95–00	1.55	– 0.58	2.14
00–04	– 0.54	– 0.76	0.23
France			
95–00	0.2	– 1.2	1.5
00–04	– 0.2	– 0.8	0.6
Germany			
95–00	– 0.5	– 0.8	0.3
00–04	– 0.7	– 0.3	– 0.4
Greece			
95–00	0.92	0.04	0.88
00–04	1.26	0.22	1.04
Ireland			
95–00	3.68	– 1.62	5.37
00–04	0.86	– 1.10	1.98
Italy			
95–00	0.72	– 0.28	1.01
00–04	1.32	– 0.34	1.67
Luxembourg			
95–00	4.18	– 0.09	4.28
00–04	2.90	0.00	2.90
Netherlands			
95–00	3.04	– 0.19	3.23
00–04	– 0.09	– 0.26	0.17
Portugal			
95–00	1.40	– 1.19	2.63
00–04	– 0.04	– 0.22	0.18
Spain			
95–00	4.08	– 0.44	4.09
00–04	2.46	– 0.46	2.66
Sweden			
95–00	0.96	– 0.44	0.84
00–04	– 0.60	– 0.46	0.36
UK			
95–00	1.05	– 0.18	1.23
00–04	0.30	– 0.51	0.81
US			
95–00	1.92	0.21	1.71
00–04	– 0.40	– 0.81	0.43
EU-15			
95–00	0.9	– 0.5	1.4
00–04	0.4	– 0.3	0.7

Source: Groningen Growth and Development Centre (GGDC), Total Economy Growth Accounting Database.

Table 3.8 shows the TFP growth rates for the EU-15 countries.[17] The high TFP growth in Finland, Ireland, Sweden and the UK is clearly visible. These countries do better than or about equally well as the US. Interestingly, Greece has also experienced high TFP growth, which has given an important contribution to its high growth.

[17] Due to some differences in the methods of computations, these numbers do not exactly match those in earlier tables in Section 4.

As discussed above, TFP growth in principle measures general technological progress, including structural change. However, innovations and improvements in the general knowledge and organisation of economic activities are not directly measurable. This means that one has to restrict the analysis to only indirect indicators of determinants of TFP. It is usually thought that high quality of the education system, strong competition and deregulation, and innovation and entrepreneurship can enhance TFP growth. Therefore, we next look at indicators of these factors.

Education

Education is often considered a key determinant of economic growth. It is regarded as one of the most important potential policy instruments for raising both TFP growth and economic growth in general.[18] Education has also been subject to intensive policy discussion in the EU, as evidenced by, for example, the emphasis on education and the information society in the Kok report (EU 2004).

A traditional way of studying the role of education in economic growth is to allow for human capital as an explicit determinant of economic growth (which we did not do above). Human capital is then usually measured as the average number of years in schooling. With this measure, education has been found to have a clear positive effect on growth.[19]

Figure 3.9 provides basic data on the educational expenditures in EU-25 countries. We see that some

[18] Griffith et al. (2004) provide recent evidence of the importance of education for innovation and absorptive capacity.
[19] See e.g. Mankiw, Romer and Weil (1992), Barro (1997) and Hall and Jones (1999).

Table 3.8

TFP growth in EU-15 countries, 1995–2004

	1995–00	2000–04		1995–00	2000–04
Austria	1.7	0.2	Italy	0.2	– 1.2
Belgium	1.7	0.3	Luxemburg	1.6	– 0.9
Germany	1.3	0.6	Netherlands	0.6	0.2
Denmark	1.4	0.3	Portugal	1.0	– 0.3
Spain	– 0.3	– 0.5	Sweden	1.3	1.9
Finland	3.3	2.0	UK	1.1	1.5
France	1.4	0.5	EU-15	0.9	0.4
Greece	1.9	1.8	US	1.1	1.7
Ireland	4.4	2.0			

Source: Groningen Growth and Development Center (GGDC), Total Economy Growth Accounting Database.

countries, particularly Sweden and Finland, which were found to have large contributions of IT capital and TFP growth, also have large shares of expenditure on education in GDP. However, the correlation between TFP growth and education spending is not that strong. For example, Ireland and the UK, which also ranked among the highest in terms of the contribution of IT capital and TFP to overall growth, are among the countries with the lowest expenditure on education. The possible links between education spending and growth may be indirect and work through other variables. An analysis of education systems is made in Chapter 4 of this report.

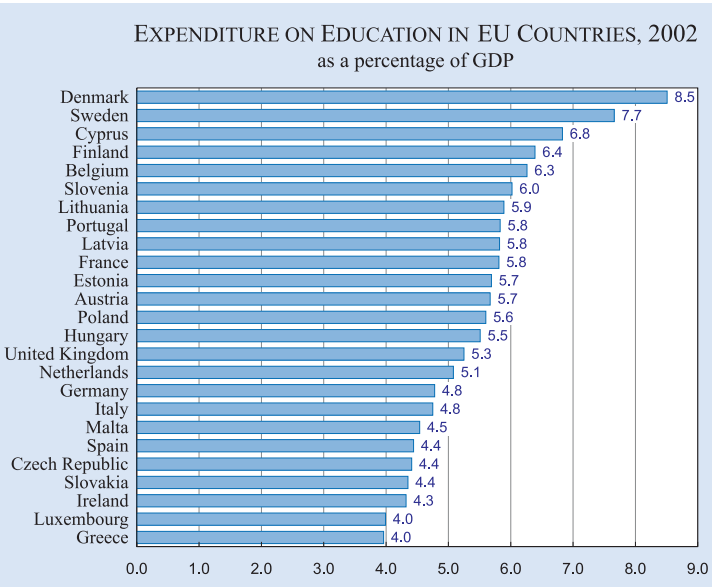
Competition and Regulation

As technological change is to a significant degree associated with the emergence of new and more productive firms, the degree of competition is potentially an important element behind TFP growth.[20] One way for public policy to influence competition is through regulatory policies – a less regulated economy makes it easier to establish new firms and thereby enhance competition in the economy. The findings of Alesina et al. (2005) suggest that regulatory reform leads to increased investment of firms, so that effects of competition can work through increased capital accumulation and not only through TFP growth.

To examine the strictness of regulation in the EU countries, we use the structural indicators on product market regulation and employment protection constructed by the OECD. Indicators of product market regulation and employment protection are reported in Tables 3.9a–b, respectively.

As a general tendency, the EU countries have been moving towards less regulation in product markets, but this has been happening in varying degrees. The successful high-tech EU-15 countries, Finland, Ireland, Sweden and the UK, appear to be among the countries with lowest degrees of product market regulation. Their levels of regulation are nowadays close to that of the US. In contrast, France and Italy, and also Germany (although the difference here is smaller), have a higher degree of product market regulation. The same seems to be true for the smaller EU countries that have not done so well in terms of economic growth. We also note that, of the EU success cases, Greece and Spain also have levels of regulation that are comparable to those of the laggard countries. The overall picture is thus not clear-cut. It appears that the connection between competition and growth can depend on the nature of the growth process. Con-

Figure 3.9



Source: Eurostat, Population and social conditions, Education data.

[20] Using British industry data, Nickell (1996) provides empirical evidence that higher competition is associated with higher rates of TFP growth. Nicoletti and Scarpetta (2003) also provide strong support for this relationship in OECD countries.

Table 3.9a
Product market regulation in EU-15 countries and the US

	Product market regulation	
	1998	2003
Austria	1.8	1.4
Belgium	2.1	1.4
Denmark	1.5	1.1
Finland	2.1	1.3
France	2.5	1.7
Germany	1.9	1.4
Greece	2.8	1.8
Ireland	1.5	1.1
Italy	2.8	1.9
Luxembourg		1.3
Netherlands	1.8	1.4
Portugal	2.1	1.6
Spain	2.3	1.6
Sweden	1.8	1.2
UK	1.1	0.9
US	1.3	1.0

Note: A higher number reflects stronger regulation. The indicator measures the degree to which policies promote or inhibit competition and summarise a large set of regulations and formal rules. The data for the indicators derive from answers to questionnaires sent to OECD member governments. The questionnaire contained questions spanning from general and sectoral regulatory policies (firm ownership, state control, market access, entry requirements, regulation in transport industries etc.) to industry structure. "YES/NO" answers are coded by assigning a numerical value to each possible response to a particular question. Quantitative information is subdivided into classes using a system of thresholds. The coded information is then normalised over a scale of zero to six reflecting increasing restrictiveness of regulatory provisions for competition.

Source: Conway, Janod and Nicoletti (2005).

ventional sources of growth might be less sensitive to regulatory intervention than growth relying on high-tech and new products, where competition should be particularly encouraged.[21]

In Greece for instance, a high degree of state control accounted for the high number in 1998 (see Conway et al. 2005). On average, the progress in lowering barriers to competition is due less to increased entrepreneurship and more to reducing state control (like price control, command-and-control measures or direct control of business enterprises) and barriers to trade and investment (like declining average most-favoured-nation tariff rates or diminishing restrictions on FDI). According to Conway et al. (2005), the progress in France and Spain was especially driven by a reduced administrative burden for firm start-up, whereas Italy removed legal barriers for entry to some sectors, and Finland, Greece and Sweden improved the system of licence and permits, thus reducing barriers to entrepreneurship between 1998 and 2003.

[21] Nicoletti and Scarpetta (2003) provide empirical evidence for this argument.

Table 3.9b looks at regulation in the labour markets using indicators of employment protection for both regular and temporary employment. The tendency towards less regulation is visible, but it is arguably much weaker than for product market regulation. In a number of cases, regulation has remained unchanged or has even tightened somewhat. There is also quite a lot of variation even among the successful high-tech countries Finland, Ireland, Sweden and the UK. The levels of employment protection are rather low in Ireland and the UK, though they are clearly higher than in the US. Finland and Sweden have higher levels of employment regulation than Ireland and the UK. However, Finland and Sweden have taken some steps towards lowering employment protection: Finland with respect to regular employment and Sweden with respect to temporary employment. The other EU success cases of Greece and Spain, as well as the laggard cases of France, Germany and Italy, have on the whole clearly higher employment protection regulation than high-tech successful countries. Some theoretical studies suggest a negative relationship between employment protection and growth (see for example Bertola 1994 and Boone 2000), but empirical evidence has not been studied.[22]

Innovation

Promotion of innovations and facilitating start-ups of new production activities are another possible policy tool for improving TFP growth. It is, however, difficult to find good measures of innovative activities and start-ups of new production that are relevant for long-term growth. We consider two indicators, venture capital financing and investment in R&D.[23]

[22] Empirical studies (see for example Nickell 2003 and EEAG 2004, Chapter 2 for overviews) usually focus on other labour market institutions and their effects on (un)employment rather than growth.

[23] High intensity of entrepreneurial activity has also been considered a possible determinant of TFP growth; see Achs et al. (2005) and Audretsch and Keilbach (2004) for empirical results on the connection between entrepreneurship and growth. The concept of entrepreneurship is even more subject to the caveat about difficulties of quantification and measurement than the measures discussed in the text.

Table 3.9b
Strictness of employment protection legislation in EU-15 countries and the US

	Regular employment			Temporary employment		
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Austria	2.9	2.9	2.4	1.5	1.5	1.5
Belgium	1.7	1.7	1.7	4.6	2.6	2.6
Denmark	1.5	1.5	1.5	3.1	1.4	1.4
Finland	2.8	2.3	2.2	1.9	1.9	1.9
France	2.3	2.3	2.5	3.1	3.6	3.6
Germany	2.6	2.7	2.7	3.8	2.3	1.8
Greece	2.5	2.3	2.4	4.8	4.8	3.3
Ireland	1.6	1.6	1.6	0.3	0.3	0.6
Italy	1.8	1.8	1.8	5.4	3.6	2.1
Netherlands	3.1	3.1	3.1	2.4	1.2	1.2
Portugal	4.8	4.3	4.3	3.4	3.0	2.8
Spain	3.9	2.6	2.6	3.8	3.3	3.5
Sweden	2.9	2.9	2.9	4.1	1.6	1.6
UK	0.9	0.9	1.1	0.3	0.3	0.4
US	0.2	0.2	0.2	0.3	0.3	0.3

Note: The overall summary measure of EPL strictness is based on three components related to specific requirements for collective dismissals, protection of regular workers against (individual) dismissal (which constitutes the core component of the overall summery index) and regulation of temporary forms of employment. There are 18 items that describe these areas. These are expressed either in units of time (for example months of notice and severance pay), as a number or as a score on an ordinal scale specific to each item. All these measures were converted into cardinal scores that were normalised to range from 0 to 6. A higher number reflects stronger regulation. The weighted average was constructed for the average indicator where the measure for collective dismissals was attributed 40 percent of the weight assigned to regular and temporary contracts.

Source: OECD Employment Outlook 2004.

Table 3.10
Early-stage versus (expansion and replacement) venture capital investment in EU-15 countries and the US (percentage of GDP)

	Early-stage venture capital investment		Expansion and replacement venture capital investment	
	Average 1995–2000	Average 1995–2000	Average 2000–2004	Average 2000–2004
Austria	0.0025	0.0025	0.0164	0.0164
Belgium	0.0313	0.0313	0.0584	0.0584
Denmark	0.0060	0.0060	0.0498	0.0498
Finland	0.0237	0.0237	0.0790	0.0790
France	0.0128	0.0128	0.0428	0.0428
Germany	0.0168	0.0168	0.0458	0.0458
Greece	0.0060	0.0060	0.0128	0.0128
Ireland	0.0143	0.0143	0.0466	0.0466
Italy	0.0080	0.0080	0.0186	0.0186
Netherlands	0.0432	0.0432	0.0576	0.0576
Portugal	0.0080	0.0080	0.0198	0.0198
Spain	0.0062	0.0062	0.0178	0.0178
Sweden	0.0203	0.0203	0.0896	0.0896
UK	0.0093	0.0093	0.0510	0.0510
EU-15	0.0132	0.0132	0.0416	0.0416
US	0.0400	0.0400	0.1384	0.1384

Source: Eurostat

As to venture capital financing, the statistical data distinguish between "early-stage" and "expansion and replacement" (or late-stage) venture finance. Table 3.10 shows that the US is a clear leader according to both indicators. Finland, Sweden and the UK also do well in terms of both indicators. The performance of Ireland is close to the EU average: it is above average in early-stage and below the average in late-stage venture financing.

The picture for the rest of the EU-15 countries is far more varied. Spain is doing fairly well in terms of the late-stage venture finance indicator, but poorly for early-stage finance. Greece is relatively low on both indicator counts. Of the laggard countries, Germany is close to or above average in terms of early-stage venture financing, but it does not do so well in terms of late-stage venture finance. France is above the EU-15 average for late-stage venture finance, but does fairly poorly in early-stage venture financing. Italy does poorly on both counts. Overall, EU-15 countries are well behind the US in venture financing. In the EU, it appears that the importance of venture capital financing correlates fairly strongly with the relative importance of high-tech industries, but otherwise the picture is not so clear-cut.

Table 3.11 shows R&D spending as a fraction of GDP as another indicator of innovative activity that contributes to general technological progress.

On this count, two EU success cases, Finland and Sweden, do particularly well. Especially in the period 2000–2004, R&D spending as a share of GDP in

Table 3.11
Expenditure on R&D in EU-15 countries and the US (percentage of GDP)

	Average 1995–2000	Average 2000–2004
Austria	1.73	2.10
Belgium	1.88	2.01
Denmark	2.01	2.49
Finland	2.82	3.44
France	2.20	2.18
Germany	2.29	2.48
Greece	0.28	0.37
Ireland	1.25	1.14
Italy	1.04	0.90
Netherlands	1.99	1.79
Portugal	0.31	0.49
Spain	0.86	0.77
Sweden	2.36	2.40
UK	1.86	1.50
EU-15	1.89	1.96
US	2.58	2.13

Source: Eurostat.

these countries was even higher than in the US. The other high-tech EU economies, Ireland and the UK, are not very big spenders on R&D and are below the EU-15 average. Interestingly, of the laggard countries, France and Germany are ahead of Ireland and the UK according to this indicator. On the other hand, Italy does poorly: its share of R&D in GDP is quite low and is not much higher than the figures for Greece and Spain, which are relying on traditional sources of growth and not on high-tech. Overall, R&D spending seems to have some relationship to fast growth, but the relationship is not very strong.[24]

6. Eastern Europe

The data for the new EU member countries are less complete than for the EU-15 countries. However, an analysis that is comparable to Section 4 has been conducted by van Ark and Piatkowski (2004). They look at growth in labour productivity in the Central East European (CEE) countries in the period 1995–2001. Table 3.12 reports the results of van Ark and Piatkowski for the CEE countries that became members of the EU, the EU-15 as a whole and the US.

