A joint initiative of Ludwig-Maximilians-Universität and ifo Institute for Economic Research

REPORT ON THE

EUROPEAN ECONOMY 2002

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CESifo

CESifo Forum ISSN 1615-245X
Publisher and distributor: Ifo Institute for Economic Research
Poschingerstr. 5, D-81679 Munich, Germany
Telephone ++49 89 9224-0, Telefax ++49 89 9224-1461, e-mail ifo@ifo.de
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Forum Special

The European Economic Advisory Group at CESifo was born out of the need to look at policy issues from a European rather than a national perspective. Europe is growing, and growing together, integration is accelerating, Eastern expansion is imminent. The establishment of a European central bank and the introduction of a common currency have joined the Continental countries with one monetary policy and the common need to establish the internal and external stability of the euro. At the same time, national fiscal policies must operate within the boundaries of the Stability Pact. Many problems in Europe are shared problems like unemployment and overburdened social systems, others are more idiosyncratic. Solutions are needed in all cases, and they may emerge from theoretical analyses, practical experiments and international institutional comparisons. The European Economic Advisory Group discusses the options and reports on the experience in the member countries and elsewhere. The Group also comments on economic activity in the European countries.

The European Economic Advisory Group was set up in 2001 by CESifo, a joint initiative of the Ifo Institute for Economic Research and the Center for Economic Studies (CES) of the University of Munich. CESifo's international network of 350 academic economists provides a valuable source of information behind the report, Ifo's macroeconomic department makes the basic forecasts, Ifo's Data Base for Institutional Comparisons in Europe (DICE) serves as a useful tool for policy evaluation, and Ifo's quarterly World Economic Climate (WEC) indicators, based on polls in 80 countries, ensure an up-to-date overview of the state of the business cycle in different parts of the world.

This is the Group's first report. It was prepared by a team of seven economists from six European countries, chaired by John Flemming, Warden of Waldam College, Oxford and former Executive Director of the Bank of England. The group also includes Giancarlo Corsetti (University of Rome III), Seppo Honkapohja (University of Helsinki), Willi Leibfritz (OECD), Gilles Saint-Paul (University of Toulouse), Xavier Vives (INSEAD) and Hans-Werner Sinn (Ifo Institute for Economic Research). The group plans to deliver similar reports on an annual basis, assuming as a group responsibility for the content.

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 Wolfgang Ochel, Frank Westermann, Wolfgang Nierhaus, and Wolfgang Meister (content), Heidemarie C. Sherman and Paul Kremmel (editing), Sascha O. Becker (secretariat) as well as Elsita Walter (statistics and graphics) and Elisabeth Will (typesetting and layout).

Hans-Werner Sinn
President, Ifo Institute and CESifo
Professor of Economics and Public Finance

Munich, 5 February 2002

Executive Summary

This is the first annual report by the European Economic Advisory group at CESifo that brings together economists from different European countries with the goal of contributing analyses and proposals to the process of policy making and reform. Each year, the report presents a selection of emerging policy issues.

This report is in seven sections, each focused on a key policy issue in the euro area. After assessing the growth prospects for the current year, the 2002 report discusses the external value of the euro, the appropriate fiscal and monetary policy mix, price and inflation divergences across member states, factors enhancing or hampering European growth in the long run, an employment-friendly reform of welfare, and a reform of the Common Agricultural Policy.

The first section is an assessment of the economic situation of Europe, with some concentration on those countries which have adopted the euro in 2001 and 2002 drawing on a wide variety of sources including Ifo survey data.

At 1.6% in 2001 and 1.3% in 2002, these GDP growth rates are both, lower than earlier forecasts as a result of information since September 11, 2001 and lower than most forecasts by national governments (which may be biased upwards to present projections of imminent fiscal stabilisation) and one percentage point lower than the growth of potential output. Prospective European growth exceeds that of the United States in 2001 and, like in the United States, recovery starts in the course of 2002. Unlike the United States, Europe as a whole is not expected to experience any decline in quarterly GDP, although some member countries are already in recession.

Slow growth is reflected in unemployment rising by 0.25 percentage points between 2001 and 2002 (from a low point in 2001), while inflation falls by 0.75 percentage points in the Euro area.

The second section addresses the weakness of the euro against the US dollar and the yen since its launch in 1999. The report stresses the effects on the euro of a dramatic decline in the demand for base money which probably reflected a flight of black money from within the euro countries as well as of deutschmarks returning from Eastern Europe and other parts of the world. As the ECB absorbed the fall in the demand for base money at given interest rates by changing the composition of its broad money aggregate M3, without changing its size, the effect on the exchange rate was very similar to a sterilised intervention of the same size. Measured against the trend, the decline in the demand for base money was in the order of €90 billion over the last few years until October 2001, enough to fully explain the euro weakness in quantitative terms.

Apart from these changes in the demand for currency, macroeconomic factors have also contributed to the weakness of the euro, which may be seen as a reflection of dollar strength in the late 1990s. Dollar appreciation was initially driven by high consumption and investment demand due to expectations of a strong US advantage in growth and productivity. After doubts about the persistence of this advantage towards the end of 2000, the euro stopped depreciating, but remained weak, perhaps reflecting market pessimism about Europe's ability to sustain its own growth independently of the United States. It was precisely in this period that the movements in currency demand mentioned above may have become stronger.

Chapter 3 considers the monetary and fiscal policies appropriate to Europe under the circumstances of an adverse international cycle and a weak euro. Typically, governments have medium-term plans for fiscal consolidation, "stabilisation plans", calling for a falling trend in budget deficits. The European Commission has called for this trend to be sustained and argued that the ECB should provide the necessary value-stimulus by cutting interest rates further. On the other hand Euro area interest rates are already lower than

would be expected on the basis of the evolution of prices and output, and an indicator based on interest and exchange rates also indicates considerable easing of monetary conditions throughout 2001. There is thus a danger that neither party will be willing to act.

The growth and stability pact underlying national fiscal stabilisation plans has a number of presentational weaknesses. In particular, although paths for deficit reduction are typically presented alongside GDP projections, they are not explicitly conditional on them. If GDP turns out lower than expected, deficits will be higher than planned which may induce the fiscal authorities to take steps that have the effect of aggravating the downturn. There may also be a tendency for them to have published unrealistic GDP projections in order to show falling budget deficits despite their failure to take real steps towards consolidation.

We would like to see stabilisation plans made more explicitly conditional and the projections made more realistic. Against this background one would be able, with much greater confidence, to allow the built-in stabilisers to operate and also to take parallel self-reversing measures (such as accelerating previously planned tax cuts).

While we cannot wait for such reforms to take place, and the recession should not be used as an excuse to postpone necessary reforms of the state sector, it would be appropriate for deficits to rise throughout Europe during the current cyclical downturn except where stabilisation efforts have been weakest, and debt income ratios are also highest, and even there they should not decline. We also believe that (especially as compared to the US Fed) the ECB has room to cut interest rates further – a measure which should be adopted sooner rather than later.

It may also be appropriate to consider/propose a contingency plan for a more radical and co-ordinated policy throughout Europe. This might either be modelled on the discretionary fiscal regulations in the German Stability and Growth Act of 1967 (and a UK law of that era) and/or be designed to provide structurally improved incentives, e.g. for investment or for larger families.

Chapter 4 addresses questions about the effect of the introduction of the euro on price differentials across the Union and also on the cost of capital in its member countries which may account for capital flows from the slow growing centre to the more buoyant peripheral states.

Although price differentials have narrowed, and should be expected to remain narrow as productivity and labour costs converge throughout the Euro area, they should not be expected to disappear completely. According to some evidence, ten years ago price dispersion in Europe was about three times that in the United States – it had already been halved at the end of the 1990s.

Nominal interest rates on government securities have converged virtually completely with the announcement and introduction of the euro indicating that risk premia resulting from uncertain exchange rates and other causes have disappeared. As these premia are generally believed to have been higher in the peripheral states, these should now be benefiting from a reallocation of capital in their favour. As a result, labour productivity and prices of goods that are not traded internationally can be expected to rise faster than would have been the case without the euro. A sizeable inflation differential among the Euro countries is a natural aspect of the real convergence process that has been brought about by European integration in general and by the euro in particular.

Differences in cyclical development within the Euro area in the last few years have raised an issue in the desirability of national inflation differentials as a mechanism reducing the risk of overheating in the countries or regions with the fastest growth rates. By raising the relative price of domestic products, in fact, national inflation differentials discourage external demand.

The problem with this idea is that only a few cyclical shocks require a permanent appreciation of the real exchange rate. So, while high inflation at time of booms in domestic demand may be a useful way to contain domestic imbalances, prices and wages then need to come down after the boom is over. Downward nominal rigidities preventing a fast adjustment can create quite a bit of unemployment.

Provided that they are not excessive, inflation differentials need not be reversed in the presence of persistent differences in productivity growth in the

tradable sector of the economy, or in the presence of international taste shocks (an upsurge of demand for Italian pasta or French wine …). Even in these cases, however, overshooting of equilibrium inflation is a real risk. Inflation differentials need to be reversed in other cases, including domestic demand booms due, for instance, to export dynamics fuelled by a weak euro. The adoption of policies promoting wage and price flexibility is a key step in the future of the Euro area.

Chapter 5 compares growth in Europe and the United States in recent decades. Although Europe was, as one would expect, catching up in the 1950s and 1960s, this virtually ceased in the 1970s, and the United States has pulled further ahead in the 1980s and 1990s – and at a particularly remarkable rate in the second half of the last decade. The chapter examines the effects of general factor endowments and their accumulation with special emphasis on the role of information technology. Here the Scandinavian countries share a number of characteristics with the United States rather than the core European countries. The analysis highlights the effects of both industrial and labour market regulations in Europe as well as shortcomings in education and access to the Internet in much of the Continent. This last effect is attributed to inadequate openness of the sector to effective competition.

Chapter 6 argues that traditional social programmes of the modern welfare state have concentrated on replacing the earnings which are not enjoyed by those without jobs. This offers an incentive to those capable of earning only very low wages to qualify for (higher) benefits by declining jobs which, as a result, are also not offered. An alternative is developed, already implemented in varying degrees in a number of countries, in which tax credits are used to supplement the wages available to low productivity workers – whose benefits when not in work may also be reduced after a period of joblessness. Traditional social insurance schemes used also to offer higher benefits for limited periods and this feature, too, should be re-emphasised.

A fairly detailed proposal is put forward on a basis which should allow the living standards of both the working and most of the non-working poor to rise at no net cost to governments while raising employment output and growth. In essence, it implies requiring government work in exchange for existing welfare benefits, cutting welfare benefits for those who do not work although they are classified as being able to, and paying a wage subsidy to those who take low-paid jobs in the private sector.

Finally, Chapter 7 re-examines the case for reforming the Common Agricultural Policy. The health and environmental aspects of modern agriculture have been highlighted by British experience with BSE and FMD. Historically, agricultural support has been rationalised by reference to security of supply, income maintenance, or, increasingly, environmental concerns. It is argued that production price supports, the scale of which is set out, act as incentives to intensification which is environmentally damaging and poses threats to animal welfare and human health. Hormone beef and GMOs are no more threatening to the health of Europeans than of Americans and therefore should not be an issue in transatlantic trade although regulation of their use in production may be in order. Trade with developing countries is also affected by the CAP to their disadvantage on average – a problem that might be aggravated by EU enlargement to include countries such as Poland and Hungary with large agricultural sectors.

The EU allows member states to enforce standards of animal welfare in excess of Union-wide minima. It is argued that doing this merely diverts production to less demanding regimes. It would be better to define different standards and to acquire appropriate labelling (as also of hormone use, GMOs etc).

Farm support should be switched much faster from price support (with the environmentally damaging side effects) to explicitly environmentally friendly programmes (possibly rationally administered within an EU framework) compatible with a more liberal trading regime.

The European Economy: Current Situation and Economic Outlook

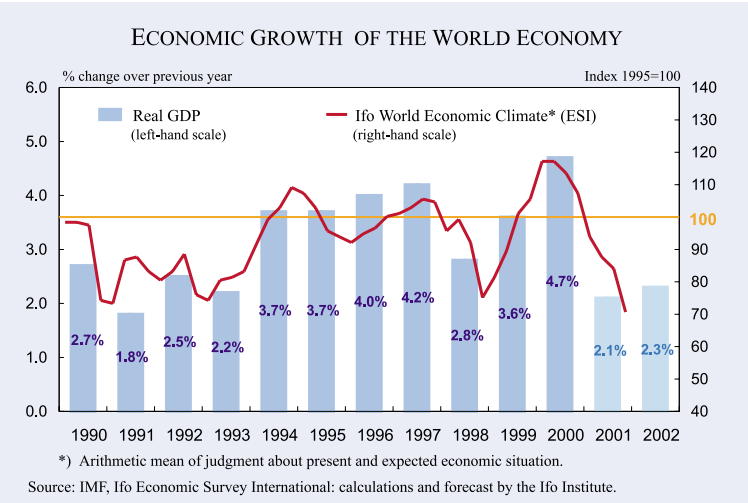
1. Current Situation

After a record growth of 3½ per cent in 2000 (see Figure 1.1), the highest level in the past ten years, economic expansion in the European economy[1] slowed significantly in 2001, and towards the end of the year growth came to a near standstill. This slowdown had started already in the second half of 2000 and it was affected, firstly, by the rapid price increase for oil and other energy sources. Secondly, the central banks in Western Europe had tightened monetary policy to stem the danger of inflation. Last but not least, the world economy weakened significantly as the boom in the United States came to a sudden end. The terrorist attacks on 11th September caused an additional shock to business and consumer confidence not only in the United States but also in the global economy including Europe. This event is expected to prolong the slowdown of the European economy.

It is difficult to disentangle the impact of these different adverse factors on aggregate demand in Europe. But the beginning of the downturn in the second half of 2000 was associated with the drastic worsening in the terms of trade from the cumulative effects of the oil price explosion and the weak euro (see Figure 1.2). The higher prices for energy were followed by a price increase for foodstuffs – much of the latter due to animal epidemics – and led to a sharp rise in consumer prices absorbing purchasing power for other goods (see Figure 1.3). In 2000 the terms of trade of the Euro area deteriorated by 1.3 per cent of GDP. More recently prices of foodstuff and energy have declined again with oil prices falling back close to their level in 1999. The deterioration of the labour market and additional economic and political uncertainties emerging in the aftermath of the terrorist attacks of 11th September, have added to the dampening of consumer spending.

[1] Real GDP increased by 3.5 per cent in the Euro area and by 3.3 per cent in the European Union.

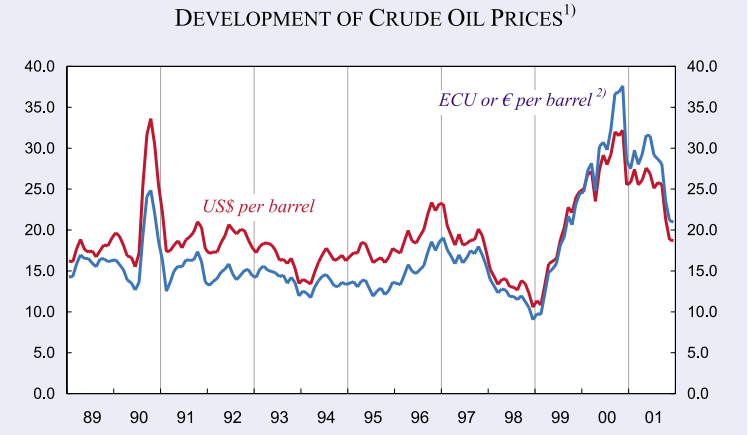
Fig. 1.1



*) Arithmetic mean of judgment about present and expected economic situation.

Source: IMF, Ifo Economic Survey International: calculations and forecast by the Ifo Institute.

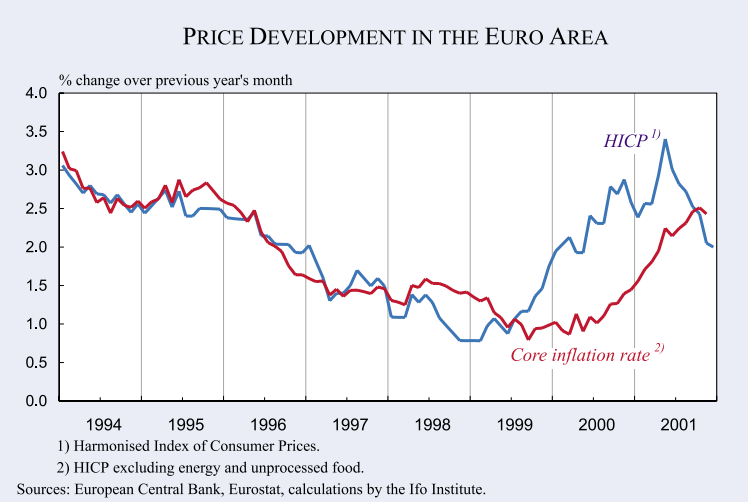
Fig. 1.2



1) Average of Brent, Dubai and WTI.- 2) From 1999 euro.

Sources: HWWA, calculations by the Ifo Institute.

Fig. 1.3



Exports of the Euro area rose strongly up to the end of 2000, boosted by the high order backlog and improvements in competitiveness as a result of the weak euro. In early 2001, however, a decline in foreign demand became evident and exports stagnated during the course of the year. Investment activity also weakened, and in some countries the continued fall of building investment was a further drag on aggregate demand. With the sharp cyclical slowdown of production, seasonally adjusted unemployment stopped declining and began to rise.

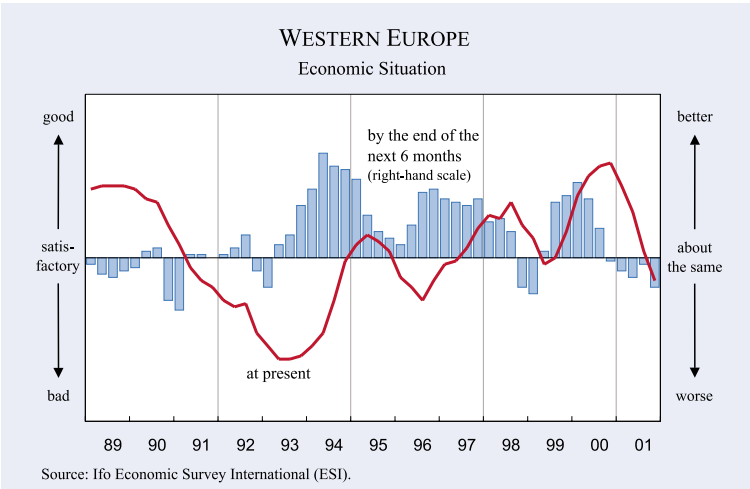
2. Economic Outlook

2.1 The Global Economy

In the current situation any projections for the European economy are highly uncertain. Given the closely synchronised sharp economic downturn in virtually all industrial countries and the low business and consumer confidence, there is a considerable risk of the global economy and the European economy falling into a recession. In fact, the United States and also Germany have already entered a recession with GDP declining in the third quarter and with a further decline expected for the fourth quarter. On the other hand, economic policies are now on a clearly expansionary course which should support aggregate demand. Furthermore, the oil price has declined to a low level and the associated increase in the terms of trade will stimulate domestic demand. Finally, business and consumer confidence are expected to recover again – and some leading indicators have started to improve as well as confidence in financial markets.

For the world economy the timing and strength of the US economic recovery are of crucial importance. The Federal Reserve had already lowered key interest rates significantly before the terrorist attacks and has reduced them further since this shock. Since January 2001 the Fed Funds target rate has been reduced by 4¾ percentage points from 6.5% to 1.75% of which 1¼ percentage points were cut after the 11th September. In addition, a large fiscal stimulus has been decided on or is in preparation. Apart from the tax cuts which were enacted in spring 2001, new measures were taken (or are in preparation) after 11th September, in particular the programme for emergency and military spending ($40 billion), the granting of subsidies to airlines ($15 billion) and another tax-cut package which could add up to $ 90 billion over the next two years. For 2002 the additional fiscal stimulus could amount to about 1 per cent of GDP. These expansionary policies should help the US economy to recover gradually. However, as a good part of the US slowdown is associated with the correction of the excessive expansion of the high-tech sector, continued weakness of this sector could be a drag on economic growth. We nevertheless

Fig. 1.4



assume that expansionary policies will be strong enough to bring the downturn to a halt and achieve a moderate recovery. The cyclical improvement in the United States will in particular stimulate the economies in Southeast Asia. For the Japanese economy, however, the impetus may not be strong enough to lead to a robust and sustainable recovery. For all industrial countries, the economic expansion will amount to only about 1 per cent in 2001 and 2002, after growth of 3.3 per cent in 2000.

2.2 The European Economy

In the summer of 2001 the European economy appeared to be on the verge of recovery. The direct and indirect adverse effects of the terrorist attacks in the United States reinforced the downturn, however. Most of the leading indicators do not suggest any improvement in the near future (see the results of the Ifo Economic Survey International for Western Europe in Figure 1.4 and the results of this survey for individual countries in Annex 1) but the low point is likely to be reached at the turn of 2001/2002. It appears, however, that in some countries (in particular in Germany) the downturn is more pronounced than in other countries (e.g. France) (for further details see the section on individual countries in Annex 2). Nevertheless, the expected turnaround of the US economy and the expansionary stance of monetary conditions in Europe should contribute to a recovery of the European economy in the course of 2002. The lower oil price and the significantly lower prices of industrial and agricultural raw materials provide a further stimulus to real domestic demand. But there are still downside risks: the deterioration in the labour market may dampen private consumption further and, given the declining capacity utilisation, the propensity to invest may remain weak despite low interest rates. Most of all, the US recovery may come later or be too weak to lead the European economy out of the current slump. Overall, we expect only a relatively moderate recovery of the European economy during 2002; the growth rate year-over-year is likely to be somewhat lower than in 2001 (see also the statistical background tables in Annex 3).

Fig. 1.5

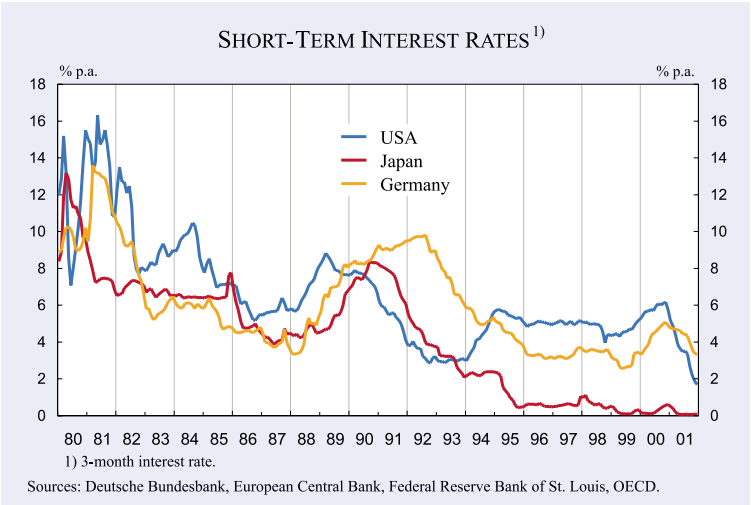
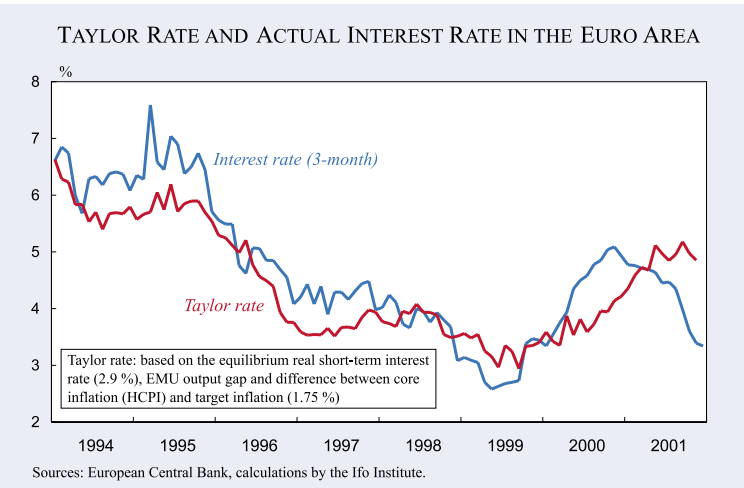


Fig. 1.6



Monetary conditions

Since last May the European Central Bank has lowered key interest rates in four steps by altogether 1½ percentage points to 3.25% of which 1 percentage point was done (in two equal steps) after 11th September (see Figure 1.5). The easing of monetary policy was a response to the cyclical weakening of the economy and was facilitated by the decline in headline inflation. Interest rates were reduced despite money supply growth being continuously above its target rate. But this was not seen as posing a risk for inflation as it was mainly caused by portfolio

shifts in favour of less risky liquid assets which are part of the M3 money supply. The actual short-term interest rate is now lower than the "optimal" rate as measured by the Taylor rate (see Figure 1.6 and Box). Taking into account the low real exchange rate of the euro as well, overall monetary conditions remain quite expansionary (see Figure 1.7). Moreover, a further moderate cut in interest rates is likely if the risk of recession increases. But this has not been assumed in this forecast.

