

CHAPTER 2

Competitiveness, growth and future prospects

Introduction

Strengthening competitiveness has been an openly stated objective of EU policy for some time. When the then President of the European Commission, Jacques Delors, set off for the 1992 Copenhagen Summit in search of a commitment to revive the flagging EU economy, his focus was on growth and employment. What emerged by the end of the year was a White Paper on Growth, Competitiveness and Employment – with the extra term, competitiveness, brought in at the insistence of EU employers.

Enthusiasm for the term continues today. Even the European Council's declaration at Lisbon in March 2000 talks, somewhat unnecessarily, of turning Europe into 'the *most* competitive economy in the world' (our italics), as if simply being competitive was not enough, or, indeed, as if there were a generally accepted meaning of the word 'competitiveness'. Despite, or perhaps because of this, the European Commission, several Member States, many employers' organisations, and sundry agencies and organisations regularly produce reports on the subject.

In these reports, competitiveness is usually seen as the means through which higher rates of economic growth can be achieved and sustained, and incomes and employment expanded. Alas – or so we are told – EU competitiveness has slipped in recent years. We have fallen further behind the US, and this is a major reason for Europe's comparatively poor growth performance of late.

The route to salvation lies, it is commonly argued, in removing impediments to the 'proper' functioning of markets – particularly the market for labour, of course – and in increasing support for R&D and innovation. This, it is claimed, will strengthen the ability of European firms to compete with US and other foreign companies.

Yet, while there is widespread emphasis on competitiveness, there is much less clarity about its meaning, or of how we can tell whether the EU economy is becoming more or less competitive over time, or in comparison with other countries. In reality, many of the league tables of comparative national competitive performance are no more objective than the average beauty or talent contest.

A long, but necessary, reflection on what it means to be competitive

If the term ‘competitiveness’ does have real meaning, and is not simply a loose synonym for growth or productivity performance, it can be argued that this might best be measured in terms of an economy’s capacity to compete on world markets – or, in the case of a region, to compete as well in the internal market.

This notion is analogous to the typical business-world focus on the ability of companies to survive, prosper and compete effectively in their different markets, but applied to a whole economy: a company is competitive; an economy whose companies are competitive is also competitive.

Economists have traditionally disputed this seemingly intuitive transposition from company to economy. Companies compete with each other, they say. But companies that are uncompetitive go out of business, whereas economies cannot. Uncompetitive economies may shrink, or grow less quickly than others, but they survive.

Moreover, the sizes of market economies are not fixed. And, because economies are interdependent, the growth of one market will provide better export opportunities for others. Free trade advocates have long demonstrated that we do not live in a zero-sum world in which one country’s gains are another’s losses. Unfortunately, this point tends to get forgotten when the focus shifts to economic policy. Metaphors of an economic ‘race’ have led to misleading diagnoses of the current situation across the EU, and false policy prescriptions.

In effect, it is not economies that are ‘competitive’ – in the sense that businesses are competitive – so much as the producers who happen to be located there. Causality can flow in both directions, however, since the

characteristics of an economy, or the conditions within it, will help determine the performance of companies, and influence where they choose to locate around the world.

If the term ‘competitiveness’ is used in this way, then it can be measured in terms of the success of a country’s producers in competing on world markets, as reflected in their overall share of global exports compared with the penetration of its domestic markets by imports.

This, it should be noted, is equally true of regional economies, though this is more difficult to measure given the lack of data on flows of goods and services between regions, just as it is becoming more difficult to measure flows between EU Member States as trade barriers come down, and there are fewer administrative checks on exports and imports.

In this context, the more a country’s exports can be expanded relative to the penetration of imports on its domestic market, the higher the rate of economic growth that can be achieved – other things being equal. This is partly because exports provide a means of increasing the demand for domestic output without expanding domestic demand – with positive implications for financial stability and inflation – and partly because it implies a relaxation of external constraints on domestic growth that result from the fact that normally countries cannot indefinitely run trade deficits.

The continuous search for the ‘holy grail’ of export-led growth – which is common to many governments across the world, with the possible exception of the US authorities – obviously has its limits, however. At the end of the day, surpluses and deficits around the world have to add to zero – all countries cannot run surpluses, although this basic fact has not prevented policymakers in many countries trying simultaneously.

There can, of course, be winners and losers – as surplus and deficit countries are often perceived – for quite some time. However, the existence of a trade deficit or surplus tells us nothing, in itself, about the wealth, living standards or labour market situation of a country.

Even though the link between a balance of payments deficit and economic policy may no longer be as direct as when exchange rates were fixed, a relationship remains. If trade performance – defined as export growth

relative to import penetration – is inadequate, then expansion of domestic demand will lead to a widening balance of payments deficit.

The need to finance this, and to attract capital inflows and/or to persuade others to accept the currency of the country in return for goods and services, will ultimately mean higher interest rates and increased inflation, as downward pressure is exerted on the exchange rate. The US has been able to finance substantial deficits for prolonged periods of time without undue upward pressure on domestic interest rates and inflation. However, this is primarily because of the favoured position of the dollar on world financial markets.

On the other hand, a number of countries have managed to maintain balance of payments *surpluses* for considerable periods. This asymmetry – between the financial pressure faced by deficit countries, and the lack of pressure exerted against surplus ones – is a long-standing source of deflationary bias in the global economic system. While deficit countries will ultimately be forced to curb internal growth, there is much less pressure on governments in surplus countries to expand economic activity so that the demand for imports rises to match export growth – even if the failure to do so means a lost opportunity to increase real incomes.

Viewed from this perspective, a balance of payments surplus – especially if it persists for some time – can be seen as a sign of internal policy failure, rather than a sign of competitive success. It is certainly a potentially misleading indicator of trade performance, which is why we consider more meaningful, alternative, measures below.

Of course, the rate of growth that an economy is able to achieve depends, not only on internal policies of demand management and the growth of export markets, but also on supply-side factors, in particular on the growth of productivity, the rate of investment, and the available additional labour. These factors determine the output potential of an economy over the long-term, although – as in the EU today – the actual output achieved may be well below this potential.

And, although the policy focus in Europe has tended to be on improving productivity growth, the scope for expanding output by increasing the number of people in work is certainly larger in the short and medium run, given the still-high unemployment in many European countries, especially

the larger ones, and the relatively large numbers of people who are not economically active at all.

It is to the credit of Prime Ministers and Heads of State that they have set the achievement of full employment as a primary goal of current EU policy, but it is very difficult indeed to detect action in support of this goal in any examination of the conduct of EU macroeconomic policy.

Moreover, while it is true that increased productivity creates the potential for higher incomes and living standards, this does not follow automatically. Indeed, uncomfortable as it may be to policy-makers, there can be circumstances when the pursuit of higher productivity can conflict with the attainment of higher levels of employment – which would also generate higher output and higher income per head in the economy.

Indeed, comparisons across countries suggest that there are significant differences in the way these two goals are reconciled, which is reflected in the relative importance attached by different countries to achieving a high level of employment.

Productivity and competitiveness – how do they compare?

Along with the tendency to see higher productivity as the main route to economic expansion, there is another tendency – namely to equate productivity growth with increased competitiveness. This is understandable insofar as an improvement in productivity will reduce production costs, and enable prices of domestic goods and services to be lowered relative to those produced elsewhere in the world.

This cannot be pushed too far, however. Competitiveness, seen in terms of trade performance, depends, not just on cost considerations, but also on a range of other factors – the quality and design of products, after-sales service and so on. And it also depends on the exchange rate, which can fluctuate widely over time.

The exchange rate should be the means of ensuring trade balance over time between economies with differing levels of cost and productivity, and differing growth aspirations. In practice, though, the prevailing exchange rate can often have little to do with underlying economic factors

because exchange rate movements are determined by financial market sentiment about how rates are likely to move in the future. They may, eventually, gravitate to a level that is 'rational' from an economic perspective, but this will be of small comfort to producers in the intervening period.

Similarly, the way in which productivity improvements are achieved can also affect long-run competitiveness. Changes in productivity are heavily influenced by the economic cycle. Productivity tends to increase as markets and output recover from recession, since businesses can – in the short run – increase the intensity of work from the existing work force and production facilities, and they are reluctant to hire more workers, and invest in more plant and equipment, until they are sure the upturn will be sustained.

When the outlook is positive but uncertain, as at present in the US, the apparent productivity gains may be substantial for a year or two, as reflected in the way job growth has lagged behind GDP growth. However, this is unlikely to be sustained. Eventually, productivity growth tends to return to its underlying trend, and may even dip below this for a time, as firms recruit to sustain the higher levels of output.