[24] Griffith et al. (2004) provide evidence on the importance of R&D for technological catch-up and innovation.

The results in Table 3.12 show that, similar to Ireland and Finland (which were the EU-15 countries with the highest TFP growth) during this time period, the Eastern European countries experienced large increases in total factor productivity, which has been the largest contributor to overall growth in GDP per capita. The Czech Republic is an exception to this pattern. It is also seen from Table 3.12 that IT capital has played a smaller role in the CEE countries than in the EU-15 countries. Not surprisingly, economic growth in these countries is relying on traditional means of growth in conventional capital, labour and total factor productivity.

It is also instructive to look at the development of total hours worked, which are shown in Table 3.13 below. The countries for which the more recent data are available are the Czech Republic, Hungary, Poland and the Slovak Republic. Table 3.13 shows that total hours worked have fluctuated substantially over the last years. In Hungary, total hours worked have contributed positively to GDP growth in all years except 2000–2001. In the other countries, the contribution of labour to growth has been quite sizable and mostly negative

Looking at the determinants of growth for the new member countries, we must note that there are major gaps in the data. Data on diffusion of IT are available for several new member countries and were included in Figures 3.7 and 3.8. The results vary from country to country. The data on education expenditures is rel-

Table 3.12
Decomposition of growth in labour productivity for CEE countries, 1995–2001

	GDP growth per person employed	Percentage contribution of		
		Non-IT capital growth	IT-capital growth	TFP growth
Slovakia	4.8	1.4	0.6	2.8
Poland	4.4	1.8	0.6	2.1
Slovenia	3.8	0.7	0.5	2.5
Hungary	3.3	0.2	0.7	2.4
Czech Rep.	2.8	1.4	0.8	0.6
EU-15	1.1	0.4	0.4	0.3
US	2.2	0.4	0.7	1.1

Source: Table 4 of van Ark and Piatkowski (2004).

Table 3.13
Growth rates of total hours worked in Eastern Europe

	98–99	99–00	00–01	01–02	02–03	03–04
Czech Republic	– 3.5	– 0.3	– 4.1	0.6	– 0.6	– 3.4
Hungary	4.0	0.7	1.8	1.1	1.9	1.1
Poland			– 2.9	– 2.8	– 1.0	1.3
Slovak Rep.	– 2.1	– 1.7	– 0.1	– 3.4	– 1.1	1.9

Source: OECD, Productivity data base, July 2005, and IMF, International Financial Statistics.

atively good for the new members and they are included in Figure 3.9 above. It is seen that most of these countries spend above or close to the EU-25 average share on education, with the Czech and Slovak Republics having lower spending on education. Data on other factors that could influence TFP growth – shown in the Appendix – are incomplete. Tables A3.1a–b show that there tends to be more of employment protection and product market regulations than in the EU-15 countries, though the protection indicator for temporary employment tends to have lower values than for EU-15 countries. The new member countries receive low scores on venture capital indicators (see Tables A3.2a–b). For R&D expenditure shown in Table A3.3, the new member countries have somewhat lower spending relative to GDP than the EU-15 countries, though the Czech Republic and Slovenia are exceptions in this respect.

Overall, for the new member countries it is difficult to draw strong conclusions with respect to these indicators. Not surprisingly, these countries tend to score lower than the old EU members, though according to some indicators, such as education, their performance is good. These countries are likely to continue to grow through traditional means – capital investment and TFP growth associated with structural change.

7. Policy challenges for the EU

Our analysis of economic growth in the EU has yielded many results that bear on current policy discussions in Europe. The most striking conclusion is that the Lisbon strategy should be modified. The Lisbon strategy argues for the creation of a uniform model of a high-tech information society for the EU. The problem with this line of thinking is the restrictive focus on a single model; the model is designed to imitate the success of the US economy in creating and making use of the IT revolution.

The European experience in the last ten years suggests that this is not the right approach. There are different routes to success, as is witnessed by the experience of the successful EU countries. Some of the countries – Finland, Sweden and the UK – have focused on technological transformation and structural change involving increased use of advanced technologies, in particular IT. The successes of Finland, Sweden and the UK have indeed many similarities with the US model. But other successful countries have had a different strategy for growth. Ireland has had great success on many fronts and not only in the development and use of IT. Spain and Greece have relied on traditional sources of growth, capital accumulation and increasing labour input, and not on high technology.

The different routes to success show that a growth strategy for the EU countries should not be based on a uniform model. Some of the countries are on the frontier of creation and adoption of new technologies. It is natural for these countries to continue with this strategy for growth. However, it must be recognised that the high-tech strategy involves major risks and it is unlikely to be successful for all EU states. Major failures may result if EU-driven technology policy is made the main part of the path forward. The public sector bureaucrats and politicians are probably not the right people for picking future winners in the high-technology businesses. It is better to rely on private profit motives and finance for the promotion of high-technology industries.

Instead the EU should allow for a flexible strategy for growth, in which there is scope for both high-tech-driven growth as well as growth based on more traditional means of capital accumulation, increased labour input and the imitative adoption of new technologies from the leaders. The examples of Spain and Greece demonstrate that the latter approach can also lead to success. Moreover, this is a natural strategy for the new EU member countries to follow, as they are currently well behind the high-technology frontier. Reaching the frontier is a gradual process, which will take many years.

The key elements of growth policy lie elsewhere. First, policies should focus on improving the education systems, and this should be done at both the national and EU levels. The traditional studies of human cap-

ital and economic growth show the significance of education and, in addition, there are important complementarities between education systems and the ease of adopting innovations and new technologies.[25] Diffusion of new technologies such as IT involve learning costs that decrease over time with the increasing number of users, and this process is facilitated by a well-qualified labour force. The evidence of high educational attainment in Finland and Sweden supports this conclusion. Both countries are on the IT technology frontier. Clearly, EU countries should direct major efforts to improving their education systems. There are important differences in the performance of the secondary education systems among EU countries as is discussed in Chapter 4 of this report.

An important question in education policies concerns the level of education at which improvements should be focused. The answer appears to depend on whether the country is close or far from the technology frontier.[26] Countries that are close to the frontier should specifically focus on improving the tertiary education systems, as high-technology innovations appear to require more advanced skills than lower-level innovations. The latter are often process improvements and rely on imitative adoption of known technologies. While the US does not stand out in the quality of secondary education, it is obviously well ahead of EU countries in universities, the part of the education system that matters the most for economic growth of the advanced countries.

A larger proportion of an age class goes to higher education in the US than in the EU. In 2002 in the US, the percentage of age classes attending tertiary education was 38 percent, while it was 33 percent in Finland and Sweden, 28 percent in the UK and 23 percent in France and Germany. The university system in the US is quite varied, but the best universities compete strongly with each other for the best graduate students and researchers. In European countries, the university system does not generally work this way, as there is no intensive competition for the best researchers and students. The UK is partly an exception to other European countries, as research and teaching quality audits there have increased competition. Nevertheless, even the best UK universities find it difficult to compete globally with the US universities.

A second policy conclusion concerns the potential to increase labour input to enhance economic growth. The growth accounting in Section 4 of this chapter showed that labour input has not grown much and in some countries labour input growth was even negative for some periods. Labour market reforms are an appropriate means of raising labour input. Such reforms should include lowering unemployment benefits, introducing employment tax credits and reducing marginal tax rates on labour. Decentralised collective agreements lengthening working hours in firms exposed to heavy international competition (as in Germany) and reversals of earlier legislated working time reductions (for example in France) are other appropriate measures. So are reforms making pension systems more actuarial and increases in the retirement age. We have recommended these kinds of measures in our earlier reports, for example EEAG (2004), Chapter 2, and EEAG (2005), Chapters 3 and 4. The aging of population in EU countries makes these proposals particularly pertinent.

The third policy conclusion concerns the easing of regulatory policies in the EU. Europe has relatively high levels of regulation that limit competition in various markets. The regulations concern limitations on entrepreneurial activities, entry restrictions and restrictions on labour market adaptability in hiring and firing, which tend to suppress innovation and technological advancements. As noted above, in terms of OECD structural indicators on product market regulation and employment protection regulation, the euro area scores much worse than the US or the UK. Interestingly, Finland and Sweden do well with respect to product market flexibility, but not so well with respect to labour market regulation.[27] The results in the literature are somewhat tentative, but suggest that regulatory reforms tend to increase TFP growth and investment, which in turn should promote faster economic growth.[28]

The effects of deregulation work naturally via intensified competition, which in turn leads to increased entry and exit. Recent evidence suggests that the growth effects of entry and exit depend on the industry, more precisely on the distance of the industry from the technology frontier.[29] Industries

[25] For empirical evidence on complementarities between IT expenditure and spending on IT personnel, see Kaiser (2003).
[26] See Vandenbussche, Aghion and Meghir (2004) and Aghion, Boustan, Hoxby and Vandenbussche (2005) for detailed results and Aghion and Howitt (2005) for a summary.
[27] See Annenkov and Madaschi (2005), Table 6 for detailed results.
[28] See e.g. Alesina et al. (2005) and Nickell (1996).
[29] See Aghion and Howitt (2005) for a summary of the recent evidence.

that are close to the frontier can compete in the environment of intensified competition, whereas industries or sectors that are far behind the frontier face difficulties in such an environment. The exit of less efficient firms and their replacement by more efficient ones tends to have positive effects on economic growth.

Technology policy should thus focus on the provision of opportunities for creation of new firms and industries and less on glorifying national champions. Improvements of venture capital financing and R&D continue to be important policy areas for the EU countries. There are big variations in the amount of venture capital investments in the EU, and Europe is lagging behind the US in this respect.[30] Correspondingly, competition policies should focus attention on facilitating the entry of new firms.

There are particular problems concerning competition and entry in the service sector. It is well established that very significant barriers to trade in services still exist in the EU.[31] These barriers derive from the fact that the cross-border provision of services requires the presence of service providers in the importing country. As a consequence, exporters of services tend to be subjected to national regulations in both the country of origin and in the host country. In view of the great importance of the services sector – making up around 70 percent of both GDP and employment in the EU-15 – a lowering of trade barriers for services would potentially have large growth effects. It is therefore very important that the new EU Services Directive being discussed is not watered down, but is instead designed to open up the market for services for cross-border competition.

The most significant barrier to intra-EU trade in services is that host countries can impose national pay conditions on posted workers from other EU member states (a right given by the so-called Posted-Workers Directive), as this prevents effective cross-border price competition. In the presence of such pay regulations, the gains from trade in services will be limited to those that can be derived from economies of scale, more effective organisation and greater product diversity. But one will not obtain the bulk of potential gains unless EU-15 states allow service providers from the new EU member states to compete effectively by compensating for lower productivity through lower wages. This is not "unfair wage dumping", but a necessary precondition for the exploitation of different comparative advantages in old and new EU member states. There are no strong reasons why one should not allow wage competition among countries in trade with services in the same way as one does in trade with goods.

The preceding conclusions on education, regulation and competition policies are in particular directed at improving the current growth performance of the old EU member countries. However, they also apply, to some extent, to the new member countries as well, though the policy recipes vary somewhat. The main concern of the new EU members is how to catch up best with the Western EU countries. The growth-enhancing policies for catching up include, in particular, facilitating technology transfer and improvement of productivity in industries that are mostly below the high technology frontier. Education policy and financing of new firms and innovations continue to be major items on the policy agenda for the new EU members.

[30] See Figure 6 in Annenkov and Madaschi (2005) for details.
[31] See, for example, European Commission (2002) or OECD (2005).

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Appendix:
Selected indicators on new EU members

Table A3.1a
Strictness of employment protection legislation, selected new EU members

	Regular employment		Temporary employment	
	Late 1990s	2003	Late 1990s	2003
Czech Republic	3.3	3.3	0.5	0.5
Hungary	1.9	1.9	0.6	1.1
Poland	2.2	2.2	0.8	1.3
Slovak Republic	3.6	3.5	1.1	0.4
Note: A higher score reflects stronger regulation.				

Source: OECD Employment Outlook 2004.

Table A3.1b
Product market regulation, selected new EU members

	Product market regulation	
	1998	2003
Czech Republic	3.0	1.7
Hungary	2.5	2.0
Poland	3.9	2.8
Slovak Republic		1.4
Note: A higher score reflects stronger regulation. See also Table 3.9a.		

Source: Conway, Janod, and Nicoletti (2005).

Table A3.2a
Early-stage venture capital investment in selected new EU members (percentage of GDP)

	Average 1999–2004
Czech Republic	0.008
Hungary	0.006
Poland	0.015
Slovakia	0.003

Source: Eurostat.

Table A3.2b
Expansion and replacement venture capital investment in selected new EU members (per mill of GDP)

	Average 1999–2004
Czech Republic	0.49
Latvia	0.42
Hungary	0.38
Poland	0.63
Slovakia	0.11

Source: Eurostat.

Table A3.3
Expenditure on R&D in selected new EU members (percentage of GDP)

	Average 1995–1999	Average 2000–2004
Czech Republic	1.10	1.24
Estonia	0.32	0.77
Cyprus	0.12	0.31
Latvia	0.42	0.42
Lithuania	0.53	0.68
Hungary	0.71	0.92
Malta	0.00	0.17
Poland	0.67	0.60
Slovenia	1.42	1.54
Slovakia	0.84	0.60

Source: Eurostat.

Prospects for Education Policy in Europe

1. Introduction

Does education matter or is it just a consumption good like other goods? There is a large consensus among economists that education is an important productive input into the wealth of a nation. For years, people have consistently shown that education enhances individual productivity, which shows up in higher wages by 5 to 10 percent per extra year of education.[1] And, when one tries to explain why some countries are richer than others, the rate of secondary enrolment comes out as one of the most robust determinants.[2] Education is an investment: by increasing the total labour input that individuals supply to the market, it boosts GDP per capita and living standards. Furthermore, it is also widely considered that an educated workforce is a valuable asset at times of rapid technological change, because educated workers are better at adopting new technologies.[3]

Another aspect of education is that it affects the distribution of income. When the supply of educated workers goes up, to restore equilibrium in the labour market, their wage must fall relative to uneducated workers. As the latter tend to earn less, that reduces wage inequality. Lower inequality may in turn be valuable because it reduces social conflict, that is, voters have lower incentives to support costly redistributive policies,[4] and individuals have lower incentives to engage in crime and social unrest.

In most European countries, the public sector holds a quasi-monopoly on the provision of education. In most countries, the share of private expenditures in total educational spending does not exceed 10 percent. It is not totally clear why this should be so, but at least there are good arguments that justify public intervention in the educational sector. First, parents may not make the right educational decisions for their children, especially if they come from disadvantaged backgrounds that are poorly informed about the costs and benefits of alternative options. Second, education is more valuable for an individual if he or she interacts with individuals who are themselves educated. For example, an elaborate vocabulary is only useful if one talks to people who can understand that vocabulary. By acquiring education, individuals increase the value of education for others, but they are not remunerated for that positive effect (hence called an externality by economists). Thus, individuals may spontaneously acquire too little education.

One key question is whether direct provision is an adequate form of government intervention, or whether one could promote a more decentralised approach that would contain costs and allow for greater diversity of individual choices. Historically, public education has not been put in place to tackle the market failures just discussed, but rather to attain political goals. For example, the public education system in France was established in the context of a struggle of influence between the Church and the State. And educational curricula played an important role in promoting French national identity and the French language, for example preparing for 'revenge' for the loss of Alsace and Lorraine in 1870.

If government involvement in education is now viewed as an economic intervention rather than shaping the citizenship's beliefs for political reasons, one may well reconsider the working of the public education system. Direct provision of public education transforms decisions into collective decisions that, arguably, might better be left at the individual level, such as: what should children learn, how fast, where, and with which techniques? Furthermore, such provision often eliminates useful competitive mechanisms that help contain costs and correct errors. For example, in a public education system, it is difficult for voters and tax-payers to evaluate the system's efficiency. A deterioration of outcomes can

[1] See, for example, Psacharopoulos (2003).
[2] See Barro and Lee (1994).
[3] See Benhabib and Spiegel (2002).
[4] See Saint-Paul and Verdier (1993).

always be blamed on resources being insufficient rather than misallocated.