Fiscal policy

Owing to tax cuts in many European countries, fiscal policy had an expansionary effect in 2001.The fiscal deficit of the Euro area increased from 0.8 per cent of GDP in 2000 to around 1½ per cent of GDP[2] and a similar deficit is expected for 2002 (see Figure 1.8). This fiscal projection is based on the assumption that governments allow, to a good extent, the so-called automatic stabilisers of the fiscal system to become effective. As the stability programmes set targets for actual deficits on the basis of a higher growth forecast, governments are assumed to tolerate some slippage from these targets. If, in contrast to our assumption, governments stick more firmly to the fiscal goals outlined in the stability programmes, they would have to take additional measures to cut spending or increase taxes which would dampen domestic demand further. The current situation highlights the risk of setting fiscal targets without considering possible changes in economic conditions. It would therefore be preferable if future stability programmes were to target cyclically adjusted (i.e. structural) deficits rather than actual deficits, notwithstanding the problems of estimating the cyclical effects on the budget.

Taylor rule

In 1993, John Taylor from the University of Stanford established a relationship between the optimal central bank interest rate and two indicators: the deviation of inflation from its target and the output gap. The Taylor rule interest rate is a kind of benchmark interest rate. The rule is based on the idea that the central bank interest rate is managed in order to ensure price stability and keep output at normal capacity utilisation (trend GDP). Any deviation of the inflation rate from its target and concerns about the level of output[1] will induce the Central Bank to adjust the interest rate. If the short-term interest rate is above the Taylor interest rate, it indicates that monetary policy is more restrictive than one would expect based on the prevailing inflation rate and output gap. If the actual interest rate is below the Taylor rate, it indicates that monetary policy is more expansionary than the inflation rate and the output gap would suggest.

The formula for the Taylor rate is as follows:

$I^t = i^{eq} + 0.5 \times (y-y^*) + 0.5 \times (\pi-\pi^*)$, where I^t: Taylor interest rate, i^{eq}: nominal equilibrium interest rate[2], $(y-y^*)$: output gap, $(\pi-\pi^*)$: inflation targeting deviation.

The more real output exceeds potential (or trend) output, the higher the Taylor interest rate will be. In the same way, the more inflation exceeds its target (1.75 per cent), the higher the Taylor interest rate will be. On the assumption that the Central Bank is equally concerned with price stability and real output, we use an equal weighting of 0.5 for each. While there is considerable uncertainty regarding the appropriate weighting scheme, the weights applied here bring the Taylor rate relatively close to the actual interest rate in most of the past years (see Fig. 1.6). Furthermore, the real equilibrium interest rate has to be determined. According to estimates by the Bundesbank, the real equilibrium interest rate in Germany was roughly 3% (2.9%) during the period 1979 to 1998. We assume that this rate also reflects the current real equilibrium interest rate in the Euro area as a whole. So we get:

$I^t = (2.9 + \pi + 0.5) \times \text{output gap} + 0.5 \times (\pi - 1{,}75)$

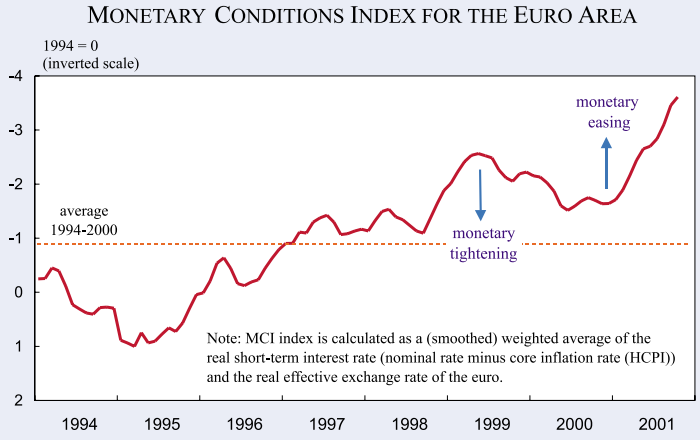
We calculate two options for the Taylor rate, one based on the headline inflation rate and the other based on the core inflation rate. The headline inflation is measured by the overall consumer price index (in Europe, the Harmonised Consumer Price Index). By contrast, core inflation excludes the volatile energy and food prices. The Taylor rate based on the core inflation rate assumes that with a given output gap the Central Bank raises interest rates only if core inflation increases i.e. it does not react to temporary effects of energy prices on the inflation rate.

[1] The output gap is here defined as the percentage deviation of real GDP from its trend.

[2] Real equilibrium interest rate plus expected inflation rate. The expected inflation rate is set equal to the actual inflation rate in what flows.

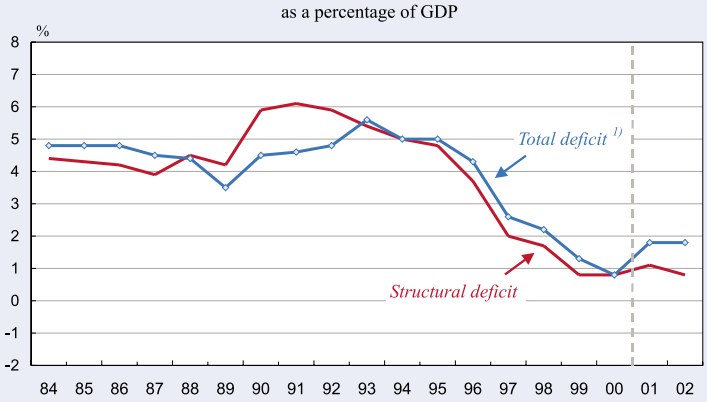
[2] Excluding one-off revenues from the sale of UMTS licenses in 2000. As these receipts amounted to 1 per cent of GDP, a surplus of 0.2 per cent of GDP was achieved by including these receipts.

Fig. 1.7



Sources: European Central Bank, Eurostat, calculations by the Ifo Institute.

Fig. 1.8



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

Sources: European Commission, estimates and forecast by the Ifo Institute.

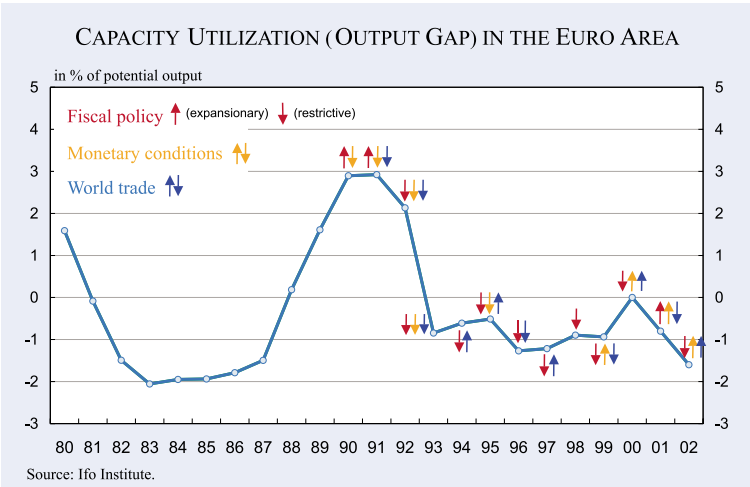
Wage agreements

In the forecast it is assumed that wage developments in Europe will remain moderate. Given the fact that in 2001 a good part of the increase in net wages was absorbed by the higher inflation rate, there could actually be more wage pressure than assumed here. Trade unions in some countries have in fact announced higher wage demands. But as unemployment is increasing and as at the time of major wage negotiations in spring 2002 the inflation rate will be relatively low, it is likely that wage increases will remain moderate in Europe.

Development of demand components

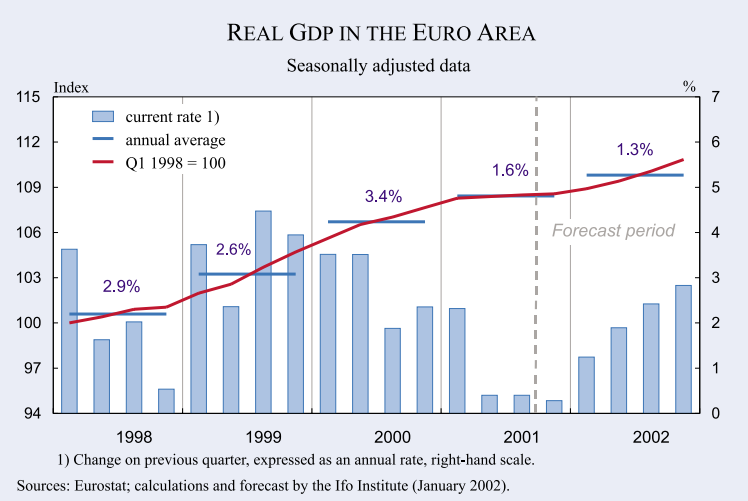
Along with the recovery of the world economy, the current slump in exports should gradually come to an end. Despite some acceleration in the course of the year, exports will expand by only 0.2 per cent in 2002, however, after 3½ per cent in 2001 and 12.1 per cent in 2000. Private consumption will increase on average by 1.5 per cent in 2002, which is somewhat less than in 2001. In 2001 tax cuts in some countries supported nominal disposable income but at the same time the surge in consumer prices and the weakening of the labour market dampened real consumer spending. As the labour market will remain weak in 2002, consumer spending will continue to rise only moderately despite the expected further decline in inflation. Investment will also remain sluggish; with the expected recovery of export demand in the second half of 2002 it may, however, increase by around 2 per cent after stagnation in 2001. In some countries the continuing weakness of construction – partly for structural reasons (as

Fig. 1.9



Source: Ifo Institute.

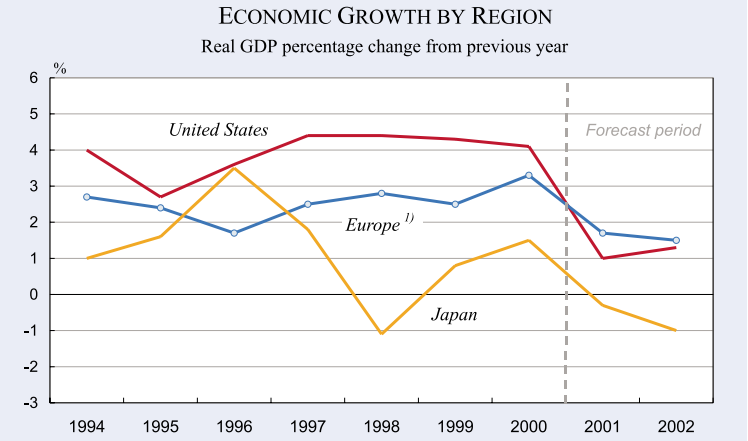
Fig. 1.10



1) Change on previous quarter, expressed as an annual rate, right-hand scale.

Sources: Eurostat; calculations and forecast by the Ifo Institute (January 2002).

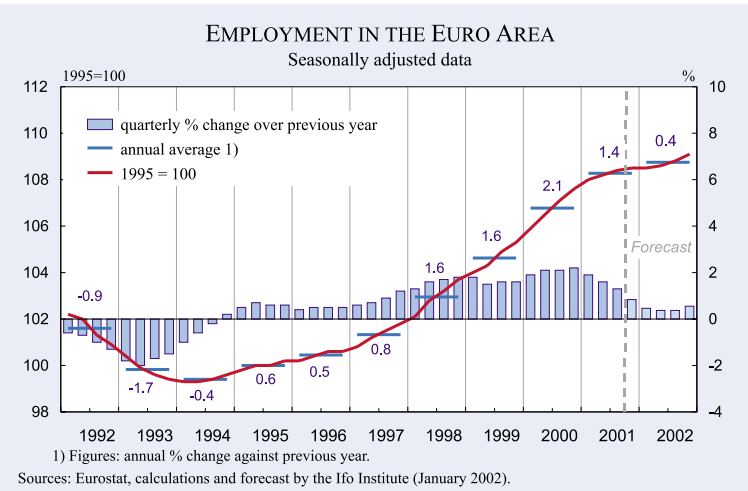
Fig. 1.11



1) Western and Central Europe.

Sources: OECD, calculations and forecast by the Ifo Institute (January 2002).

Fig. 1.12



1) Figures: annual % change against previous year.

Sources: Eurostat, calculations and forecast by the Ifo Institute (January 2002).

in eastern Germany) – will remain a drag on overall investment and growth.

Growth, employment and inflation

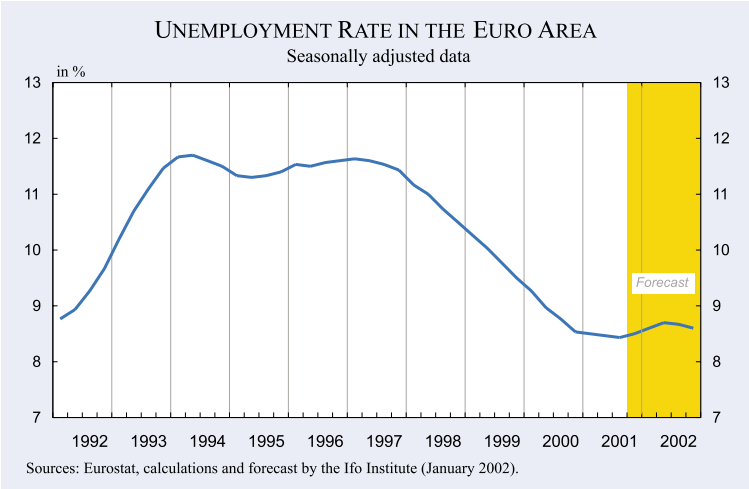
Altogether, in 2001 real GDP in Western and Central Europe can be expected to have grown by about 3/4 per cent and grow by 1 1/2 per cent in 2002. Given potential output growth of the Euro area of about 2 1/2 per cent, the output gap (which was around zero in 2000) will widen significantly in both years which implies a fall in overall capacity utilisation (see Figures 1.9, 1.10 and 1.11).

With output growth weaker than productivity growth, employment rose at a slow pace while unemployment increased in the course of 2001. This trend will continue in the first half of 2002.[3] On average, the unemployment rate in the Euro area is likely to rise from 8.5 per cent to 8.6 per cent (see Figures 1.12 and 1.13).

As the rise in energy and food prices came to an end and the oil price fell, the inflation rate declined in the second half of 2001. Assuming continued moderate wage increases and a drop of the oil price from about $25 per barrel in 2001 to around $20 per barrel on average in 2002, the inflation rate (consumer prices) in the Euro area will decline from 2 1/2 per cent in 2001 to 1 3/4 per cent in 2002 on average, and to even lower rates in the second half of

[3] Due to the higher level of employment and the low level of unemployment at the beginning of 2001, the average level of employment in 2001 was higher and the average level of unemployment was lower than in 2000.

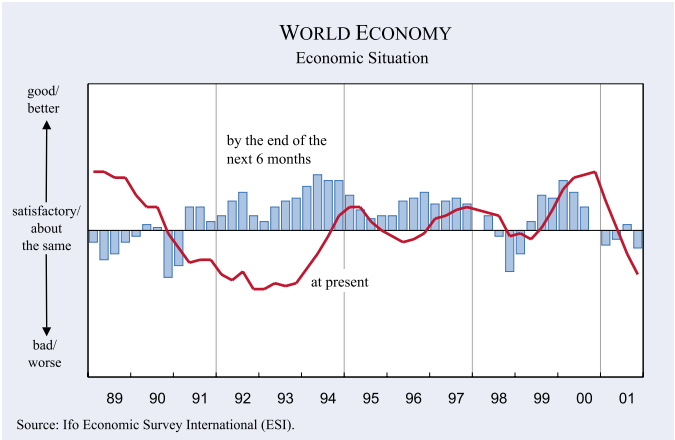
Fig. 1.13

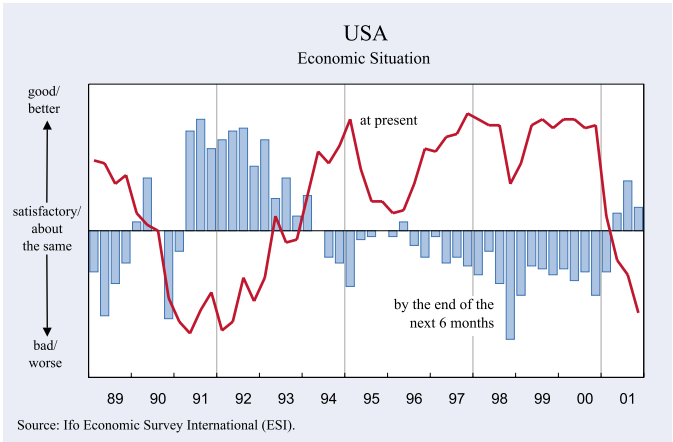


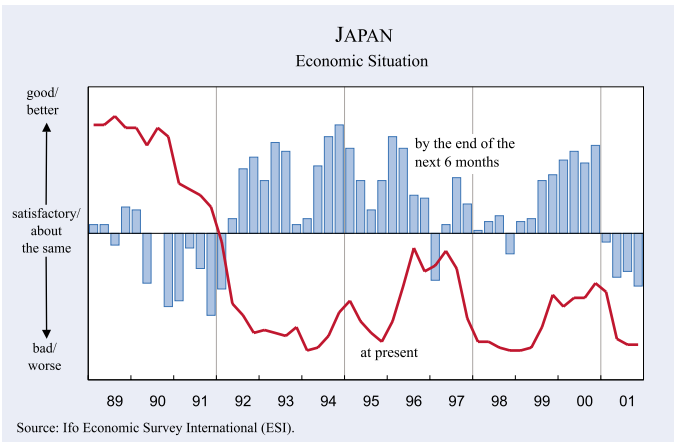
the year. The headline inflation rate would be in line again with the ECB target of “less than 2 per cent”. (More details of the economic forecast are provided in Annex 3.)

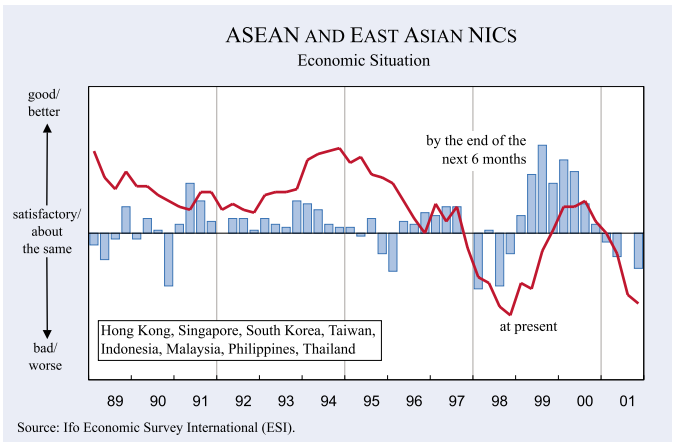
Appendix 1
Ifo Economic Survey International (ESI)

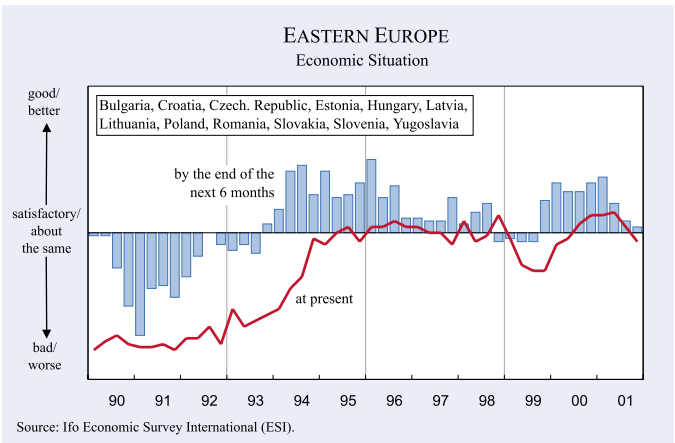
ESI is a world-wide survey of the Ifo Institute for Economic Research, questioning - on a quarterly basis - more than 800 economists of multinational corporations in 80 countries on the present economic situation of the country of residence and its economic prospects by the end of the next six months.

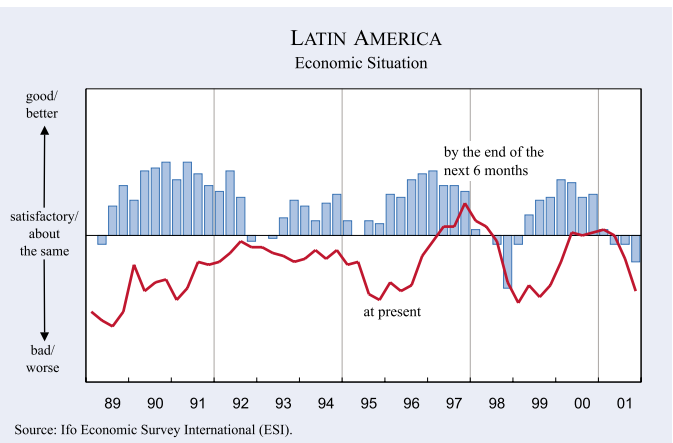




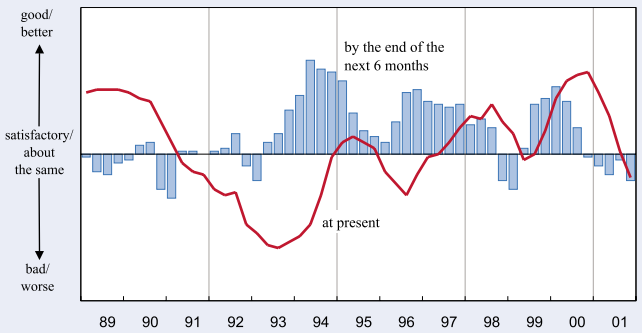






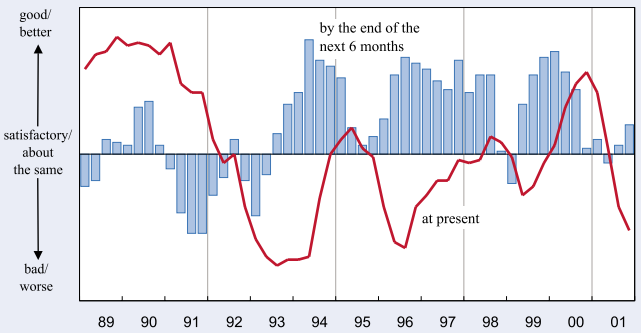


EUROPEAN UNION
Economic Situation



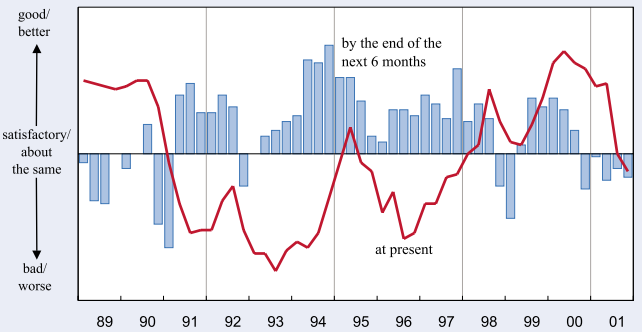
Source: Ifo Economic Survey International (ESI).

GERMANY
Economic Situation



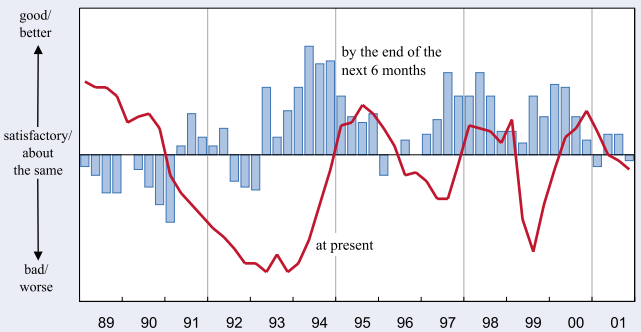
Source: Ifo Economic Survey International (ESI).