There is an analogous tendency in the early stages of an economic downturn, when productivity falls as producers wait to see whether reduced market growth is set to be prolonged, or is simply a temporary blip ('labour hoarding'). If the pessimistic view prevails, then an apparent slowdown in productivity growth is likely to be followed by an increase as workers are fired.

Such fluctuations in the observed change in output relative to employment can make it difficult to identify the *underlying* rate of productivity growth. Productivity gains that simply reflect the lag in the adjustment of employment to higher output, or those achieved through rationalisation and the closure of the least profitable plants, will have less lasting benefits than those secured through increased investment in more up-to-date equipment and new methods of production.

While productivity can show a significant increase during a recession as the least efficient plants are closed down, this does not necessarily increase long-term competitiveness, or mean that the economy is better

placed to sustain economic growth in future years. Indeed the reverse may be the case unless policies are implemented to maintain and develop the skills of those made redundant.

The same argument applies to economies with high levels of productivity in the goods and services they produce, but which also have high levels of unemployment. They may be competitive in the goods and services they produce, but they are not necessarily in a better position than economies in which a larger proportion of the population are employed, even if aggregate productivity levels are lower.

In short, at the level of an economy, productivity may be a misleading indicator of ‘competitiveness’, when that term is taken to represent growth potential, if the rate of employment is not taken into account at the same time. And while it is true that aggregate productivity in the EU – measured in terms of output per unit of labour input – is lower than in the US, the difference is rather small, as we saw in the previous chapter.

Meanwhile, the evidence of trade performance suggests that producers located in the Union have tended to be more successful in competing in global markets than those located in the US. In this sense – as we show in detail below – the EU is certainly far more ‘competitive’ than the US.

This does not necessarily mean that EU-owned companies have been more successful than US-owned ones – if the distinction makes any sense in a world of global capital markets. As Robert Reich and others have emphasised, the ownership of companies rests with shareholders of many nationalities, and can change quickly over time. Hence it is hard to associate particular companies with particular countries. The largest companies – which have come to dominate global trade – are multinational, not just in terms of the location of their production, but also in their ownership.

Despite this, there is still a tendency for public policy to lean towards encouraging the growth of what are deemed to be national, or European, enterprises – even where the scale of their national or European activities may be less than those of firms which are regarded as foreign-owned or foreign-based. This state of affairs has existed in the EU with regard to computers for at least two decades, and has led to poor political decisions

in the past. Today it would be unwise to assume, even where the nationality of companies seems clear-cut, that they will operate more in the perceived ‘national or European’ interest than other firms when deciding, for example, to relocate or cut-back production.

The evidence on trade performance in the EU and the US

Contrary to the impression given by the frequent and forcible comments on the supposed ‘lack of competitiveness’ of the European economy, and some of its major national economies – especially Germany – a detailed examination of the evidence on international trade in goods and services tells a very different, and much more positive, story, at least in terms of the way most people intuitively grasp competitiveness. For example:

- EU exports to third countries are significantly larger than those of the US, and there is little sign of EU exporters slipping behind in this respect;
- While the US balance of payments deficit has widened appreciably in recent years – so that, in 2003, its imports of goods and services were almost 50% larger than its exports – the EU has had a growing surplus;
- The US *deficit* on its external account amounted to 4.5% of its GDP in 2003, which is the same figure as the German *surplus* on external account relative to its GDP.

Within the EU, despite continual talk about its supposed structural deficiencies, Germany remains the economy with the strongest trade performance and is, hence, the most ‘competitive’ European economy on this criterion.

Thus, despite US GDP being slightly larger than that of EU15, the total value of US visible exports in 2003 only amounted to just two-thirds of the value of EU exports to the rest of the world – some EUR 650 billion – down from just under 85% in the early 1990s.

Although part of this difference is a result of the recent strengthening of the euro against the dollar - which tends to depress US exports when expressed in euro terms – the value of EU exports has been consistently

over 15% greater than the value of US exports over the past 13 years. The sole exception was the year 2000, when the dollar was relatively strong, and the difference narrowed to 10%.

Over the past decade, EU exports to the rest of the world have increased from 7% of EU GDP to 11% – contributing significantly to the demand for EU production. By contrast, the value of US exports – which also accounted for 7% of its GDP in the early 1990 – was still less than 8% in 2003. At the same time, US imports of goods in 2003 were some 17% larger in value than EU imports from the rest of the world, and they had been consistently between 10% and 30% larger over the previous 10 years.

EU trade performance is equally impressive relative to that of Japan. Whereas Japanese visible exports in the early 1990s amounted to some 63% of EU exports to third countries in value terms, they had fallen to only 43% by 2003.

On the other hand, imports from the rest of the world grew by much more in the US than in the EU over this period, resulting in a deficit on visible trade of almost 5.5% of GDP in 2003, as compared with one of 1.5% of GDP in 1991. Despite having a surplus on invisibles, the overall balance of payments deficit on current account in the US amounted to 4.5% of GDP, almost half the scale of exports. In the EU, by contrast, imports have tended to grow by less than exports, and the current account has been consistently in surplus since 1993 – the average rate, and the actual figure for 2003, being around 1.5% of GDP.

Germany – the so-called ‘sick man’ of Europe – makes a particularly significant contribution to this surplus. Its visible exports to the rest of the world amount to some 14% of its GDP, substantially more than for the other large EU economies – 9% for Italy, 8% for in France and only 7% for the UK – and exceed its imports by almost 3% of GDP. Since Germany has an even larger surplus on visible trade with the other EU Member States, its overall surplus on current account amounted to 4½% of its GDP, despite a sizeable deficit on invisible trade.

As noted already, surpluses or deficits are not, in themselves, an indicator of trade performance since they reflect, not only the degree of success in

selling domestic goods and services on global markets, but also the level of demand, or economic activity, in the domestic economy relative to elsewhere. A country, or a global region like the EU, with a surplus on external account may be achieving this by limiting domestic demand through restrictive fiscal and monetary policies, thereby depressing the demand for imports, rather than by being successful in the international competition for market shares. And indeed it can well be argued that the EU surplus on external account reflects such a policy stance, notwithstanding the budget deficits in Germany and France.

One way to take better account of different rates of domestic and foreign demand growth, is to shift the focus from the trade balance to shares of export markets in combination with the share of the domestic market going to foreign producers. Depressing domestic demand will not affect the latter, except to the extent that imports are luxury or investment goods, both of which will tend to decline more than in proportion to the fall in demand. Market shares are examined in the following section.

EU15 and Germany's market shares

The evidence on market shares within the EU tends to confirm the relative strength of the EU's trade performance. In 2003 EU exporters accounted for 64% of total EU imports coming from both inside and outside the Union. This was slightly higher than in 1991 (63%). It was also up on the figure for 2000 (62%), which suggests, at the very least, that there has been no tendency for the share of EU producers in their own market to decline.

At the same time, the share of EU exporters of total US imports was around 19% in 2003, slightly higher than in the mid-1990s (18%). Given the rise in imports relative to GDP in the US – from 12% to 14% – this implies that EU producers have increased their share of the US market relative to US producers.

As against this, the US share of total EU imports has remained much the same since the mid-1990s while the share of Japanese exports in the EU market has declined, as it has in the US market and, indeed, in most of the markets around the world.

Given the value of EU exports to third countries compared with the US and Japan, it should be no surprise to find that, despite the arrival of new competitors on world markets, the EU still accounted for around 20% of total world exports of manufactures in 2003 (even if internal EU trade is excluded) – much the same as 10 years earlier. Likewise, data on export shares also suggest that German trade performance remains strong compared with both the US and Japan, as well as with other EU countries.

In 2003, Germany accounted for almost 31% of all EU visible exports to third countries, well over twice the share of any other Member State (the next largest share being that of France, at only 13%). This was a slight increase on its share 10 years ago, and up from its low-point of just under 28% in 2000. By contrast, the share of the three other large countries in the Union fell over this period – most notably in France and the UK.

It should be noted, here, that Germany is less competitive in trade in services than it is in trade in goods. It is difficult to take this into account since data on trade in services is less readily available. However, since services only account for around 20% of total EU exports (30% of US exports) and these proportions have remained virtually unchanged over the past 10 years and more, it is very unlikely that the conclusions of the analysis would be altered significantly if services were included.