This chapter discusses these issues. It starts by providing a panorama of Europe's educational achievements in light of the recent OECD PISA study. The chapter then discusses the cost of education and casts doubts on the usefulness of often-advocated costly policies, such as reductions in class size. The final part reviews evidence suggesting that competition between schools and parental choice bring economic benefits, especially if institutions such as central exams allow for transparent choice.

2. How do European countries perform?

Before starting the discussion, it is interesting to point out that there now exist measures of student achievement that are comparable across countries, in particular the OECD-sponsored PISA (Programme for International Student Assessment) study. This is an internationally standardised assessment that has been jointly developed by participating countries and administered to 15-year-olds in schools. The survey is repeated every three years. It was implemented in the first assessment in 2000 and in the second assessment in 2003. Tests are typically administered to between 4,500 and 10,000 students in each country.

How do European countries fare in that comparison? Table 4.1 summarises the average math proficiency of European students, comparing them with the other countries participating in that study. It is not obvious how to interpret these scores. To make them more transparent, the OECD has made six groupings, from level 1 to 6. The median level, level 3, ranges from 483 to 544 points: because of averaging, most countries fall into that interval. The corresponding competences are described as follows:

"At level 3, students can execute clearly described procedures, including those that require sequential decisions. They can select and apply simple problem-solving strategies. Students at this level can interpret and use representations based on different information sources and reason directly from them."[5]

In some countries, the average student is near the top of that level or even at level 4, which is defined as follows:

"At level 4, students can work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions. They can select and integrate different representations, including symbolic ones, linking them directly to aspects of real-world situations. (…) They can construct and communicate explanations and arguments based on their interpretations, arguments, and actions."

Conversely, in 11 countries the average student falls short of level 3, and in a number of them he virtually is on the border between level 3 and level 2, which involves the following skills:

"At level 2, students can interpret and recognise situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures or conventions. They are

Table 4.1

PISA ranking in average math proficiency

	Math score	Level		Math score	Level
Hong Kong	550	4	Slovak Republic	498	3
Finland	544	3/4	Norway	495	3
Korea	542	3	Luxembourg	493	3
Netherlands	538	3	Hungary	490	3
Liechtenstein	536	3	Poland	490	3
Japan	534	3	Spain	485	3
Canada	532	3	United States	483	2/3
Belgium	529	3	Latvia	483	2/3
Switzerland	527	3	Russia	468	2
Macao	527	3	Italy	466	2
Australia	524	3	Portugal	466	2
New Zealand	523	3	Greece	445	2
Czech Republic	516	3	Serbia	437	2
Iceland	515	3	Turkey	423	2
Denmark	514	3	Uruguay	422	2
France	511	3	Thailand	417	1
Sweden	509	3	Mexico	385	1
Austria	506	3	Indonesia	360	1
Germany	503	3	Tunisia	359	1
Ireland	503	3	Brazil	356	1

Source: OECD (2004a), Table 2.5c, p. 356.

[5] Source: OECD (2004a), Figure 2.2, p. 47.

capable of direct reasoning and making literal interpretations of the results."

Table 4.1 suggests a large amount of heterogeneity in performance. Despite the averaging, four European countries fall short of level 3: Italy, Portugal, Greece and Serbia. Latvia and Spain are almost at the frontier between levels 2 and 3. At the other end of the spectrum, Finland, the Netherlands, and Liechtenstein come close to reaching level 4.

If we now look at reading proficiency, as reported in Table 4.2, we see that the ranking and the degree of heterogeneity between countries is quite similar to math. Country average performance ranges from level 1 (337–407 points) to level 3 (481–552), with level 2 between 408 and 480 score points. Level 3, the most frequent one, is defined as follows:

"Students proficient at level 3 on the reading literacy scale are capable of reading tasks of moderate complexity, such as locating multiple pieces of information, making links between different parts of a text and relating it to familiar everyday knowledge".[6]

On the other hand:

"Students proficient at level 2 are capable of basic reading tasks, such as locating straightforward information, making low-level inferences of various types, working out what a well-defined part of a text means and using some outside knowledge to understand it."

Finally, level 1 is the lowest understanding level; literacy problems start when one is below that level:

"Students proficient at this level are capable of completing only the simplest reading tasks developed for PISA, such as locating a single piece of information, identifying the main theme of a text or making a simple connection with everyday knowledge".

The average student is at least at level 2 in all European countries. Nevertheless, the breadth of score levels across countries, in light of the above definition, can be considered as large as for math. Another striking fact is that countries which do well in math also do well in reading, and the laggards are the same in both fields. The correlation coefficient, across countries, of the math and the reading scores is as high as 0.94.

A natural question is: how can we explain such important differences among European countries in proficiency levels? That heterogeneity does not seem to come from genetic differences, nor cultural differences between people: countries that are quite similar genetically and/or culturally seem to experience wide differences in achievement levels. Finland does much better than neighbouring Sweden, while Norway does poorly. Furthermore, it is unlikely that countries that are, for some reason, very "talented" in math could also be very "talented" in reading. These are two rather different kinds of skills – as suggested by the fact that girls are better than boys in reading, but boys perform better in math. Thus it is unlikely that "talent", wherever it comes from, explains these differences.

It does not seem that a relationship between GDP per capita and achievement can explain the difference between European countries, although it may help explain why the worst performers – Thailand, Uruguay, Turkey, Mexico, Indonesia, Tunisia and

Table 4.2

PISA ranking in average reading proficiency

	Reading score	Level		Reading score	Level
Finland	543	3	Austria	491	3
Korea	534	3	Germany	491	3
Canada	528	3	Latvia	491	3
Australia	525	3	Czech Republic	489	3
Liechtenstein	525	3	Hungary	482	3
New Zealand	522	3	Spain	481	3
Ireland	515	3	Luxembourg	479	2
Sweden	514	3	Portugal	478	2
Netherlands	513	3	Italy	476	2
Hong Kong	510	3	Greece	472	2
Belgium	507	3	Slovak Republic	469	2
Norway	500	3	Russia	442	2
Switzerland	499	3	Turkey	441	2
Japan	498	3	Uruguay	434	2
Macao	498	3	Thailand	420	2
Poland	497	3	Serbia	412	2
France	496	3	Brazil	403	1
United States	495	3	Mexico	400	1
Denmark	492	3	Indonesia	382	1
Iceland	492	3	Tunisia	375	1

Source: OECD (2004a), Table 6.2, p. 444.

[6] PISA (2003), p. 278.

Brazil – are all emerging economies. Among the richest European countries, Liechtenstein ranks 5th in mathematics, Switzerland 9th, Luxembourg 23rd, and Norway 22nd. Finally, as we argue below, there is only a moderate influence of spending per pupil on these achievement measures.

Thus, the most likely explanation is that *differences in achievements across countries are due to differences in the way their school system is managed.* That important conclusion suggests that substantial improvements in schooling achievements can be obtained by learning from the experience of other countries.

3. The cost of education

Education accounts for a large share of GDP: in 2001, from some 4 percent in Greece to as much as 7 percent in Denmark. That is not specific to Europe: in the United States, the fraction is as high as 7.3 percent. Thus, from a cross-country comparison perspective, the cost of education does not seem abnormally high in Europe. However, in the United States there is a growing sense of an "education crisis", based on the observation that costs are growing, with little impact on achievement levels that remain mediocre and seem to deteriorate if one uses standardised tests. We want to know whether these problems may harm Europe, too. This section discusses the basic economics of the cost of education, the next one asks whether increased spending is an efficient investment.

From an economic viewpoint, the key property of the educational market is that it is affected by the so-called *cost disease.* The technology of education has been virtually unchanged in the last thousand years: teachers lecturing in front of an audience. That makes education similar to a performing art like theatre or opera and stands in contrast to the production of industrial goods, where a single worker, thanks to improvements in technology and machinery, can produce a far larger quantity of goods than in the past. It implies that the unit cost of education should roughly grow like wages, which themselves roughly grow as GDP per capita. In contrast, for industrial goods, prices fall relative to wages because of productivity improvements. Thus education becomes progressively more expensive relative to industrial goods. That is more or less borne out by the data: Americans spent 30 percent of GDP per capita on each student in 2001, and that figure is exactly the same as in 1991. Thus, parents have to give up a greater amount of physical consumption to get the same education level (in years) for their children. As for the European Union, that figure is 25 percent, down two points from 27 percent in 1991.[7] In the performing arts, the cost disease naturally drives consumers away; they move to substitutes that are not to the same extent affected by the cost disease, like movies, TV, and DVDs. In the realm of education, two things may prevent that from happening. First, such substitutes may not be available, a point to which we return below. Second, educational expenditures are socialised, so that parents do not see the cost of their children's education.

As a consequence of the cost disease, we expect the share of GDP devoted to education to remain constant as long as the school population remains constant, and it should go up as long as one increases the size of that population. According to this logic,

Box 4.1

The cost disease in economics

The cost disease has been analysed by the American economist William Baumol from Columbia University. It affects goods like the performing arts where there is no – or only small – room for productivity improvements. As other sectors of the economy see their productivity rising, one hour of labour can produce more goods, so that the relative price of the performing arts goes up. A simple example is as follows: assume that one hour of work produces 2 shirts, and that 1000 people can see a play by 10 actors which lasts 2 hours. These 10 actors could alternatively produce 10 x 2 x 2 = 40 shirts, so that each spectator must pay the equivalent of 40/1000 = 0.04 shirts to see the play. Suppose that a new invention raises productivity tenfold in the textile industry. The actors could now produce 400 shirts. The textile industry is willing to pay its workers 10 times more than before; to match it, theatres must increase their price to the equivalent of 400/1000 = 0.4 shirts. The price of theatre has risen tenfold relative to the price of shirts.

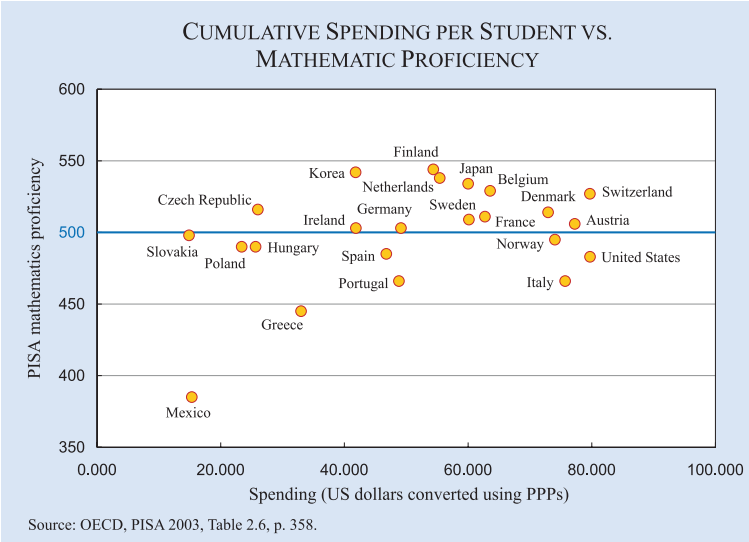
As the economy grows, the performing arts, whose productivity cannot keep up with other sectors, become ever more expensive in relative terms. If people can find substitutes for the performing arts that are not affected by the cost disease, they will gradually shift to these alternatives as the economy grows, and the performing arts will slowly disappear, in the sense that they will employ fewer and fewer workers. That is what seems indeed to be happening for theatre and opera. But, if that is not the case, people may actually consume more of them, despite the fact that they cost more. This is because less can be spent on the goods that become cheaper, so that more money can be devoted to the goods affected by the cost disease (In technical terms, it is said that the income effect then dominates the substitution effect). That seems to hold for goods like health and education, whose expenditure shares go up as the economy grows. In the case of education, people have been studying longer; given that the cost per year per pupil has grown in line with GDP, the share of educational expenditures in GDP has trended upwards.

[7] Wasmer et al. (2005).

pledges to bring more people to upper education, in order to catch up with more advanced economies like the US, can only be met at a substantial cost for the taxpayer.

One may well accept that as a fact and conclude that it is desirable for countries to spend a growing share of their income on education. But, alternatively, one may challenge the "cost disease" view and explore the extent to which one can increase productivity in the educational sector. That brings us into a realm of controversy: While the rise of education suggests that costs could now be cut drastically, many people still recommend policies which precisely go in the other direction, such as costly reductions in classroom size. We discuss these policies in the next section.

Figure 4.1



Source: OECD, PISA 2003, Table 2.6, p. 358.

4. Spending – what does it buy us?

The evidence is clear that an extra year of education is a productive investment, both at the individual and economy-wide level. However, many advocate policies that increase spending given the number of students and the number of years they spend at school. That raises the following questions: What is the effect of increased spending per student? How should a given amount of spending be allocated between say, classroom size, teachers' skills, books, computers, etc.? To answer that question, we may again use the PISA study, which reports correlations between, on the one hand, achievement measures and, on the other hand, school resources and organisation.

The lesson from this study is that spending indeed seems to affect performance positively (see OECD 2004a, Figure 2.20, p. 102), but the effect is not very strong and it only accounts for a small proportion of the cross-country variation in performance. Furthermore, the effect is probably overstated, because richer countries spend more, and that simple correlation may also capture other effects of living standards on performance (through nutrition, social norms, and so on). A lot of variation in achievement levels is not due to spending: the Slovak Republic spends one fourth of the United States' expenditure on each student and yet fares better in mathematics.

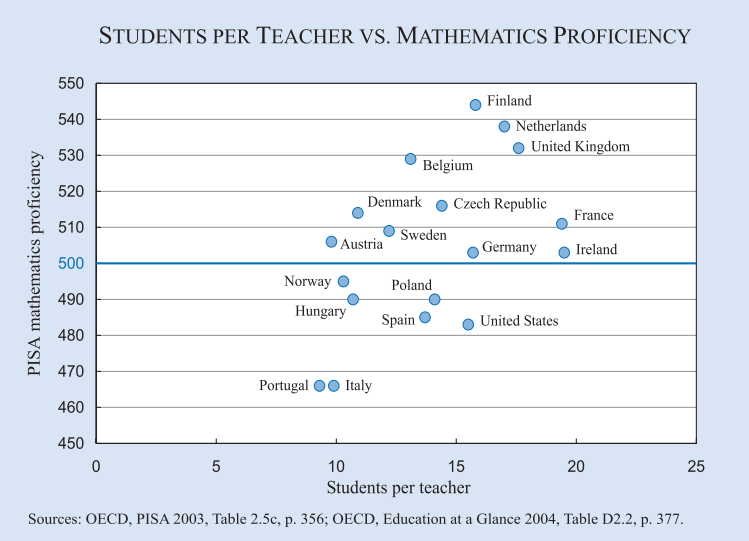
Figure 4.1 plots cumulated spending on education per student between 6 and 15 years, adjusted for PPP,[8] against the PISA math score.[9] There is no tight connection between spending and performance. We can observe a "top league" of efficient providers, such that no other country performs substantially better on both proficiency and spending: these countries are the Slovak Republic, the Czech Republic, Korea, Finland, and the Netherlands. Similarly, we can spot clear underperformers: those countries that seem most remote from the efficiency frontier, getting the lowest value per dollar spent: Mexico, Portugal, Spain, Greece, Italy and the United States(!).

Thus the effect of spending on performance is not very strong. Can we make more detailed statements? For example, do specific types of spending, like reducing classroom size, have a more significant effect of their own? That is not what the data seem to indicate. In fact, the raw cross-country correlation between students per teacher and reading proficiency is *positive*: countries with more students per teacher perform better. The same is true for mathematics (see Figures 4.2 and 4.3). While such raw correlations are replete with biases and should be taken with caution, one may think of a number of explanations: low classroom size may come at the expense of other

[8] Not adjusting for purchasing power parity is likely to be misleading. For example, consider a country where wages are lower than elsewhere, because the cost of a standard basket of goods is lower. This country would be classified as spending less per pupil than elsewhere even though it would hire the same number of teachers per pupil and grant the same living standards to the teachers. Adjusting for PPP allows to compute a measure of the true inputs into education, rather than just their dollar value.