FRANCE
Economic Situation



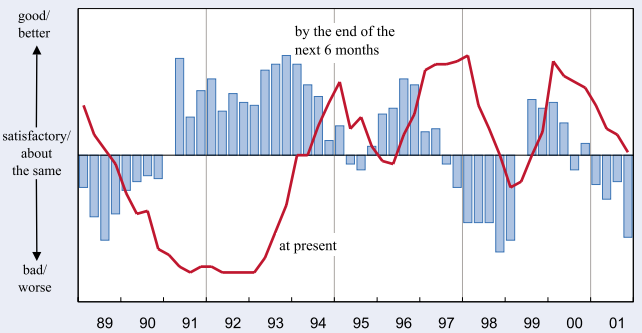
Source: Ifo Economic Survey International (ESI).

ITALY
Economic Situation



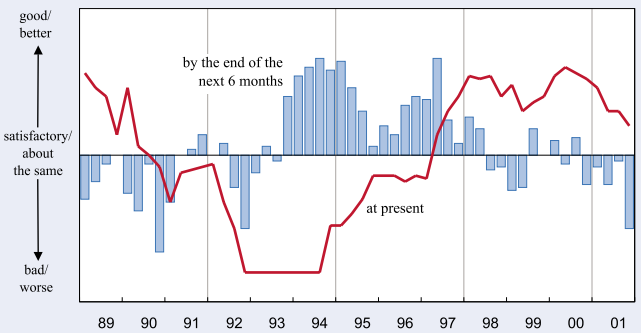
Source: Ifo Economic Survey International (ESI).

UNITED KINGDOM
Economic Situation



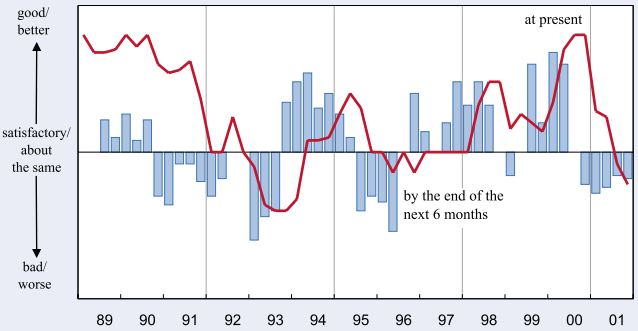
Source: Ifo Economic Survey International (ESI).

SPAIN
Economic Situation



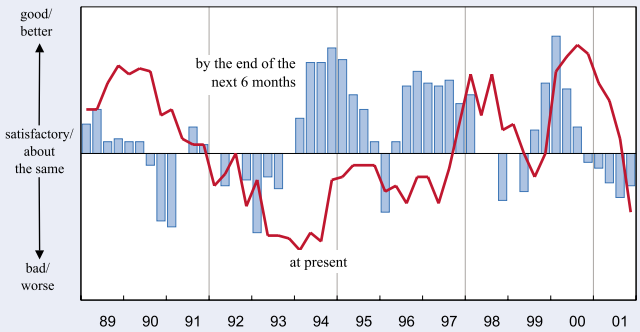
Source: Ifo Economic Survey International (ESI).

AUSTRIA
Economic Situation



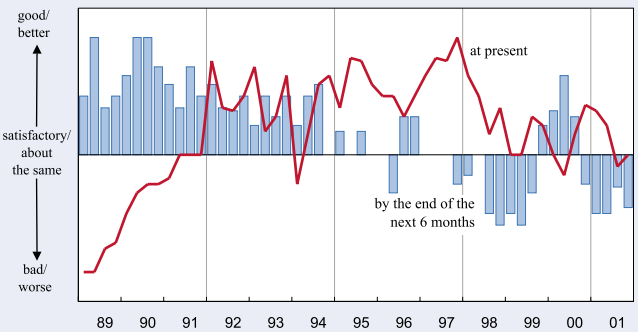
Source: Ifo Economic Survey International (ESI).

BELGIUM
Economic Situation



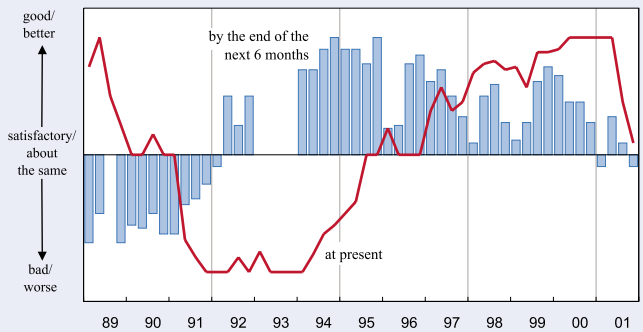
Source: Ifo Economic Survey International (ESI).

DENMARK
Economic Situation



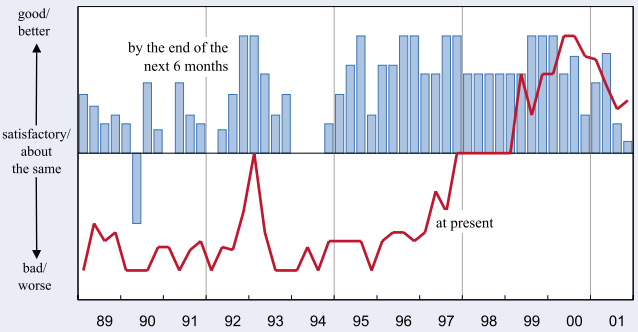
Source: Ifo Economic Survey International (ESI).

FINLAND
Economic Situation



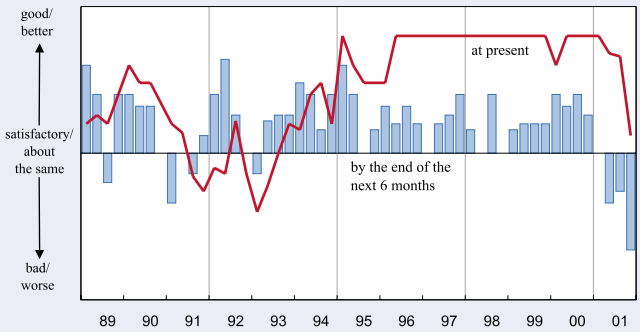
Source: Ifo Economic Survey International (ESI).

GREECE
Economic Situation



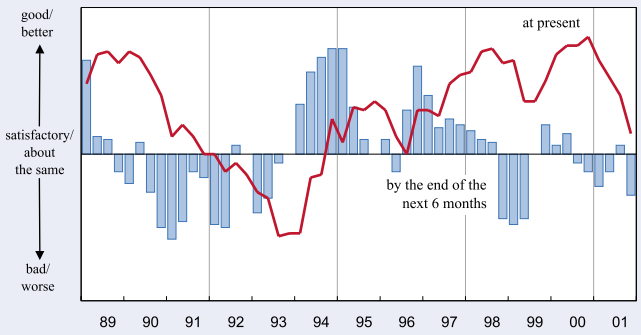
Source: Ifo Economic Survey International (ESI).

IRELAND
Economic Situation



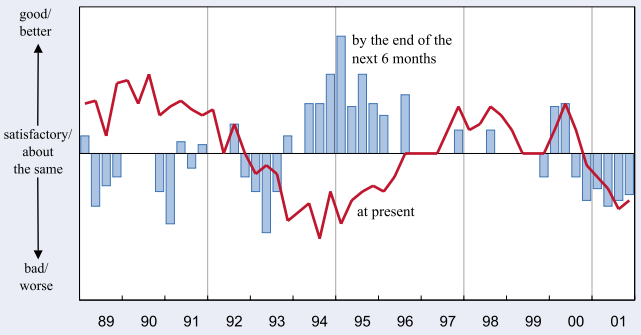
Source: Ifo Economic Survey International (ESI).

NETHERLANDS
Economic Situation



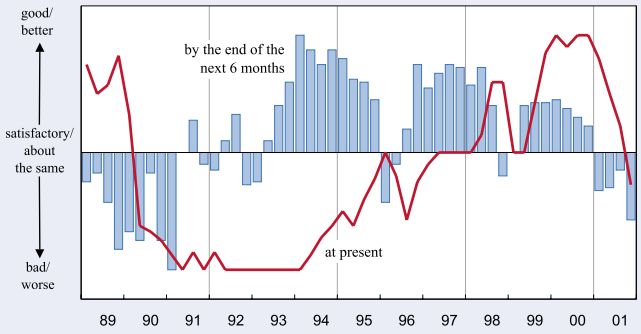
Source: Ifo Economic Survey International (ESI).

PORTUGAL
Economic Situation



Source: Ifo Economic Survey International (ESI).

SWEDEN
Economic Situation

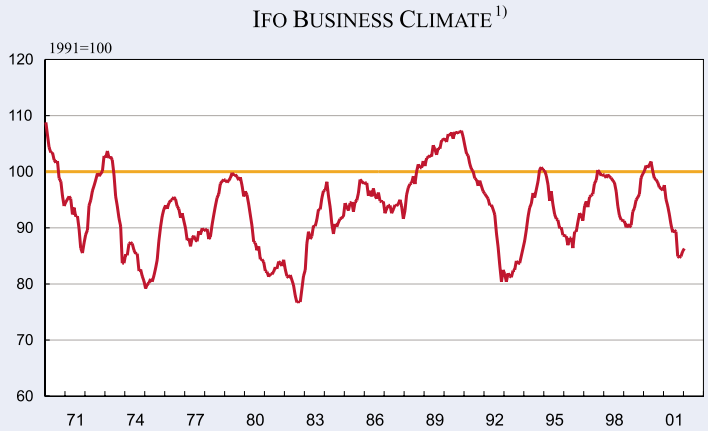


Source: Ifo Economic Survey International (ESI).

Appendix 2

Country reports

Germany



1) Western Germany; manufacturing industry, construction, wholesale and retail trade.
Source: Ifo Business Survey.

The slowdown of economic activity has been more pronounced than in most other European countries. Economic growth fell from more than 4 per cent in the first half of 2000 to slightly negative growth in the third quarter of 2001 (seasonally adjusted annual rate – 0.6 per cent) and for the fourth quarter another small decline is expected. Various factors contributed to this downturn: (1) the price shock of higher energy and food prices which dampened domestic demand in the second half of 2000 and the first half of 2001; (2) the weakening of the US economy and the global economy which weakened export demand and business confidence; (3) as a result of weaker demand and (possibly) adverse effects of the tax reform[4], investment in machinery and equipment declined and stocks were reduced; (4) the ongoing recession in the construction sector deepened; (5) after the 11th September terrorist attacks in the United States, business confidence (as reflected in the Ifo Business Climate Indicator) plummeted further although business expectations (which is one component of the Business Climate Indicator) had turned around in preceding months. In recent months the level of this indicator has approached (although not reached) the low levels of previous recessions. Obviously the adverse effects on the German economy were much stronger than the fiscal stimulus of the tax cut (1 per cent of GDP), which was implemented at the beginning of 2001, and the easing of monetary conditions. The increase in unemployment reduced consumer confidence further.

Altogether, economic growth in Germany will only amounted to 0.6 per cent in 2001. This year,

Germany
Key Forecast Figures

	1999	2000	2001	2002[1)]
Percentage change over previous year[a)]				
Private consumption	3.1	1.4	1.4	0.8
Government consumption	1.6	1.2	1.3	1.1
Gross fixed capital formation	4.2	2.3	– 4.1	– 1.7
Machinery and equipment, other	8.0	8.7	– 2.2	0.8
Construction	1.5	– 2.5	– 5.7	– 3.9
Domestic expenditure	2.6	2.0	– 0.5	0.4
Exports	5.6	13.2	5.1	2.2
Imports	8.5	10.0	2.0	1.8
Gross domestic product	1.8	3.0	0.6	0.6
Unemployment rate[b)] (in %)	9.7	9.1	9.1	9.3
Consumer prices[c)] (% change on the previous year)	0.6	1.9	2.5	1.5
General government budget balance[d)] in % of GDP[e)]	– 1.6	– 1.3	– 2.6	– 2.5

[1)] Forecast of the Ifo Institute. – [a)] At 1995 prices. – [b)] Unemployment as a % of labour force (employed and unemployed). – [c)] Price index for the cost of living of all private households (1995 = 100). – [d)] On national accounts definition (ESA 1995). – [e)] In 2000 without revenues from the auction of UMTS licenses.

Source: National Statistical Office, calculations of the Ifo Institute.

[4] The corporate tax rate was reduced but depreciation allowances became unfavourable so that the effective marginal tax rate rose. This may have induced firms to bring forward some of their planned investment into 2000.

German Tax Reform

The income tax and business tax reform of 2001 aims at promoting economic growth and employment. The direct budgetary costs of tax reductions are estimated to amount to DEM 46 billion or 1.1 per cent of GDP in 2001 (see table below). About 60 per cent of this reduction increases the disposable income of private households and 40 per cent benefits the business sector. The income tax reduction of 2001 will reduce the tax bill of wage earners by 1½ to 1¾ per cent, depending on the size of income. The corporate tax rate has been reduced significantly in order to bring business tax rates more in line with those of other countries. The reduction of tax rates is accompanied by a broadening of the tax base, in particular the introduction of less favourable depreciation allowances. This leads to an increase in the marginal effective tax rate on new investment (capital costs). Furthermore, the full imputation system of the corporate tax was abolished. Distributed profits bear the full corporate tax paid by the firm. However, the recipient will pay income tax only on half of the amount received ("Halbeinkünfteverfahren"). On average, this should bring the effective tax rate on distributed profits close to that of income from other sources. For shareholders with a marginal income tax rate of 40 per cent the tax burden on distributed profits is similar to the old system while for those with a marginal tax rate below 40 per cent the tax burden is higher and for those with a marginal income tax rate of more than 40 per cent it is lower than with the old imputation system.

Changes in taxes and social security contributions from 2000 to 2003

–: lower revenues +: higher revenues

	2000	2001	2002	2003
	DEM Billion			
Taxes and social security contributions	– 1.0	– 46.4	– 36.0	– 45.1
Taxes	+ 3.0	– 39.3	– 25.7	– 31.5
Social security contributions	– 4.0	– 7.1	– 10.3	– 13.6
Reduction of social security contribution (for persons) from 20.3 to 19.5 per cent (1.4.1999), to 19.3 per cent (1.1.2000), to 19.1 per cent (1.1.2001), to 18.9 per cent (1.1.2002) and 18.7 per cent (1.1.2003)[a] and introduction of social security contribution for part-time-workers.				

[a] Estimate for 2002 and 2003 based on information from the government.

Sources: Federal Ministry of Finance. Calculated by the six German economic research institutes.

with the expected recovery of the US economy and the global economy the retarding factors will lose their strength, the mild recession will be overcome and economic growth could accelerate to almost 3 per cent (annual rate) during the course of the year. But given the low starting position at the beginning of the year average growth will only be again 0,6 per cent. Continuing deterrents to expansion in Germany are the structural problems in the eastern German economy and the overall weak construction sector. Other growth-retarding factors are labour-market rigidities and the high marginal tax rates on labour input. The relatively weak increases in output in both 2001 and 2002 will be achieved entirely by improvements in productivity. The number of gainfully employed may not increase until 2002 as the economy recovers and average unemployment in 2002 is expected to amount to 9.3 per cent. The previous goal of the German government to reduce unemployment to below 3½ million by the autumn of next year will clearly not be reached; according to this forecast unemployment will rise to almost 4 million at that time.

The general government budget deficit is expected to amount to 2½ per cent in 2001 and in 2002 which is significantly higher than planned by the Government in its stability programme in the autumn of 2000 (1½ per cent for 2001 and 1 per cent for 2002). The fiscal slippage is to a large extent caused by lower tax revenues in response to weaker growth.

Tax reform measures

		Step 1	Step 2	Step 3
	2000	2001	2003	2005
Business sector				
Corporate sector				
Corporate tax rate[a)]	40.0	25.0	25.0	25.0
Corporate marginal tax rate				
Retained earnings[b)]	51.8	38.6	38.6	38.6
Distributions[c)]	61.5	54.3	53.9	52.2
Non-corporate sector[d)]				
Top marginal income tax	43.0	48.5	47.0	42,0
Total marginal tax rate[b)]	54.5	51.4	50.1	45.7
Household sector				
Marginal income tax rate				
at the bottom	22.9	19.9	17.0	15.0
at the top	51.0	48.5	47.0	42.0
incl. solidarity tax	53.8	51.2	49.6	44.3
Basic tax allowance (DEM)	13.500	14.000	14.500	15.000
Income bracket for top marginal tax rate (DEM)	115.000	107.500	102.000	102.000

[a)] Retained earnings. – [b)] Incl. solidarity tax and local business tax. – [c)] For shareholders with the top marginal income tax rate, incl. solidarity tax. – [d)] From 2001, firms can de facto deduct a good part of the local business tax from their income tax bills.

Furthermore, the recent corporate tax reform may have led to bigger revenue shortfalls than previously expected and it is suspected that, in the context of VAT, tax evasion is widespread.

German business tax rates in international comparison[a)]

in %

Germany (1998)	**56.0**
Germany (1999/2000)	**51.8**
United States (New York)	40.8
Germany (2001)	**38.6**
France	37.8
Portugal	35.2
Spain	35.0
Netherlands	35.0
Austria	34.0
Denmark	32.0
United Kingdom	30.0
Finland	29.0
Sweden	28.0
Norway	28.0
Switzerland (Zürich)	25.0
Ireland	24.0

[a)] Corporate taxes inc. local taxes.

Source: Federal Ministry of Finance.

France

Whereas real GDP increased by 3.4 per cent in 2000, economic growth slowed markedly during 2001. But the slowdown was less pronounced than in Germany; in the third quarter GDP growth even picked up a bit (to 0.5 per cent against the previous quarter). As elsewhere, the slowdown in the world economy reduced export growth. The consequence was a weakening of business investment. Furthermore, firms reduced stock-building. The government provided fiscal stimuli by cutting income taxes and social security charges which supported private consumption. Even more, the 35 hour-week will also be introduced in small firms at the beginning of 2002 and the job programme for the young will be continued which both will be supportive of employment in the short term. As we have seen in recent years, a favourable situation in the labour market is of upmost importance for private consumption – and it will be decisive for the general election and the presidential election held in May 2002. For that reason the government can be expected to stimulate employment directly and indirectly beyond the present programmes. These are costly for the government budget. Despite con-

Fiscal Policy in France

Between 1997 and 2000, France experienced a strong macroeconomic expansion. This pick-up followed a severe and protracted recession which had a substantial impact on public debt. The latter increased from 39.5 per cent of GDP in 1990 to 65.1 per cent in 1998, as a result of both automatic stabilisers and the introduction of various subsidies and tax cuts in order to stimulate activity. Therefore, during this period, France moved from a situation where it was quite virtuous, to a situation where its debt/GDP ratio is now similar to that of other countries. During the more recent expansion, the fiscal stance improved, and the budget deficit gradually fell from over 3 per cent of GDP to less than 2 per cent.

General government deficit (% of GDP)

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
4.2	6.0	5.5	5.6	4.1	3.0	2.7	1.6	1.3	1.6	1.4

Most of this improvement, however, is due to automatic stabilisers. There has been no attempt to take advantage of the previous expansion to reverse the earlier trend of growing public debt, which was still equal to 64.5 per cent in 2000, lower than the average of the Euro area but larger than in Germany and the UK. Instead, the government implemented some tax cuts, most notably of VAT in 1997, and increased its spending commitments. In particular, there has been no pension reform, despite the fact that the current situation is financially unsustainable. For example, contrary to what happened in Germany, the retirement age has not been increased. As this is a politically sensitive issue, it is likely not to be tackled seriously before it actually occurs, i.e. in 2010, when baby-boomers come to retirement. This lack of reform is likely to generate strains on public finances in the future. The workweek has been reduced by more than 10 per cent as of January 2000, without any compensating fall in take-home pay although trade unions have accepted moderate wage increases. In order to offset the effect of the reduced workweek on this large increase in labour costs, the government has subsidised wages for firms that shift to the 35-hour week. The fiscal cost of these measures is about FF 100 billion a year. There has been no attempt to reduce the size of the public sector, although the fraction of the workforce employed in the public sector is one of the largest of the OECD, and despite a historical opportunity due to large numbers of retirements in the civil service in the coming year. Instead, recruitment has been slightly increased where needed (hospitals), but staff was not reduced where possible (the modernisation of some sectors like the tax administration was blocked by unions). Active labour market policies were increased despite their already high cost of about FF 200 billion a year, and most measures (in particular the emplois-jeunes) favoured employment in the public or non-business sector. Future pressure to transform these temporarily funded relief jobs into permanent positions in the public sector is likely to arise, thus contributing to an increase in government expenditures. As a result, the cyclically adjusted budget deficit (as measured by the OECD) remained between 1.8 and 2.2 per cent of GDP over this expansion period. The major consequence of this development is that if a new recession were to come, France would emerge from it in a financially fragile position, with a debt of perhaps 70 to 90 per cent of GDP, and the need for a painful adjustment like in Italy and Belgium. This would not be the case if France had accumulated a surplus during the recent period of very strong growth, as sound economics recommends. In the longer run, the trend toward an excessively large public sector continues. According to the OECD, in 2000 government outlays amounted to 51.4 per cent of GDP, ranking second in the OECD after Sweden. Similarly, France ranks among the top countries in terms of public employment, with a share of over 25 per cent.

Why is inflation so low in France?

Standard macroeconomic thinking holds that when tensions on product and labour markets are too high, wages and prices adjust upwards, thus generating inflationary pressure. Typically, this occurs when unemployment falls below the so-called "natural rate", which depends on regulation and frictions in product and labour markets. Therefore, if one has an idea of the level of the natural rate, one should be able to predict inflationary tensions by estimating the difference between this natural rate and actual unemployment (or, equivalently, the "output gap"). However, the natural rate itself moves, and macroeconometric analysis sheds little light on the structural causes of such moves. For example, in the early 1990s in the United States, many economists thought the natural rate to be about 6 per cent, and would have expected the strong expansion that was observed in the second half of this decade to increase inflation. In fact, inflation did not exceed 2 per cent and was actually lower than in the preceding period, despite unemployment falling continuously to 4 per cent in 2000. To critics of orthodox economics, such episodes suggest that the concept of a natural rate is simply useless. To us, it means that the natural rate has fallen for structural reasons that need to be investigated. In an interesting paper, Shimer (1998) argues that this can be entirely explained by changes in the composition of the workforce, due to a lower share of younger workers and an improvement in education. However, the growth pick-up of the period (see chapter on growth) has also played a role in disinflation, since faster productivity growth reduces price inflation for any given level of wage inflation. According to the US Bureau of Labor Statistics, wage inflation has been moderate at 3 per cent during this period, but increased to 4 per cent in 2000. An indicator of labour market tensions like the help wanted index went up, as is always the case in expansions, but by less than in previous cycles. Superficially, the strong expansion in France in 1997–2000 exhibits similarities. Unemployment fell rapidly from over 13 per cent to less than 9 per cent. A lot of unemployment at the beginning of this period was "Keynesian", i.e. in excess of the natural rate, due to the severe recession of the mid-1990s. On the other hand, the natural rate of unemployment was expected to be significantly higher than in the United States because of a rigid labour market and the absence of significant structural reforms. Indeed, in the expansion of the late 1980s, as unemployment fell to near 8 per cent, a sharp increase in labour supply bottlenecks was observed, suggesting a low search activity of many unemployed workers. This created wage pressure and inflationary tensions, which eventually brought the economic expansion to a halt. This episode suggested that the natural rate of unemployment was around 8 to 9 per cent at that time. Given that no institutional reform aimed at improving the labour market was implemented in the 1990s, it was reasonable to expect a similar scenario in the current boom, with unemployment stabilising at 8 to 9 per cent, and a sharp rise in labour market tightness indicators. Indeed, unemployment bottomed at 8.5 per cent in the spring of 2001 and has been going up again since then. And indicators of hiring difficulties went up sharply in early 2000, by virtually the same amount as in the previous expansion, and much more for the least skilled workers.[1] The emergence of labour market bottlenecks suggests that wage pressure should have picked up, thus putting upward pressure on inflation. But, in fact, this has not happened. Until recently, both price and wage inflation had been moderate. Therefore, this situation has been paradoxical, in that tension indicators suggested – at least until spring 2001 – a labour market tightness, while the behaviour of wages and prices suggested otherwise. How can we reconcile these two facts? Although this is the matter of much speculation, we can at least point out two factors. First, inflation has been suppressed as wage moderation agreements were signed in many firms as part of the transition to the 35-hour week. If tensions persist in the labour market, such moderation will probably be lost when these contracts are renegotiated. That is, these arrangements have delayed the inflationary impact of labour market tightness. Second, price adjustment has been delayed to some extent because of the transition to the euro in 2002. Since, at this date, all firms will have to change their prices anyway, it is not worth for a given firm to increase its price six months or one year ahead of the event, as competitors will typically not do so simultaneously, so that the firm runs the risk of losing customers. Indeed, in the summer of 2001, there were signs of substantial price hikes in the retail sector as firms set their euro prices, so much that the Ministry of Finance threatened to impose "sanctions". More generally, prices are only one tool of adjustment; firms can play on other margins such as delivery lags, product quality, etc. Different instruments will be used depending on circumstances. But given the most recent cyclical weakening of the economy, it is likely that inflation will remain moderate.