It should be note that the German share of the EU market for goods has declined since the 1990s. However, this decline is both small, and less than the losses of the other three large countries, with the main gainers being Spain and the Netherlands. At the same time, the German share of US imports was slightly higher in 2003 than in 1995 – 5.5% against 5%. Equally, German exports to countries outside the EU expanded by more than US exports over this period – in 1995, they amounted to 38% of US exports; in 2003, 45%.

Overall these figures, which to some extent allow for the impact of depressed domestic demand, confirm the results from the analyses of trade balances. To the extent that competitiveness is seen in the traditional sense of ‘holding your own’ on world markets, there is simply no evidence at all that the EU15 in general, and Germany in particular, is ‘uncompetitive’.

The implications of EU success on world markets for economic policy

The evidence on EU successes in global markets casts serious doubts on the notion that a lack of competitiveness is the underlying cause of the recent slowdown in the EU, or of the rather slow growth that the EU economy has exhibited over the longer-term.

It seems that the use of ‘competitiveness’ as a *leitmotif* in European policymaking is at best confusing and at worst dangerous, as it risks misleading actors to think in terms of a company’s price competitiveness. What is ultimately decisive for a country’s economic (and social) welfare is the rate of economic growth, and the way this is split between changes in employment and changes in labour productivity. We consider these issues in detail below, but first it is important to recall that, in the short term, economic growth is given by the level of aggregate demand.

The above analysis clearly shows that, contrary to the impression often given, Europe’s growth problems are linked more to internal than to external demand. Moreover, the events which followed the slowdown in the US economy, and the repercussions of this in depressing the growth of markets in other parts of the world, have brought into sharp contrast the differing reactions of the US and EU authorities to economic setbacks, to which we now turn.

Whereas the US authorities have reacted by stimulating domestic demand through both fiscal and monetary means, the EU authorities – both the central bank and the national governments – have done too little to compensate for the fall-off in external demand, waiting instead for the latter to pick up, and placing even greater reliance on increasing shares of global markets as a way out of recession.

Indeed, while the US Government launched a massive fiscal stimulus, which has seen the budget move from a substantial surplus to a deficit of over 6% of GDP in 2004, the German and French Government have faced intense criticism for allowing their deficits to increase above 3% of GDP, and for failing to introduce tax rate increases and/or cut-backs in public expenditure, which would have depressed domestic demand even further.

There may be a question-mark over the long-term sustainability of the fiscal expansion introduced in the US, and the aggressive action taken by the Federal Reserve to reduce interest rates. However there can be little doubt about the effectiveness of this combination of policies in initiating economic recovery. The US hope is clearly that, as in the past, their policy actions will ensure that their recession is short-lived. In the early 1990s, it lasted for a year. Meanwhile, the inaction of the EU authorities has prolonged the current EU recession – just as happened a decade ago.

The differing responses to the slowdown in economic activity have seen GDP in the US grow by 2% in 2002, and 3% in 2003, having increased hardly at all in 2001. This contrasts with growth in the EU, which has averaged less than 1% a year over the same period. While the US current account *deficit* on the balance of payments has risen to 4.6% of GDP, in the EU – largely as a consequence of the sluggish growth of internal demand – the current account *surplus* has risen to 1.6% of GDP. In Germany, as noted above, the surplus has increased to 4.5% of GDP, precisely the reverse of the US deficit.

At the same time, and partly reflecting the differing reaction of the authorities to the slowdown in economic activity, the euro has appreciated significantly on foreign exchange markets, and the dollar has depreciated equally markedly. Between October 2000 and January 2004, the effective exchange value of the euro increased by a third. This rise has little to do with relative rates of inflation – adjusted for inflation, the appreciation was still 30% – and it more than compensates for the large fall in the exchange rate which occurred over the preceding two years (amounting to 18% or so).

On the evidence on trade performance presented above, the rise in the exchange rate has so far done little to curb EU competitiveness, which had been boosted earlier by the depreciation that had preceded it. Arguably, trade performance would have been even stronger over the recent past if the appreciation had been less, and the EU surplus on external account could have been even larger.

Nevertheless, the ultimate effect is likely to be that net exports will fall – especially if the exchange rate remains at its present historically high level – and EU producers have expressed increasing concern about the

prospects for export growth, and the likelihood of losing domestic market shares to importers. As a result, the prospects for early and strong recovery of the EU economy from the past two years of sluggish growth do not seem bright, especially given the policy stance of the ECB and Member State governments.

Once again, EU economic policy seems to be to wait for something to turn up, preferably a sharp upturn in the global economy, led by somebody else. At the same time, there is talk of the need for EU economies to become even more competitive combined with attempts to talk down the exchange rate – seemingly unaware that it is policy inactivity which has helped pushed the relative value of the currency higher and higher.

At the same time, there are calls for the US authorities to change their policy – to reduce the budget deficit and government borrowing in order to strengthen the exchange rate – which would undoubtedly risk jeopardising the continuation of the global recovery, and tend to offset any gain to EU exporters from a fall in the exchange value of the euro. This risk is all too evident in the light of past experience regarding the relationship between net exports, the real exchange rate, and world trade growth.

In the period since 1995, the contribution of net exports to GDP in the EU has invariably been positive when world trade growth has been high, as might be expected. This was even the case between 1995 and 1997, despite the high real exchange value of the ecu during this period. On the other hand, when the growth of world trade was relatively low in 1998 and 1999, the contribution of net exports was negative, but when world trade grew faster in 2000, net exports once again becoming positive.

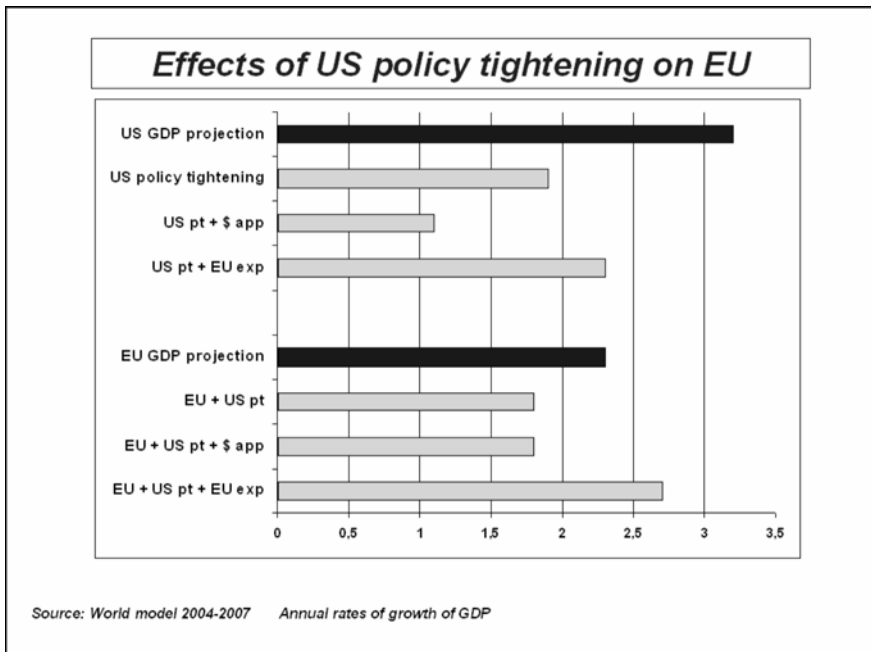
Unusually, the slump in world trade in 2001 was not accompanied by a fall in net exports, and their contribution to GDP growth remained positive in 2002. This can be attributed, however, to the low value of the euro, combined with the depressed state of internal EU demand, which reduced imports. In 2003, the combined effect of slow world trade growth, and a strongly appreciating exchange rate, was to reduce the contribution of net exports to GDP growth.

This experience suggests, unsurprisingly, that net exports are affected by both the real exchange rate and world trade growth. Hence, while a fall in

the exchange rate might offset the continued slow growth of world trade, it might need to be large – of the magnitude that occurred in 1999 and 2000 – to do so. Predictions of faster world trade growth may prove correct but, once again, Europe is putting its money on forces largely outside its control, rather than the development of its own internal market.

Scenarios of future economic developments

The EU policy stance towards US fiscal policy (and the internal and external deficits which are a consequence of this) and towards the dollar-euro exchange rate, is of major importance in terms of the growth of the EU economy over the next few years, and the prospect of rising living standards. Because of this, we have explored various scenarios of future developments in the global economy, looking at the consequences of pursuing differing policies in the EU and the US.



The possible effects can be examined by means of a model of the world economy, first developed some years ago in the Department of Applied Economics at the University of Cambridge. This is designed to capture the interaction between the major trading blocs, as explained in the Box at the end of the chapter.