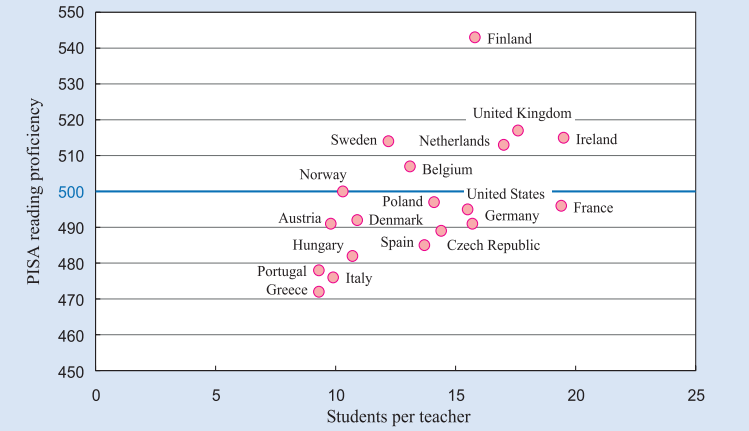
[9] Based on OECD (2004a), Table 2.6, p. 358.

Figure 4.2



Sources: OECD, PISA 2003, Table 2.5c, p. 356; OECD, Education at a Glance 2004, Table D2.2, p. 377.

Figure 4.3



Sources: OECD, PISA 2003, Table 6.2, p. 444; OECD, Education at a Glance 2004, Table D2.2, p. 377.

kinds of investment, or there may be a trade-off between quality and quantity of teachers.

The economics literature has obviously gone beyond these simple correlations: an abundant literature, based on US data, has analysed the costs and benefits of alternative educational policies. Hanushek (2002, Ch. 30) has produced an extensive meta-analysis of that literature, using 376 different studies. He finds that only a small number of spending items have a significant effect on student performance. The pupil-teacher ratio, in particular, has an effect that is not statistically different from zero in 72 percent of the studies, while the effect is statistically positive in 14 percent of them and statistically negative in the remaining 14 percent. Yet costly reductions in that ratio are constantly advocated as the path to success. Table 4.3 documents its downward trend and the associated increase in the cost of education in the United States.

The Hanushek meta-study also suggests that facilities do not have any noticeable impact on educational achievement. Teacher salary and expenditure per pupil seem to matter a little bit more, but only marginally: in both cases, some 75–80 percent of the studies find negative or insignificant effects. What seems to matter most for outcomes is the teacher's ranking on an IQ test!

If teacher quality matters, then it is not surprising that reducing classroom size is counterproductive: reducing classroom size means appointing more teachers, which is likely to imply a reduction in the average quality of teachers. That suggests that one should actually pursue the opposite policy: select fewer, but higher quality teachers, reward them accordingly, and increase classroom size to make sure that all pupils can access the high quality teachers.

The finding that indiscriminate spending and class size reduction are inefficient is confirmed by a recent event study by Bénabou et al.

Table 4.3
The soaring cost of education in the United States

	Pupil-teacher ratio	Expenditure per pupil (constant 2001 $)
1960	25.8	2,275
1970	22.3	3,849
1980	18.7	5,146
1990	17.2	6,996
1995	17.3	7,090
2000	15.8	8,044

Source: Hanushek (2002), National Center for Education Statistics.

Box 4.2

The French ZEP experience

In 1982, the French ministry of education put in place a programme of increased support for schools in disadvantaged neighbourhoods, called ZEP (zones d'éducation prioritaire). The measure was meant to be temporary, but, as is often the case with costly administrative programmes, is still in force today. Over the years, different waves of ZEPisation have taken place, so that the fraction of ZEP schools has increased. Schools in a ZEP zone have greater financial means than schools outside a ZEP zone. The bulk of this money is used to reduce classroom size, from a national average of 25 to 23, which increases teaching costs per pupil by 8 percent. Furthermore, teachers who teach in those schools have a higher salary (which boosts costs by another 4–5 percent) and are promoted more quickly. While most studies typically have failed to find a significant effect of ZEPs, they often fail to control for the fact that students in ZEPs are from more disadvantaged backgrounds. A recent study by Bénabou, Kramarz and Prost (2004) is, however, immune to that criticism because, using the 1989-90 ZEPisation wave, it looks at the difference in performance between students in a ZEP school and students in that same school before if joined a ZEP, and compares it to schools whose status was unchanged during that wave. They use results at the national Baccalauréat degree as a measure of performance. Their key finding is that being in a ZEP has essentially a zero effect on performance. While that confirms the results of Hanushek's meta-study, there is some room to believe that they may be due to the negative stigma associated with ZEP status, with the most motivated parents taking their kids to private school when their district's school becomes classified as ZEP. In any case the presumption holds that the policy has failed, especially given its high cost.

(2005) on the French experience of ZEP (Zones d'Education Prioritaire) (see Box 4.2) and by several recent studies such as, for example, Woessman and West (2005).

We conclude from this section that there is little empirical support for the popular view that increased spending per student, especially in the form of reduced classroom size, *has had* a significant effect on educational quality. That does not imply that it *could not*. To quote Hanushek's words: "The evidence does not say that money and resources never matter. Nor does it say that money and resources could not matter. It simply describes the central patterns of results given the current organisation and incentives in schools. Indeed, a plausible interpretation of the evidence is that some schools in fact use resources effectively, but that these schools are counterbalanced by others that do not. At the same time, the expansion of resource usage unaccompanied by performance gains implies a high level of inefficiency in the current operations of schools."

5. Meritocracy and selectivity

An issue in defining an educational system is: how demanding should it be on pupils? How much should one emphasise the achievements of some pupils relative to others? How large should differences be between "good schools" and "bad schools" and how selective should the "good schools" be? That is, how meritocratic should the system be?

From an economic perspective, a number of issues are involved. At a first level of analysis, one may just view education as an input in the production of human capital. If people were just buying it on the market, no selection would be required. Indeed, that is what is happening in private, continuing education classes when people take classes in foreign languages, driving, computers or math. Nobody is being turned down, entry tests are used to determine which level is appropriate, and exit tests give the customer a signal that he may use on the job market. This suggests that selectivity is the by-product of the artificial scarcity created by the fact that education is free. However, full-curriculum private schools are often selective, despite often charging high tuition. That is because education is not only an input in human capital, but also a signal about one's intrinsic productivity.[10] An institution that becomes less selective allows more people to get education, which raises their productivity, but at the same time it performs a poorer job at signalling the intrinsic productivity of its graduates. For that reason it may not accept applicants even though they might want to pay the full cost of education.

Another aspect of meritocracy is that it provides incentives to work hard in order to gain entry into the good schools. However, note that too much selectivity may be counter-productive in that respect, as one does not want to invest too much into winning a contest if the probability of winning it is too low. Also, critics argue that meritocracy is inegalitarian because it favours students from privileged backgrounds. That argument may hold only if one believes that the alternative would be to put all pupils at the same level by some coercive means. However, the likely alternative is that if one reduces academic meritocracy as an engine of social promotion, it will be replaced by money and social networks and social mobility will be even lower.

[10] See Akerlof (1970) and Spence (1973).

Box 4.3

Main features of the Finnish education system

Figure 4.4 gives an overall picture of the Finnish education system. Municipalities are responsible for providing and running the basic education and upper secondary schools.

Basic education is based on comprehensive schools and on the principle of equality. Pupils usually attend the local school in the neighbourhood where their family lives, though there is some movement from neighbourhood schools to other schools especially between the 6th and 7th grades when students move from primary to lower secondary school. The basic education is mandatory, the curriculum is largely the same for everybody, and the schools are publicly funded and run. There are a very small number of private schools, mainly a few foreign schools in Helsinki.

As regards educational achievement in basic education, it has been found that there are some differences in learning results between schools, between boys and girls and between different regions of the country. These differences are, however, relatively minor. Moreover, it has been found that in Finland the influence of students' socio-economic background on learning performance is among the lowest among countries in the PISA system.[a)]

About 55 percent of the students finishing basic education entered the upper secondary school system and 35 percent the vocational school system (in 1999). Three percent of students continued an additional, voluntary 10th grade of basic education, while seven percent did not continue in the education system in the year after they finished basic education. Both upper secondary and vocational schools provide qualification for continuing into tertiary education, which splits into university and polytechnic education.

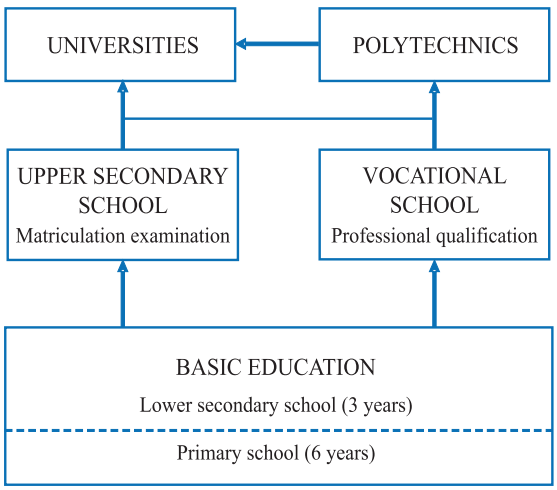
Entry to the upper secondary schools is based on the final grades that students achieve in the basic education system. This has led to significant competition among students for places in the best upper secondary schools. The competition is very visible in the bigger cities like Helsinki. The grades required for achieving entry to one of the best high schools in Helsinki are quite high and the entry thresholds make news every year. Naturally, the competitive elements have led to significant differences in the education results among schools, though even at this stage students' socio-demographic background is the most important explanatory factor behind differences in educational attainment in upper secondary schools.

About 65 percent of an age cohort enters the tertiary system and about 43 percent of the entrants to tertiary education go to the polytechnics. The emphasis on competition between students continues at the level of entry to the university system. The universities exercise a system of entry exams and entry can be very difficult, depending on the subject that a student finishing upper second schooling wants to study. There is significantly less competition among students for places in the polytechnics.

[a)] See Asplund and Leijola (2005) for a summary of these results and references.

Figure 4.4

THE FINNISH EDUCATION SYSTEM



The Finnish education system, discussed in Box 4.3, involves stiff competition from pupils to get into the best high schools, while remaining quite egalitarian in terms of the resources given to each student. This may be an important explanation of why Finland fares extremely well in the PISA study in terms of overall achievements (see Tables 4.1 and 4.2). Moreover, outcomes are not more unequal than in other countries, and socio-economic background does not matter more than in other countries. That experience suggests that meritocracy is a powerful tool for boosting educational achievements, while not generating more inequality than the feasible alternatives.

6. Fighting the cost disease: school competition and parental choice

In light of the rising costs of education, which is a particularly salient phenomenon there, the US has in recent years seen a heated debate on the problem of school quality. This has triggered a wealth of empirical studies as well as interesting proposals regarding, for example, school vouchers, greater parental choice between schools, greater accountability of public schools, incentive schemes based on academic achievements, and the like. Even though education in Europe is not as costly as in the US, we believe it is time to ask the same question here, rather than wait for costs to become unbearable.

The idea behind parental choice is simple: parents would be free to choose the school which gives the best results given their children's needs. Schools that are successful in attracting pupils would be allowed to grow accordingly, as their resources would be adjusted upwards. Schools that lose children would experience a proportional reduction in resources and can eventually be forced to close. For this system to work, sufficient autonomy must be granted to schools in

their organisational and pedagogical choices. The outcome would somewhat mimic a market outcome, but one need not resort to full-scale privatisation to achieve it, and one can avoid the adverse consequences for equal opportunity and social mobility of a pure private system.

In most current public systems, pupils are allocated to a school depending on their residence, and schools are run in a centralised way. On paper, this is supposed to guarantee maximum equality. In practice, there is no incentive for either cost reductions or quality improvements. In addition, disadvantaged families suffer most from inefficient public schools, as opting out into a private school is too costly for them. Thus they might be the individuals who gain most from increased school competition. Against these arguments stand the two traditional ones that (i) parental choice need not be the best solution from the child's perspective (some parents, for example, may, place excessive weight on religious instead of academic content), and (ii) pupils may be sorted into schools in a segregated and/or inegalitarian way.

Box 4.4

The Milwaukee Voucher Programme

"Vouchers for poor students in Milwaukee were enacted in 1990 and were first used in the 1990–91 school year. Currently, a family is eligible for a voucher if its income is at or below 175 percent of the federal poverty level (at or below 17,463 dollars for a family of four). For the 1999–00 school year, the voucher amounted to 5,106 dollars per student or the private school's cost per student, whichever was less. For every student who leaves the Milwaukee public schools with a voucher, the Milwaukee public schools lose state aid equal to half the voucher amount (up to 2,553 dollars per voucher student in 1999–00). Milwaukee's per pupil spending in 1999–00 was 8,752 dollars per pupil, so the district was losing 29 percent of the per pupil revenue associated with a voucher student. Currently, the vouchers may be used at secular and non-secular private schools" (Hoxby 2004, p. 24).

Using differences between eligibility levels to identify the degree of competition faced by schools, Hoxby finds that achievement (as measured by test scores) improved in the schools that faced more competition from private schools relative to those that faced less competition. Evidence from parental choice programmes in Michigan and Arizona (Charter schools) points to similar results.

These are important findings suggesting that introducing competition between schools would improve the efficiency of the educational system. What about potential adverse effects? Can we fear, for example, that vouchers would lead to increased segregation, and that the most disadvantaged would suffer because they would stay in degraded public schools? We do not have a clear answer on that. Epple and Romano (1998) analyse the impact of vouchers in a theoretical model. They predict that introducing vouchers will mostly benefit *bright* students from *poor* families, who would be able to move to private schools that will not charge them a high price (thus remunerating them for the positive peer effects they create), while low-ability low-income students would lose, but not by much. However, their analysis ignores any positive effect of school competition on the efficiency of public school. If these effects are strong enough, voucher systems could in fact benefit everybody.

Enhancing parental choice and school competition is not absent from the European debate either, although many countries maintain an egalitarian, rigid approach to schooling. In particular, in the UK, the scope for competition and parental choice was greatly enhanced by the 1988 Education Act. A recent study suggests that this had positive effects, in that achievement improved substantially in the schools that were granted more autonomy. However, there is no evidence of competition improving performance in schools that remained in the traditional, non-autonomous system.

The available amount of evidence on the role of parental choice and competition is not huge, because of the scarcity of real world voucher programmes and similar school competition policies. Furthermore, that evidence is not always easy to interpret. For example, a prominent study by Rouse (1998) finds that a Milwaukee voucher program that allowed a small number of poor children to attend private schools was successful in that participants fared better than a "control group" of non-participants. That tells us that private schools are "better" than public schools, which is not very surprising since a "worse" private school could not survive competition from free public schools. But it tells us little about what would happen if the educational system was entirely redesigned to be based on vouchers.

Angrist et al. (2002) studied a truly random experiment in Colombia, the so-called Programa de Ampliacion de Cobertura de la Educacion Secundaria, which gave vouchers covering 50 percent of the cost of private schools to 125,000 students selected by a lottery mechanism. They found that lottery winners had better achievements, confirming the view that the private schools were better. Again it is hardly surprising that those being allowed to choose between a private and a public school achieve better results than if they are confined to a public school. We expect that to always be the case unless people grossly misperceive school performance.[11] These studies cannot answer the key question, which is: does parental choice create competitive pressure that leads to increased efficiency or does it only lead to sorting of pupils by skills, parental background, religious beliefs, income and other characteristics, with potential adverse effects on social cohesion and also (to the extent that there are peer effects) on the overall performance of the school system?

[11] However, the authors also argue that a cost-benefit analysis can be performed on the basis of their results and that this suggests that shifting from public provision to vouchers has a positive net social value.

Fortunately, there are studies – a number of them by Hoxby (2004)[12] – that directly document such competitive pressure by looking at the effect of parental choice programmes on achievement in *public* schools – that is in the schools that the choice students are allowed to leave. For example, the Milwaukee voucher programme (see Box 4.4) was extended in 1998, covering now 15 percent of school enrolment. That means that public schools can lose a substantial fraction of their students. Furthermore, the programme is designed so that these schools also lose resources – thus public schools have a genuine incentive to improve to retain students.