[1] See Pisani-Ferry (2000), fig. 19, p. 95.

strained government spending in some areas, transfers from the central budget to local budgets will show an increase of 8.4 per cent in 2002 as against 2001. Consequently the public deficit is on the rise. After a level of 1.4 per cent of GDP in 2000 and more than 1½ per cent in 2001, it might amount to about 2¼ per cent in 2002, thus clearly missing the targets of the Stability and Convergence Programme. While public consumption will grow steadily by 2 per cent, private consumption will gain momentum in the course of 2002, but given the relatively low starting level at the end of next

France
Key Forecast Figures

	1999	2000	2001[1)]	2002[1)]
Percentage change over previous year[a)]				
Private consumption	2.8	2.5	2.7	1.9
Public consumption	2.0	2.2	2.0	2.2
Gross fixed capital formation	6.2	6.1	2.7	0.7
Domestic demand	3.0	3.6	1.7	1.8
Exports	4.0	12.6	3.0	1.7
Imports	4.7	14.2	2.3	1.8
Gross domestic product	2.9	3.1	2.0	1.7
Unemployment rate[b)] (in %)	11.2	9.6	8.6	8.8
Consumer prices[c)] (% change on the previous year)	0.6	1.8	1.8	1.3
General government financial balance[d)] in % of GDP[e)]	– 1.6	– 1.3	– 1.6	– 1.4

[1)] Forecast of the Ifo Institute. – [a)] At 1995 prices. – [b)] Unemployment as a % of labour force (employed and unemployed). – [c)] Price index for the cost of living of all private households. – [d)] On national accounts definition (ESA 1995). – [e)] In 2000 without revenues from the auction of UMTS licenses.

Source: Eurostat, National Statistical Office, calculations of the Ifo Institute.

year consumption growth will be lower than in 2001. Gross fixed investment will recover only slowly next year, since there is no indication that housing investment or investment in plant and machinery will pick up significantly before autumn.

Based on a recovery of the world economy, exports and overall economic growth will pick up in the course of 2002. Real GDP will increase by about 2 per cent in 2001 and 1¾ per cent in 2002. The unemployment rate, which declined from 9.6 per cent in 2000 to 8.6 per cent in 2001, is expected to rise again to 8¾ per cent in 2002. Inflation will remain modest and below the Western European average. Consumer prices are likely to rise by 1¼ per cent in 2002 after 1¾ per cent in 2001; retail trade is committed to keep prices stable in order to avoid irritations while euro coins and notes are introduced. The current account will continue to show surpluses in the order of 1½ per cent of GDP.

Italy

Italy
Key Forecast Figures

	1999	2000	2001[1)]	2002[1)]
Percentage change over previous year[a)]				
Private consumption	2.3	2.9	1.6	2.1
Public consumption	1.5	1.6	1.3	1.7
Gross fixed capital formation	4.6	6.1	1.5	2.5
Domestic demand	2.3	4.1	1.8	2.0
Exports	0.0	10.2	3.9	2.0
Imports	5.1	8.3	3.8	3.9
Gross domestic product	1.6	2.9	1.8	1.4
Unemployment rate[b)] (in %)	11.3	10.5	9.6	9.8
Consumer prices[c)] (% change on the previous year)	1.7	2.6	2.7	2.0
General government financial balance[d)] in % of GDP[e)]	– 1.8	– 1.5	– 1.3	– 1.2

[1)] Forecast of the Ifo Institute. – [a)] At 1995 prices. – [b)] Unemployment as a % of labour force (employed and unemployed). – [c)] Price index for the cost of living of all private households. – [d)] On national accounts definition (ESA 1995). – [e)] In 2000 without revenues from the auction of UMTS licenses.

Source: Eurostat, National Statistical Office, calculations of the Ifo Institute.

After an increase in GDP of 2.9 per cent in 2000, which was the highest rate since 1995, economic growth slowed in 2001. The world-wide slump of the IT-sector did not hurt very much since this industry does not play a role worth mentioning. The slowdown of growth was caused by a parallel weakening of domestic demand and exports. Industrial production and business confidence fell during the first half of 2001 and business investment weakened significantly; while the upswing in construction slowed only moderately, the investment boom in machinery and equipment came to an abrupt halt not only for cyclical reasons. There were clear signs of a recovery before the September terrorist attacks as business confidence had improved and order inflow had picked up. Despite a modest decline, the consumer confidence indicator remained on a high level. After the events of 11th September hopes for a recovery were dashed and business confidence declined sharply. But the consumer climate was still favourable.

Employment continued to rise at about the same pace as in 2000 (1.6 per cent). It appears that the measures to reduce labour market restrictions taken since 1998 (more flexible labour contracts) are having a positive impact on employment; the strong increase of part-time jobs is perhaps the most striking evidence. Private consumption, which had been supported in 2000 by the drop in the savings rate, decelerated to a rate similar to that of real disposable income, due to the oil and food price shocks (they have been petering out since midyear) which reduced the purchasing power of private households.

In the course of 2002 exports are expected to recover which will stimulate demand in addition to expansionary monetary policy. Real GDP can be expected to increase by about 1½ per cent after 1¾ per cent in 2001, implying a steady acceleration in the course of 2002. There will be a steady increase in public consumption, a slight acceleration of private consumption, but gross fixed investment is expected to grow significantly in the later course of the year due to new fiscal incentives (a second "Legge Tremonti"). Inflation is likely to fall from 2¾ per cent in 2001 to almost 2 per cent in 2002. The rate of unemployment which declined from 10.5 per cent in 2000 to 9½ per cent in 2001 is expected to remain almost unchanged in 2002.

As in Germany and in France the economic slowdown will cause an overshooting of the fiscal deficits of the targets of the stabilisation programme despite unorthodox operations like significant sales of public real estate etc. The deficit might amount to 1¼ per cent of GDP in 2001 and 2002 compared with the targets of 0.8 per cent and 0.5 per cent respectively.

United Kingdom

United Kingdom
Key Forecast Figures

	1999	2000	2001[1)]	2002[1)]
Percentage change over previous year[a)]				
Private consumption	4.2	4.0	3.9	2.4
Public consumption	2.8	1.6	2.5	3.5
Gross fixed capital formation	0.9	4.9	1.9	1.0
Domestic demand	3.9	5.0	3.0	2.4
Exports	5.4	10.2	2.0	1.0
Imports	8.9	10.7	3.7	2.8
Gross domestic product	2.1	2.9	2.2	1.8
Unemployment rate[b)] (in %)	6.1	5.5	5.1	5.4
Consumer prices[c)] (% change on the previous year)	1.3	0.8	1.2	1.0
General government financial balance[d)] in % of GDP[e)]	1.2	4.3	1.0	– 0.1

[1)] Forecast of the Ifo Institute. – [a)] At 1995 prices. – [b)] Unemployment as a % of labour force (employed and unemployed). – [c)] Price index for the cost of living of all private households. – [d)] On national accounts definition (ESA 1995). – [e)] In 2000 without revenues from the auction of UMTS licenses.

Source: Eurostat, National Statistical Office, calculations of the Ifo Institute.

After an increase in real GDP of 2.9 per cent in 2000, growth decelerated albeit less than in most other countries. The slowdown was caused by significantly weaker export growth, which was affected by the global downturn, the sharp adjustment of high-tech industries and the overvalued pound Sterling. In addition, the international competitiveness of manufacturing continued to dwindle and production began to decline in late summer of 2000, albeit slowly. By contrast, the service sector and also the construction sector held up much better and the "split economy" continued. The unemployment rate continued to decline. Headline inflation increased as consumer demand remained strong. It came down somewhat in the second half of the year when the temporary effects on food prices of the poor weather conditions and the BSE and foot-and-mouth-epidemic waned.

Economic policies remain expansionary. Given a budgetary surplus, which provides room for manoeuvre, and pressures to improve the public infrastructure and public services, public spending – including investment in the public infrastructure which underpins further growth of construction – will continue to be increased significantly in 2002; between April and October 2001 spending grew by as much as 9.6 per cent (annual rate). Furthermore, tax credits for various purposes (e.g. R&D investment, work incentives and saving) have been introduced. Monetary policy has been eased in the light of deteriorating economic prospects, the high Sterling exchange rate and the low inflation rate. After the September terrorist attacks, interest rates were cut further, reaching a historically low level. A further cut seems likely in order to support demand in general and the manufacturing industry in particular.

Economic growth is expected to slow from 2.9 per cent in 2000 to 2¼ per cent in 2001. An improving global economy and the strong expansionary stance of economic policies should support aggregate demand, and growth is expected to accelerate in the course of 2002. Average growth in 2002 will amount to 1¾ per cent. This rate means an acceleration in the course of the year with public consumption and public construction picking up strongly. Private consumption will grow less, since increasing unemployment will cause an increase of the savings rate. Investment by the manufacturing industry is not expected to revive until the later course of 2002 and then only slowly. Consequently, it may not contribute appropriately to the coming upswing of the world economy. The unemployment rate might rise from around 5 per cent in 2001 to 5½ per cent in 2002. The inflation rate (CPI) will be. 1¼ per cent in 2001 and about 1 per cent in 2002 (after 0.8 per cent in 2000).

Appendix 3

Forecasting Tables

Euro Area
Key Forecast Figures

	1999(*)	2000(*)	2001(s)	2002(s)
Percentage change over previous year[a]				
Private consumption	3.2	2.5	1.8	1.4
Public consumption	2.2	1.9	1.7	1.3
Gross fixed capital formation	5.4	4.3	– 0.5	0.7
Domestic demand	3.2	2.8	0.8	1.3
Exports	5.2	11.9	3.3	1.4
Imports	3.7	10.7	1.4	1.2
Gross domestic product	2.6	3.4	1.6	1.3
Employment[b] (% change on the previous year)	1.6	2.1	1.4	0.4
Unemployment rate[c] (in %)	9.9	8.8	8.5	8.6
Consumer prices[d] (% change on the previous year)	1.1	2.4	2.6	1.8
General government financial balance[e] in % of GDP	– 1.3	– 0.8	– 1.1	– 1.4
Memo item: Real GDP in USA (% change over previous year)	4.1	4.1	1.0	1.3
Real GDP in Japan (% change over previous year)	0.7	1.5	– 0.3	– 1,1

(*) Preliminary. – (s) Forecast of the Ifo Institute. – [a] At 1995 prices. – [b] Domestic employment. – [c] Unemployment as a % of labour force (employed and unemployed). – [d] Harmonize index of consumer prices. – [e] On national accounts definition (ESA 1995); in 2000 without UMTS revenues.

Source: Eurostat, calculations of the Ifo Institute.

Economic Growth by Country and Region
Real GDP, percentage change over previous year

	% weights as of 2000[a]	1994	1995	1996	1997	1998	1999	2000	2001[f]	2002[f]
Austria	0.82	2.6	1.6	2.0	1.6	3.5	2.8	3.0	1.1	1.3
Belgium	0.99	2.8	2.6	1.2	3.6	2.2	3.0	4.0	1.4	1.5
Czech Republic	0.22	2.6	5.9	4.3	– 0.8	– 1.2	– 0.4	2.9	3.4	3.5
Denmark	0.70	5.5	2.8	2.5	3.0	2.8	2.1	3.2	1.3	1.4
Finland	0.53	4.0	3.8	4.0	6.3	5.3	4.0	5.7	0.5	1.3
France	5.60	1.8	1.9	1.1	1.9	3.5	3.0	3.1	2.0	1.7
Germany	8.12	2.3	1.7	0.8	1.4	2.0	1.8	3.0	0.6	0.6
Greece	0.48	2.0	2.1	2.4	3.6	3.4	3.4	4.3	3.5	3.2
Hungary	0.20	2.9	1.5	1.3	4.6	4.9	4.2	5.2	3.8	3.7
Iceland	0.04	4.5	0.1	5.2	4.8	4.6	4.0	5.0	1.4	0.5
Ireland	0.41	5.8	10.0	7.8	10.8	8.6	10.8	11.5	6.3	3.5
Italy	4.66	2.2	2.9	1.1	2.0	1.8	1.6	2.9	1.8	1.4
Luxembourg	0.08	4.2	3.8	3.6	9.0	5.8	6.0	9.5	4.1	3.0
Netherlands	1.59	3.2	2.3	3.0	3.8	4.3	3.7	3.5	1.4	1.3
Norway	0.70	5.5	3.8	4.9	4.7	2.4	1.1	2.3	1.6	1.9
Poland	0.71	5.2	7.0	6.0	6.8	4.9	4.0	4.0	1.5	1.6
Portugal	0.45	2.2	2.9	3.7	3.8	3.8	3.3	3.4	1.9	1.6
Slovak Republic	0.08	4.9	6.7	6.2	6.2	4.1	1.9	2.2	3.0	2.9
Spain	2.41	2.4	2.8	2.4	4.0	4.3	4.1	4.1	2.7	2.2
Sweden	0.99	4.1	3.7	1.1	2.1	3.6	4.1	3.6	1.6	1.8
Switzerland	1.04	0.5	0.5	0.3	1.7	2.4	1.6	3.0	1.5	1.2
United Kingdom	6.14	4.7	2.9	2.6	3.4	3.0	2.1	2.9	2.2	1.8
Euro area[b]	25.65	2.3	2.2	1.4	2.3	2.9	2.6	3.4	1.6	1.3
European Union[c]	33.96	2.8	2.4	1.7	2.6	2.9	2.6	3.3	1.7	1.4
Western Europe[d]	35.75	2.7	2.3	1.6	2.5	2.7	2.5	3.3	1.7	1.4
Central Europe[e]	1.21	4.5	6.2	5.3	4.5	3.4	3.0	3.9	2.3	2.4
Western and Central Europe	36.95	2.7	2.4	1.7	2.5	2.8	2.5	3.3	1.7	1.5
Japan	20.00	1.0	1.6	3.5	1.8	– 1.1	0.8	1.5	– 0.3	– 1.1
United States	43.05	4.0	2.7	3.6	4.4	4.3	4.1	4.1	1.1	1.3
Total of the above countries	100	2.8	2.3	2.7	3.0	2.7	2.9	3.3	1.0	0.9

[a] Aggregates were computed using nominal GDP weights of the previous year. – [b] Excluding Greece until 2000. – [c] Euro area plus Denmark, Sweden, United Kingdom and Greece until 2000. – [d] European Union plus Iceland, Norway and Switzerland. – [e] Czech Republic, Hungary, Poland and Slovak Republic. – [f] Forecast of the Ifo Institute.

Source: OECD, OECD Economic Outlook.

Inflation Rates by Country and Region

Consumer Price Index, percentage change over previous year

	% weights as of 2000[a]	1994	1995	1996	1997	1998	1999	2000	2001[f]	2002[f]
Austria	0.82	3.0	2.2	1.8	1.2	0.8	0.5	2.0	2.3	1.5
Belgium	0.99	2.4	1.5	1.8	1.5	1.3	1.1	2.7	2.4	1.4
Czech Republic	0.22	10.0	9.1	8.8	8.5	10.7	2.1	3.9	4.8	4.2
Denmark	0.70	2.0	2.1	2.1	1.9	0.9	2.1	2.7	2.3	1.6
Finland	0.53	1.1	0.8	1.1	1.2	1.4	1.3	3.0	2.7	1.6
France	5.60	1.7	1.8	2.1	1.3	0.7	0.6	1.8	1.8	1.3
Germany	8.12	2.8	1.7	1.2	1.5	0.6	0.6	2.1	2.4	1.5
Greece	0.48	10.9	8.9	7.9	5.4	4.5	2.1	2.9	3.7	3.0
Hungary	0.20	18.9	28.3	23.5	18.3	14.2	10.0	9.8	9.1	6.4
Iceland	0.04	1.5	1.7	2.2	1.8	1.3	2.1	4.4	6.6	5.5
Ireland	0.41	2.3	2.5	2.2	1.2	2.1	2.5	5.3	4.0	3.0
Italy	4.66	4.1	5.2	4.0	1.9	2.0	1.7	2.6	2.7	2.0
Luxembourg	0.08	2.2	1.9	1.2	1.4	1.0	1.0	3.8	2.4	1.2
Netherlands	1.59	2.8	1.9	1.4	1.9	1.8	2.0	2.3	5.1	2.7
Norway	0.70	1.4	2.4	0.7	2.6	2.0	2.1	3.0	2.7	1.9
Poland	0.71	32.2	27.8	19.9	14.9	11.6	7.3	10.1	5.6	3.8
Portugal	0.45	5.4	4.2	2.9	1.9	2.2	2.2	2.8	4.4	3.1
Slovak Republic	0.08	13.4	9.9	5.8	6.1	6.7	10.6	12.1	7.4	6.4
Spain	2.41	4.7	4.7	3.6	1.9	1.8	2.2	3.5	3.7	2.5
Sweden	0.99	2.4	2.9	0.8	1.8	1.0	0.6	1.3	2.7	1.6
Switzerland	1.04	0.9	1.8	0.8	0.5	0.0	0.8	1.6	1.0	0.7
United Kingdom	6.14	2.5	3.4	2.5	1.8	1.6	1.3	0.8	1.2	1.0
Euro area[b]	25.65	3.0	2.7	2.2	1.6	1.2	1.1	2.4	2.6	1.8
European Union[c]	33.96	3.0	2.9	2.3	1.7	1.3	1.2	2.1	2.4	1.6
Western Europe[d]	35.75	2.9	2.9	2.2	1.7	1.3	1.2	2.1	2.4	1.6
Central Europe[e]	1.21	24.7	23.3	17.5	13.7	11.5	7.0	9.1	6.2	4.5
Western and Central Europe	36.95	3.6	3.5	2.7	2.1	1.6	1.4	2.3	2.5	1.7
Japan	20.00	0.7	– 0.1	0.1	1.7	0.6	– 0.3	– 0.7	– 0.5	– 0.4
United States	43.05	2.6	2.8	2.9	2.3	1.6	2.2	3.4	2.9	1.9
Total of the above countries	100	2.6	2.5	2.3	2.1	1.4	1.4	2.2	2.1	1.4

[a] Aggregates were computed using nominal GDP weights of the previous year. – [b] Excluding Greece until 2000. – [c] Euro area plus Denmark, Sweden, United Kingdom and Greece until 2000. – [d] European Union plus Iceland, Norway and Switzerland. – [e] Czech Republic, Hungary, Poland and Slovak Republic. – [f] Forecast of the Ifo Institute.

Source: OECD, Main Economic Indicators; Eurostat, Eurostatistics.

Unemployment Rate by Country and Region

Standardised unemployment rates (per cent of civilian labour force)

	% weights as of 2000[a]	1994	1995	1996	1997	1998	1999	2000	2001[f]	2002[f]
Austria	0.95	3.8	3.9	4.3	4.4	4.5	4.0	3.7	3.8	4.0
Belgium	1.06	10.0	9.9	9.7	9.4	9.5	8.8	7.0	6.9	7.2
Czech Republic	1.27	4.4	4.1	3.9	4.8	6.5	8.8	8.9	8.3	8.4
Denmark	0.70	8.2	7.2	6.8	5.6	5.2	5.2	4.7	4.5	4.7
Finland	0.63	16.7	15.2	14.5	12.6	11.4	10.2	9.7	9.1	9.1
France	6.37	12.4	11.7	12.4	12.3	11.8	11.2	9.6	8.6	8.8
Germany	9.76	8.4	8.2	8.9	9.9	9.3	8.6	7.9	7.8	8.2
Hungary	1.00	11.0	10.4	10.1	8.9	8.0	7.1	6.5	6.0	6.0
Ireland	0.41	14.4	12.3	11.7	9.9	7.5	5.6	4.2	3.8	3.9
Italy	5.74	11.2	11.6	11.7	11.7	11.8	11.4	10.5	9.6	9.8
Luxembourg	0.06	3.2	2.9	3.0	2.7	2.7	2.4	2.4	2.4	2.6
Netherlands	1.,94	7.1	6.,9	6.3	5.2	4.0	3.4	2.8	2.4	2.9
Norway	0.57	5.5	5.0	4.9	4.1	3.3	3.2	3.5	3.5	3.4
Poland	4.22	14.4	13.3	12.3	11.2	10.6	13.9	16.1	18.5	19.5
Portugal	1.22	7.0	7.3	7.3	6.8	5.2	4.5	4.1	4.3	4.8
Spain	4.05	24.1	22.9	22.2	20.8	18.8	15.9	14.1	13.2	13.3
Sweden	1.07	9.4	8.8	9.6	9.9	8.3	7.2	5.9	5.1	5.3
Switzerland	0.97	3.8	3.5	3.9	5.2	3.5	3.0	2.6	1.8	2.1
United Kingdom	7.12	9.6	8.7	8.2	7.0	6.3	6.1	5.5	5.1	5.4
Euro area[b]	32.21	11.6	11.3	11.5	11.5	10.8	9.9	8.8	8.3	8.6
European Union[c]	41.10	11.2	10.7	10.8	10.6	9.9	9.1	8.2	7.6	7.9
Western Europe[d]	42.64	10.9	10.5	10.6	10.4	9.7	8.9	7.9	7.4	7.7
Central Europe[e]	6.49	11.9	11.1	10.3	9.6	9.4	11.9	13.2	14.6	15.2
Western and Central Europe	49.14	11.1	10.6	10.6	10.3	9.6	9.3	8.6	8.4	8.7
Japan	16.56	2.9	3.1	3.4	3.4	4.1	4.7	4.7	5.0	5.7
United States	34.30	6.1	5.6	5.4	4.9	4.5	4.2	4.0	4.7	6.1
Total of the above countries	100	8.0	7.6	7.6	7.3	6.9	6.8	6.4	6.6	7.3

[a] Aggregates were computed using nominal GDP weights of the previous year. – [b] Euro area without Greece. – [c] Euro area plus Denmark, Sweden, United Kingdom. – [d] European Union plus Norway and Switzerland. – [e] Czech Republic, Hungary, Poland. – [f] Forecast of the Ifo Institute.

Source: OECD, Main Economic Indicators; Eurostat, Eurostatistics.

The Weakness of the Euro: Is it Really a Mystery?

1. A Review of the Main Facts and Issues

The external value of the euro declined steadily against the dollar and the yen between its launch and November 2000. After that, it experienced two cycles of limited appreciation followed by depreciation, hovering around a rate of .89 euros per dollar, and slightly below 110 yen (see Figure 2.1). If measured in effective terms against an index of currencies of major trading partners (according to IMF calculations), the euro depreciated in real and nominal terms roughly by 17 per cent between January 1999 and the end of the year 2000. It has gained slightly since then (see Figure 2.2).

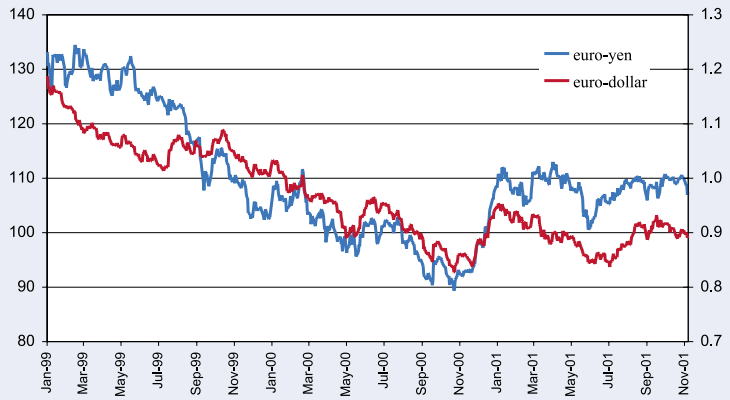
Looking back in time, we note that most European currencies started to depreciate against the dollar as early as 1995. As shown in Figure 2.2, the depreciation of the euro can be seen as the continuation of a phase of dollar strength starting three years earlier. Relative to the synthetic euro – calculated as a weighted average of the European currencies in the euro basket – the dollar appreciated by 35 per cent between 1995 and 2000.