It is used here to consider the effects of the present fiscal expansion in the US continuing, and then the consequences of this being brought to an end – not only for the US economy, but also for the EU and the rest of the world. We also then estimate what differences a change in policy stance in the EU might make.

On the assumption that past trends continue – that fiscal and monetary policy in the US remains geared both to stimulating and supporting internal economic growth, and that the dollar remains weak on foreign exchange markets – it is likely that US GDP would continue to expand at around 3% a year, or just over. Both the budget deficit and the balance of payments deficit would continue to remain large, though slowly declining in relation to GDP.

In the EU, if the present cautious policy stance persists, then growth would return to around 2.5% a year but is unlikely to go much higher – noting that, over the 17 years 1986 to 2003, GDP growth in the EU averaged just under 2.5% a year, but since 1991, only just under 2%. The balance of payments surplus would remain significant. Inflation would almost certainly remain low since there is likely to be little upward pressure from primary and energy prices given the relatively modest growth of the world economy. Employment would increase, since growth would be above the trend rise in productivity, but not by enough to reach the Lisbon targets.

If, however, the US succumbed to international pressure and began to reverse the fiscal expansion in order to curb the rise in government borrowing and reduce the balance of payments deficit, then US growth would slow. Halving the budget deficit over the next 3-4 years would be likely to reduce US GDP growth by around 1% a year – from 3% to 2%. This would have a major impact on global economic growth, reducing it by almost the same extent, once the repercussions of a slower rise in US imports, and the depressing effect on primary and energy prices and the

incomes of primary producers, worked themselves out. In the EU, GDP growth would be reduced by over ½ a percentage point a year to below 2%.

The effect on the EU, it should be noted, is much larger than typically assumed because the model looks beyond the immediate impact of a decline in US imports. Although the EU accounts for only around 20% of US imports, EU producers are affected, not just by the decline in US sales, but also by reduced sales to other trading blocs that are similarly hit by a reduction in their exports to the US. As these effects work themselves out, the consequences for EU exports are much greater than the first-round impact.

If a tightening of policy in the US were accompanied by a strengthening of the exchange rate, this would depress US growth even further. The EU and certain other countries would gain market shares from this movement in the exchange rate, but the gain would be offset by the lower growth of the US market as US producers were hit by the appreciating currency. Indeed, it is possible that any gain from increased market shares could be more or less completely offset by a reduction in the size of the market, leaving EU growth still below 2% a year.

This illustrates the predicament of policy-makers on both sides of the Atlantic. The result of the substantial fiscal expansion which has occurred in the US – in a context where global markets elsewhere have been depressed – is a large balance of payments deficit, which requires funding. This has put downward pressure on the exchange rate, since the US Federal Reserve has been reluctant to see interest rates rise.

Indeed, given the scale of the trade deficit and a continued policy of expanding domestic demand to maintain growth, the exchange rate has to remain low in order to reconcile the different economic policy stances in the US, on the one hand, and the EU and other parts of the world, on the other. Indeed, the exchange rate might even need to fall further to prevent the internal and external deficits expanding even more rapidly.

The rising strength of the euro, which is the counterpart of dollar weakness, might make it difficult for EU producers to hold onto market shares. However, responsibility for this lies as much with the policy

caution of the ECB and EU Member State governments, collectively, as with the profligacy of the US administration. Lower interest rates in the euro zone, coupled with a less restrictive fiscal policy stance and a higher rate of internal EU market growth, would relieve upward pressure on the exchange rate and help reduce the imbalances.

The benefits of higher EU growth

Model simulations show that an additional 1% a year of growth in the EU market, in the context of US policy tightening, would boost both US growth and the growth of the global economy as a whole. Growth of GDP in the US would be over ½ a percentage point a year higher with the same internal policy stance, and growth of the world economy as a whole would increase even more.

This illustrates the strategic position of the EU in the global economy. Its imports from the rest of the world may be less than those of the US, but it still represents a substantial market for other countries, and developments here have a significant effect elsewhere. This will be even more the case after enlargement.

Such an expansion of the internal market would almost certainly necessitate the abandonment of any attempts to keep budget deficits below 3% of GDP – an arbitrary ceiling which is widely recognised as having no economic rationale, and little political justification, except to those who believe that EU governments would otherwise allow their deficits to spiral out of control, bringing down the euro and the European economy, and who see no other way of containing such a menace.

In reality, and given the scale of the EU economy – with a GDP of much the same size as the US – the euro has the potential to be an international currency to rival the dollar. Yet the international role of the euro and its potential for supporting EU growth, as well as the international responsibilities which result from the EU economy being the size that it is, have been largely neglected by the ECB and EU governments.

The wide fluctuations which have occurred in the exchange value of the euro since its inception, and their adverse effects on economic growth – which stem in part from the uncertainty created for businesses – forcibly

demonstrate the need for a more conscious international attempt to manage such movements, with cooperation between the US and EU authorities, perhaps with the support of Japan and other major economies. Despite the scale of private capital flows and their potential for disruption, a concerted effort at co-operation, while it would not of course achieve complete stability, could moderate the extreme fluctuations which have become a feature of international currency markets.

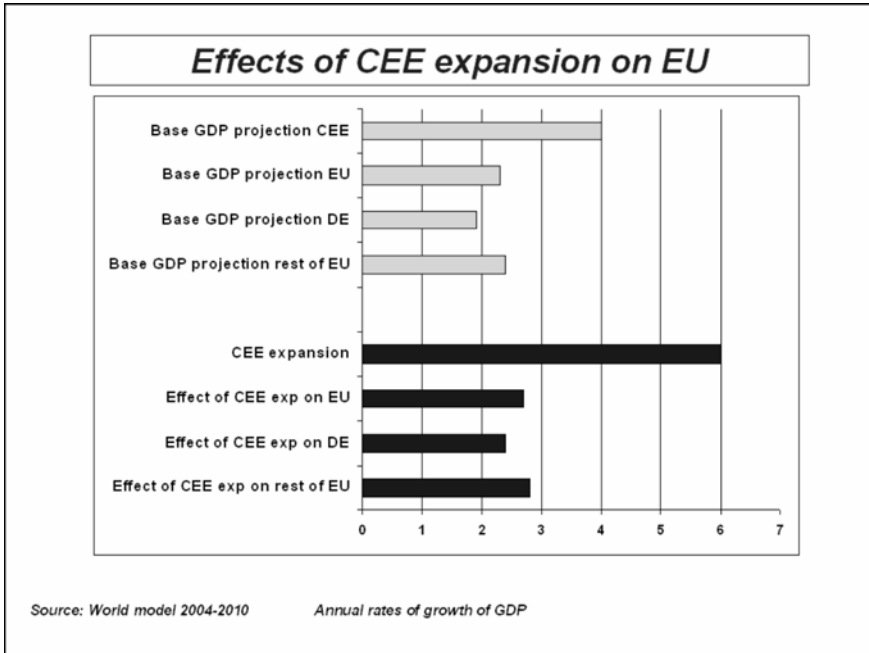
This requires, however, a major shift in the preoccupations of the ECB, which would need to address wider concerns than the rate of internal EU inflation. The pursuit of a single policy target may have the merit of simplicity, but the choice of economic policy objectives, and the conduct of policy itself, ought not to be determined only in terms of what makes for an easy life for the ECB.

The growing importance of Central and Eastern Europe

In May this year, 10 additional countries joined the EU, eight of them former centrally-planned economies in central and eastern Europe, which are still in the process of making the transition to market economies. These countries add around 20% to the EU population, and therefore to the number of potential consumers in the internal market, but under 5% to total EU GDP measured in terms of euros.

This is less than half the addition to GDP that followed the entry of Austria, Finland and Sweden in 1994, which had a population under a third of that of the countries about to join. However, the new arrivals already import almost as much from the EU as Austria, Finland and Sweden combined, despite their much smaller GDP, and despite the fact that they were outside the single market until May.

Central and eastern countries as a whole, including those who have not yet joined the EU, import around 10% more than these three existing Member States together. In 2003, EU Member States exported over EUR 150 billion's worth of goods to central and eastern countries. Indeed, the value of total EU exports of goods to central and eastern Europe in 2003 amounted to some 70% of its exports to the US. Moreover, the market is expanding more rapidly than that of the US.



Between 1995 and 2003, therefore, EU exports to central and eastern Europe increased three fold in value terms, and virtually doubled in relation to EU GDP to just under 2%. This rate of growth reflects both the large proportion of expenditure that goes on imports in these countries, and the large share that comes from EU Member States. Imports of goods and services therefore amount to over half of the GDP of the countries entering the EU this year, as compared with an average of only around a third for existing EU Member States, including imports from other EU countries.