Box 4.5 gives basic information and results about the UK education reform under the Thatcher government, which gave more scope for parental choice and more independence to schools with respect to local education authorities.

7. Putting the evidence together: designing an efficient schooling system

The preceding discussion suggests that school autonomy associated with parental choice has positive effects on the performance of the educational system, while centralised meritocratic systems also work well. More systematic cross-country studies based on PISA-type data can correlate achievement measures with data on how the system is managed in each country. These data are summarised in the appendix to this chapter in Table A4.1, and capture characteristics such as the degree of school autonomy, the prevalence of central exams, the importance of private vs. public financing and management, and so on. They suggest that the combination of autonomy and meritocracy works best. Indeed, these studies show that school autonomy typically works best in countries where a central nation-wide exam takes place at the end of high school, while it has insignificant effects in the absence of a central exam.[13]

While this type of evidence is not as convincing as natural experiments, since it ignores the reasons why a given country has chosen a given system, it makes a lot of sense. Results at national exams provide a common metric by which parents can evaluate the performance of alternative schools. Furthermore, by designing national exams, governments can set standards for what schools are supposed to achieve, and (provided the central exams are properly designed) reduce parental incentives to put their children into schools with useless or biased curricula. In principle, however, one could also envisage a market-based system for evaluating schools, based on subsequent labour market outcomes, as is the case for higher professional education.

As for the financing of education, things are more complex. At one extreme, pure public financing favours equal opportunity, since students can in principle access the same educational resources regardless of their family background. On the other hand, it gives little incentives to cut costs. At the other extreme, pure private financing is inegalitarian: there is indeed evidence that achievements are more likely to depend on family background, the lower the share of public financing.[14] But it leaves more room for cost-cutting and price competition. However, price competition does not seem to have managed to bring down the costs of private schools, in part because in most countries the poor, who are the ones who should care about costs, cannot

Box 4.5

Education reform in the UK

In 1988 the Thatcher government enacted an Education Act, which substantially increased the scope for parental choice. The key ingredient of the reform was to force schools to accept pupils indiscriminately up to some limit, and to tie a school's financial resources to its number of pupils. Thus, it was felt, better schools will attract more pupils, which would trigger an increase in their resources, allowing them to grow at the expense of less efficient schools. At the same time, school autonomy was enhanced by transferring decision making from the district (Local Education Authorities, LEAs) to the school level. Finally, new schools (so-called "Grant Maintained" GM) were created. They enjoyed even greater autonomy and were totally independent of the LEAs. Schools under the supervision of LEAs could opt out of that system and become grant-maintained. In particular, that procedure involved parental vote.

Clark (2005) identifies the effects of the reform on educational achievements by looking at differences in outcomes among schools that decided to opt out of the LEA system by a narrow margin, and schools that decided to stay in by a narrow margin (thus mimicking a random experiment). He finds large positive effects of the GM status on graduation rates, and shows that these effects are not due to student selection. On the other hand, contrary to some findings by Hoxby, he does not find large spill-over effects on schools that remained in the LEA system – they do not seem to have been 'disciplined' by competition from GM schools.

[12] In an earlier paper, Hoxby (2000) uses instrumental variable techniques rather than natural experiments, reaching similar conclusions. While there is controversy about the robustness of these results (Rothstein 2005), which the authors of the present report are not able to evaluate, the 2004 paper we refer to uses a number of different empirical studies to validate the claim that school competition has a positive impact on productivity, including the Milwaukee voucher programme mentioned in the text.

[13] See Woessmann (2005), Bishop (1997), and Juerges et al. (2005).

[14] See Schuetz et al. (2005).

afford private schools and send their children to public schools instead. This suggests that a generous voucher system, in which a large fraction of costs is covered by vouchers, might be a good mechanism to reconcile price competition with equal opportunity.

The PISA study suggests that the organisation of public schools has a large impact on achievements. Furthermore, naïve increases in spending, in particular in the form of smaller classes, seem to be an inefficient way of raising achievements. On the other hand, we have argued that substantial improvements can be obtained if one fosters competition, both among students to get into the good schools and among schools to attract the good students. The available evidence suggests that while raising performance, such policies would not be particularly "unfair" or "inegalitarian" relative to current practices. Equal opportunity can be preserved if the financing of education remains public or if private financing is sustained by vouchers for a large enough amount. A national central exam will allow society to make most out of school competition, by giving parents a clear, uncontroversial way of measuring school quality.

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Table A4.1

The institutional characteristics of educational systems

			Distribution of students in primary education		Distribution of students in lower secondary education		Distribution of students in upper secondary education			
	Share of students covered by central exams (Science & Math)	Share of public expenditure (2002)	Public institutions	Government-dependent private institutions	Public institutions	Government-dependent private institutions	Public institutions	Government-dependent private institutions	First age of selection	Percentage of decisions at school level, lower secondary education (2003)
Austria	0	93.3	95.6	4.4	92.3	7.7	90.0	10.0	10	29
Belgium	0	94.2	45.4	54.6	43.2	56.8	42.1	57.9	12	43
Czech Republic	100	94.5	98.9	1.1	98.2	1.8	87.4	12.6	11	60
Denmark	100	96.1	88.0	12.0	76.9	23.1	97.5	2.5	16	44
Finland	100	97.8	98.8	1.2	95.8	4.2	89.6	10.4	16	27
France	0	92.1	85.4	14.3	78.8	21.0	69.5	29.7	15	31
Germany	35	83.3	97.3	2.7	92.9	7.1	92.5	7.5	10	32
Greece	0	95.4	92.4	0.0	94.5	0.0	93.7	0.0	15	13
Hungary	100	89.8	94.7	5.3	93.7	6.3	85.9	14.1	11	68
Ireland	100	93.4	99.1	0.0	100.0	0.0	98.5	0.0	15	n.a.
Italy	100	92.6	93.2	0.0	96.6	0.0	93.7	0.7	14	48
Japan	100	74.5	99.1	0.0	94.0	0.0	69.8	0.0	15	23
Netherlands	100	90.3	31.3	68.7	23.8	76.2	7.8	92.2	12	100
Norway	100(*)	96.2	98.2	1.8	97.8	2.2	90.1	9.9	16	37
Portugal	0	98.4	89.5	0.0	88.7	0.0	81.8	0.0	15	41
Slovak Republic	100	95.3	95.8	4.2	94.9	5.1	92.0	8.0	11	50
Spain	0	88.4	66.6	30.1	67.2	29.7	76.9	12.0	16	28
Sweden	50	96.7	94.9	5.1	94.6	5.4	96.6	3.4	16	47
Switzerland	0	n.a.	96.3	1.3	93.0	2.5	93.1	3.2	15	n.a.
UK	100	84.4	95.1	0.0	93.2	0.4	26.9	70.4	n.a.	85 (England)
US	7	73.8	89.2	0.0	90.8	0.0	90.9	0.0	16	n.a.

Sources: Central Exams: Woessmann (2003), (*) only math. Share of public expenditure for all levels of education, OECD (2005), table B3.1; Distribution of students by type of institution, OECD (2005), table D5.1 (remainder to 100% are independent institutions); First age of selection, OECD (2005), table D6.1; Decision level, OECD (2004), Table D.6.6.

Mergers and Competition Policy in Europe

1. Introduction

Merger activity is gathering pace in Europe. 2005 saw large value mergers or acquisitions such as Italy's Unicredito of Germany's HVB in the banking industry and France's Pernod Ricard of the UK's Allied Domecq in the food and drink sector. The pace of activity in utilities has been especially hectic: France's Suez acquired Belgium's Electrabel, France Telecom bought Spain's Amena and Telefónica (Spain) has launched a bid for O2 (UK). Within Spain, Gas Natural has also announced its intention to take over Endesa. Private equity firms (mostly British and American) have been active, especially in the profitable restructuring of conglomerates. Not so long ago mergers were basically an Anglo-Saxon phenomenon, but now they are a European phenomenon. Cross-border mergers are an increasing proportion of the total, and activity within the EU-15 is now the most important component of this trend.

This reflects the long-term effects of market integration in Europe. But broader trends in the world economy are also important – the revolution in information technology, the widening of markets through globalisation, the strength of corporate profits and the availability of cheap credit. Globalisation, especially in the form of competition from emerging economies, like China and India, has induced restructuring and redeployment to increase productivity, and mergers are an integral part of such a process.

Mergers raise many public policy issues. It is not clear that mergers always create value for either shareholders or customers. Consolidation poses a threat to competition, the main driver of efficiency and productivity growth, and domestic competition is the best school for international competitiveness. Domestic mergers are generally more threatening to competition than cross-border ones, and it may be agreed that globalisation lessens the need for merger control. But it is important to establish that European merger control is up to the task of ensuring that the merger wave is beneficial to consumers as well as to investment bankers.

Many European governments have a protectionist instinct and view with suspicion the foreign takeover of their national champions. They also tend to give special attention to what are considered "strategic" sectors, such as banking and utilities. These pressures are particularly strong in France and Italy, as the discussion over whether French Danone could be taken over by PepsiCo, and the obstacles put by the (former) governor of the Bank of Italy to the foreign takeover of Antonveneta and BNL show. France has issued a list of strategic sectors where national interests have to be protected (although it seems that yoghurt finally has not been included in the list).[1] These actions have not, however, halted the steady rise in cross-border mergers; and, somewhat paradoxically, acquisitions by French public or semipublic companies (for example, by France Telecom and EDF) have been particularly extensive. There are two closely related public policy questions in this context. Does ownership matter? Does Europe need either national or European champions?

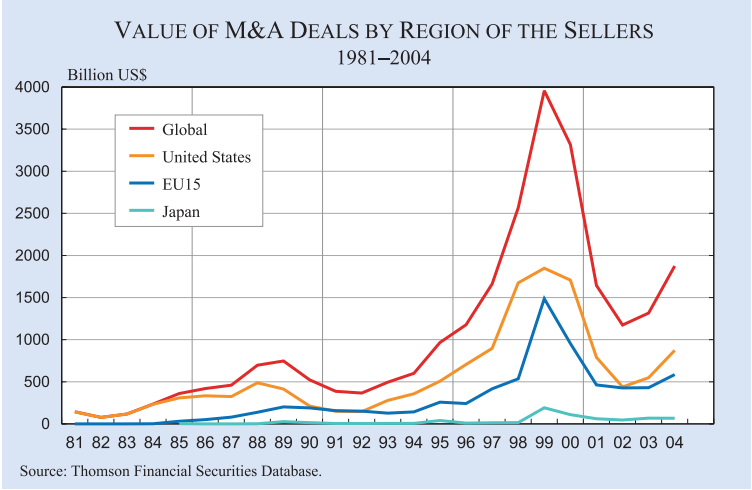
In this chapter we will look first at some of the recent evidence on merger activity, focusing on the rationale of mergers and evaluation of their effects. We go on to survey the evolution of competition policy towards mergers in Europe and the new regulation that the EU has put in place. We will also explore the tension between industrial policy and competition policy.

2. Mergers and acquisitions in figures

The world has never before seen a boom of mergers and acquisitions (M&A) on the scale of the late 1990s. According to the Thomson Financial Securities Database, 1999 marked the peak of the

[1] Mr Riboud, chairman and CEO of Danone, stated: "It is the duty of governments and political representatives in all parts of the world to do what they can to see that the decision-making centres of large businesses stay in their home countries. There is nothing shocking about that. I don't think there was anything out of place in the way the French government and politicians showed concern over the possibility of a hostile bid."

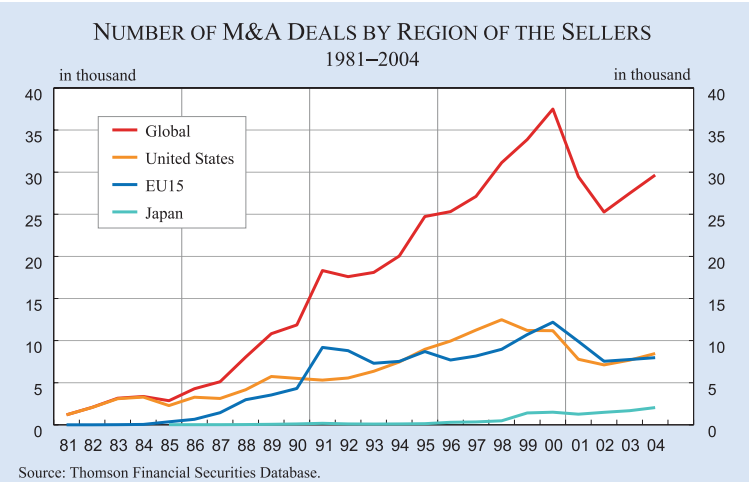
Figure 5.1



recent mergers and acquisitions boom with an aggregate value of nearly 4,000 billion dollars. For comparison, in 1989 – the peak of the preceding boom in terms of merger value – the figure reached 747 billion dollars. The peak in the number of deals was reached in 2000 when more than 37,000 were reported (see Figures 5.1 and 5.2). The magnitude of the recent boom means that the rising trend evident in Figure 5.1 disguises the tendency for mergers to occur in waves: the scale of activity at the end of the 1990s dwarfs the peak of ten years before, itself a substantial increase on previous levels. However, the last century has seen merger waves – one at the beginning of the century and then at the end of the 1920s, 1960s, 1980s and 1990s.

Until the 1980s, most M&A activity was undertaken by American and British firms. But during the latest wave, mergers and acquisitions also played an increasing role in other industrialised countries, especially in continental Europe. This can (in part) be attributed to the introduction of the Single Market in 1993, but also to the fall of the Iron Curtain and the intensified competition from low-wage countries.

Figure 5.2



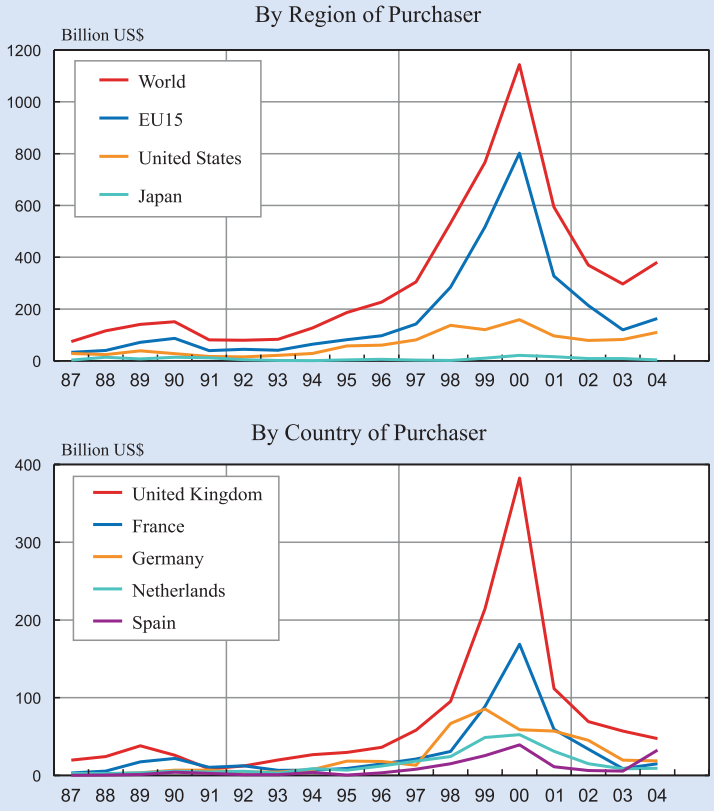
The decline in value since 2000 is more accentuated than the decline in the number of deals makes clear. This indicates the extent to which the recent boom featured so-called mega-deals, defined as transactions with a value of more than one billion dollars. According to the World Investment Report 2004 these transactions made up 40 percent of the entire cross-border M&A value in 1987, whereas its share rose to 75 percent in 2000. Prominent examples of such mega-deals have been mentioned in the introduction. Other examples include the purchase of Italy's Banca Antonveneta by the Dutch ABN Amro and the German deal between Viterra and Deutsche Annington Immobilien (IBO).

As the number of international transactions demonstrates, *cross-border* M&A has gained importance and contributed more than proportionately to the increase in overall merger value. In 1986, 17.6 percent of all M&A value was incorporated in cross-border transactions, the share rose to 39.9 percent in 1990 and to 37.2 percent in 2001.[2] Figure 5.3 shows that cross-border activity was especially vigorous in EU-15 countries. The exceptional size of the 1999–2000 boom is almost entirely accounted for by this explosion in activity within the EU. US companies were also major players in mergers and acquisitions, but the cyclical upswing there was much less pronounced, as was also true in Japan (where the scale of M&A activity is much smaller).