In effective terms, the value of the euro in November 2001 is about the same as in 1985, corresponding to the peak of dollar strength during the Reagan years, and to an historical low for European currencies. Individual currencies in the euro basket, however, experienced different developments. Figure 2.3 shows that the deutschmark was actually much weaker in 1985 than in 2000 and 2001 (as implicit in the euro). Translated into euros, the peak of the dollar relative to the deutschmark during the year 1995 would correspond to a price of only 56 US cents per euro. Conversely, liras and pesetas have never been weaker than in 2000 and 2001.

The balance of payments data for the Euro area show that the current account moved from a

Figure 2.1

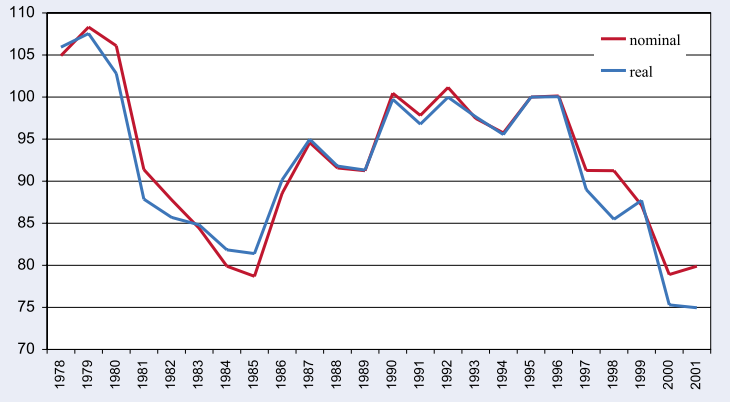
THE EURO AGAINST THE DOLLAR AND THE YEN



Source: PACIFIC Exchange Rate Service.

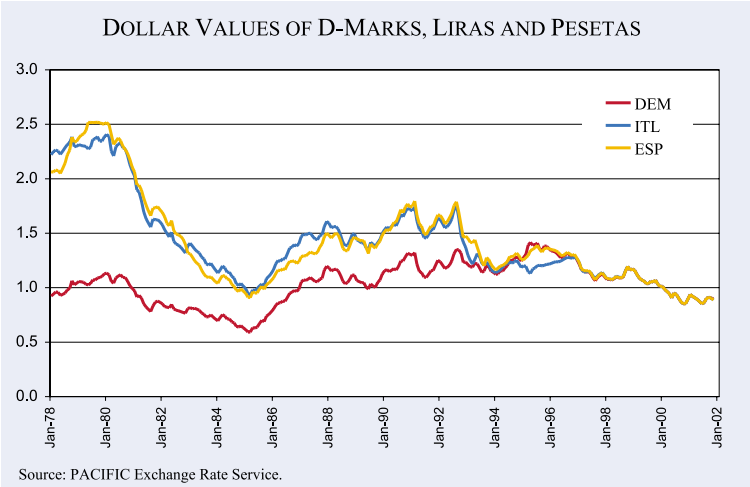
Figure 2.2

EURO EFFECTIVE EXCHANGE RATE



Source: PACIFIC Exchange Rate Service.

Figure 2.3



Source: PACIFIC Exchange Rate Service.

modest surplus in 1998 to a modest deficit in 2000, and that the outflows of FDI and portfolio investment over the periode was quite strong. The US experience over the same years was the opposite. A large current account deficit has been matched by large capital inflows.

As is well known, the euro was widely expected to appreciate after its launch in 1999, in anticipation of stronger European growth and the successful completion of European Monetary Union. Its steady depreciation took most observers by surprise. Over time, the "mystery" of a steadily falling currency has raised a number of issues. Is the euro out of line relative to the fundamentals of the European economy? Should we expect a rebound? If yes, when? Most importantly, is a weak euro somehow damaging the European economy, so as to call for some policy action to support its value? For instance, has a weak euro constrained the ability and willingness of the European Central Bank to pursue stabilisation policies by reducing interest rates? Should major central banks of the world co-operate to contain the size of exchange rate swings?

In this chapter of the report we will argue that, while no single interpretation can perfectly fit the historical behaviour of the Euro, a few factors stressed by economic theory, individually and collectively, can help us to understand why the European currency was relatively weak in the past three years. Different forces are at work, both through a portfolio channel and through a macroeconomic adjustment channel, to keep the euro, at least temporarily, low.

On the portfolio side of our interpretation, the weakness of the euro is mostly driven by excess supply of euro-denominated assets. Most analysts have focused on the *demand* for foreign-currency denominated assets by Euro area residents, motivated in part by the expectations of high productivity growth in the United States, in part by the search for diversification opportunities after the common currency eliminated currency risk within Euroland. Recent analyses have instead stressed the strong increase in the issuance of euro-denominated bonds after 1999, and, most importantly, the strong contraction in the demand for currency in circulation in view of the impending changeover. This contraction resulted in part from reduced interest in the deutschmark as an international transactions currency, notably in eastern Europe, Turkey and Asia, in part it was caused by the flight of black monies from inside the euro area into real assets and non-EU currencies. Replacing a substantial fraction of the currency in circulation with short-term securities which are part of the broad money aggregate M3, the ECB was able to partly stabilise the interest rates, but to a much lesser extent it succeeded in stabilising the exchange rate. The additional short-term assets found their way into the international portfolios of financial institutions only at a reduced value of the euro.

On the macroeconomic side of our interpretation, the weakness of the euro to a large extent mirrors the strength of the US economy. In the second half of the 1990s, the dollar appreciated by about 20 per cent in real terms, while the United States widened its current account deficit to 5 per cent of GDP. The perspective of future productivity growth in the United States kept consumption and investment demand quite high through most of 2000. By the end of 2000, uncertainty surrounding the growth and productivity differentials between the United States and Europe picked up, leading market participants and international institutions to wonder about the sustainability of the US external balance. Opinions have been quite polarised: Some believe that the United States may well keep their lead in productivity and growth for many years to come; others have become more sceptical. Many

recent market movements seem to reflect swings in expectations across these two scenarios. The main question is whether the adjustment, when it comes, will take the form of a soft, as opposed to a hard landing, in terms of depreciation of the dollar and current account reversal. In their paper presented at Jackson Hole, for instance, Obstfeld and Rogoff (2000) argue that closing the US current account deficit in a gradual way (the soft-landing scenario) would entail a real depreciation of the dollar by about 16 per cent, roughly corresponding to a nominal depreciation of 12 per cent. Their hard-landing scenario looks quite different, with a one year fall in the dollar of about 24 per cent in nominal terms.

To rule out any misunderstandings, before presenting our argument we stress that economic research strongly warns against the ambition to "explain" exchange rates. It is well known that no economic model does well in explaining, let alone forecasting, exchange rates in the short and medium run. As shown by Meese and Rogoff in 1983, and many studies after that, a simple random walk model systematically outperforms the predictions of sophisticated econometric models over many quarters. This is, of course, no surprise, since the exchange rate is an asset price – nobody can claim success in explaining, say, the stock market! However, this is not to say that economics cannot provide some guidance as to the influences on the external value of the euro, especially in the longer run. Keeping our ambitions in check, this is one of the goals of this section of the report.

While the link between the euro and the economic fundamentals of Europe is the subject of an intense debate in both theory and policy, almost 30 years of floating exchange rates across major currencies have taught us an important lesson: stabilising the inflation rate does not mechanically imply a stable exchange rate. Large swings in the euro are not necessarily incompatible with the achievement of price stability objectives and should not be mechanically taken as an indicator of how well a central bank is doing its job.

2. Financial Factors and Portfolio Movements at the Root of the Euro Weakness

Studies of the euro often refer to the portfolio balance approach to the exchange rate. According to the argument in these studies, an increase in the relative supply of euro-denominated assets (or a fall in their demand) should lower their price relative to foreign assets – thus increasing their yield in domestic currency and depreciating the euro.

The problem with adopting this approach in policy and empirical analysis is that asset supply and demand affect asset prices and exchange rates in quite complicated ways. In a world with many assets, for instance, a shock to demand or supply of a specific asset alters the return on and therefore the demand for all assets in a way that depends on investors' wealth and their attitude towards risk. The effect on the exchange rate cannot be predicted in general, but only conditionally on specific features of the economy. Moreover, this effect will also depend crucially on what the issuer of the assets will do with the additional financial resources: whether she/he will invest, consume or reduce debt.

Nonetheless, there are a few cases in which the prediction of portfolio models becomes more precise. Suppose there is an increase in the supply of European currency and short-term securities which is balanced in a way that does not affect the short-term interest rate (or suppose an unbalanced increase in the supply accommodated by an expansionary open-market policy so as to stabilise the interest rate.) Reasonably, to absorb a larger supply of assets, international investors will require a fall in their price or, equivalently, an increase in their rate of return. However, since the own-currency nominal rate of return is given in the case under consideration, a change in the price of euro-denominated assets in foreign currency is required, and this can only be achieved via a fall of the exchange rate of the euro.

This argument provides the conceptual foundation for sterilised interventions in the foreign exchange markets. To prop up the euro without affecting euro interest rates, the European Central Bank buys euro-denominated securities and money balances in exchange for foreign-currency denominated securities and money balances, changing the relative supply of these assets in the hands of private investors. To make room for more foreign-currency denominated assets, these investors will require a fall in their price which can be achieved by a fall in the dollar or, equivalently, a rise in the euro.

There is some controversy on the empirical magnitude of these portfolio effects. Many are sceptical

and downplay their importance altogether (see for example Obstfeld and Rogoff (1996)). Yet, a different and more favourable view is suggested by recent studies of the foreign exchange market. Evans and Lyons (1999 and 2000) show that each billion of additional sterilised stock demand for money (due to private buy orders) has an immediate effect on the dollar exchange rate of 44 cents. About 80 per cent of this effect is persistent over time – persistence is even higher when the buy orders arrive in periods when trading activity is high. This means that a mere $50 billion excess supply of dollars could appreciate the euro by 22 cents on impact, and 17 cents permanently!

So, can the euro weakness be attributed to portfolio-balance effects? We address this question by discussing two pieces of evidence: the increase in the issuance of euro-denominated debt; and the contraction in the demand for currency in circulation, especially for deutschmarks, after the launch of monetary union and in view of the 2001 changeover.

3. Can a Large Issuance of Euro-denominated Assets Affect the Exchange Rate?

One of the most striking facts in the short life of the euro is the sharp increase in the issuance of euro-denominated debt relative to the cumulative issuance in European currencies up to 1999. In the international debt market, the percentage of new issues of euro-denominated debt securities has increased from 25–30 per cent before 1999, to 40–45 per cent after the launch of the new currency.

According to the BIS, in the first and second quarters of 2001, the *gross* issuance of euro-denominated bonds and notes was as high as $408.5 billion out of a total of $1,113.5 billion announced new issues. Relative to the net issuance of international debt securities in dollars, *net* issuance in euros was higher in 1999, came down to three quarters in the year 2000, but bounced back in the first two quarters of 2001.

There are a number of factors that underlie this phenomenon, including a wave of mergers and acquisitions that have vastly increased the financial need of European corporations, the desire by some foreign firms to establish a presence in the market of euro-denominated debt, low interest rates (relative to historical standards), but also the creation of a deeper and more liquid market for bonds. While some of these factors may be temporary, this evidence does point to a significant development towards a pan-European bond market – reflecting current changes in the pattern of European corporate finance.

The IMF recently stressed the argument (early-on discussed by McCauley), according to which the euro weakness can in part be attributed to the extraordinary increase in the net supply of euro-denominated bonds. Meredith (2001) calculates that, holding the exchange rate constant (that is, disregarding the depreciation of the euro) the supply of euro-denominated debt increased by €300 billion between 1998 and the first quarter of 2001. There are, however, a number of problems with this interpretation.

First, is the €300-billion increase in net issuance of Euro-denominated debt to be considered a net addition to the world asset supply? Some fraction of new euro debt may well be a substitute for euro-denominated loans by banks. Adjusting for asset substitution should considerably lower the size of Meredith's estimate.

Second, and more importantly, even if the adjusted estimates remain high, the impact on the euro will probably depend on the maturity of the new debt and the reasons for the new issuance. As monetary and fiscal authorities do not strictly target long-term interest rates, new issuance of long-term debt instruments reduces their price in domestic currency, increasing their yield. This drop in domestic debt prices may be sufficient to make international portfolio investors willing to absorb the new issuance with little or no adjustment in exchange rates. Things are quite different for new debt belonging to the shorter end of the spectrum, since short-term interest rates are more closely controlled by central banks. In this case, the ECB would react to a drop in debt prices or an increase in interest rates with an expansionary open-market policy, i.e. with a purchase of short-term debt against currency. But we have little evidence that this is what has actually happened in the European debt market. As we will point out in the subsequent section, the relative stock of currency in circulation has not increased, but rather declined in recent years; in fact, it even declined in absolute terms, an unusual phenomenon which points to another explanation.

4. The Sizeable Fall in the Demand for Currency in Circulation

The demise of national currencies and the euro changeover in 2001 have had a profound effect on the demand for currency in circulation. The ECB data show that the stock of euro-11 currency in circulation had grown more slowly than the broad money aggregate since 1997 and contracted sharply in absolute terms during the year 2001. Figure 2.4 plots the seasonally adjusted increments to the stock of currency in circulation against the number of months to the changeover. The data for 2001 are quite striking, but there is evidence that important changes had already occurred early-on in the life of the European Monetary Union. Why did the euro reduce the demand for cash? Is this effect temporary? Sinn and Westermann (2001a and b) recently addressed these issues, showing that there are several factors at work.

The introduction of the euro affected the demand for that European currency with a large circulation outside Europe, which is the deutschmark. According to the Bundesbank, in 1995 approximately 1 in 3 deutschmarks circulated outside the country. The money was used especially in East and Southeast Europe and in Turkey, but also in east Asian countries and elsewhere in the world. The deutschmark was the second largest transactions currency after the dollar, of which as much as 70 per cent might be circulating outside the United States. Taking the Bundesbank estimate as a benchmark, the aggregate circulation of deutschmarks in foreign countries can be estimated to have been as high as €46 billion.

This international circulation of the deutschmark may be partly attributed to 'currency substitution' – as people may have lacked confidence in the domestic currencies issued by the new states emerging from the dissolution of the Soviet empire. But it also reflects portfolio diversification in economies with limited financial development and a large informal economy. The deutschmark thus represented both a means of payment and a liquid asset with a stable value.

Things changed in the last few years. To some extent, the process of political consolidation in most of these states has realistically increased their citizens' confidence in their domestic currency, reducing the need and scope for currency substitution. Most importantly, the creation of the euro generated uncertainty around the deutschmark, perhaps as early as 1996, when the Dublin summit eliminated the last doubts about the creation of the euro, and therefore about the demise of the German currency. As discussed by Sinn and Westermann (2001a), these circumstances clearly contributed to reduce the international demand for deutschmarks. A first issue is the apparent asymmetry in international confidence between one currency with a long track record of stability and a new currency based on an unprecedented political agreement among sovereign nation states. A second issue is the widespread uncertainty (especially outside the EU) about the modalities and costs of converting deutschmarks into euros during the changeover in 2002. People may have been afraid of being cheated given their lack of familiarity with the new euro bills (how can anyone tell the difference between a good euro bill and a counterfeited one at the time of the changeover?). Also, some may have disliked the idea of changing vast sums of money into euros within a relatively short period of time – since this means that they have to deal with rules against money laundering (presumably stricter during the changeover period than otherwise), and/or to expose their liquid savings to the risk of theft.

A majority of economic experts on Eastern Europe surveyed by the Ifo Institute at the beginning of 2001 argued that foreigners had not been properly informed about the euro and felt substantial insecurity. Some governments in the area even took official steps to discourage deutschmark holdings by their citizens. The Polish government, for instance, warned against holding deutschmarks and recommended exchanging them into zlotys. As a result, however, many people may have preferred to acquire dollars instead of zlotys. In addition, secret services reported massive exchange transactions from the deutschmark into the dollar in Yugoslavia.

An extensive survey by the Austrian central bank in Croatia, Hungary, Slovenia, the Czech Republic and Slovakia documented a strong propensity to move away from deutschmarks into dollars and other currencies (Stix 2001). From the second half of 1998 until the first six months of 2001, the decline in foreign demand for deutschmarks was strong enough to fully explain the reduction of the stock of deutschmarks in circulation. As late as

May 2001, most holders of deutschmarks in eastern Europe had not decided in which currency to exchange them, and among those who had made up their minds, no less than 40 per cent said that they did not want to exchange them into euros, but rather into other currencies.

Not surprisingly, the share of deutschmarks in the euro-11 money supply declined sharply after 1997. From January 1997 to October 2001, the decline in this share was 5.7 percentage points, large enough to explain a reduction in the stock of deutschmarks in the order of €21 billion. Interestingly, the recent decline in the share of deutschmarks mirrors the sharp increase in the deutschmark share after 1989 associated with the fall of the Berlin wall. Eastern European citizens moved into deutschmarks in the first few years of their new life in market economies. The introduction of the euro somehow redirected their demand towards other currencies. Liras, schillings and Finnish markkas, also held in Eastern Europe, may have experienced a similar fate.

It is now well understood that the euro changeover – and its strict rules against money laundering – is of concern to criminals and tax evaders, who hold large sums of money in cash. Their problem is to choose the most effective way to reduce the costs of dodging the rules as well as the risk of being caught when recycling cash. Plausibly, acquiring dollars, pounds Sterling or Swiss francs slowly over time may have been preferable to waiting for the changeover period and converting all their cash in a relatively short time span. Indeed, many observers believe that criminal organisations moved massively into dollars. In the last few months before the changeover an anticipation of this and related phenomena were observable. Newspapers increasingly reported stories about booming sales of real estate and luxury goods settled in cash. Schneider and Ernste (2000) indirectly provide an estimate of a lower bound on cash held in the black market economy of as much as €50 billion.

The reduced demand for euro-11 currencies resulting from these effects is likely to have depressed the value of the euro despite ECB interventions to stabilise the short-term interest rate. If the ECB did not have an interest-rate target but an exclusive focus on narrow money targets, the reduced demand for Euro-area currencies would have caused a fall in European interest rates in order to induce Europeans to keep holding the existing stock of euro-11 currencies in their portfolios. We would not have seen any contraction in the stocks of currency in circulation, such as the one shown in the above figure. Then, because of the decline in interest rates and the reduced attractiveness of euro-denominated bonds, the euro would have experienced an even sharper decline in its external value!

However, the ECB does have an interest target, and does not focus on narrow money aggregates. More or less automatically, the ECB bought back unwanted money balances against short-term securities from its own portfolio in order to keep the short-term interest rate at its target level. But this policy only mitigated, not avoided, the negative effect of a contraction in money demand on the euro. This is because, by substituting short-term interest bearing securities for currency , it did not reduce the overall stock of *short-term* assets, as measured by the M3 aggregate. As shown in Figure 2.5, the time path of M3 has been largely unaffected by the contraction in the demand for cash and a similar development is true for other asggregates such as M1 or M2. In other words, interest-rate targeting resulted in a switch from currency to other assets at unchanged values of other

Figure 2.4

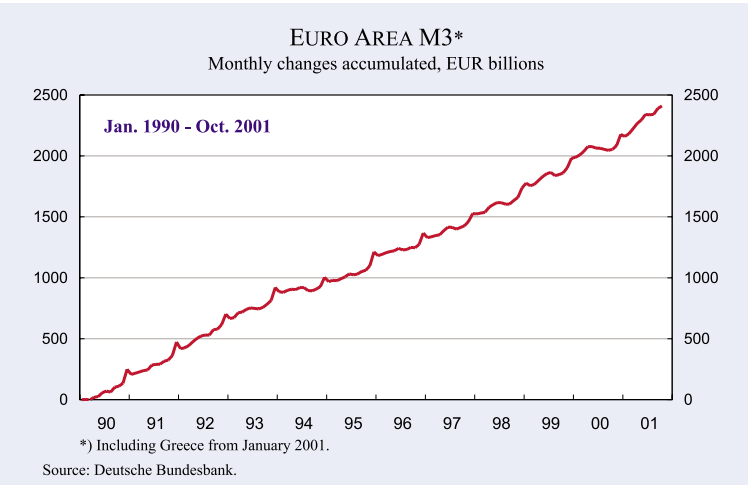
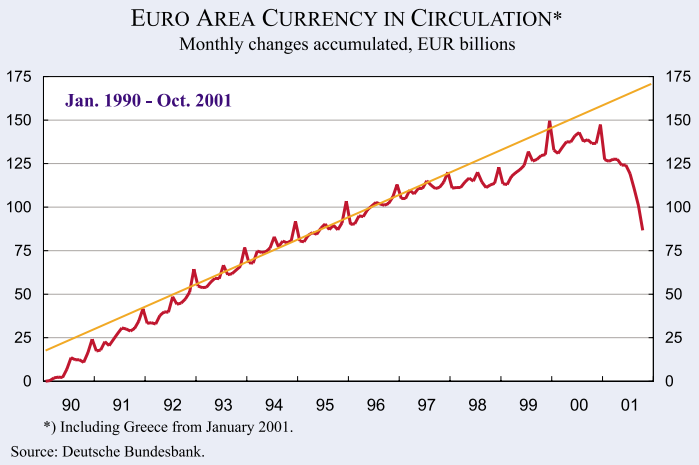


Figure 2.5



money aggregates, rather than a reduction of these aggregates themselves. Given that the other money aggregates was not reduced by the falling demand for Euro-area currencies, the net effect on the euro could not but remain negative. After all, the reduction in the demand for short-term euro denominated assets has not been accommodated by a reduction in the supply of such assets.

The explanation implies a positive correlation between the exchange rate and a country's currency in circulation when the central bank follows a policy of interest-rate targeting. Such a correlation was found to be robust for the deutschmark-dollar exchange rate during the nineties as well as for other exchange rates and time periods (see Sinn and Westermann 2001a and Breedon and Fornasari 2001).

Note that this explanation does not require households and firms trying to get rid of the old Euro-11 currencies to go straight into the dollar. In many cases the substitution may have been from cash to real assets such as land or art objects or to other currencies, including the domestic currencies of the East European countries. However, for a given stock of such assets, those who sold them may then have bought dollar-denominated assets instead. While the substitution chains may have been complicated and hard to track in detail, it is very unlikely that the reduced demand for Euro-11 currencies, which in itself is a clearly documented fact, did not increase the demand for dollar-denominated assets, with a sizeable effect on the relative value of the currencies.

What is the magnitude of the combined effect on money demand and exchange rates of all the factors discussed above, including both the reduction in circulation of European currencies outside Euroland and the contraction of money held by the black economy? Focusing on Germany, Sinn and Westermann fit a traditional money demand equation (with interest rates, GDP and time as explanatory variables), and looked at the size of the regression residuals in the last few years. While demand for deutschmark is one standard deviation above trend in the period 1994–1996, it falls one standard deviation below trend in 1999, and two standard deviations below trend in the year 2000. The sharp decline in deutschmark holdings between the first quarter of 1997 and the last quarter of 2000 corresponds to an absolute decrease in the demand for deutschmarks in the amount of €27 billion.

It is, of course, very difficult to generalise this finding to the Euro area as a whole, since the circulation of other European currencies outside the country in which they are legal tender is not as large as for the deutschmark. On the other hand, the size of the black economy may be large in many countries. Some realistic calculations by Sinn and Westermann (2001 b) suggest that over the period 1997–2000 the demand for European currency has fallen €48 billion below a trend determined by GDP, interest rates and time. We may expect this estimate to be quite conservative when extrapolated to 2001 and the early months of 2002. Indeed, from January to October 2001, the decline in the stock of currency in circulation was again very substantial, being in the order of another €50 billion (Sinn 2001). Inspection of Figure 2.4 shows that the gap between a simple linear trend and the currency in circulation had reached a level of about €90 billion s in October 2001 with an obviously sharp tendency to increase further in the remaining months of the year.

Relative to the increase in the supply of euro-denominated debt by €300 billion at constant exchange rates a €90 billion drop in the demand

for currency in circulation may not seem large. Yet, as already mentioned at the beginning of this chapter, in light of the findings of Evans and Lyons, the exchange rate effect of such a drop in demand can be quite sizeable. As each additional billion in sterilised demand for dollars raises the exchange rate between 35 and 44 cents, this factor can explain a depreciation of the euro against the dollar by between 30 and 40 cents if the drop in demand for Euro-area currencies translates fully into an increase in the demand for dollars. This is enough to explain the actual decline in the foreign exchange value of the Euro-area currencies since 1997, which was about 40 cents.