Moreover, some 60% of these imports come from the EU. In addition, imports are increasing much faster than GDP, as growth of income goes disproportionately on purchases from other countries. These include not only plant and equipment to modernise the processes of production, but also consumer durables. Between 1995 and 2003, the share of imports in GDP increased by some 12 percentage points in these countries taken together.

Given the scale of these imports, and the potential size of this market, the rate of growth which these economies manage to achieve is important to existing EU countries, and could give a significant long-run boost to the EU economy if high rates of growth could be sustained. This is demonstrated in simulations, using the world model to explore the interrelationship between the EU and US economies, taking account, once again, not only of the first-round effect of higher growth, but the effect of subsequent rounds as well.

Despite the fact that EU exports to the central and eastern economies amount to under 2% of EU GDP, and GDP in these economies is only around 5% of the EU total, growth of these economies has a potentially important effect on existing EU Member States once the consequences for other parts of the global trading system are taken into account. For example, if the growth rates of these countries could be increased by 2% a year on a sustained basis over and above what they would otherwise be, this would eventually add an extra $\frac{1}{2}$ a percentage point a year or so to the growth in EU15.

Indeed, given the scale of accession country exports to existing EU Member States, growth in the latter is critical if these countries are to sustain the high rates of growth necessary to raise their GDP per head to a level more comparable to that in EU15. Growth is also needed to provide the finance required to bring their infrastructure up to a standard that can support long-run economic development.

Finding this finance will depend on the policies followed by the EU15 countries towards them, as well as on their own efforts. While the achievement of a higher rate of growth in the EU15 is important, it is equally important that large-scale funding is provided through the Structural Funds to meet the substantial investment required, not only to improve infrastructure of all kinds – especially communication and transport networks – but to modernise education and training systems, and support business development. Without this funding, present structural deficiencies are likely to be a major obstacle to sustained growth, especially in areas outside the large cities, where the problems are most acute, and EU companies reluctant to invest.

Despite the potential gains on offer, and the mutually beneficial consequences of enabling these countries to achieve and sustain high rates of growth, the attitude of existing Member State governments towards the accession countries is as cautious, even negative, as it is to addressing the issue of slow growth in EU15. While the European Commission has recently recommended an increase in the EU Budget – raising it to just over 1% of EU GDP – to enable the Structural Funds to be expanded to meet the needs of the accession countries, it seems likely that the Member State governments will reject this recommendation.

Indeed, it seems probable that the governments will reduce the EU budget for the period after 2006, rather than increasing it, given their concern for the short-term consequences of an increased budget on public expenditure at national level, and their willingness to ignore the longer-term benefits of boosting public investment and economic growth.

Sharing potential gains between EU countries

One possible reason for the reluctance of EU15 governments to contribute towards investment in the accession countries is the large difference between existing EU economies in terms of what they each appear to stand to gain from the growth of the new Member States. This may also explain the differing degrees of enthusiasm for EU enlargement.

In 2003, Germany accounted for some 42% of total EU exports to central and eastern Europe. This is almost three times the share of Italy, the next largest exporter, nearly five times the share of France, and almost 10 times the UK share.

As a consequence, these countries now represent a larger market for German exporters than the US market, with sales accounting for over 20% of total German exports to countries outside the EU – equivalent to 3% of German GDP.

For Austria – crucially placed geographically and with close historical links – the market in central and eastern Europe is even more important, even if the share taken by Austrian exporters is much less than for Germany because of the much smaller size of the Austrian economy.

Austrian exports to this region amount to some 6% of Austrian GDP, and account for 40% of its total exports outside the EU.

Although these countries are, for the most part, less important as markets for other EU Member States, they are of some significance for Italy and Finland. Indeed, in both cases, the value of goods sold to central and eastern European countries is much the same as for goods sold to the US. Moreover, while German and Austrian exporters will gain most directly from the growth of markets in central and eastern Europe, exporters in other countries will, in turn, gain from the growth of the German and Austrian markets as the increased exports earnings are spent.

Simulations using the world model confirm this. Indeed the model indicates that even countries outside the EU, which export very little to central and eastern European countries, stand to gain from their expansion as the increased economic activity spreads globally.

Given the scope for rapid growth in these countries as their economies modernise, their potential for acting a catalyst for growth in the EU economy as a whole is considerable. This will not happen automatically, however. It will require a conscious effort from EU15 Member State governments to adopt appropriate policies. At best, this still looks uncertain at the present time.

Recent productivity growth in the EU and the US

Although, as argued earlier, productivity should not be confused with competitiveness, and should not be treated as the only constraint on growth potential, it is still a crucial factor in determining the attainable rate of long-term growth. In the short-run, it is also important since it has a bearing on the real wage increases that are consistent with maintaining the share of wages and profits in overall value-added, while containing inflation.

Much has been made of the recent apparent increase in the US rate of productivity growth relative to the EU. While productivity in the EU – defined in terms of the growth of GDP per person employed – has usually

risen at a significantly higher rate than in the US, the reverse appears to have been the case since the mid-1990s.

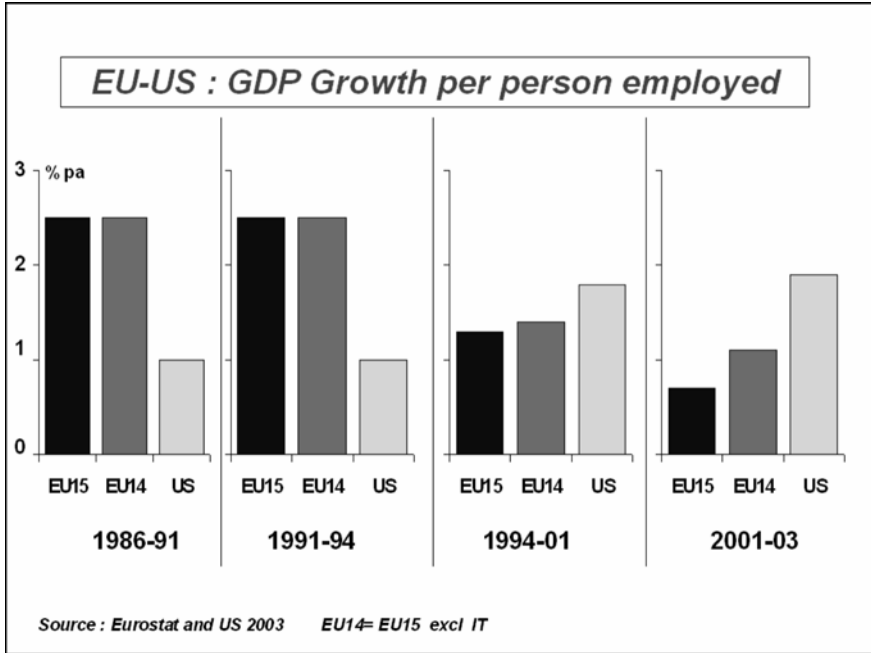
This is seen to be particularly significant because:

- Firstly, employment has also tended to rise faster in the US than in the EU, which was previously regarded in some degree as the counterpart of lower productivity growth;
- Secondly, technology in the EU as a whole still lags somewhat behind the US, so that the scope for productivity growth in the EU should also be larger;
- And thirdly, a faster rate of growth of both productivity and employment in the US would lead to a widening income gap, whereas the EU's higher productivity growth had previously compensated for its lower rate of growth of employment.

The first point to make is that much of the reporting in the press tends to focus on productivity in the business sector which, in terms of value-added per hour worked, has increased particularly rapidly in the US over the past two or three years. This has led to claims of a productivity miracle – attributable, perhaps, to new information and communication technologies.