Within Europe, the United Kingdom has always been the most active purchaser of foreign firms, as shown in the lower part of Figure 5.3. France was next, with

[2] According to the Thomson Financial Securities Database.

Figure 5.3



Source: UNCTAD (2005).

purchases rising from a value of 21.8 billion dollars in 1990 to 168.7 billion dollars in 2000. In 2005, France even became the leading player with an aggregate deal value of 59.5 billion dollars (see Table 5.1). German companies only started to purchase foreign firms in the recent merger wave: 1999 was the peak year so far with an aggregated deal value of 85.5 billion dollars. The Netherlands and Spain are the next largest acquirers.

Table 5.1

European cross-border M&A (1 Jan.–15 Aug. 2005)

Country of acquirer	Deal value (bn. $)	Number of deals
France	59.5	146
United States	55.6	398
Italy	27.9	76
Britain	19.8	272
Spain	18	53
Sweden	15.7	136
Switzerland	11.7	70
Germany	7.4	164
Denmark	6.6	91
Saudi Arabia	6.6	2
Total	286.6	2251

Source: The Economist, 3 September, 2005, Dealogic.

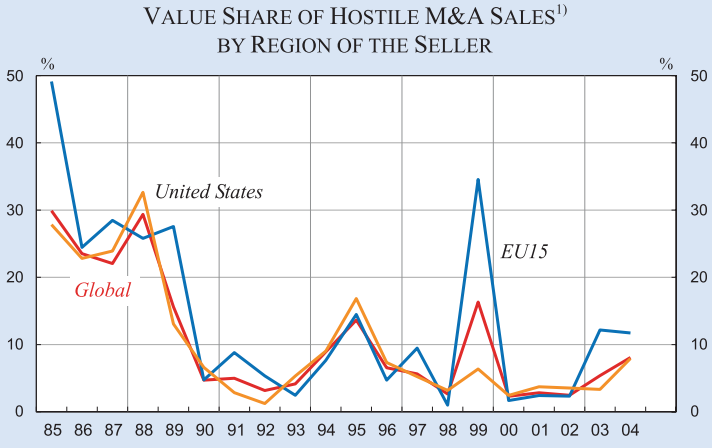
The growth of European merger activity means that the US is now a net seller of firms and Europe a net buyer: in 2000, European firms were sold, to the value of $587 billion, but purchases by European firms totalled $802 billion. The equivalent figures for the United States are $324 billion and $159 billion respectively.[3]

China basically only plays a role as a target region of M&A. In 2001, M&A sales reached a local peak of 10.6 billion dollars. The purchases, however, peaked in 2001 with only 1.6 billion dollars. Surprisingly for its size, Japan literally does not participate in international cross-border merger activity. Even in the boom year 2000 Japanese companies undertook M&A deals of "only" 20.8 billion dollars. For comparison, the US reached a value of 159 billion and the UK one of 382 billion dollars.[4]

The new EU member states can be neglected as purchasers, but they are important as a target region. In these countries merger activity increased from literally zero in 1989 to a total value of about 18 billion dollars in 2001.[5] Hungary, Poland and the Czech Republic are the major target countries, with a combined deal value of almost 13 billion dollars in 2001, while the entire group of new members reached a level of 14.7 billion dollars. This makes up 88 percent of all cross-border M&A sales in these three countries. The development was almost entirely driven by foreign investors, especially in the eight Eastern European states which became recipients of flows of foreign capital after the Iron Curtain was lifted. In 1990, 100 percent of all merger value

[3] According to UNCTAD (2005).
[4] UNCTAD Cross-Border M&A Database (2005). The figure for the UK is exceptionally high for the year 2000 due to the takeover of Mannesmann by Vodafone. The deal itself comprised 202.8 billion dollars.
[5] These figures are from the Thomson Financial Securities Database.

Figure 5.4



1) Cross-border and non cross-border.
Source: Thomson Financial Securities Database.

there was classified as cross-border activity. Thereafter, this share decreased to 64 percent in 2003. However, the trend pointed upwards again in 2004. The share of cross-border M&A is still at a very high level compared to more developed economies.

Hostile activity has declined since the 1980s. In 1985, about 30 percent of the value (although a much smaller proportion of the number) of acquisitions were hostile,[6] and this figure was even close to 50 percent within the EU-15; the share of contested bids had fallen to 8 percent in 2004 (there is a spike in 1999 due to the takeover of Mannesmann by Vodafone for $202.8 billion, a deal so large that it significantly distorts all figures for that year[7] (see Figure 5.4).

Among cross-border transactions, Evenett (2003) points out that the service sector has played a more prominent role in M&A activity in recent years. While in 1990 about 62 percent of the value of mergers was in the manufacturing sector (with only 35 percent in the tertiary sector), this ratio was reversed ten years later. In the recent wave, the proportion of horizontal mergers has increased: Andrade et al. (2001) report that nearly 50 percent of all mergers in the US take place between firms from the same industry. But the industries within which such activity has been concentrated have changed substantially over time, as Table 5.2 illustrates.[8]

Although the recent trend of M&A underlines the increased global perspective of firms by both a higher value of mergers and a wider participation of countries, M&A activity is still concentrated in a few regions. The US and the UK are still major players if one looks at total value of M&A deals. However, continental European countries have caught up in recent years and even outperformed the US and the UK in cross-border M&A recently (see Table 5.1).

3. The rationale for mergers

Globalisation is associated with technological change (particularly in information technology), with decreases in trade and transport costs (in goods, capital, people and information), and with liberalisation and market integration, which simultaneously enlarge the market and increase competitive pressure. Productive systems require revision to accommodate these changes. In many sectors the number of firms will have to be reduced in an integrated or enlarged market in order to reap economies of scale. In many industries, in particular in those subject to network externalities and learning curves, activities that demand or give advantage to scale, such as investment in R&D, innovation and securing a large customer base, become central to competitive strategy. Mergers are a prime instrument of industrial restructuring.

For example, in banking there is a move from the traditional business of taking deposits and granting loans to the provision of services to investors (investment funds, advice and insurance) and to

Table 5.2
Top five industries based on average annual merger activity (US)

1970s	1980s	1990s
Metal mining	Oil & gas	Metal mining
Real estate	Textile	Media & telecom.
Oil & gas	Misc. manufacturing	Banking
Apparel	Non-depository credit	Real estate
Machinery	Food	Hotels

Source: Andrade et al. (2001).

[6] A merger is classified as hostile if there is resistance to the takeover on the part of the target company's board of directors and management.
[7] UNCTAD and Thomson Financial count this merger in different years.
[8] Further evidence is provided by Mitchell and Mulherin (1996) and Andrade and Stafford (1999).

firms (consulting, insurance, advice and preparation of M&A, underwriting of equity and debt issues, and risk management). As a source of revenue, the margin – that is the difference between borrowing and lending rates – makes way for fees and commissions, and investment in "bricks and mortar" (the branches) to investment in communication networks, information technology, and highly specialised human capital.[9] This change may mean that size is important, especially in wholesale and investment banking. The outcome of this process is an overhaul of the banking sector that, in general, is more advanced in the US than in Europe.

Merger and acquisition activity may enhance profits by improving the efficiency of firms or increasing their market power. Firms may merge to obtain synergies, exploit scale economies and rationalise production, or to reduce managerial inefficiency by taking over a poorly run firm. If capital markets are imperfect, it may pay also to merge to gain financial muscle and to diversify to undertake major and/or risky investments. This may apply in particular to important R&D projects. But a horizontal merger may also increase the market power of the merging firms, enabling them to raise prices. A vertical merger may have efficiency benefits. It may eliminate the "double margin" which arises when two successive firms in the chain of production each have market power: it may also enable complementary assets to be brought under single control. Vertical mergers may, however, also raise rivals' costs or foreclose a competitor. This may be the case, for example, if the merged entity controls some essential input for downstream suppliers.

There may also be other motives for merger that need not increase profits or enhance shareholder value. These result from the ambitions of managers and inefficiencies in the relationship between them and the owners of the firm. Managers may seek higher status by promoting size rather than profitability, may protect their private benefits of control with entrenchment strategies, and may engage in empire building. Size may lead to inefficiency as management becomes bureaucratic and the loss of control by owners leads to agency problems. A typical defensive strategy to keep a firm independent is to engage in unprofitable mergers to increase firm size and make a takeover by another company less likely. Mergers may be the consequence of hubris: managers are overconfident and assess the potential value of a merger incorrectly, thus undertaking unprofitable mergers (Roll 1986).[10]

Regulation, and the relationship between economics and political structures, may also provide a motive for merger. A large firm may be "too big to fail"; this is typical of the banking business but applies to other industries as well. It may have a larger capacity to influence regulation or more capacity to obtain subsidies through lobbying and political connections. For international firms, size may be important to obtain government protection of their interests abroad. These arguments will tend to have more weight for domestic mergers than for cross-border mergers.

Almost all these reasons for mergers – good and bad from the perspective of shareholders, desirable and undesirable from the perspective of public policy – can be seen in the banking industry. Size offers the possibility of exploiting scale economies in administrative and back-office operations, information technology, and in investment banking type operations (related to information gathering and fund management). Size may help in realising scope economies (through combining different product lines because, for instance, it increases the value of customer relationships and decreases average marketing costs). Consolidation may deliver these advantages, eliminating excess capacity in the branch network when the networks of the merging banks overlap, and improving diversification, particularly if the banks operate in regions with non-synchronised cycles. Furthermore, consolidation may provide a way to cut excess labour and to access the mass retail market in a foreign country.

As we have seen, mergers tend to happen in waves. Only recently have theoretical models attempted to account for this phenomenon. The explanations involve the exploitation of market inefficiencies (Shleifer and Vishny 2003, Rhodes-Kropf and Viswanathan 2004), the desire of managers to preserve their independence (Gorton et al. 2005), cyclical phenomena (Lambrecht 2004), strategic considerations (Faulí-Oller 2000 and Toxvaerd 2004) or capital reallocation due to technological shocks (Jovanovic and Rousseau 2002, 2003). Although all these factors may help explain merger waves, the argument based on technological shocks seems the most compelling. The different theoretical models are described in Box 5.1.

[9] However, we should expect that banks will maintain a liquidity insurance provision role.

[10] See also the survey article on mergers by Mueller (2003).

Box 5.1

Why mergers happen in waves

Exploitation of market inefficiencies. In Shleifer and Vishny (2003), stock-financed mergers are driven by relative market valuations of merging firms. Stock market inefficiencies lead to misvaluation. Rational managers exploit these inefficiencies, in part through mergers, and takeovers are more likely when misvaluations are high.
In a similar vein Rhodes-Kropf and Viswanathan (2004) construct a rational model of stock mergers with false market valuations. While managers of the bidder have private information about both the stand-alone value of their own firm and the potential value of the merged firms, target firms' managers are only aware of the stand-alone value of their firm. To assess the synergies, they have to rely on market valuation through the bids they receive. This is the crucial mechanism of the model that generates merger waves. Since there is a market-wide and a firm-specific effect of the misvaluation, the target tries to filter out the market-wide effect. When the market-wide overvaluation is high, the estimation error of the synergy is also high. Hence, bids appear much more attractive in overvalued than undervalued markets. Empirical evidence for the impact of stock market valuation on M&A activity can be found in Ang and Cheng (2003), Dong et al. (2003) and Rhodes-Kropf et al. (2005).
Manager independence. Gorton *et al.* (2005) explain merger waves by the managerial interest in keeping the firm independent. Since larger size decreases the probability of acquisition by another firm, protection against mergers may be pursued at the expense of profitability, and a potentially efficient merger within one industry may result in a merger wave with unprofitable mergers. The first merger sets off a chain reaction; as the authors put it, the defensive actions of all companies result in a "race for firm size".
Cyclical phenomena. Lambrecht (2004) provides a model to explain why mergers occur more frequently in times of economic expansion than recession. Takeovers promise the exploitation of scale economies, which are correlated with the market demand for the firm's product and hence its market price. Given that mergers always involve costs, transactions become more likely if product prices, and hence the benefits of the merger, rise. Consequently, product markets that show cyclical behaviour are more likely to be subject to merger waves.
Strategic considerations. Toxvaerd (2004) considers a finite number of acquiring firms competing for a scarce number of target firms. Each acquiring firm can either undertake the transaction immediately or wait for better market conditions. This, however, involves the risk of being pre-empted by competitors. The author shows that, in equilibrium, acquirers undertake their transactions simultaneously, thus generating merger waves. The intuition for this result is that while waiting to merge is only optimal when other firms wait as well, there is a risk of not finding a target firm to acquire when other companies have already acted. Thus, a merger wave is anticipated and all firms buy their predetermined target at the same time.
Non-strategic and strategic considerations. Fauli-Oller (2000), in a Cournot model with cost asymmetries, combines both non-strategic and strategic explanations for merger waves. The former comprise exogenous determinants that make takeovers profitable. The latter include interrelations among firms making mergers profitable only if other firms merge as well. The author shows that an exogenous reduction in demand stimulates merger activity as cost asymmetries are thereby accentuated and mergers become more profitable. The strategic effect is that non-participating firms create a negative effect on the merger since they respond to it by increasing their output. The fewer competitors there are, the less intense is this effect. Under certain circumstances, an initial merger can thereby make further mergers more attractive.[a)]
Capital reallocation due to technological shocks. According to the theory of Jovanovic and Rousseau (2004), merger waves coincide with epochs of technological change, for example the spread of electricity in the period 1890-1930 or of information technology between 1970 and 2002. Technological progress forces firms to restructure and make their production process more efficient. As some firms do better than others, technological change naturally generates a higher dispersion between the efficiency of different firms. The analysis relies on Tobin's q as a measure of the market's evaluation of the relative efficiency of a firm. Following this reasoning, a technological shock increases the q for successful firms and lowers it for less successful ones. Hence, high-q firms will purchase low-q firms and thus ensure a better allocation of capital. Using US stock market data, this straightforward theory provides a reasonable fit for four out of five merger waves that occurred in the twentieth century.[b)] Mergers and acquisitions have become a much more important device for capital allocation relative to ordinary entry and exit of firms in the market.

[a)] Fauli-Oller explains merger activity by a reduction in demand (in declining industries and refers to Dutz 1989 for examples), while Lambrecht (2004) points out that merger activity is positively related with booms (like the last wave which peaked in 2000). There need to be no contradiction since an overall merger wave can rather be explained by Lambrecht's view, whereas it may be true that there is some need for restructuring in declining branches (which would probably be too small to create a merger wave).
[b)] In an earlier study Jovanovic and Rousseau (2002) demonstrate that there is a clear empirical relationship between the reallocation of capital via M&A and the dispersion of q among companies. It is shown that the response of investment through M&A to a change in the dispersion of q is 2.6 times higher than the response of regular investment.

What are the consequences for concentration?

Globalisation and market integration imply effective enlargement of the market, which has consequences for the equilibrium level of concentration in a market. In an industry characterised by the presence of a fixed and sunk cost of entry, concentration decreases as the ratio of the market size to the sunk cost of entry increases. For example, when markets with the same number of firms become integrated, the total number of firms in the free entry equilibrium falls, but to a number which is larger than the initial number of firms in either of the original markets. Concentration in the integrated market is thus lower than in any of the original markets. However, in industries in which the sunk cost is endogenous – that is controlled by the firm, as in investment in R&D or in advertising or other expenditures not related to output but designed to reduce costs, boost demand, or to improve the quality of the services offered – an increase in market size need not lower concentration (Sutton 1991). For example, in banking the cost of establishing a branch

network is a fixed and sunk cost, and the transformation of banking towards a service industry may increase the sunk cost required from the bank through its investment in communication networks/information technology or specialised human capital. We might envision competition proceeding in three stages: (1) entry decisions which demand certain expenditure to be present in a market at all; (2) investment decisions which imply fixed costs, as in R&D, advertising, and information technology; and (3) following these preparatory expenditures, competition in the marketplace. Under these conditions increasing the size of the market does not generate more entry in equilibrium, in fact it may generate exit, because competition at the investment stage is very fierce. The required circumstances are that the fixed expenditure in (2) must loom large in relation to the variable one at the production and market stage and that the market share must be sufficiently sensitive to the investment effort. A larger market leads only to increased expenditures by a few firms and there is typically an upper bound to the number of active firms in the market (no matter how large that market) and we may speak of a natural oligopoly (see Sutton 1991 and Schmalensee 1992).