That a €90 billion reduction in currency demand would have a large effect on the euro is also consistent with the recommendations of advocates of sterilised intervention. Lyons and Portes (2000) and Portes (2001), for instance, argue strongly for sterilised foreign exchange interventions in the order of €50 billion.

As is well known, the ECB intervened in support of the euro on two occasions: the first was on 22nd September 2000, the second one on 3rd through 6th November of the same year. In the first intervention, the ECB was joined by the United States, Japan, Canada and the UK, while it acted unilaterally in November. Although the size of these interventions has been kept secret, reportedly the first intervention was between €2 and 12 billion. On that occasion, the euro jumped from $ .85 to $ .90 within hours, and subsequently came down to $ .88 for a week. The second intervention had a much weaker impact, but it was implemented in less than ideal conditions (see Koen et al. (2001) for a discussion).

5. The Euro and Macroeconomic Adjustment

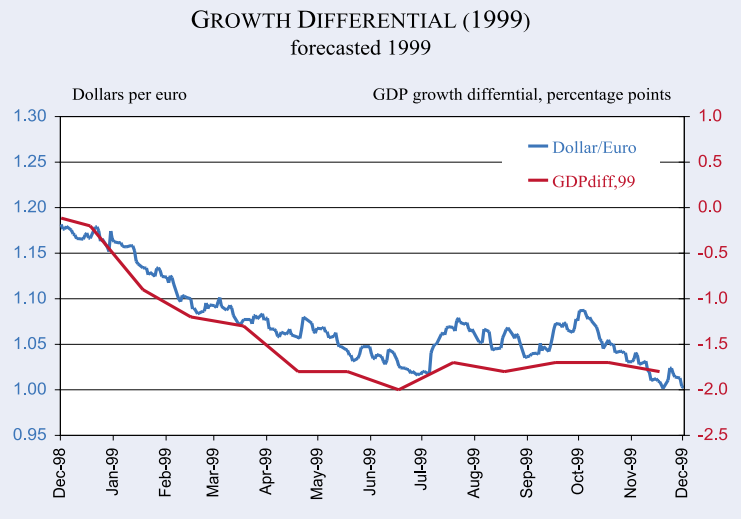
A complementary explanation of euro weakness shifts the focus from the role of the exchange rate in the asset markets, to its role in the good markets, stressing the dynamics of aggregate demand in the United States relative to the Euro area. In this interpretation, the weakness of the euro is a mirror of dollar strength along with the long phase of US expansion in the 1990s – characterised by high investment rates, low inflation, a large fall in the natural rate of unemployment, a growing current account deficit, and sustained productivity growth. The argument draws on a well-known prediction of standard open-economy models with nominal rigidities: any shock that leads to excess domestic aggregate demand and overheating in the short run also creates a trade deficit, causes the real interest rate to rise, and leads to a real appreciation of the currency. Since the economy is overheating, high interest rates and the real appreciation endogenously reduce the internal demand imbalance. In particular, real appreciation discourages foreign demand for domestic output by raising its relative price in the world market. Together with high interest rates it also makes current (as opposed to future) consumption by domestic citizens more expensive.

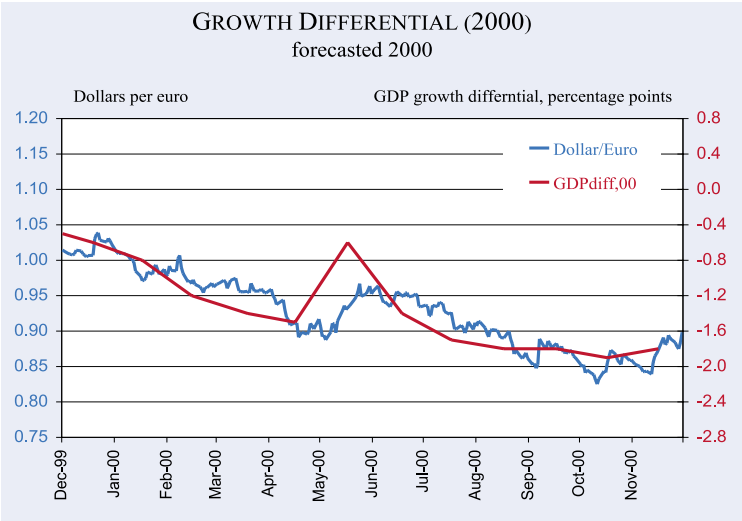
This standard model seems to fit well the recent US experience. The key factor driving the long phase of demand growth in the second half of the 1990s is commonly identified with expectations of persistent productivity gains, raising forecasts of future income growth. As persistent productivity gains imply higher profits, these expectations led to an investment boom, adding to the productive capacity of the country. Anticipated income growth in turn caused households to adjust their estimated permanent income upwards and to modify their consumption plans accordingly. The combined effect of higher investment and consumption demand sustained GDP growth, but also widened the external imbalance: the US current account deficit widened from 1.5 per cent in 1995 to about 5 per cent of GDP in 2001. Financing this deficit was not a problem, as domestic returns were reflecting expected productivity gains (even with some irrational exuberance), attracting capital from the rest of the world. Leaning against the wind of excessive demand, domestic interest rates tended to rise relative to the rest of the world. Indeed, the differential between US and European long-term nominal interest rates turned from negative to positive after 1995, and remained positive until 2001. The dollar rose relentlessly between 1995 and the end of 2000.

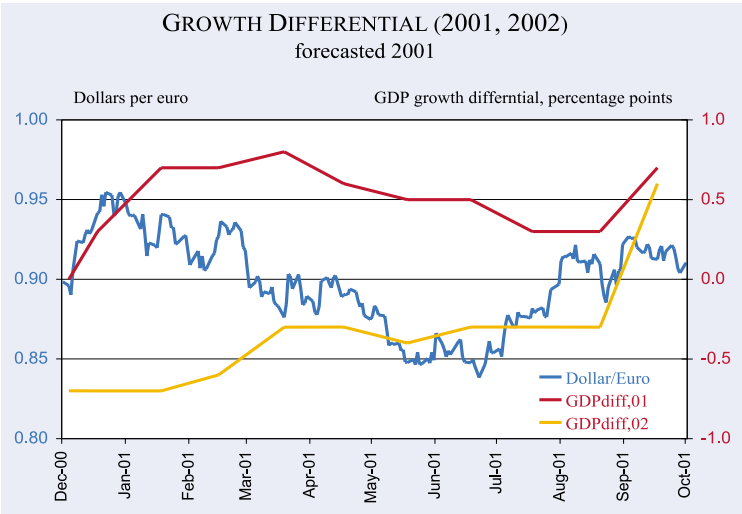
Yet it is worth recalling that the novel features of recent US economic growth were not readily (and perhaps are still not very well) understood. As mentioned above, when the euro was launched most observers believed that the US economy was at the end of its expansionary phase, while Europe would soon catch up. The European currencies were actually experiencing an appreciation.

Figure 2.6

Forecast Euro Area – United States
Growth Differential and the Dollar-Euro Exchange Rate







Note: This is an update version of the chart introduced in Giancarlo Corsetti and Paolo Pesenti, "Stability, Asymmetry, and Discontinuity: The Launch of European Monetary Union", *Brookings Papers on Economic Activity*, 1999:2, Figure 3, p. 352.

Source: Consensus Forecasts (Consensus Economics, London) and BIS.

Somewhat surprisingly, the data from the ealry months of 1999 depicted a totally different picture, and the euro started to lose value against the dollar. For many months afterwards, the dollar seemed to have tracked quite closely the market's re-assessment of US growth. At the same time, markets and EU institutions developed a deep scepticism about the possibility of 'new-economy' miracles in Euroland. For instance, the European Central Bank did not change its assessment of the long-term growth potential between 1998 and 2001, as implicit in the reference value for the rate of growth of M3.

Early in 1999, Corsetti and Pesenti (1999) pointed at the positive correlation between movements of the euro-dollar exchange rate, and revisions to prospective growth in the United States relative to Euroland, according to the "consensus forecasts" data. Figure 2.6 updates the analysis for the year 2000 and 2001. The association between the two variables is quite strong until 2000 and becomes looser afterwards, although it does not fade away – it is actually visible again at the end of 2001.

The graph shows that, from 1998 through the second quarter of 2000, the news on the US growth dynamics was all in one direction. After the summer of 2000, however, the previous pattern is no longer clear. Market moods seemed to swing between two possible scenarios, one extrapolating the relative strength of the US economy for another few years, the other pointing to a US slowdown,

with, a depreciation of the dollar and a reduction in the current account deficit. These 'polarised views' of the future are also contained in many official documents, such as the October 2001 World Economic Outlook of the International Monetary Fund.

Figure 2.6 is often confused with evidence supporting some 'cyclical view' of exchange rates – with appreciation and depreciation tracking different phases of economic cycles. Such view is misleading. Relative GDP growth forecasts are proposed as a *proxy* for expectations of future productivity and income trends, that are correlated with expected returns on US assets, and US households' permanent income, and therefore with US investment and consumption demand. With the United States working close to potential output, upward movements of internal demand may increase the need for compensating adjustments of external demand – that is the need for a real appreciation crowding out net exports. It is not surprising that detailed data on the balance of payments for the United States and Euroland showed that the euro-dollar exchange rate moved closely with net capital inflows into the United States. This correlation reflects exactly the same factor discussed above – strong beliefs in the persistence of growth and productivity gains in the US economy. These beliefs drove up US demand, generating the US external imbalance, and attracted capital from abroad. Most of these inflows were from Europe where, because of the impending introduction of the single currency, investors were searching for new opportunities to diversify their portfolios. The exchange rate, capital inflows and aggregate demand are all endogenous variables in the macroeconomic process – it makes little sense to state that one 'causes' the other. In this respect, we note that much of the increasing demand for US equities came from UK investors, with apparently little effect on the strength of the pound – a strength that is best understood by looking at the dynamics of British aggregate demand and output.

Some evidence in support of this interpretation of euro weakness is provided by the May 2001 World Economic Outlook of the International Monetary Fund, that includes a study of the determinants of the bilateral exchange rates for dollar-euro and dollar-yen in the period 1988–2000 (measured at a quarterly frequency). The study shows that over the period, the dollar-euro exchange rate is significantly correlated with net equity flows (more equity investment in the United States appreciates the dollar), and long-term interest differentials (higher US rates appreciate the dollar). It is also strongly correlated with relative expected growth rates. The statistical results are, however, different for the dollar-yen bilateral exchange rate. It seems to be correlated with long-term interest differentials, but not with net equity flows or differential growth prospects. This suggests that other factors, possibly related to causes of the long-lasting Japanese stagnation in the 1990s, are at work.

The importance of productivity differentials is strongly supported by Alquist and Chinn (2001b), based on an empirical study of the real euro-dollar exchange rate over the period 1985-2001. They find that each percentage point in the United States-Euro area productivity differential results in a five-percentage-point real appreciation of the dollar. The authors rightly observe that one cannot explain this result without stressing the role of expectations in driving domestic demand.

An interesting question concerns the kind of divergence in expectations of future productivity growth that is required to generate the observed real dollar appreciation. This question is addressed by Alvaro and Parera-i-Ximenez (2001) using a modern version of the Dornbusch-Mundell-Fleming model to focus on the short-run effects of a revision of long-term potential output. In their exercise, short-run supply is assumed to respond to demand shocks with a lag. Assigning realistic values to the parameters of the model, it turns out that to generate a 25 per cent real appreciation of the dollar only takes an upward revision of expected long-run output of between 10 and 12 per cent – a very reasonable estimate of the discounted output effects of the new economy.

Could it be possible that the dollar appreciation was driven by the dynamics of aggregate supply and productivity, rather than by aggregate demand? Some studies analysed the prediction of a standard Balassa-Samuelson model, assessing terms of trade and relative price effects of a supply boom driven by productivity growth. Tille, Stoffels and Gorbachev (2001) did not find much of an effect in the data. Their estimates suggest that the gap in productivity growth between the United States and Europe could explain at most 5 percentage points of the dollar appreciation in the second half of the 1990s.

Most importantly, we should note that, holding aggregate demand constant, a supply boom should be associated with an increase in net US exports. Indeed, those sectors of the US economy with the fastest productivity growth have not lost international market shares (many sectors have nonetheless suffered because of the strong dollar appreciation). Yet the US trade balance sharply deteriorated due to an upsurge of imports – as is usually the case in the presence of a boom in domestic demand.

Another key question is whether the expectations of high US productivity growth and returns reflect a rational assessment of fundamentals as opposed to some bubble or misperception, inducing investors and households to grossly underestimate risk. For instance, it has been observed that the euro-dollar exchange rate responds asymmetrically to US and European news, as well as to bad and good news, suggesting a bias in the way markets perceive relative growth prospects.

In the spirit of the well-known work by Robert Shiller (2000) on irrational exuberance in the US stock market, Meredith (2001) develops a demand-boom interpretation of the dollar strength driven by a surge of asset prices, not necessarily linked to fundamentals. Asset prices drive up consumption through a wealth effect and investment through easy and cheap financing. Swings in asset prices determine the end of dollar strength.

Why, then, has the euro not appreciated with the drop in US stock prices and the slowdown in the US economy since the fall of 2000? The euro did not even recover after the terrorist attack on September 11 – widely regarded as a catalyst of expectations, leading to a sharper deterioration of the world economic outlook than would otherwise have been the case.

Perhaps analysts and market participants do not believe in the possibility that Europe will recover on its own independently of the United States – despite official forecasts that often support the opposite view. So, any bad news for the United States is translated into equally bad news for the European economy ahead of any data release.

US monetary policy has been rapidly and sharply relaxed since the beginning of 2001. Allowing for lags in its effect on the economy, its impact should be felt by the end of 2001.The US programme of tax cuts and increased public spending should also provide additional demand. Many observers believe that the slowdown in the US economy was mostly due to excess investment in the past, causing a compensating sharp contraction of investment spending in 2000 and 2001. Given that inventories are currently rather low, US firms may soon start spending again. This is the positive side of the coin.

On the negative side of the coin, consumer confidence is still low, and the effect of monetary policy has been rather modest (mostly operating through construction and real estate). Also, many believe that US asset prices are still too high relative to their fundamental value. Many economists are concerned with the risk of a liquidity trap – exemplified by the recent Japanese experience. International demand is low because the recession in Japan, and a clear slowdown in Europe. .

6. What About the Future?

By their very nature, some of the portfolio effects analysed above may well be temporary. Without doubt, black markets and international criminal organisations may come back to the euro after the changeover – especially when a large part of their profits are generated within Euroland. The process of international portfolio diversification may lead to a shift in favour of the new currency. The demand for currency in circulation should pick up strongly with the introduction of euro notes and coins. It has been suggested that the changeover will actually produce a peak in the demand for cash in the early months of 2002 because of the short period of parallel circulation of the euro and national currencies. A key question is then whether the demand for currency in circulation will be larger or lower than in the pre-euro period. For one thing, the euro changeover can increase the use of demand deposits and electronic means of payment, that are promoted with the introduction of the new currency. For another, it is possible that some of the foreign holders of European cash who went into the dollar in order to avoid the subjective and objective risks of currency conversion will not return but stick to the dollar as their preferred transactions currency for a considerable period of time.

Nevertheless, the demand for euro-denominated bonds and bills can be expected to increase relative

to the supply after the currency conversion, implying an appreciation of the euro. The timing of such an effect is, however, uncertain. It is possible for portfolio adjustments to take several years.

What is less clear is the market assessment of future growth in Euroland relative to the United States. Since the end of 2000, forecasters' opinions have been quite polarised. Some observers believe that the end of US productivity and growth leadership close and that US adjustment will be dominated by the need to close the current account deficit. This, of course, will be the case, sooner or later. The question is when. The track record of the dollar clearly shows that there is no obvious answer.

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Appendix

Is the euro undervalued?

Many econometric studies have looked at the long-run performance of a synthetic or "virtual euro", constructed as a weighted average of the European currencies in the euro basket since the 1970s. According to most of these studies, the euro (at least in its virtual form) performs quite normally in the long run. For instance, in the analysis by Chinn and Alquist (2001), the euro appreciates when an increase of domestic output relative to foreign output raises the demand for the currency, it depreciates when the European central banks cut interest rates and expand the relative money supply. The European-United States gap in the relative productivity of tradables and nontradables also influences the currency according to the Balassa Samuelson hypothesis (discussed in another chapter of this report). A 1% positive difference causes the currency to appreciate between .85% and 1.7%. Other studies stress the role of productivity differentials even more, suggesting that these are the main force driving long-run movements in real exchange rates (see for instance the recent ECB working paper by Maeso-Fernandez, Osbat and Schnatz (2001)).

In addition, however, the euro tends to depreciate with hikes in the price of oil. It is also found to respond to long-run interest rate differentials, to relative government spending, but not to the cumulated stock of net external debt.

All these results are quite reasonable. They confirm the Balassa-Samuelson view. While the oil price may be correlated with the dollar via the strength of the world and US business cycle, such correlation also suggests that structural differences across areas matter. For instance, to the extent that the United States is less dependent on imports of oil than Europe, an increase in the oil price is a terms of trade (that is a relative price) shock that should appreciate the dollar. These terms of trade effects, however, are usually found to be small (see Hunt, Isard and Laxton (2001)). Specific structural features of the economy can also lead to differences in monetary policy. To the extent that the United States uses more energy in production relative to Europe, oil price shocks may affect prices there more than in Europe, thus trig-

Estimates of the equilibrium value of the euro

Study	Methodology	Equilibrium rate of under-/overvaluation for the reference period
Wren-Lewis and Driver (1998)	Equilibrium FEER Model	1.19–1.45 against the dollar
Borowki and Couharde (2000)	Equilibrium FEER Model	1.23–1.31 against the dollar
Alberola et al. (1999)	Internal/external balance model	1.26 against the dollar
Alberola et al. (2001)	Internal/external balance model	Undervaluation 12.4% against trading partners
Hansen and Roeger (2000)	Internal/external balance model	Undervation: 15%
Lorenzen and Thygesen (2000)	Internal/external balance model	Long run 1.2 Medium run 1.19 Short run 1.09 against the dollar
Chinn and Alquist (2001)	Monetary model (M1, GDP, interest differentials) and relative productivity growth	1.17–1.24 against the dollar
Duval (2001)	Natrex and Balassa/ Samuelson	1.15 against the dollar
Clostermann and Schnatz (2000)	Real long-term yield spread, oil price, government spending, relative price of traded to non-traded goods	Short run 1.20 Medium run 1.13 against the dollar
Teiletche (2000)	Relative productivity, government spending, real long-term yield spread, M1, industrial production	1.09 against the dollar
OECD	GDP PPP	1.09 against the dollar
IMF (2000)	Saving-investment	Undervaluation 30%
Wyplosz (2000)	Mean reversion on real exchange rate	Undervaluation 10–20%
Koen et al.	Terms of trade, saving-investment	Undervaluation
Van Aarle et al. (2000)	Monetary model with nominal rigidities	Explains the depreciation of the euro in 1999–2000
Schulmeister	PPP for tradables	.87 against the dollar

Adapted from Koen et al. (2001).

gering a stronger anti-inflationary reaction by monetary and fiscal authorities, appreciating the dollar when oil prices are high.

It is commonly believed that exchange rates should react to short-term interest rates, and a monetary contraction should lead to appreciation. This is true for a given value of next period's exchange rate. Yet, that exchange rate is not given and depends itself on future short-term variables and the expected exchange rate a further period ahead. Thus, recursive considerations of asset holders imply that it is indeed the long-term variables that represent fundamentals and that matter in the end. Ultimately, the level of the exchange rate should be related to *long-term* inflation and growth rates, current and *anticipated* risk premia, and productivity shocks, at both aggregate and sectoral level. The dependence of the exchange rate on future policy, productivity and risk is quite intuitive, as the exchange rate is an asset price. Other things equal, an easy monetary stance and inflation in the future means a weak currency today. The short-run effect of monetary policy decisions depends on their impact on these long-run conditions, and if a short run contraction implies a long run expansion, then it may well result in a depreciation today.

As long as it does not compromise fiscal stability, relatively high public spending contributes to a strong currency by raising the relative price of domestic traded and nontraded goods. Conversely, a high level of external debt requires the country to have higher exports in the long run in order to pay its external interest bill. To the extent that a higher supply of domestic products on the world markets reduces their price, a high external debt contributes to a weakening of the currency. This effect is, however, controversial when looking at the euro – as the high and rising external US debt should weaken the dollar, but so far has not done so.

Virtually all long-run studies on the euro tend to reach similar conclusions. Relative to long-run relationships between the currency and its fundamentals, they cannot explain the depreciation of the euro since 1999. In other words, if these models are correct, an exchange rate for the euro as low as 90 cents to the dollar, is undervalued – perhaps by as much as 20 per cent. Different estimates of the equilibrium exchange rate of the euro are shown in the Table that reproduces part of the survey by Koen et al. (2001).

That exchange rate models work well in the long run, but have problems in forecasting short-run movements in the exchange rate, is a well-established fact (at least since the enduring contribution by Meese and Rogoff (1983)). What is worse, it is often the case that, comparing actual exchange rates with estimated equilibrium rates for major currencies, analysts discover that two series remain quite apart from each other for long periods of time – up to ten years.

But, apart from these well-known problems, we should not forget that the euro is something more than the sum of its parts. It may well be possible that there is something fundamentally different in the way the euro behaves, compared to the pre-existing European currencies. For one, we know that, before EMU, fluctuations in cross-Atlantic exchange rates had an impact on intra-European exchange rates, often acting as catalysts for speculative attacks and destabilising pressures. This empirical regularity was referred to as dollar-deutschmark polarisation. This is because, when the dollar strengthened against the deutschmark, currencies such as the Italian lira and the French franc tended to appreciate against the deutschmark as well (and vice versa). Downward swings of the dollar were particularly bad for European exchange rate stability. Giavazzi and Giovannini (1989) argue that almost all realignments in the European Monetary System were associated with swings in the dollar rate. Strikingly, the EMU crisis of September 1992 was preceded by a dollar crisis in August.

After the creation of the euro, the risk that dollar fluctuations would have an impact on nominal exchange rates within Europe obviously disappeared – with the important exception of the pound Sterling. This is an important structural break that can help explain why the ECB can take a more relaxed attitude toward the exchange rate than European central banks could take in the past (as suggested by Corsetti and Pesenti 1999). Yet, the economic root of polarisation may still be at work in Euroland.

By the same token, a large body of empirical work has documented that, before the creation of the euro, the exchange rate played quite a different role in the stabilisation of different European economies. Current econometric work based on past time-series of the synthetic euro is not able to capture this or other major transformations in the European economy. So, while the conclusions of long-term studies send a reassuring message from a policy perspective, they should not be overstated.

Fiscal and Monetary Policy

In this chapter we discuss the relative role of fiscal and monetary policy both from a long-run perspective and in view of the severe slowdown predicted by our forecasts.

Because monetary policy is the same for all EU members, country-specific shocks can only be fought using fiscal policy. The next section analyses the size and consequences of country-specific divergences in business cycle conditions.

1. The Importance of Cross-country Imbalances

Prior to EMU a lot of studies concluded that because of the low rate of labour mobility within the Euro area, monetary union could be quite costly if individual countries faced large asymmetric shocks. These same studies, however, also found that the variance of asymmetric shocks had not been very large and that EMU was unlikely to impose large costs on its members because of this channel.[1]

In recent years this assessment has not been invalidated as far as the larger countries are concerned, but some countries at the periphery have diverged. These imbalances are due to different business conditions. Table 3.1 reports growth rates for the Euro area during 1998–2000. Not only Ireland is a substantial outlier, Spain, Greece and Portugal have also grown faster than the North.

What are the consequences of such imbalances for the ECB's monetary policy? In principle, it should not pay attention to them and only look at union-wide aggregates. In particular, higher growth in poorer countries is the normal thing to be expected since it means they are converging to the GDP levels of the richer countries. However, it is reasonable to believe that at least in the Irish case, part of the excess growth is not due to convergence but to a strong, temporary expansion.

Table 3.1

Growth rates

Country	1998	1999	2000
Austria	3.3	2.8	3.2
Belgium	2.4	2.7	4.0
Denmark	2.8	2.1	2.9
Finland	5.3	4.2	5.7
France	3.3	3.2	3.2
Germany	2.1	1.6	3.0
Greece	3.1	3.4	4.1
Ireland	8.6	9.8	11.0
Italy	1.8	1.6	2.9
Luxembourg	5.0	7.5	8.5
Netherlands	4.1	3.9	3.9
Portugal	3.6	3.0	3.2
Sweden	3.6	4.1	3.6
Spain	4.3	4.0	4.1
United Kingdom	2.6	2.3	3.0
Euro area	2.8	2.6	3.4
European Union	2.8	2.6	3.3

Source: OECD.