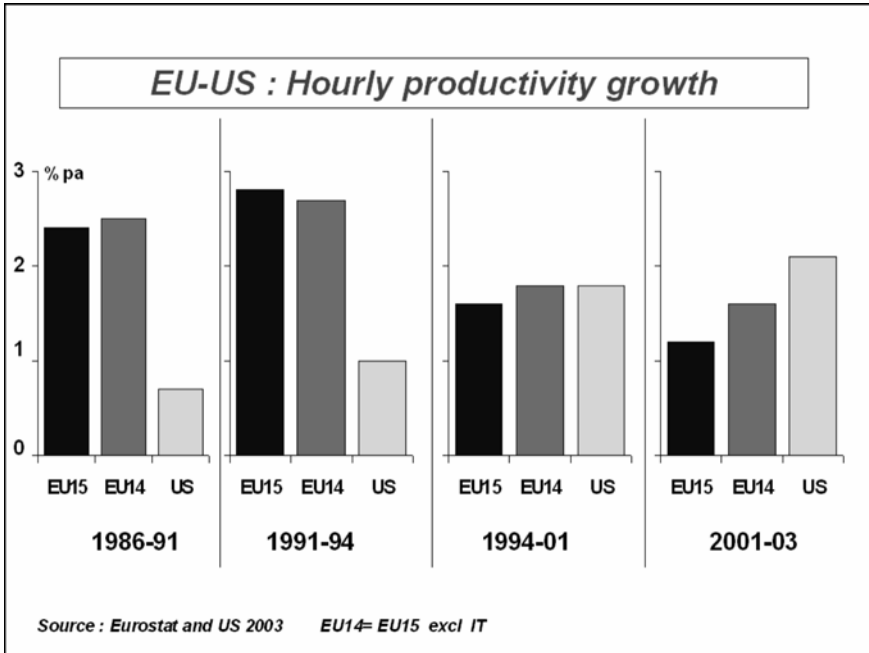
In this chapter, however, the focus is on productivity in the economy as a whole, including the non-business sector, where productivity growth is less easily measured, and recent experience has been less impressive.

The overall evidence, as set out in the graph, shows that, over the 17 years from 1986 to 2003, productivity growth, measured in terms of GDP per person employed, rose by rather more in the EU than in the US – by 1.7% a year as opposed to 1.4%. The higher overall growth in productivity in the EU was entirely due, however, to the higher rate of increase in the first half of the period – from 1986 to 1994 – when productivity rose by 1½ percentage points more than in the US.



Since then, growth in productivity in the EU has slowed, while in the US it has risen, though its rate of increase is still below 2% a year. Nevertheless, over the period 1994 to 2001, growth of productivity in the US averaged $\frac{1}{2}\%$ a year more than in the EU and, between 2001 and 2003, it averaged over 1% a year more.

When these relative changes are examined in more detail, however, some of the apparent slowdown in productivity in the EU seems to be the result of a reduction in average hours worked. Adjusting for this, and expressing productivity in terms of GDP *per hour* worked, the productivity increase in the EU over the period 1994 to 2001 increases from 1.3% a year to 1.6% a year – the result of average hours worked in the EU falling by 0.3% a year over this period, equivalent to almost an hour a week over the period as a whole. This *hourly* rate is much closer to the rate of growth of productivity in the US – 1.8% a year – where there appears to have been little or no reduction in weekly working time, according to the household surveys conducted by the Bureau of Labour Statistics.



It should be noted that the EU estimates of average hours worked are taken from the EU Labour Force Survey, which also reports only average hours worked per week. This is the only regular source of data on working time covering the whole economy. In the case of the EU, though, it is possible that the use of weekly data understates the reduction in annual hours (which would have the effect of understating the growth in hourly productivity) if, as seems probable, the average number of weeks worked per year has declined in the EU.

In practice, over the two years 2001 to 2003, average hours worked, according to the LFS, fell by a further 0.5% a year, raising the annual growth of productivity in the EU from 0.7% to 1.2%. In the US in the same period, however, there was also a small reduction in weekly hours worked, which increased its productivity growth to 2.1% – significantly above the EU rate.

Further examination of the changes in the EU reveals marked differences between Member States. In particular, the figures suggest a sharp decline

in productivity growth in Italy, with a rate of only just over 1% a year between 1994 and 2001 and a negative rate of just over ½% a year between 2001 and 2003 as employment rose by significantly more than the relatively small increase in GDP.

There is no obvious explanation for these unusual results, but it is worth noting that, if Italy is excluded from the EU calculations, productivity growth in the rest of the EU over the period 1994 to 2001 appears to have been the same as in the US (1.8% a year). And in the two years 2001 to 2003, when EU productivity growth was especially slow, overall productivity growth in EU14 was only ½ a percentage point a year less than in the US (1.6% a year as opposed to 2.1%).

Moreover, these differences may in fact have little to do with real changes in underlying rates of productivity growth, and more to do with differing short-term reactions to two years of unusual economic and labour market uncertainty. For example, US employers may have been reluctant to hire until they were sure that the upturn would be sustained – boosting short-term labour productivity growth – whereas, in the EU, employers may have been reluctant to lay-off workers if they felt the upturn would soon begin, thereby reducing short-term labour productivity growth.

Growth of GDP per head

The fact that GDP per person employed has risen by slightly more in the EU than in the US since the mid-1980s, combined with a larger increase in the numbers employed relative to the working age population (as discussed further below), means that the large gap in GDP per head that had existed between the two economies has narrowed somewhat.

Between 1986 and 2003, GDP per head measured in real terms grew by an average of 2% a year in the EU, as compared with a rise of just over 1½% a year in the US. This narrowing of the gap occurred predominantly in the second half of the 1980s, when GDP rose by over 3.5% a year in the EU, and GDP per head rose by just over 3% a year.

Since then, the gap has widened rather than narrowed. This is largely the result of two factors. Firstly, the much longer recession in the EU in the

earlier 1990s, when GDP per head rose by under 1% a year in the 3 years 1991 to 1994, less than half the increase in the US. And, secondly, the impact of the slowdown between 2001 and 2003, when GDP per head increased by only ½% a year in the EU, under a third of the rise in the US. Between these two periods of slow growth – from 1994 to 2001 – growth of GDP per head in the EU averaged just 2% a year, marginally more than in the US.

The experience since the 1980s clearly demonstrates that, during periods of reasonable economic growth, the EU can match the US in terms of productivity growth and growth of GDP per head, as well as in employment growth. The problem is that these periods have been interspersed with much longer periods of slow growth in the EU than in the US. This is sometimes attributed to greater wage flexibility in US labour markets – in the sense that wages fall in recession and tempt employers to hire more quickly – although hard evidence is actually hard to find on this point.

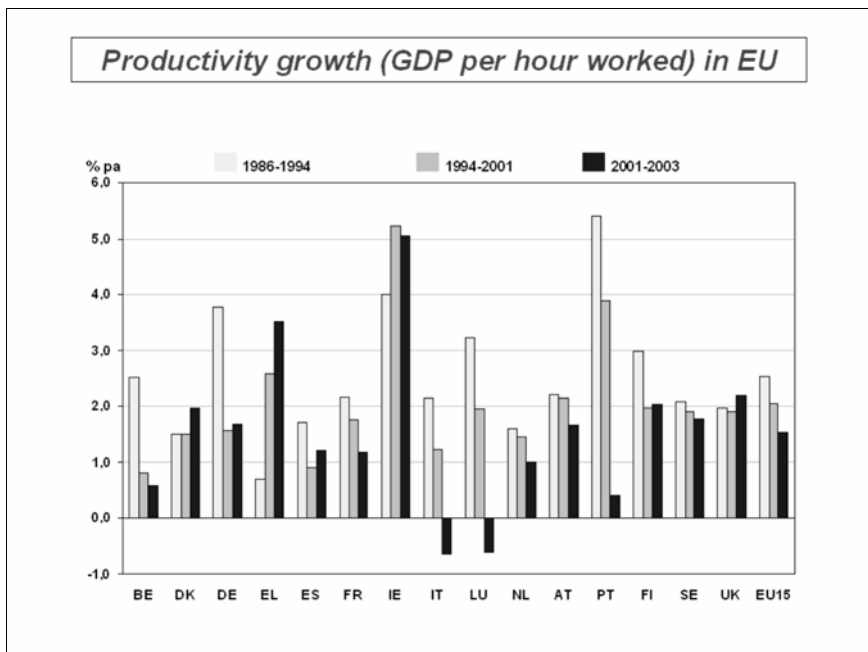
The more plausible explanation, though, is to be found in the much more aggressive economic policy responses in the US during these periods, reflecting the much less fragmented nature of policy-making in the US than in the EU, and the greater priority to sustaining employment. The creation of the single currency, and the establishment of the ECB, makes it possible, in principle, for a more coherent policy to be followed in the EU in the future. However, this requires more attention to demand management – an issue that seems to be of rather limited policy concern at the present time at EU level – and more open and active co-operation between EU authorities and national governments and social partners.

Part of the problem is that, at national level, political authorities are much closer to their electorates and have to justify policies such as putting up taxes, or cutting public expenditure, at times when demand is already depressed. EU authorities are much further removed from these realities and pressures and, for the moment at least, seem all too happy to keep things that way.