It is an empirical question to what degree sunk costs in a particular industry are "endogenous" in the sense described above. It is likely, however, that the increased importance of investment in information technology, in information acquisition, in building a customer base in markets with network externalities and/or learning curves has increased the importance of endogenous sunk costs. This means that fixed expenditures are now larger relative to variable ones, and that the market share has increased its sensitivity to investment in fixed costs. If this is so, then it may be true that in some industries in the global market place there is only room for a few players. In financial services this might apply to wholesale and investment banking (providing services – underwriting, trading, brokerage, rating, and advice and preparation of M&A – to the top tier of multinational corporations and medium-sized firms with international operations).

4. Merger performance

4.1 Competitive impact

A merger will affect the profits of the merged entity (the insiders), its rivals (outsiders) and will influence the prices, quality and variety of products available to consumers. Welfare assessment of a merger is thus complex. When mergers increase the profits of the merging firms, there are generally potentially two opposing effects: welfare losses from a reduction in effective competition and welfare gains from scale economies and unit cost reductions. Increased concentration will tend to enhance welfare overall only if the merged firm gains market share through lower prices.

In the absence of cost reduction effects, a merger that is profitable for insiders tends to be profitable for outsiders also because it tends to raise price and restrict output. Consumers are typically hurt. If firms are symmetric – that is of similar sizes – then the effect is a reduction in total welfare (the sum of producer and consumer surplus). However, if firms are asymmetric, then a merger of small firms may improve productive efficiency (by making the capacities of the firms in the market more equal and shifting production from high-cost to low-cost firms) and profits so much that total welfare may rise even though prices and concentration increase.[11]

In a study of mergers around the world based on the global Thomson Financial Securities Database for the period 1981 to 1998 (which covers all transactions of at least 1 million dollars in size), Gugler et al. (2003) found that on average mergers do increase profits but reduce sales of the merging firms. The authors did not find large differences between geographic areas, manufacturing or services, or between domestic and cross-border operations. Conglomerate mergers decrease sales more than horizontal mergers.

The authors differentiate four categories of merger: *Market power effects* (27.6 percent) is when sales are reduced and profits increase. *Efficiency improvement* (29.0 percent) occurs when both sales and profits rise. *Efficiency decline* (28.2 percent) is where both sales and profits fall, while a fourth category involving higher sales but lower profits (15.1 percent) may be explained by the *pursuit of size* at the expense of profits. The study reveals a rich variety

[11] In fact, under some technical conditions on the profit functions under quantity (Cournot) competition, a merger with a small initial joint market share of the insiders, which is profitable and increases price, also raises the total surplus (Farrell and Shapiro 1990). With product differentiation, the average share-weighted price may fall post merger if there is a significant shift in output towards non-merging lower-cost firms. If a merger generates synergies, then (under some technical conditions on the profit functions) under quantity (Cournot) competition with homogenous product or price (Bertrand) competition with differentiated products, a merger will benefit consumers if and only if it hurts competitors (see Farrell and Shapiro 1990 and Vives 1999).

of outcomes consistent with a similar variety of motives for merger.

Before concluding that a majority of mergers in the 15-year period examined were welfare-reducing, as the authors do, a full welfare analysis should consider effects on rivals and consumers. Pesendorfer (2003) does this for horizontal mergers in the US paper industry in the mid-1980s. He found that both efficiency and welfare increased after this industry-specific M&A wave. Merged firms reduced capacity and generally lost market shares with an overall positive welfare effect as a result since the mergers increased producer surplus without affecting consumer surplus.

Maksimovic and Phillips (2001) provide empirical evidence that the majority of firm asset transactions generate productivity gains and better allocative efficiency in a sample of around ten thousand transactions. Using data from the Longitudinal Research Database (LRD) of the US Bureau of the Census for the years 1974 to 1992, the authors calculate total factor productivity and compare that measure at the firm level one year before a transaction with two years after. The mean industry-adjusted change in productivity is significantly positive with a 2 percent increase.

During the 1990s, many national and cross-border mergers took place in the banking sector, complemented by strategic alliances and joint ventures that led to a consolidation of the industry. Evenett (2003) seeks to distinguish efficiency and market power effects by analysis of the interest rate spread (the difference between the average interest rate paid by borrowers and the average interest rate the bank pays to depositors). An increase in the interest rate spread indicates that banks gained more market power and did not pass lower costs due to efficiency gains onto customers. Using data from the World Bank and the Bank for International Settlements, Evenett finds mixed results. Cross-border strategic alliances within the EU seemed to be associated with an increase in the interest rate spread, whereas intra-EU cross-border mergers reduced this spread. Outside the EU, both strategic alliances and M&A have decreased interest rate spreads, pointing to positive welfare effects.

Another interesting stylised fact is that mergers between asymmetric firms (for example, a large and a small firm) tend to fare better than those among more symmetric firms (see Capron 1999 and Conn et al. 2003).

4.2 Winners and losers

Andrade et al. (2001) seek to identify winners and losers of M&A between publicly traded US firms in the period 1973–1998.[12] The impact of mergers on stock prices is analysed by employing short-window event studies that monitor stock market reactions one day before the announcement of the merger to one day after. In a second step, this window is also extended to 20 days prior to the announcement to the completion of the merger. The basic result is that owners of target firms' stock clearly benefit from the merger. The value creation amounts to 16 percent, on average. On the other hand, the impact of the merger on stock owners of the acquiring company is not clear cut (on average, stock value is reduced by 0.7 percent; however, this result is insignificant). Combining both the target and acquiring firm effect, stockholders on average gained 2.6 percent in the 1980s and 1.4 percent in the 1990s.

If markets are sufficiently well informed about the effects of the merger, these increases in value would reflect the anticipated returns. However, the high degree of uncertainty about estimates of expected returns incorporated in stock prices must be translated into a similarly high degree of uncertainty in the estimation of abnormal returns.

The empirical evidence for an important fraction of mergers seems to be inconsistent. For those mergers, event studies find that the stock market value of the merged firms increases, while profits decline. This leaves three puzzles: (1) Why do unprofitable mergers occur?; (2) How can the value of the merged firms increase while profits decrease?; and (3) Why do firms acquire other firms if the gain is almost wholly derived by stockholders of the target company? Fridolfsson and Stennek (2001) try to resolve the puzzles by proposing a single explanation. In a coalition bargaining model, the authors show that pre-emptive mergers are rational if it is disadvantageous to become an outsider, that is to be excluded from the merger wave. The negative externality imposed on non-participating firms creates an incentive to engage in pre-emptive mergers. Although the merger results in lower profits, the value might increase since the pre-merger stock value takes into account the risk of becoming an outsider, an even worse result for profits, which is thereby averted.

[12] They employ the stock database from the Center for Research in Security Prices (CRSP) at the University of Chicago, including pricing information for all firms listed in the New York Stock Exchange, the American Stock Exchange and the Nasdaq.

4.3 Mergers and R&D

The dynamic consequences of mergers on innovation are among the most important effects. Innovation is the engine of growth and it may well be that a (negative) static welfare effect is overturned by a (positive) dynamic merger-induced efficiency effect or vice versa. Mergers might have scope and scale effects in R&D, generating sharper incentives to engage in that activity (for example, a firm producing a larger output will have more incentive to invest in cost reduction, as in Vives 2004). Also, positive spillover effects vis-à-vis related firms can be internalised, bringing social and private returns more closely in line. Mergers may also provide a firm with more financial resources and this may allow it to undertake riskier and more ambitious R&D projects in the presence of capital market imperfections. At the same time, mergers may avoid the duplication of effort and, in fact, reduce R&D effort while maintaining R&D output. On the other hand, mergers may soften competition, and the empirical literature as well as some theoretical models have concluded that a degree of competition is needed for innovation to occur and that competitive pressure tends to foster innovation (see Baily and Gersbach 1995, Nickell 1996, Aghion et al. 2005 and Vives 2004).

The strength and net impact of these effects is an unresolved empirical question. The evidence available on the R&D performance of mergers is fragmentary and mixed. Note, however, that a result that indicates that R&D effort is reduced by mergers could be compatible with welfare-enhancing operations, since the elimination of duplication efforts may be good.

Several studies focus on the effect of mergers on R&D investment. In a study for the biotech and pharmaceutical industries, Danzon et al. (2004) show that large firms in this sector often merge to eliminate overcapacity, which may emerge on the expiry of patents. Controlling for the propensity to merge, the authors find that there is no difference between R&D expenses of merged firms compared to similar firms in the same industry that did not merge. Smaller firms in this industry often see mergers as an exit strategy when under financial pressure.

Cassiman et al. (2004) argue that technological and market relatedness should determine the impact of a merger on the level of R&D. Firms that use complementary technologies should increase their joint level of R&D after merger, whereas firms with substitutive technologies might be expected to reduce it. Aggregation of product market activities can yield economies of scale and scope with indirect consequences for R&D expenditures. In a small sample of 31 EU mergers, Cassiman et al. (2004) find that R&D levels rise where technologies are complementary and fall when they are substitutive. Where technologies are substitutive, R&D reductions are larger where firms are product market rivals. Overall the authors find empirical evidence for the scope effect, whereas the scale effect does not appear in the data.

The semiconductor industry ranks high in R&D spending (amounting to 13 percent of sales). Gugler and Siebert (2004) looked at efficiency versus market power effects in this industry and compared mergers with research joint ventures (RJV). RJVs should also be capable of internalising positive spillover effects yielding a higher R&D level. Indeed, Gugler and Siebert (2004) find that RJVs generate higher welfare gains since the market power effect, which could potentially decrease the efficiency gain effect, is lessened. Hence, from a public policy perspective, such RJVs offer the advantage of not reducing competition on the product market.

4.4 Summary

The assessment of the performance of mergers is complex and there is evidence consistent with different explanations of their origin. On balance, however, the most plausible explanation is that mergers respond to technological shocks and are an instrument of restructuring, and this explains merger waves. Other motives are superimposed on this central influence of technology: to gain market power, to benefit managers or managerial overconfidence. These latter factors explain why merger waves may overshoot and some mergers may destroy value.

5. Competition policy and merger control

Competition policy has as its main goal the protection of social welfare by maintaining a healthy competitive process. There is a debate over whether competition policy should be directed only to the consumer interest (that is consumer surplus) or should encompass also profit or producer surplus (often described as a total surplus standard). In any case, competition policy is today directed towards economic efficiency. In the US, it took some time to get to this point, overcoming populist attitudes according to which mere

size was an offence. Now only market power is. In Europe, the efficiency objective has been intertwined with other goals like the promotion of small and medium-sized firms, innovation and the external competitiveness of European firms. An added objective has been to promote European economic integration. Unique among competition policy authorities, the European Commission has the duty of monitoring industrial rationalisation programmes and state aid to industry. All in all, however, the efficiency objective has gained weight.

The foundation for competition policy is that competitive pressure is the guiding force towards economic efficiency. There are general arguments in favour of competition that, in principle, apply to any industry. Indeed, the benefits of competition for allocative efficiency are well established since Adam Smith. It must be noted, however, that competition is in general imperfect because of entry barriers, switching costs, product differentiation and asymmetric information. The result is that there is room for firms to exercise market power. A consequence is that the welfare theorems associated with perfect competition are not directly applicable to any real industry. All in all, however, competition is perceived to be good for both allocative and productive efficiency. The pressure of a competitive market provides incentives to managers to perform and information to design appropriate incentive schemes.[13] Monopoly power induces inefficiency and waste, and a healthy degree of rivalry is necessary to keep a vigorous pace of innovation in an industry, that is, for dynamic efficiency.

Competition policy tries to prevent adverse consequences of market power by controlling *ex post* restrictive practices (like price-fixing or market-sharing arrangements in cartels) and abusive practices (like attempts to monopolise or exclude rivals from the market). It also seeks to control merger activity *ex ante:* preserving market structures conducive to competition or preventing market structures that preclude effective competition. Merger control tries therefore to anticipate the consequences for competition of the restructuring induced by a merger. Merger analysis distinguishes between the "unilateral effects" and the "coordinated effects" of a merger. The unilateral effects reflect the consequences of raising prices above costs and are measured with the standard oligopoly-pricing static models of competition among the few. Coordinated effects arise when firms agree explicitly, or implicitly via reward and punishment strategies, to keep prices high. Coordinated effects reflect actual or tacit collusion. An analysis of entry conditions, potential efficiency gains, and dynamic effects (on investment and innovation for example) is also relevant.

The procedure in the US and the EU is similar. It starts by defining the relevant (geographic and product) market and proceeds to compute market share and concentration indicators (like the Herfindahl index).[14] Those are used to define safe harbours, basically stating that mergers with small combined market shares should be allowed to proceed, in particular in unconcentrated industries. There is a major difference between the EU and the US. In the EU, the jurisdiction that should deal with the merger must be established: the European Commission or a national authority.[15] The allocation of jurisdiction may be contentious as the recent Spanish Gas Natural–Endesa case shows, with the Commission taking more than two months to decide.

The definition of the relevant market, in product or geographic space, is crucial and typically contentious. For example, in the blocked proposed merger of the two Swedish truck manufacturers, Volvo and Scania, the European Commission concluded that each of the individual countries (such as Sweden, Denmark, Norway, Finland, and Ireland) was a market within which the merged company could exercise excessive market power. However, the merging parties argued in favour of the European market being the relevant one (the European Economic Area). If the relevant market had a European rather than a national dimension, the decision would have been different. This case makes clear that companies that seek to gain size to compete internationally may be prevented from merging if this is considered to raise concentration too much in a national market.

A rise of concentration due to the merger must then be checked against a specific analysis of unilateral and coordinated effects and entry conditions. To check for unilateral effects, quantitative and simulation techniques, based on oligopoly models, are increasingly used. The analysis of coordinated effects

[13] See, for example, Hart (1983), Schaferstein (1988), Hermalin (1990), Schmidt (1997) and Vives (2000).

[14] The Herfindahl index is defined as the sum of the squares of the market shares of firms in a particular market (see Chapter 4 in Vives 1999).

[15] The EC will have authority over concentrations having a "Community dimension", that is of operations with combined annual turnover larger than 5 billion euros or EU-wide turnover of each of at least two of the firms larger than 250 million euros. If each of the firms involved has more than 2/3 of its EU-wide sales in one member state, then this country has jurisdiction.

is more qualitative, relying on market structure conditions (like market transparency, asset distribution in the industry in terms of capacities of production and product portfolios of the firms, concentration and number of firms, multi-market contact, asymmetries in cost and demand, entry conditions and buyer power) and facilitating practices (like a history of co-operation in the industry, communication of plans, exchange of information on prices and quantities, and pricing policies) that may impinge on the capacity of firms to collude in sustaining prices above a competitive level.

In the US and the UK, a merger would be challenged if it "substantially lessens competition". The substantive test in the EU under the old merger regulation (from 1989) was that: "A concentration which does not create or strengthen a dominant position as a result of which competition would be significantly impeded in the common market ... shall be declared compatible with the common market." This is a "two-prong" test referring to the "creation or strengthening of a dominant position" and checking whether "competition is significantly impeded". The problem was that this test is not well adapted to deal with unilateral effects because a merger may raise prices and diminish welfare even though no dominant position for a single firm is created. The Commission then tried to block mergers because they would create a collective dominant position (that is foster collusion) when in fact what potentially was at stake were unilateral effects (that is non-collusive exercise of market power), which could not be challenged using the old regulation. An example is provided by the blocking in 1999 of the merger of Airtours and First Choice, because it would have created a collective, dominant position in UK short-haul foreign package holidays. However, in 2002 the Court of First Instance (CFI) concluded that the Commission had made errors of assessment and had not proved to the requisite legal standard that the merger would give rise to collective dominance (that is the collusive potential according to the coordinated effects analysis).