Differences in GDP growth are mirrored in differences in inflation, as shown in Table 3.2. Countries with stronger growth also have higher inflation. The explanations for differences in inflation mirror those for growth. Inflation differentials are dis-

Table 3.2

Inflation rate (consumer price index)

Country	1998	1999	2000
Austria	0.9	0.6	2.4
Belgium	1.0	1.1	2.5
Denmark	1.8	2.5	2.9
Finland	1.4	1.2	3.4
France	0.8	0.5	1.7
Germany	0.9	0.6	1.9
Greece	4.8	2.6	3.2
Ireland	2.4	1.6	5.6
Italy	2.0	1.6	2.6
Luxembourg	1.0	1.0	3.2
Netherlands	2.0	2.2	2.5
Portugal	1.8	2.3	2.9
Sweden	0.4	0.3	1.3
Spain	4.3	4.0	4.1
United Kingdom	3.4	1.6	2.9
Euro area	1.1	1.1	2.3
European Union	1.8	1.3	2.5

Source: OECD.

[1] For an updated discussion see C. Wyplosz (2001).

cussed at length in the next chapter on relative prices. Here, it is nonetheless useful to summarise a few policy conclusions. First, countries that are converging must have a real exchange rate appreciation because of what is called the Balassa-Samuelson effect. Differences in business cycles in turn imply differences in inflation by virtue of the Phillips curve, a short-run relationship between the output gap and inflation, which tells us that in expansions greater tensions in factor and product markets are reflected in stronger inflationary pressures.

While there is not much that the ECB can do about differences in inflation with its single monetary policy, we argue that they are worrying for at least two reasons.

First, meeting the target of a 2 per cent maximum inflation rate with a fairly large inflation differential across countries means that in the low inflation countries – i.e., according to the above arguments, those that are richer and/or in low phases of their business cycles – one must actually have deflation. Deflation can be severely contractionary if nominal wages are downward rigid, i.e. if people resist nominal wage cuts. The maximum rate of deflation that can then be achieved is the rate of growth of labour productivity, which may be quite low at low phases of the business cycle. This effect is compounded by the fact that, given a common nominal interest rate imposed by the ECB, deflationary countries will face a higher real interest rate in the short run than inflationary countries.

Second, to the extent that the ECB's policy is tailored to a median, or mean European country, the wider the differences across countries, the greater the difference between the ECB's policy and the one most preferred by a given country, and the greater the proportion of countries which are not satisfied with the ECB's policy. Therefore, it is important that asymmetries across countries be limited if one wants to preserve the political stability of the system.

A natural answer to these worries is that fiscal policy should be used to alleviate cross-country asymmetries in business conditions. In particular, countries that have a strong expansion should engineer a fiscal contraction.

Table 3.3 looks at government financial balances. Three conclusions emerge. First, while booming countries tend to run less of a fiscal deficit, this is largely due to automatic stabilisers and there does not seem to be much of an effort, except in the case of some smaller countries which are running fairly high surpluses (Finland, Ireland, Sweden). Second, there remain large imbalances. For example, the deficit is higher in high-growth Spain than in the Benelux. Third, despite the strong expansion that has prevailed between 1998 and 2000, in many major countries there is still a deficit, suggesting an expansionary fiscal policy.

Table 3.3
General government financial balances (as a percentage of nominal GDP)

Country	1998	1999	2000[a)]
Austria	– 2.2	– 2.1	– 1.5
Belgium	– 0.9	– 0.7	0.0
Denmark	1.1	3.1	2.4
Finland	1.3	1.8	6.7
France	– 2.7	– 1.6	– 1.4
Germany	– 2.1	– 1.4	– 1.0
Greece	– 2.5	– 1.8	– 0.9
Ireland	2.2	2.1	4.5
Italy	– 2.8	– 1.8	– 1.5
Netherlands	– 0.7	1.0	1.3
Portugal	– 2.3	– 2.0	– 1.7
Sweden	1.7	1.8	4.0
Spain	– 2.6	– 1.2	– 0.4
United Kingdom	0.4	1.3	1.9
Euro area	– 2.2	– 1.3	– 0.7
European Union	– 1.6	– 0.7	0.0

[a)] Excluding UMTS.

Source: OECD, EU Commission.

This suggests that national authorities have few incentives to design fiscal policies to stabilise their economic fluctuations. In particular, this means that in an expansion they are not running enough of a surplus and consequently imbalances across countries are too large. In the next section we discuss why this may be the case.

2. The Risk of Easy Fiscal Policy During Expansions

According to many analysts, for many European countries one of the most salient benefits of belonging to European Monetary Union is the elimination of inflationary biases in the use of monetary policy. A benevolent government will be subject to such a bias to the extent that it tries to increase the employment level beyond its natural rate by exploiting a short-run trade-off between inflation and unemployment. However, such a

trade-off exists only if inflation is unanticipated. In the long run, the government's incentive to inflate is reflected in people's inflationary expectations, and the economy ends up at a higher rate of inflation without having achieved the attempted increase in employment.

The inflationary bias is the higher, the greater the desired employment level relative to its equilibrium level, the more the government cares about employment relative to inflation, i.e. the lower the welfare cost of inflation, and the higher the inflation increment needed to achieve a given increase in output.

If the government cannot commit itself in advance to the future stance of monetary policy, it will set it on a discretionary basis so as to exploit the short-run trade-off between employment and inflation. On the other hand, commitment devices such as constitutional rules or central bank independence permit getting around this trade-off, because they allow policy to take a longer view and to embody the fact that actual behaviour must be reflected in people's expectations.

It is now widely believed that these incentives no longer exist because monetary policy is in the hands of the European Central Bank which has an explicit mandate of price stability. National governments no longer control, directly or indirectly, the money stock. In effect, European Monetary Union is one of the commitment devices allowing to get rid of the inflation bias.

Contrary to much popular belief, however, this does not mean that the ECB alone controls the inflation rate and that national government's decisions are irrelevant. In fact, this is only true in the long run in the sense that the rate of increase of the price level cannot differ from the growth rate of the money stock, otherwise real money balances would either explode or shrink without limit.

In the short run, a national government can inflate the economy even though it no longer controls monetary policy. It just has to stimulate aggregate demand, for example by running a larger fiscal deficit. Indeed, any instrument which boosts aggregate demand will be enough to move the economy along its short-run inflation/output trade-off.

Despite the loss of control of money, a government disappointed with its average employment performance has the same incentive to boost aggregate demand by injecting fiscal stimulus into the economy. This means too high a deficit in recessions and not enough fiscal consolidation in expansions.

These incentives may be compounded by the public's psychological perception that national governments are no longer in charge of fighting inflation, so that they will not be held accountable for inflationary tensions.

How do national governments' incentives for providing fiscal stimulus interact with the central bank's reaction to inflationary pressures?

In a world without frictions, the central bank could impose a huge penalty for any deviation of inflation from its official target. That is, if inflation exceeded such a target even by a tiny amount, it would impose a huge increase in interest rates in order to cool the economy down enough to bring inflation back within the desired range. Recognising that, governments would refrain from fiscal stimulation, as they would expect that any increase in aggregate demand associated with their actions would be offset by an equivalent reduction in aggregate demand due to the response of the monetary authorities.

In practice, however, such razor-edge rules are impossible to implement, if anything because inflation is measured with a lag and because the components of aggregate demand such as investment and consumption also respond with delays to changes in nominal interest rates. So a better representation of a central bank's policy is that its policy instrument (typically, the nominal interest rate) reacts to the inflation rate and perhaps the output gap.(See the box on Taylor rules).

A national government's incentive to inflate by using fiscal policy will nonetheless depend on monetary policy: the greater the central bank's reaction to inflation and to the output gap, the lower the government's incentive to inflate. If the central bank's policy is such that inflation will eventually be brought back to its long-run target, then the government's lack of credibility does not generate inflation in the long run. However, depending on the welfare costs of running budget deficits, the economy ends up with an inadequate policy mix of too easy a fiscal policy and too tight a monetary policy. This results in excessively high real interest rates and excessively high government debt.

What happens if such an economy joins a monetary union? Monetary policy will now only react to union-wide aggregates. In particular, it will react much less to specific developments in a given country. As a result, a country tempted to run a deficit will take into consideration that the monetary backlash against its fiscal stimulus will be much weaker. In other words, the short-run output-enhancing effect of such fiscal stimulus is stronger in the monetary union than if the country had an independent central bank of its own. As a result, the temptation to inflate is higher, which implies higher deficits and greater inflationary pressures.

If all national fiscal authorities independently give in to the incentive to run a much too easy fiscal policy, then the ECB ends up facing a tougher challenge than any independent national central bank in that it will have to combat an even more expansionary fiscal policy, which – in the long run – will lead to bigger imbalances between fiscal and monetary policy.

But this is not the end of the story. For there are strategic complementarities between fiscal expansion at home and fiscal expansion abroad. Despite some direct cross-country spillovers on aggregate demand, an easier fiscal stance abroad tends to increase the aggregate price level and Euro-area interest rates, thus making it more desirable to expand at home. And this is reinforced by the Euro-area monetary contraction associated with fiscal expansion abroad.

Note that smaller countries have a greater incentive to pursue fiscal stimulus than larger ones because their policies have a lower impact on Euro-area wide aggregates and therefore trigger a lower counter-inflationary reaction by the ECB. As a result, one may observe long-lived imbalances between small and large countries.

While we have mostly focused on output and employment stabilisation, similar incentives to run high budget deficits are induced by non-anticipated changes in the price level of the Euro area as a whole due to fiscal imbalances in some countries. These changes in the price level reduce the real value of public liabilities, therefore causing a wealth transfer from bond holders to governments.

3. The Risk of Overly Restrictive Fiscal Policies in the Current Downturn

EMU is not without instruments to prevent excessive fiscal stimulus. The 'stability pact' is the main one, but many individual countries have also committed themselves to reach balanced budgets over time in the framework of the 'stability programme'. These instruments are, however, far from perfect. Among their many deficiencies one seems to be particularly damaging in the present circumstances, i.e. that specific fiscal targets are not explicitly made contingent on the business cycle.

The three per cent upper boundary on the deficit/GDP ratio established by the stability pact is unlikely to bind in expansions. This strongly reduces the scope for fiscal consolidation in good times. With a cyclically corrected target, the effort by individual governments to reach fiscal discipline would be much more transparent.

By the same token, within the stability programme, individual countries commit themselves to fixed fiscal targets over time; i.e. these targets are not defined contingent on the business cycle and underlying assumptions about the effect of specific fiscal measures. Thus, any unanticipated economic event (a world recession, a stricter US monetary policy and the like) automatically offers an excuse to re-contract and modify targets, with little or no relation to the original commitment.

Consider Table 3.4, based on data of the European Commission, reporting both the actual and the

Table 3.4

Budgetary outlook for the Euro area (% of GDP)

	1998	1999	2000	2001	2002	2003
Actual budget balance (without UMTS proceeds)	– 2.2	– 1.3	– 0.8	– 1.1	– 1.4	– 1.0
Cyclically adjusted balance	– 2.0	– 1.3	– 1.3	– 1.3	– 1.4	– 1.0
Cyclically-adjusted primary balance	2.7	3.0	2.8	2.6	2.6	2.7
Growth rate	2.9	2.7	3.4	1.6	1.3	2.9

Source: Based on the figures of the Commission services.

cyclically-adjusted budget deficits. According to these figures, despite the good growth record in the years between 1998 and 2000, on average the structural progress on the road to fiscal consolidation was extremely slow. The cyclically-adjusted deficit remained as high as 1.3 per cent of GDP. Cyclically adjusted primary surpluses, excluding interest payments, actually fell in 2000 relative to 1999, despite the higher growth rate. While cyclically adjusted figures are to some extent arbitrary, and therefore potentially subject to cosmetic manipulation, the message from Table 3.4 is quite clear: the decline in the actual deficit in those years is not to be confused with structural improvement. But this makes future fiscal targets extremely difficult to meet in practice, although, in light of our considerations, attempts to stick to balanced-budget targets in the next few years should be welcome.

However, our forecasts – as well as the forecasts by virtually all international institutions – predict a severe slowdown in 2002, and the objective of fighting this slowdown should also be given proper weight. Given the world-wide nature of the slowdown that will also affect all EMU countries, it is feasible, and indeed desirable, to counteract it mainly with monetary policy. European policymakers should cut interest rates, rather than relying on fiscal policies, for which the room for manoeuvre is much more limited, and because fiscal stimulus would run counter to the long-run consolidation objectives.

But at some point monetary policy may prove ineffective, particularly if very low nominal interest rates are matched by low inflation. To avoid the risk of pushing fiscal policies into dangerous corners, it may be counterproductive to pursue fiscal consolidation at all cost, in the midst of a slowdown, even if such consolidation may be regarded as a high-priority long-term goal.

For the next two years, on average, national governments should simply let automatic stabilisers work, that is, they should not counteract the loss of fiscal revenue and the increase in welfare spending caused by the macroeconomic contraction. They should not, however, provide further stimulus. Discretionary fiscal policy measures, while effective, have two major drawbacks. First, once government spending is increased and/or taxes are cut, these measures are usually very difficult to reverse. The progress of the last few years in fiscal consolidation may be put at stake. Second, the adoption and implementation of such measures is usually subject to lags, and their timing may end up being wrong.

We therefore advocate a 'neutral' policy stance in light of the short-run need for fiscal stimulus, without compromising the long-run need for consolidation. The balance between these two needs may be different from country to country. In some cases, the long-run consolidation should be given higher priority over short-run stabilisation. Yet, it is quite clear that stabilisation and consolidation require much more than looking at quantitative targets in terms of debt and deficits. They are likely to require reforms of tax codes and spending structure, efficiency standards in the provision of public goods, and a rethinking of the scope and scale of government intervention. While reforms are hard to implement at times of slow economic growth, it is not obvious that their further delay will help in any way the countries that mostly need them – not surprisingly, the countries in which growth rates have been consistently the lowest during the past few years.

4. A Proposed Framework for Fiscal Policy

As argued above, fiscal policy targets should be defined in a framework explicitly designed to separate structural from cyclical deficits. As objectionable and rough the measurement of these two deficits may be, a cyclically-corrected deficit provides better guidance on the formulation of targets and the assessment of fiscal performance than the ratio of the general government deficit to GDP.

For each year, countries should decompose the overall deficit into these two components:

$d = s + c$,

where d is the total deficit, s is the structural deficit and c the cyclical one. The structural deficit would then follow a pre-determined time pattern independent of the business cycle. For example a highly indebted country might want to reduce it by, say, one percentage point a year on average. The other component of the deficit, c, should be allowed to vary with the business cycle.

5. Summary

The following points summarise the main findings and recommendations of this chapter.

- Because business cycle fluctuations are not identical across countries, fiscal policy will retain an important stabilisation role. In particular, this implies fighting inflation in booms. It is incorrect to think of inflation as the sole business of the ECB.
- Inflationary bias may arise in the setting of fiscal policy; it is likely to be stronger in a monetary union with nationally set fiscal policies than in a closed economy. Within the union, it is more likely to happen in smaller economies.
- It is important, therefore, to design institutions for the commitment and coordination of fiscal policies in order to mitigate such biases.
- These considerations are in line with the observation that little fiscal effort has been made in the last expansion, following large deficits in the mid-nineties. To enhance the transparency of commitments by national authorities, fiscal targets should be made explicitly contingent on the business cycle.
- In order to reconcile the need for fiscal stabilisation with that of avoiding a severe recession, we advocate a 'neutral' stance in the next two years, i.e. letting automatic stabilisers work without engineering further fiscal stimulus.

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Prices, Wages and Inflation after the Euro – What Europeans Should or Should not Expect

1. More Trade and Fewer Price Differences

The disappearance of European national currencies is likely to bring about a number of important changes in the cross-border economic relations within Europe. Recent empirical research, for instance, has documented that creating a currency union tends to have a sizeable impact on the amount of cross-border trade – the impact ranging from a 50 to 300 per cent increase in trade flows. The introduction of the euro should then lead to strong intensification of exchanges across countries in the Euro area, fostering economic integration.

By the same token, a vast empirical literature has documented that differences in the price charged for identical goods tend to be larger when comparing market locations using different currencies, relative to market locations within a single-currency area. It is quite plausible that the euro will lower price differences across countries – as crossing a European border will no longer imply switching currencies. Although language and other barriers may still be at work, the prices for goods and services will be somewhat less dispersed across countries in the Euro area.

There are strong arguments suggesting that larger trade flows and a reduced variability of prices are good news for the European economy. To the extent that they result from the elimination of barriers to trade and transaction costs – due to switching currencies across countries – these phenomena are bound to increase efficiency in both production and consumption. However, they may also be costly for some groups, as reduced market segmentation can erode the monopoly power of producers, and bring about shifts in production patterns and the relative price of labor and capital.

It is difficult to forecast the magnitude and timing of these effects with any precision. It is nonetheless useful to address a number of basic questions on what is likely to happen when the introduction of euro bills and coins will make differences in price and wage levels clearer and more transparent. Some may wonder whether wage differentials in euros for similar jobs (perhaps in the same company) are to be considered unfair. Others may expect a quick convergence of prices towards common levels – the argument is sometimes made that prices of individual goods will converge downward to their lowest level in the euro area.

A few related questions have already become a political issue in the first two years in the life of the new currency, as national inflation rates have not converged completely. One question that has been hotly debated is whether inflation differentials are a destabilising phenomenon, so that governments should be required to fight them in all circumstances by using fiscal instruments. In what follows we will examine these questions in detail.

2. Will Differences in Prices Disappear?

The euro will surely foster convergence of prices to common levels, but only up to a point. The main idea here is that introducing a common currency is equivalent to reducing transaction costs, since a single currency removes the cost of exchanging currencies, the computational costs of making price comparisons across different currencies, as well as the risk associated with exchange rate volatility. Lower transaction costs mean more opportunities to arbitrage across markets. This should clearly reduce the scope for price differentials in the markets of goods that can be shipped from one market to another at low costs.

This view is correct but, unfortunately, there are many barriers to trade other than switching currencies. For instance, there may be substantial differences in taxes and regulation; more crucially, many final goods come to the consumer together

with services (such as technical assistance), which are provided only in specific locations. Hence, after adopting the common currency, even accounting for progress in market integration and fiscal harmonisation, *we should not expect complete convergence of prices.*

This conclusion should not come as a surprise, once we think about the importance of wholesale and retail trade services in bringing goods from producers to consumers. Based on input-output tables for the United States and Europe, for instance, the *average* margin of these accounts for 50 per cent of the price to consumers. In some cases these margins are as high as 80 per cent. A large fraction of distribution margins consists of services that employ local inputs intensively – including rents of office and store space, wages of local employees, fees of local professionals and the like. To the extent that the price of these services varies across locations, cost differences related to distribution services are not going to disappear with a common currency.

Moreover, firms with market power will charge a markup on top of the above costs. Unless the degree of competition is very high, firms will take advantage of impediments to arbitrage due to distribution and transportation costs. Thanks to these impediments, firms can increase their profits by charging different prices (and therefore adjusting their profit margins) according to local market conditions.

As is now well understood, producers and wholesalers "price to market". Striking evidence of this behaviour is, for instance, provided by the reaction of firms to movements of the exchange rate. As documented by recent studies, only a fraction of exchange rate movements is translated into price movements, and this fraction is between 50 and 80 per cent at import-price level, depending on the market.

Pricing to market is key to understanding why, contrary to a popular view, *prices of individual goods will not converge to their lowest level in the Euro area.* When barriers to arbitrage are removed or reduced, firms with market power will likely respond by adjusting their mark-ups and profits in all markets. They will increase prices in some locations, while decreasing them in other markets. There is no particular reason to take the lowest price as the benchmark. These decisions will ,of course, have distributive effects. Some consumers will be worse off, others will be better off with these price changes.

The regulation of firms with market power is a key area for EU-wide and national policymaking with large potential welfare gains for European citizen. To the extent that they reduce market segmentation, policies in favour of competition, especially in the distribution sector, can provide a sizeable push to price convergence in Europe.

Yet one should not conclude that a strong price convergence is always desirable. European consumers may be worse off if they are not charged the same price for an identical good everywhere. In fact, a single price can hide massive cross-subsidies from consumers in locations with low distributive costs to consumers in locations with high costs. These cross-subsidies may not be efficient, let alone acceptable to European consumers.

3. Will the Price Level be the Same Everywhere?

Effective international arbitrage in the goods markets cannot guarantee by itself convergence in the price level as measured by the consumer price index. This is because only a small fraction of goods are traded internationally. Due to transportation costs, most goods are produced and consumed locally: they are nontradables.

Price divergences for nontradables are usually explained in terms of productivity differentials, according to the theory attributed to Balassa and Samuelson (henceforth BS). In a nutshell: consider two economies, integrated in the world markets, with the same level of productivity in the sector producing nontradables. In the sector producing tradables, however, productivity is higher in one economy than in the other. Now, if international markets of capital and goods are competitive, the rate of profits and the price of tradables will be the same across these countries. What will be different is the real wage – which must be higher in the economy in which workers in the tradable sector are more productive. But higher wages in this economy also mean that local producers need to charge a higher price for nontradables – as there is no productivity advantage in this sector. Clearly, international arbitrage can do nothing to prevent price differentials for goods that are not traded across

borders. The overall price level – combining the prices of both tradables and nontradables – will therefore be higher in the economy with higher productivity.

There are several variants to this story. Since a high level of income is usually associated with high productivity in the tradable goods sector, the price of nontradables should be higher in richer countries. Moreover, to the extent that governments spend proportionally more than the private sector on nontradable goods, economies with a larger government sector may have higher nontradable prices because of a stronger demand for these goods.[1]

Finally, higher productivity of national exportable goods may imply a fall in their international prices, as producers with a cost advantage will try to sell more abroad. In this case, a higher price of domestic nontradables (because of the considerations above) may be offset by a fall in the price of national tradables. In principle, the effect on the CPI can translate into a depreciation of the real exchange rate (see Corsetti and Dedola 2001).

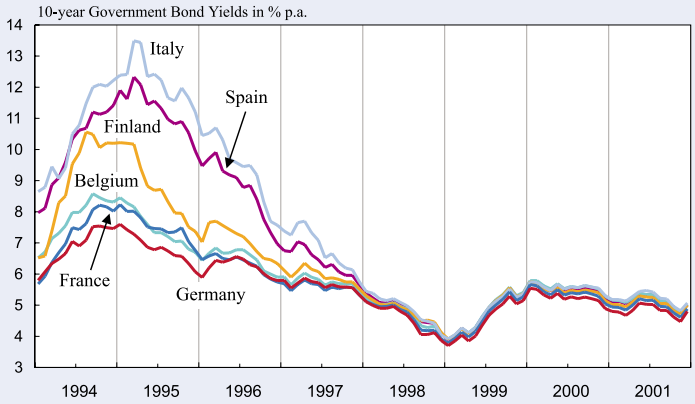
It is worth stressing that the BS explanation of price differentials works in the medium and long run. Not only does it depend on emerging productivity differentials – which are, of course, associated with technological change and new investment; it also crucially relies on high labour mobility across sectors, or some other mechanism keeping wages in line in the whole economy. If labour mobility across sectors is imperfect and/or low in the short run (due, for instance, to the need for retraining or a mismatch of workers' skills), and productivity differentials lead to wage differentials, the BS mechanism does not work. Indeed, there are reasons to believe that the short-run dynamics of nontradable prices are strongly influenced by other forces.

The main point stressed by the BS theory is that price levels will be different among countries whose productivity levels are different. As an implication, we may expect price levels to converge to the extent that productivity levels also converge across countries. Is there any reason to expect the introduction of the euro to affect productivity differentials in Europe? We have already noted that a common currency is supposed to promote market integration and efficiency, enhancing trade flows in the medium and long run. But there could be much more to this issue.

As shown in Figure 4.1, interest rates have converged dramatically in recent years.[2] The announcement and introduction of the euro eliminated all expectations of depreciation of traditionally weak currencies – virtually wiping out exchange rate risk – in the Euro area. The process greatly benefited the countries that had to pay the highest risk premia in the past, such as Italy, Spain and Finland. Given these changes in the relative cost of capital, it is plausible that the introduction of the euro has raised capital accumulation in the high-interest rate countries above what would have been had the EMU project failed – in part reallocating resources away from countries with the lowest pre-euro risk premium, such as Germany. As high capital accumulation generates productivity gains and wage

Figure 4.1

CONVERGENCE OF LONG-TERM INTEREST RATES IN EUROPE



Source: National sources.