Productivity growth in EU countries

Although much of this analysis has focused on comparing the EU and the US, it is also the case that there are significant differences between countries within the EU, in terms of both competitiveness and productivity. There are variations in the US as well – as noted in the variations in regional income per head discussed in Chapter 1 – but the variations are not as wide as those in the EU, reflecting the much longer period that the US has been a single economy, and the much longer time it has had to address regional disparities.

As regards the ‘competitiveness’ of different EU Member States, some of the variations across EU countries, as reflected in trade performance, have been noted. Suffice to say that there are countries with good and bad trade performance, which does not lend strong support to a common EU policy focus on improving competitiveness of the EU as a means of stimulating growth.



There are equally significant differences in productivity, which has come to be used (confusedly in our view) as a surrogate for ‘competitiveness’, with GDP per hour worked being above the US level in some countries, and below in others. Differences between EU countries in productivity performance over recent years are also reflected in differing patterns of employment growth.

Growth of GDP per hour worked since the mid-1980s has varied from over 4% a year in Ireland and Portugal – countries where productivity was relatively low at the beginning of the period – to under 1½% a year in Spain and Italy – countries where the proportions of their populations of working age in employment were relatively low, so putting a premium on job growth.

This was also the case in Ireland, which succeeded in achieving a rate of growth of GDP high enough to increase employment substantially, while maintaining a high rate of growth of productivity.

Overall, there was a tendency for productivity growth to be lower in the second half of the period than the first, matching the pattern observable for the EU as a whole, with only Denmark, Greece and Ireland not conforming to this tendency. The slowdown was particularly marked in Germany, where unification to incorporate the east German *Länder* had led to a pronounced surge in productivity as a result of rationalisation and a reduction in over-manning.

In six Member States – Luxembourg, Portugal, Austria and Finland as well as Ireland and Greece – productivity growth between 1994 and 2001 exceeded that in the US. Nevertheless, there seems to have been a widespread change in underlying productivity growth over this period across the EU, which might be related, in some degree, to the growth of services activities. Productivity growth in this sector is particularly difficult to measure, and there has been far less effort devoted to improving its measurement in the EU than the US.

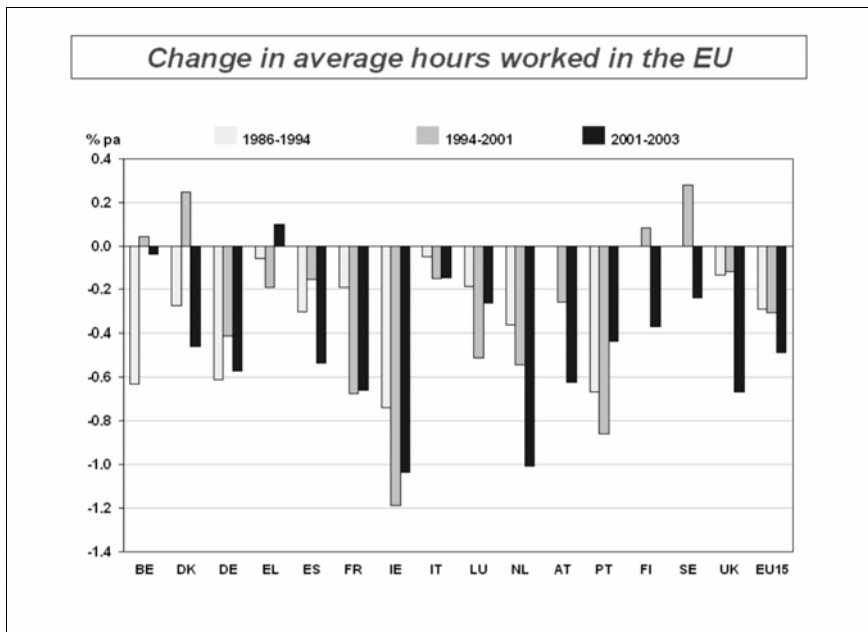
Alternatively, it may simply be related to differing policy priorities being given to increasing employment and reducing unemployment during the recession. Certainly, reducing unemployment became a major aim of economic policy across the EU during this period, with considerable

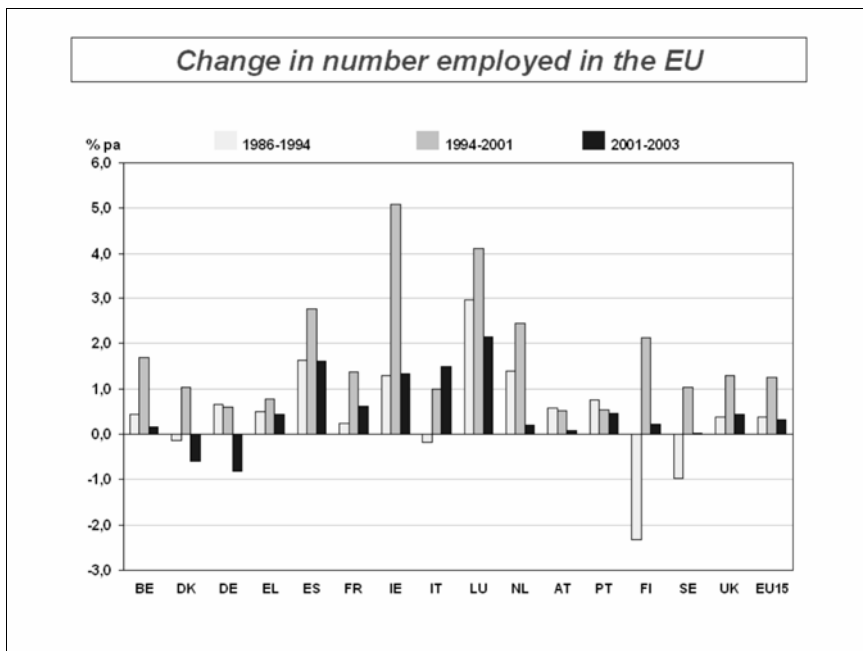
attention been given to the need to raise the so-called ‘job content of growth’, effectively the reverse of labour productivity.

The slowdown in productivity growth since 2001 has been less widespread, possibly reflecting differing perceptions of the underlying economic situation and future prospects and, of course, the variation in GDP growth over this period, which exceeded 4% a year in Greece and Ireland but which was negative in Germany, the Netherlands and Portugal.

There was little or no slowdown at all in eight of the 15 Member States – including Germany, the UK and Spain – but a significant fall in productivity in Italy which, as noted above, is a major ‘explanation’ of the average EU decline in productivity.

Average working time has also declined since the mid-1980s – more so in the EU than in the US, as noted above – so contributing to growth in the number of people in work. In Ireland, the reduction in average hours worked has amounted to just over 1% a year over this period, and in Portugal and France to over ½% a year.





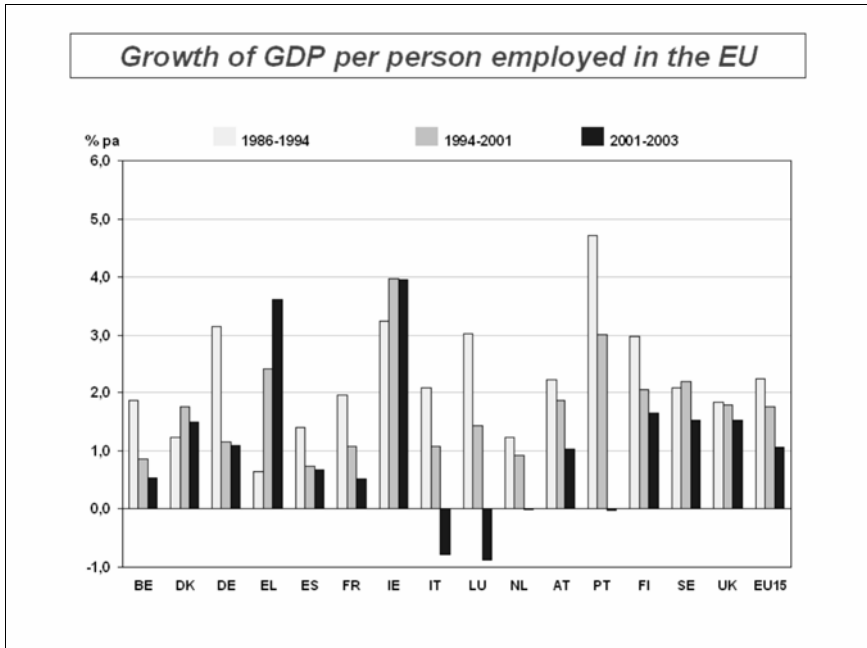
The only EU countries not to have experienced a reduction in working time are Denmark, Sweden and Finland, reflecting – in the first two at least – a tendency for increasing numbers of women to work full-time rather than part-time.