Under the old merger regulation, there was a period of vigorous intervention at the end of the 1990s. Prohibited or abandoned transactions tripled from an average of two per year in 1990–98 to an average of six per year in 1999–2000. From 1998 onwards there was also an increase in transactions subject to structural remedies. However, about half of the prohibition decisions of the Commission have been challenged by notifying parties, including, for example, Gencor/Lonrho, Airtours/First Choice, Worldcom/MCI Sprint and GE/Honeywell, and in 2002 the CFI overturned the Commission's decision in Airtours/First Choice (as discussed above), Schneider-Legrand and Tetra Laval Sidel (see Table 5.3).

Duso, Neven and Röller (2003) have claimed that a stock-market event study can in principle detect the welfare impact of mergers. The authors reached their

Table 5.3

M&As formally blocked by EU

Year	Deal
1991	Aerospatiale/Alenia bid for de Havilland (Canada)
1994	Bertelsmann, Kirch, Deutsche Telecom MSG deal (digital pay TV)
1995	Dutch Holland Media Group venture between RTL4, Veronica and Endemol
1995	Nordic satellite distribution joint venture between Norsk Telecom, TeleDanmark and Kinnevik
1996	Saint-Gobain and Wacker-Chemie silicon carbide joint venture
1996	Finnish retail deal between Kesko and Tuko
1997	Blokker's acquisition of Dutch operations of Toys'R'Us
1998	Proposed digital TV alliance of CLT-UFA and Kirch
1998	Acquisition by Deutsche Telecom and CLT-UFA of stake in Kirch's BetaResearch (decoders for pay TV)
1999	Airtours' bid for tour operator First Choice (travel agencies), (turned down by CFI, 2002)
2000	MCI Worldcom & Sprint/USA (internet access)
2000	Volvo and Scania (cars and trucks)
2001	GE – Honeywell (appeal pending to CFI)
2001	Scheider – Legrand in electrical equipment (turned down by CFI, 2002)
2001	SCA-Mölnlycke & Metsä Tissue (paper)
2001	CVC and Lenzing (synthetic fiber)
2001	Tetra Laval and Sidel (drink packaging), (turned down by CFI, 2002)
2004	ENI –EDP –GDP (energy)

Source: European Commission.

conclusions based on the stated insight that in some mainstream oligopoly models with substitute products,[16] consumer surplus increases if the profits of outsider firms, that is firms that are not involved in the horizontal merger, decline. A merger is pro-competitive if and only if it decreases the value of rivals. It must be noted, however, that this only applies to horizontal mergers, and several of the mergers considered have either vertical or complementary market components. Furthermore, a decline in the stock market valuation of rivals as an outcome of the merger announcement may also come about if the market anticipates predation and exclusionary strategies against outsiders.

In 2004 the Commission introduced a new merger regulation with a reformed substantive test, a strengthening of the parties' procedural rights, and internal controls and investigative powers of the Commission. The procedure in the EU differs from that in the US, which is of an adversarial nature: antitrust agencies must challenge a merger in court. In the EU the procedure is administrative: a merger of a European dimension has to be notified to the Directorate General of Competition, which examines it and makes a recommendation after which the Council of Commissioners takes the final decision on approval. The new procedure in the EU adds check and balances and establishes the appointment of a Chief Competition Economist to enhance economic analysis and the creation of a Scrutiny Panel, which will review cases that go over a second phase of investigation and report to the Director General.[17]

The new merger regulation of 2004 introduces a new substantive test to assess the anticompetitive impact of concentration: "A concentration which would not significantly impede effective competition on the common market … shall be declared compatible with the common market." In this Significant Impediment of Effective Competition (SIEC) test, the first prong of the old regulation test, "... which does not create or strengthen a dominant position ...", is disposed of and only the part "effective competition is significantly impeded" is kept. This makes the test closer to the US and UK practice and allows the Commission to deal with market power issues in non-collusive oligopolies. At the same time the Commission has issued horizontal merger guidelines in the style of the US guidelines. In those guidelines, also potential efficiencies of a merger are considered as long as they are beneficial to consumers, merger-specific, and verifiable.

When the antitrust agency in the US – be it the Department of Justice or the Federal Trade Commission – decides to challenge a merger, the parties may decide not to pursue the transaction, given that the judicial process may drag on for quite some time. The new substantive test in the EU is closer to economic analysis and less rigid. It allows the elimination of distortions in the use of the concept of collective dominance, which was creating uncertainty in the procedure. The merger guidelines should also help reduce uncertainty for parties contemplating a merger. The changes introduce more checks and balances and provide an enhanced role for economic analysis. However, the Commission staff dedicated to economic analysis is still quite limited in comparison to the US antitrust agencies, and the imbalance of resources relative to the private sector is marked. Still, an open question is whether the new checks and balances will be enough to avoid the cases being overturned by the CFI, which seems to have tightened the standards of proof required from the Commission. Further rejections may imply that the system effectively changes to one of judicial review more similar to the US.

In an inquisitorial procedure, the prosecutor/judge may not look for all sides of the argument and seek only reinforcing information. In the CFI decisions on Airtours/First Choice, Tetra Laval/Sidel and Schneider/Legrand, the Court criticised the Commission for being one-sided and suppressing conflicting evidence. When the prosecuting and judging functions are separated, the parties will generate information on all sides of the argument. There is thus a case for a more explicit adversarial procedure.

The introduction of a scrutiny panel has gone some way, but it would make sense to go further and consider an internal team that makes the pro-competitive case for the merger.[18] A further step would be to consider the establishment of an administrative tribunal, independent of the investigators, but still within the Commission, that makes a public recommendation on the merger to the College of Commissioners. The Commissioners might still disagree with the panel's recommendation but would have to explain why. A

[16] Namely, Cournot markets with homogeneous products or Bertrand markets with differentiated products and under some technical conditions on payoffs.
[17] In fact, the group in charge of merger analysis – the Merger Task Force – was dissolved as a separate unit and integrated into the already existing industry-specific units of DG Competition.

[18] See Baker (2005).

further step would be for the administrative tribunal to take the final decision. An even bolder step would be to set up an independent European Competition Agency similar to the US Federal Trade Commission (FTC). At the FTC, the challenge to a merger is brought to the decision of an administrative law judge and the decision can be appealed to the full Commission; if the merging parties are not happy, they can then go to a circuit court of appeals. In the European case the parties could appeal the decision of the European Competition Agency to the CFI and the ECJ (the European Court of Justice).

6. Industrial policy and competition policy

Industrial policy often conflicts with competition policy. National governments may want to help declining industries (like textile, coal, shipbuilding etc.) or national champions such as Crédit Lyonnais, Bull, or MG Rover. Examples abound with declining industries and national champions. This may reflect lobbying efforts of local constituencies or a belief that some sectors (like banking or energy) are strategic and need well-entrenched domestic firms to defend the national interest. This conflicts with competition policy, which limits state aids, and may slow the integration of European markets.

6.1 Why ownership matters

Does the national ownership of firms matter? It seems hard to argue that Belgium is worse off because it has no national car producers. However, is the same true of other industries like banking? Is a country worse off if all its banks are foreign-owned? This is close to happening in some developed countries like New Zealand as well as some emerging markets (including new entrants to the EU such as Estonia).

The banking example

In the financing of domestic economic activity, and in particular in relationship banking like lending to small and medium-sized firms, proximity matters for long-term commitments. Foreign ownership may reduce the commitment of domestic banks to domestic borrowers because distant headquarters may use hard information and rigid protocols instead of soft information and may have less tendency to internalise the welfare of local stakeholders.[19] In the US, this has been a concern when large out-of-state banks took over local institutions.

However, as the Japanese experience has painfully pointed out, close relationships may result in high costs of finance (because banks cannot exit from transactions), delay the closure of non-viable firms, lead to collusive arrangements that prevent entry, and eliminate healthy competition and innovation from foreign institutions. All in all, in developed economies with a well-diversified range of institutions, national protectionism does not seem warranted even in banking. In emerging economies – as in Eastern Europe where financial integration has been achieved mostly through ownership by West European banks – the alternative to foreign bank ownership may be semi-public banks, vulnerable to political influence and soft budget constraints.

Most mergers in the banking sector have been domestic. There are obstacles to cross-border mergers in Europe that do not affect cross-state mergers in the US: more limited economies of international diversification, labour market rigidities as well as differences in language, regulation, and corporate culture. Political interference and the fostering of national champions are also prevalent. Recent examples of this include BBVA with first Unicredito and very recently with BNL in Italy, and ABN Amro's aquisition of Antonveneta. The French authorities adopted a protectionist attitude in the triangular battle BNP-SG-Paribas that ended up in the merger BNP-Paribas by insisting on a "French" solution to the case.

Domestic mergers cut costs by reducing overlap in branches (and overcoming labour market rigidities) and many reap benefits from a financial conglomerate. But such mergers may also increase or maintain market power and prevent hostile takeovers. Cross-border mergers may help to acquire local expertise, access high-margin deposits or diversify, while size is gained to compete in global markets. In fact, cross-border regional mergers, where cultural and legal differences are smaller, took place in late 1990s in the Scandinavian and the Benelux countries. More re-

[19] If a domestic firm borrows from a foreign bank, the lending bank's headquarters will be presumably located in another country. The lending officers responsible for the loan will respond, directly or indirectly, to headquarters located far away geographically and organisationally. The foreign lending bank will presumably be a more complex organization, which may be less able to offer the same services and respond with the same flexibility as a local domestic bank. This implies that large multinational banks, to ensure effective internal controls, may be obliged to operate with internal procedures that are quite standard across countries. Thus, large multinational banks may not be flexible enough to adapt themselves to the specific needs of local borrowers. Local banks, instead, are more able to respond to the specific needs of local firms, and may be better partners in situations where relationship banking is important. An open issue is why multinational banks do not develop internal organization structures to cope with this problem. See Berglöf et al. (2005).

cently, Banco Santander (Spain) was able to acquire Abbey because the UK does not have a protectionist attitude: the antitrust authority did block the takeover of Abbey by Lloyds TSB in 2001 but not the takeover by Banco Santander. Here a vigorous national competition policy promoted a cross-border merger. Santander comes from an increasingly competitive domestic market in Spain that has induced efficiency gains and allowed international expansion (mostly in Latin America).

We have described how in the banking sector the location of headquarters of banks may matter because proximity is important for long-term credit relationships. More generally, the location of headquarters of a firm matters because headquarters create agglomeration effects for both other headquarters and business services. One example of such positive external effects is the density of the market for highly qualified labour. Most regions are therefore prepared to subsidise the location of new headquarters (see Strauss-Kahn and Vives 2005 for evidence on location factors and external effects in the US.) Other advanced activities like R&D also tend to be located close to headquarters.

Ownership also matters because proximity is relevant for the protection of the interests of the different stakeholders (such as workers, suppliers, small shareholders and communities) in a firm. In bad times the firm may tend to minimise staff cuts in its country of origin.

Large international firms typically develop a corporate culture with a national base and do need the support of a government, in terms of influence activities and protection of property rights, to compete truly internationally (for example, US "multinationals" typically call on the State Department when in trouble). This implies that companies remain "national" for good reasons that may still be important in a globalised world.

In summary, ownership matters in so far as it influences the location of corporate control centres and the associated externalities. Local and regional authorities have incentives to retain and attract corporate headquarters. There is a lot of path dependence, that is, history matters, and there may be potential multiple equilibria. This gives room for policy intervention. However, if all regions give subsidies or protect their firms, they may neutralise each other and imply both large budgetary costs and welfare losses. Such protectionist attitudes may be self-defeating.

6.2 From national to European champions?

Cross-border mergers may lead to the formation of European champions. Competition concerns should be less in such cases, because of the size of the European market. But a trade-off may exist: extracting rents from abroad against exploiting European consumers. However, those champions may be helped unduly to start with or, perhaps worse, are too big to fail and are still provided with subsidies when they should be closed down. In some sectors where the learning curve is very steep like aerospace, the commitment power that comes with public help may prove crucial in international competition. In this case, according to Neven and Seabright (1995), help to Airbus basically entailed a transfer of rents from US producers Boeing and McDonnell-Douglas to Airbus, leaving the consumers with small gains.

Cross-border mergers require the combination of very different corporate cultures: to be successful in the end, one culture has to predominate over the other. Asymmetric mergers or absorption seem to work better than mergers among equals.

European competition policy regarding state aid may be effective in checking support to national champions (as with Crédit Lyonnais) and serve as an external commitment to not keep inefficient institutions in business (see Besley and Seabright 1999). However, it is not so clear that it can prevent the support of pan-European champions: the Commission cannot easily resist the simultaneous pressure of France and Germany, as shown by the dilution of the Stability Pact (see Box 1.4 in Chapter 1 of this report). Can the independence of competition policy may be maintained given the politics of the Commission since states can lobby Commissioners and other Directorates (like Industry or Energy) to further national policies? This tension between competition and industrial policy has often surfaced, as in proposals to create a Super Commissioner or Vice Presidency that would oversee both industrial and competition policy, with the obvious objective to keep competition policy in check. Independent institutional bodies like an administrative panel within the Commission or even an own European Competition Agency might be ways of protecting competition policy from these industrial policy pressures.

6.3 Privatisation and regulated sectors

Network industries such as electricity, gas, and telecoms have been liberalised and the incumbent monopolies privatised in most countries (with the conspicuous exception of France). In those industries, regulation is maintained, even after liberalisation, because they have some segments that are a natural monopoly (for example, transmission and distribution of electricity). The way the privatisation process has been accomplished has very important consequences for the level of competition and performance in the industry. To privatise a monopoly is one thing: to introduce a degree of competition and then privatise is another. The evidence suggests that what really matters for performance is the level of competition in the industry (see, for example, Armstrong, Gowan and Vickers 1994) rather than the structure of ownership. However, in some instances the desire of governments to obtain cash from privatising a monopoly has been a more important motive than to ensure competition. Some public companies have even been allowed to merge before privatisation (this was the case of the formation of the Spanish Endesa, for example).

In those network industries, it is important that a potentially competitive structure is created before privatisation. Once firms with monopoly power are privatised it is very difficult to change the market structure with divestitures to enhance competition. Merger proposals may offer an opportunity to rearrange assets in a pro-competitive way.

Network industries, such as those in the energy sector, are typically considered strategic by many countries, which resist privatisation or hold on to "golden shares" even after privatisation. France has resisted domestic liberalisation at the same time as publicly controlled French firms have gone shopping in other European markets.

7. Conclusions

Globalisation, accompanied by the information technology revolution and consequential lowering of trade costs and market expansion, imposes restructuring in many sectors and mergers are a prime instrument. Size is necessary to compete globally in many segments of industry and services, but consolidation may pose a threat to competition. Competition is a necessary prerequisite for economic efficiency: sufficient competition is needed for innovation and the timely termination of bad projects drives productivity growth. Domestic competition is key to international success and competitiveness: fostering national champions defeats this objective. The policy challenge is to allow the needed restructuring and potential increase in firm size in some sectors while at the same time protecting competition.

Our first conclusion is that a vigorous competition policy is needed, but care must be taken not to try to enforce low concentration in natural oligopoly industries, where the dynamics of investment is such that only a limited number of players can survive. Furthermore, merger control should take into account the need for larger firm size in several industries and the potential dynamic efficiencies, benefiting innovation, generated by merger proposals.

A second conclusion is that artificial obstacles to hostile and cross-border mergers should be removed in Europe. Hostile takeovers are a sign of health of the market for corporate control. Cross-border mergers should proceed without regulatory obstacles, as they may keep in check the increase in domestic concentration. We acknowledge that ownership is not neutral, in particular in some industries like banking where relationships are important, but on balance this is insufficient justification for protectionism. European as well as national competition policy must play a major role in keeping markets open.

A third conclusion is that care must be taken in not promoting European champions that end up effectively protected from closure. The political economy of European champions may imply that the powers of European competition policy, with the present institutional structure, are very limited to deal with those cases. Indeed, this is one instance where global coordination of competition policies may help.

Fourth, the 2004 reform of the merger control procedure in the EU went a step in the right direction, increasing checks and balances for merging parties and the role of economic analysis. However, the guarantees for the parties, the quality of analysis and decision-making, and the protection against the lobbying pressures of national governments and firms could still be improved. Merger decision proposals should be taken by an administrative panel, independent of prosecutors and investigators. Failing this, a debate should be opened about the need of an independent European Competition Agency similar to the US Federal Trade Commission.

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