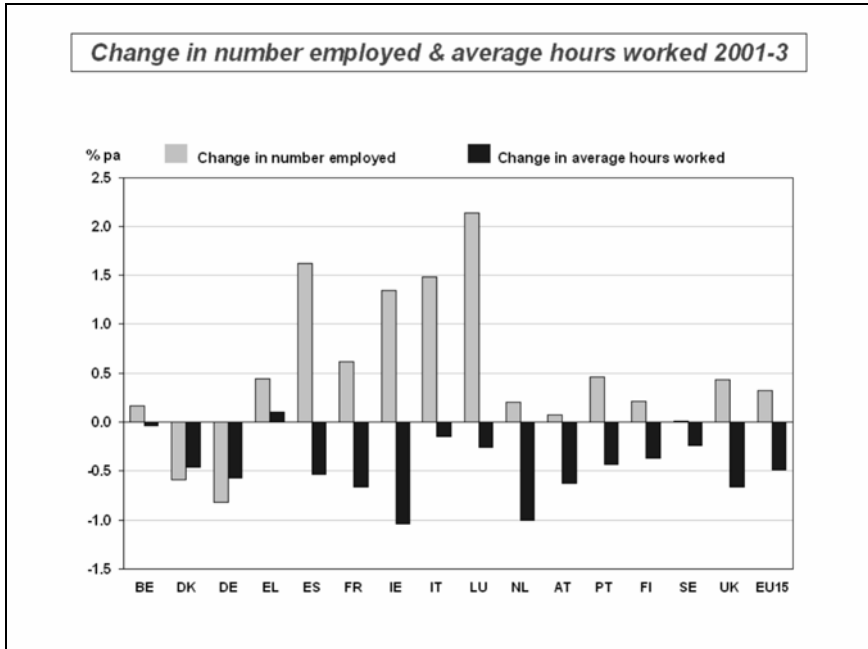
Overall, average hours worked have declined fairly continuously in most countries over the period, with the reduction particularly pronounced in the two years 2001 to 2003, when GDP growth slowed.

The effect of this reduction in working time has been to increase the number of people in work for any particular level of GDP, given productivity trends. Up to 2001, it effectively raised the growth of employment associated with any GDP growth by around 0.3% a year, seemingly accounting for around 40% of the overall increase in employment between 1986 and 2001 (though this is not to imply that there is necessarily a direct or one-for-one trade-off between average hours worked and numbers employed).

Over the eight years 1986 to 1994, a reduction in average hours worked was effectively responsible for most, or all, of the increase in numbers employed in Belgium, Germany, France, Portugal and Ireland. Between 1994 and 2001, its effect was less, but it still accounted for most of the growth in employment in Germany, Austria and Portugal, and for half the growth in France. And in the two years, 2001 to 2003, it enabled employment to be maintained or increased in most Member States.

Partly because of the reduction in working time, the growth of GDP per person employed was less over the two years 2001 to 2003 than during the preceding seven-year period in six out of the 15 Member States. And GDP per person employed remained unchanged in two countries – the Netherlands and Portugal – and fell significantly in two others – Italy and Luxembourg.





Convergence and divergence among EMU Member States

The introduction of the euro in 1999 – with notes and coins introduced in 2002 and Greece joining in 2000 – was expected to increase economic convergence between the Member States. If anything, however, the reverse has been the case.

Setting aside Ireland and Luxembourg as special cases – with a very small impact overall, anyway – economic growth rates have diverged significantly in the five years of EMU. While there was a substantial fall in the average EU-12 rate of growth – from 2.8 to 0.4% - the range actually widened, from 2.2 to 5 percentage points.

This contrasts with the longer run experience – as noted in Chapter 1 – that relatively low-income countries have enjoyed faster growth than high-income countries, leading to expectations of growth convergence over time.

There has been a similar experience concerning differential rates of inflation across the members of EMU. Wide, or widening, differentials can make it difficult for the central bank to operate a monetary policy appropriate to all areas, with policymakers relying on the theoretical expectation that increased trade within the monetary union will constrain price developments in each country, leading to a convergence of national inflation rates.

The evidence from the first five years of EMU suggests, however, that this has not happened. In practice, the range of values for the 12 countries has doubled – from 1.5 to 3 percentage points – although, in contrast to the case of economic growth, this partly reflects the increase in the average by one percentage point.

These two experiences are linked by the fact that all the countries in the EMU area face the same nominal interest rate, set by the ECB. Thus a divergence of inflation rates implies a divergence in real interest rates, with high-inflation countries having low real interest rates, and vice versa.

This is important because faster growth tends to push up inflation, while lower real interest rates lead to faster growth. Thus there is a danger of some member countries of a monetary union experiencing faster growth, leading to higher inflation, reduced real interest rates, and a further boost to growth, with the reverse occurring in slow-growing countries. Such virtuous and vicious circles create major problems for the common monetary policy.

There is a counter mechanism, however, that works through foreign trade. Countries within the monetary union who experience faster or slower inflation, suffer a loss or gain of competitiveness vis-à-vis other members, without the possibility of offsetting this by a change in the exchange rate. This is the mechanism that policymakers rely on to balance growth and inflation rates.

Comparing actual growth and inflation rates we see that, indeed, it is the cumulative-causation effect that seems to predominate in the short to medium term. Germany, France and Austria, on the one hand, and Ireland, Spain and Greece, on the other, have exhibited, respectively, low and high

inflation, high and low real interest rates, and slow and fast economic growth.

However, in the longer run, the trade effects come into play. Portugal and the Netherlands are cases in point. For some time in the late 1990s, these countries benefited from the virtuous circle of fast growth, rather high inflation and low interest rates. Then they encountered competitiveness problems – in Portugal exacerbated by a serious tightening of fiscal policy – that severely reduced their economic growth, and changed them from being among the best, to being the worst growth performers in 2003.

On the other hand, and less spectacularly, Austria appears to be slowly benefiting from its below-average inflation rates, and improving its growth performance against the EMU average. Germany may follow, but its larger size (and smaller trade effects) makes this competitive disinflation path particularly arduous.

The policy conclusions are complex. Monetary policy cannot bring about inter-country adjustment. That is a task for national governments and the social partners, who have to set the courses of national fiscal and wage policies in ways that limit vicious and virtuous circles, while permitting necessary adjustments in national competitiveness within the single currency area.

As many people have argued, this requires, firstly, a reform of the Stability and Growth pact, with an emphasis on ensuring that it works in a more symmetrical way. It is not possible to have a one-size-fits-all monetary policy and a one-size-fits-all fiscal policy. At the same time, it is important for the success of the euro zone that wage-bargaining takes account of medium-term productivity trends in each country, and avoids reacting to short-term cyclical fluctuations.

A model of the global economic system

The model currently breaks down the world economic system into 12 blocs, of which the US is one, Japan another, Germany a third, the rest of Western Europe – which is predominantly the rest of EU15 – a fourth, and other developed economies, mainly Canada and Australia, a fifth. The central and eastern European economies represent another bloc, as does the rest of the former Soviet Union, while South-East Asia, China, Latin America, Africa and the Middle East are each treated separately.

Trade is divided into three categories – manufactures, energy and other primary products – the supply and demand for the latter two being brought into balance by movements in price. Exports are modelled in terms of the share of each bloc in the imports of each of the others, while imports are mainly affected by demand within the respective blocs. Financial flows are assumed to be the counterpart of trade balances and to influence policy through these.

Although the model is an extremely simplified representation of reality, its merit is that it captures the interrelationship, through trade, of developments in different parts of the world. This enables the repercussions of a change in one part to be traced through the global system. The fact that simple accounting identities are also enforced – in particular, that world exports must equal world imports, that trade balances must sum to zero, and that shares of different markets cannot exceed 100% – ensures that, for any changes, there are counterpart changes elsewhere in the system. For example, the trade shares of the EU cannot increase unless there is a reduction in other shares, nor can trade surpluses be accumulated without counterpart deficits elsewhere.

The model contains annual data back to 1970, and its equations have been tested over many years, and proved relatively robust. Its main use, it should be emphasised, is for exploring future scenarios on alternative assumptions, along the lines of ‘what would happen if’. In other words, the purpose is not to predict what is likely to happen, but to compare outcomes on alternative assumptions.