[1] But note that the theoretical basis for the latter argument is not strong: in the simple version of the Balassa-Samuelson hypothesis presented above, goods demand plays no role at all.

[2] Note that the convergence of nominal interest rates is an important efficiency criterion in a currency union. It is sometimes argued that real rates should converge, where real rates are defined as nominal rates minus the respective national inflation rates. This claim is unwarranted, however, since a country's relative rate of price increase is part of this country's "own rate of interest". In an efficient capital market the marginal value product of a country's capital plus this country's inflation rate should be equal across all countries, and nominal interest convergence ensures that this condition will be met. If convergence of real interest rates is postulated, the real rates would have to be defined in such a way that the rate of increase of a *common* price index is subtracted from the national nominal rates. Obviously, real rates defined in this way would show the same perfect convergence as the nominal rates depicted in the figure.

growth, a faster price convergence towards the German level is the likely consequence.

4. How Large were Price Differences in Europe before EMU?

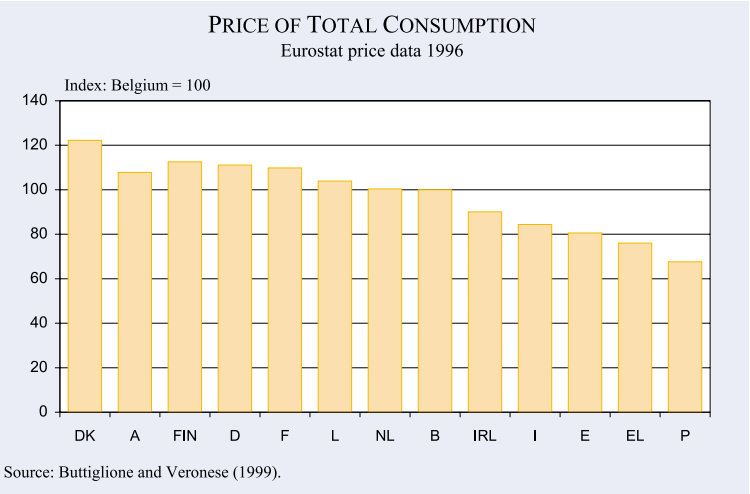
What was the gap in price levels across Europe before the euro? How strong an effect should the euro have to bring about convergence in prices and price levels? Addressing these questions requires the use of special datasets, including detailed information on prices of individual goods recorded simultaneously in different countries. Using exchange rates, one can then convert local prices into a common currency, and test whether a unit of this currency has the same purchasing power in different locations – i.e. test Purchasing Power Parity theory (henceforth PPP). One such dataset is produced by Eurostat.

Based on the Eurostat dataset, Figure 4.2 shows the prices of total consumption, industrial goods and services for the year 1996, well before European monetary unification. The first graph suggests a striking conclusion. A group of European countries have consumer prices that are actually quite close to each other. On average, deviations from purchasing power parity seem to be only minor for Austria, Belgium, Finland, France, Germany, the Netherlands, Luxembourg and Sweden – even allowing for differences plausibly due to higher tax rates in the Scandinavian area. The price of total consumption is lower, however, (by about 20 per cent) in Ireland, Italy, Spain and the UK. More distant are Greece and Portugal.

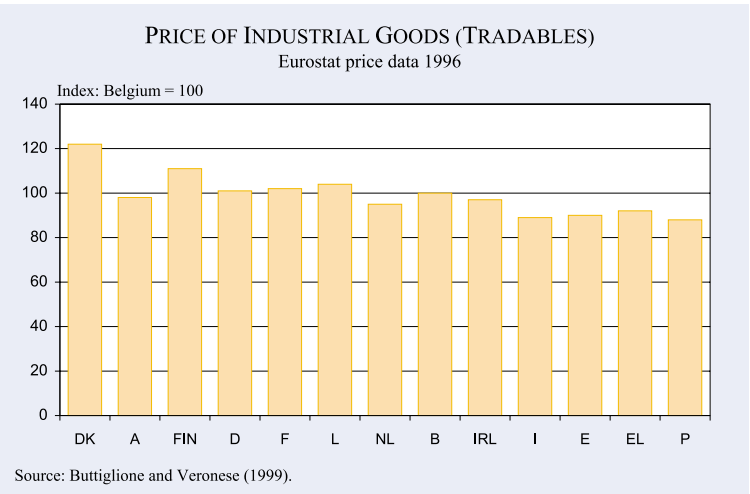
In the same area of the Euro zone where deviations from PPP are small, the average price of both industrial goods and services is also very similar across national borders – see Graphs b and c, which reproduce the calculations by Buttiglione and Veronese (1999). If we consider industrial goods as representative of tradables, this is evidence that markets are quite integrated, and disciplined by arbitrage.

Figure 4.2

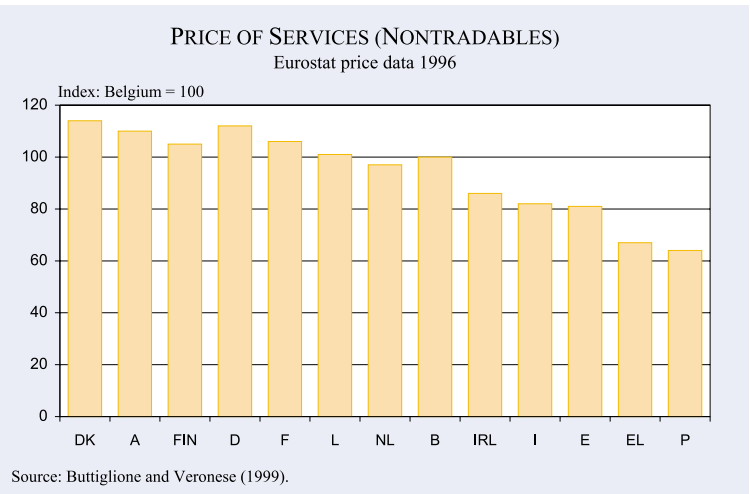
Deviations from Purchasing Power Parity



Source: Buttiglione and Veronese (1999).



Source: Buttiglione and Veronese (1999).



Source: Buttiglione and Veronese (1999).

In Ireland, the UK, Italy, Portugal, Spain and Greece, the price of services (nontradables) is, however, considerably lower than in the rest of the sample. For some of these countries, it is realistic to assume that the productivity in the traded-good sector is lower than in the other countries in the sample (at least in 1996). Then the price differential for non-tradables would be consistent with the BS hypothesis. The price index of industrial goods is, however, not too different in the sample. The fact that industrial prices are slightly lower in the second set of countries may simply reflect the lower cost of services employed in producing and distributing tradable goods.

To the extent that we anticipate a reduction in the technological and productivity gap within Europe, we can also expect further convergence in the level of consumer prices – driven by convergence in the price of nontradables. Although there are different views on the strength of this effect, it will be by no means negligible. Some estimates show that the inflation rates in fast growing countries such as Ireland and Finland can be expected to exceed the German inflation rate by about 2.5 percentage points in the foreseeable future, and that the average Euro area inflation rates can be expected to exceed the lowest inflation rate by one percentage point.[3]

Looking into the different categories of goods in greater detail, recent empirical work has yielded a further striking conclusion. While there are no major deviations from the average price level of tradables in the Euro area, the *prices of individual identical goods* are actually quite dispersed. For each pair of countries in the Eurostat sample, Crucini, Telmer and Zachariadis compare the price of a large set of goods for each pair of countries. Comparing prices in say, France and Germany, it turns out that approximately one half of the goods in the sample are charged a higher price in France, while the other half are charged a higher price in Germany. Most interestingly, the same result holds for virtually every possible pair of countries (see Crucini, Telmer and Zachariadis (2001)).

Recall that in 1996, exchange rates in the Euro area were allowed to fluctuate within a wide band. If differences in prices were due only to exchange rate movements, goods should have been systematically under-priced in countries with a weak exchange rate, while systematically overpriced in countries with a strong exchange rate. The fact, that the evidence does not support this conclusion suggests that firms actively engage in pricing to market, offsetting exchange rate movements with location-specific pricing strategies.

With a strong caveat on the quality of information in the dataset, this result strongly points to market segmentation as a primary feature of the price landscape in the Euro area.

Additional important lessons can be learned by looking at price dispersion over time, and by comparing the Euro area with the United States. This is done by Rogers (2001), using a different dataset produced by the Economist Intelligence Unit. This dataset includes prices of 186 goods in 28 cities in 26 countries. His main findings are reproduced in the table below.

According to the evidence in the table, during the 1990s the Euro area experienced a significant convergence in the average price of tradable goods. The variability of these prices across locations has halved, from 1.2 to .6 (a similar conclusion is also suggested by the analysis of Buttiglione and Veronese, based on Eurostat data). It is reasonable to interpret such convergence as an effect of trade liberalisation within the Single Market. However, the table also shows that the variability of nontradable prices slightly increased over the period. As a result, there is almost no convergence in the overall consumer price.

Comparing data from across the Atlantic, the variability of prices of tradables is lower in the United States than in the Euro area – although the dfference is declining over time. A long history with a

Convergence of prices: Euro area vs. United States
Standard deviation of prices across locations

Price index	1990	1995	1999
Euro area			
Overall	0.12	0.12	0.17
Tradables	0.12	0.08	0.06
Nontradables	0.27	0.33	0.31
United States			
Overall	0.16	0.15	0.17
Tradables	0.05	0.04	0.04
Nontradables	0.51	0.52	0.57

Source: John Rogers (2001).

[3] See Sinn and Reuter (2000).

common currency, integrated goods markets and high mobility of productive factors clearly helps to explain the lower price variability in the United States.

However, it should be stressed that, at the end of the 1990s, the Euro area was not too far from the United States: in 1999, the tradables' price dispersion coefficient is .6, as opposed to .4 for the United States. If we take the US economy as a benchmark for the future of the Euro area, the message from this study is quite clear: a large portion of the convergence process in the goods market of the Euro area may have already taken place.

5. Should we Worry about National (or Regional) Differences in Inflation Rates?

The first three years in the life of the euro have already shown that different countries and regions in the Euro area need not have the same economic performance in terms of output, employment and inflation. Indeed, Figure 4.3 shows that, relative to the 1999–2001 average growth rate of output in the area, Germany and Italy have been growing at least half a percentage point more slowly, while Finland, Greece and Spain have been growing about one percentage point faster. Ireland has been an amazing outlier, surpassing the average growth rate by 7 percentage points.

Inflation rates have also differed markedly. As shown in Figure 4.3, over the 1999–2001 period, inflation was at least half a percentage point higher than average in the Netherlands, Portugal and Spain. It was 1.4 percentage points higher than the average in Ireland. Inflation in Austria, Finland and France was at least one percentage point lower than the Euro area average.

What explains these differences? In the long run, there is little doubt that growth differentials reflect technology and the accumulation of productive inputs. Fast growth stems from innovation, investment and the growth of employment. These topics will be analysed elsewhere in this report. Here we focus on inflation differentials.

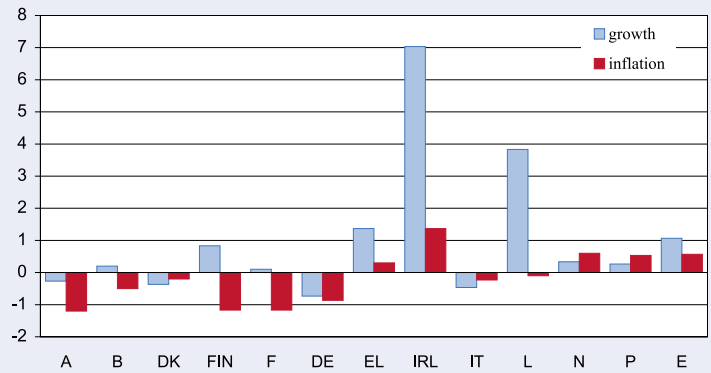
As discussed above, the Balassa-Samuelson hypothesis reveals a link between technology-driven growth and inflation: countries with the highest productivity gains in the traded goods sector will also be the countries where the price of nontradables will increase the fastest. Hence, their inflation rate will be higher. This theory also suggests that the inflation rate will be systematically higher in lower-income countries than in higher-income countries, simply because the former are catching up with (thus growing faster than) the latter. But this is not the whole story.

Another important key to understanding inflation differentials, and the policy problems raised by them, is the way in which local economies in the Euro area can adjust to asymmetric demand and supply shocks *in the short run*. To clarify this point, suppose that a country or a region in the Euro area experiences a boom in the external demand for its products, and that this boom is regarded, at least in part, as *permanent*. Note that this is a positive and desirable macroeconomic scenario for the country, but in the short run it could produce overheating, pushing employment above the natural rate.

If prices and/or the exchange rate were flexible, an upsurge of demand would cause an immediate upward adjustment in relative prices – corresponding to an appreciation of the real exchange rate. By crowding out part of the boom in external demand, the real appreciation would reduce the risk of overheating for the domestic economy. However, without exchange rate flexibility, and with a limited degree of price flexibility, a real appreciation can only be obtained via a period of higher inflation relative to the rest of the euro zone.

Figure 4.3

GROWTH AND INFLATION DIFFERENTIALS RELATIVE TO THE AVERAGE FOR THE EURO-AREA 1999 - 2001



Source: European Commission.

How can we be sure that inflation differentials contribute to stabilising the economy? After all, for a given interest rate set by the ECB, higher inflation means a lower real interest rate and therefore additional stimulus to aggregate demand in the form of investment or consumption of durables. Clearly, lower interest rates do not "lean against the wind" of excessive demand – and, in the short run, may actually have some perverse effects. However, as the inflation differential persists, the level of domestic prices will keep rising, while the real interest rate will only respond to the anticipated rate of price increase. Over time, the *price level* effect will surely prevail over the *growth rate* effect as other European countries will not be willing to buy the nation's products at any price!

Policymakers could, of course, avoid inflation differentials by resorting to an alternative adjustment mechanism – that is a contraction of domestic demand using the instrument of fiscal policy. If they decide to do so, higher demand from abroad would be matched by lower internal demand, reducing the need for a real appreciation. But why should a country give up, say, public goods and government spending on useful public infrastructure because foreigners increase their demand for its national output? Or, why should a country increase tax rates, discouraging private consumption, in the same circumstance? It is quite reasonable to let the market bring the system into a new equilibrium, with a higher domestic price level.

The above argument shows that inflation differentials can actually perform a useful role in a currency union, as a mechanism of adjustment to a new equilibrium with different long-run real exchange rates. The crucial question is, however, under what circumstances it will be wise to let inflation rates 'diverge'.

The argument is sometimes made that inflation differentials as an adjustment mechanism are not appropriate if the original shock to demand is an internal investment or consumption boom. Since the origin of the excess demand is internal – so the argument goes – policy makers should not let it modify the external price of domestic products. The appropriate action is a fiscal contraction. Yet again, one may wonder why good investment opportunities in the country, or preferences for current over future consumption, should cause a country to give up public goods, and increase taxes.

The main point is that, different from the effects of a permanent surge of external demand, the real appreciation associated with a surge of current investment and consumption is likely to be temporary. Over time, a higher capital stock and external debt will induce the country to export more. To the extent that selling more goods abroad causes a fall in their prices, more exports will have a negative effect on the country's terms of trade and depreciate the real exchange rate. With a common currency, the real exchange rate can only depreciate via a fall in prices and wages. Thus, if prices and wages increase in the short run, they must then fall in the long run.

The problem therefore lies not in the origin of the shock, but in plausible asymmetries in the speed and cost of adjustment in nominal prices and wages. It is well understood that nominal prices and wages go up easily when demand is high but come down with some difficulty when demand is low. If inflation differentials fuel demands for higher nominal wages, national policymakers may be concerned about the cost of reverse adjustment in the future. Downward nominal rigidities may cause quite a bit of macroeconomic distress.

Note that the problem is not specific to domestic (as opposed to external) demand booms. Temporary, as opposed to permanent, external demand shocks will raise the same concerns, as they have a small impact on the long-run exchange rate. Domestic demand policies leaning against the wind are therefore preferable to adjustment through inflation when the required adjustment in prices and wages is temporary, and there are downward nominal rigidities.

Which macroeconomic shocks require a permanent appreciation of the real exchange rate? Asymmetric permanent productivity shocks may be expected to have the same effect on the real exchange rate as the catching-up of low-income countries with high income-countries: in either case, in the long run, relative prices should move according to the BS hypothesis. Also, to the extent that the conversion rates of domestic currency into the euro set at the end of 1998 were 'out of line', we may expect some real exchange rate adjustment to long-run equilibrium across different regions of the union. But asymmetric demand shocks, asymmetric implications of aggregate shocks to the Euro area, and aggregate productivity shocks (common to both tradables and nontradables) *do*

not require a permanent appreciation of the real exchange rate.

Even for shocks that do so, it is extremely hard, in practice, to target the new equilibrium real exchange rate – i.e. to determine the right size of inflation differentials in the adjustment period. One should keep in mind that upward adjustment in prices – whether or not towards equilibrium – may *per se* trigger additional shocks to aggregate demand. For instance, a high increase in nontradable prices may be associated with a boom in real estate prices. As the value of domestic collateral is inflated, firms and households may expand their spending 'excessively', planting the seeds of future financial troubles.

Many countries in the Euro area have experienced overheating as recently as the year 2000. The list includes Greece, Spain, Ireland, Luxembourg, the Netherlands, Portugal and Finland. For some of these countries, a key factor driving demand close to or above the natural rate of output has been an extremely weak euro, boosting external demand. To the extent that prices and wages are rigid downward, national inflation rates above the Euro area average are hardly to be recommended in this case.

Inflation differentials could nonetheless play a much larger role in the life of EMU if policymakers could effectively promote price and wage flexibility. Under the realistic assumption that wages are less flexible downward than prices, incomes policies could be targeted at insulating medium and long-term wage movements from temporary inflation differentials. Workers may be granted temporary income supplements at times of booms – like a temporary tax cut. The same goal may be achieved by promoting a flexible wage structure with bonuses indexed to productivity.

Aggregate demand will, of course, be stimulated by such measures which fuel rather than reduce, the short-run inflation differential. But this is intentional, as it is supposed to speed up the required adjustment in prices. Moreover, some of these measures will increase the budget deficit, contrary to the view that fiscal authorities should always lean against the wind, and contract it at times of high demand. Yet again, the meaning of these fiscal measures (such as a temporary tax) is to reduce the incentive of workers to demand a permanent increase in nominal wages, while letting relative prices do the adjustment.

One may argue that such policy strategies are 'risky' – as the economy may end up with both fiscal expansion (adding to any initial fiscal imbalance) *and* higher nominal wages. But it is not clear that the risk of high wage demands is lower when the government pursues a fiscal contraction. As is well known, redirecting the budget process take time (so that the required fiscal contraction kicks in too late), and may create social tensions vis-à-vis raising prices.

The real alternative faced by European countries is therefore between frequent use of contractionary fiscal policy, aimed at preventing overheating of the economy, and policies promoting wage and price flexibility in order to reduce the long-run costs of inflation differentials. The importance of this issue can hardly be overstated.

6. Price Stability and Inflation Differentials

The role of wages and inflation differentials in the macroeconomic adjustment within the Euro area will acquire increasing importance over time. Misunderstanding the basics of the adjustment process could easily lead to severe mistakes and unnecessary pain.

A potentially important issue is suggested by the fact that the price stability objective of the ECB is a time-invariant and asymmetric range of average inflation in the Euro area – to be kept below 2 per cent in the medium run. Based on the Balassa-Samuelson effect and the observation of previous productivity and inflation trends at national levels, this average is likely to coincide with large differences in national inflation rates. As it will be impossible for the ECB to reach the target inflation rate in each country of the Euro area, European monetary authorities will have to accept a considerable amount of inflation in some countries if they want to avoid the risk of pushing the low-growth countries into deflation.

An alarming picture is depicted by Sinn and Reutter (2000), who predict that keeping average inflation below 2 per cent will imply national inflation rates as high as 3.5 per cent in fast growing countries like Finland and Ireland, but as low as 1 per cent in Germany where productivity growth and inflation are the lowest in Europe. Note that a mere 1 per cent headline inflation for Germany

would be well below the inflation rate that had previously been pursued by the Bundesbank.

Once measurement errors in prices due to quality improvements are taken into account, implementing Euro-area wide policies implying a 1% inflation rate in Germany could easily push this country to the verge of deflation. Given that deflation is harmful for a multitude of reasons, the ECB may want to avoid policies that create a bias towards it in (important) regions of the union. In light of the current diversity of European price and productivity levels, a 2 per cent upper bound on inflation may simply be too tight.

Even if convergence in the level of productivity will make the above argument less compelling in time, the possible inflation implications of asymmetric shocks call for wisdom in the application of the monetary strategy of the ECB. To the extent that they help the adjustment to shocks in the short run, temporary hikes in national inflation rates could be safely ignored when setting the monetary policy for the Euro area as a whole, without reducing the nominal anchor to keep headline inflation within the 2 per cent range.

Domestic authorities, however, should take extra care to prevent inflation differentials from feeding into changes in nominal wages and prices that tend to be inflexible downward. The ECB would definitely be concerned with this development, pointing to future troubles. Yet again, reform of the labour markets and income policies are at the core of macroeconomic stabilisation in the Euro area.

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GROWTH AND PRODUCTIVITY

1. Is the United States Increasing its Lead?

At the end of World War II a substantial fraction of Europe's capital stock was damaged and Europe found itself in a state of economic backwardness compared to the United States. In the following years, under the impulse of reconstruction policies, US aid, and European integration, European countries started closing the gap at an extremely rapid rate.

Such a convergence process is what we should expect to observe under the assumptions of technological diffusion across countries and international capital mobility. As long as Europe is less rich than the United States, i.e. has less capital, the return on investing in Europe should be higher than in the United States, and Europe should accumulate capital more rapidly than the United States. However, this is not what happened. The period of convergence stopped in the mid-1970s when oil shocks and rising unemployment started taking their toll. Given that productivity per capita was still lower in Europe than in the United States, one should have expected the convergence process to have continued at a moderate pace. Instead, the United States exhibited a better growth performance in the 1980s and the 1990s than Europe. This phenomenon is displayed in Table 5.1.

Only Luxembourg and Ireland managed to outperform the United States. With respect to other countries the United States extended its lead. Table 5.2 shows the relative gap between per-capita GDP in European countries and the United States. These numbers eliminate population growth as a source of growing GDP differentials between Europe and the United States.

Table 5.1

Annual average GDP growth rate, constant 1995 PPP USD

	1970–1980	1980–1990	1990–2000
Germany	2.68	2.22	1.53*
France	3.21	2.33	1.77
Italy	3.53	2.19	1.50
Netherlands	2.88	2.16	2.84
Belgium	3.31	2.01	2.05
Luxembourg	2.55	4.36	5.15
United Kingdom	1.91	2.66	2.09
Ireland	4.63	3.56	6.64
Denmark	2.21	1.92	2.16
Spain	3.47	2.96	2.45
Greece	4.60	1.59	2.23
Portugal	4.63	2.88	2.57
Finland	3.39	3.02	2.03
Sweden	1.91	2.07	1.65
Austria	3.59	2.28	2.03
European Union	2.94	2.36	1.91
United States	3.15	3.14	3.25

* Because of German unification in 1990, the annual GDP growth rate, at constant 1995 PPP USD, is calculated for the period 1991–2000.

Source: OECD Statistical Compendium.

As we can see, in the 1990s Europe lost further ground and in 2000 per capita GDP was 30 per cent lower than in the United States, which was a larger gap than in 1970. Among EU countries a clear

Table 5.2

Per capita GDP relative to the United States, constant 1995 PPP USD

	1970	1975	1980	1985	1990	1991	1995	2000
Germany	0.86	0.87	0.90	0.87	0.88	0.80	0.76	0.70
France	0.75	0.80	0.79	0.75	0.76	0.78	0.73	0.69[a)]
Italy	0.66	0.68	0.73	0.70	0.72	0.74	0.71	0.65[b)]
Netherlands	0.80	0.83	0.80	0.75	0.75	0.77	0.75	0.75[b)]
Belgium	0.73	0.79	0.81	0.76	0.78	0.81	0.77	0.74[b)]
Luxembourg	0.92	0.92	0.89	0.90	1.05	1.11	1.19	1.25[b)]
UK	0.67	0.68	0.65	0.64	0.66	0.66	0.66	0.63[b)]
Ireland	0.45	0.49	0.50	0.49	0.56	0.58	0.64	0.81[b)]
Denmark	0.85	0.85	0.83	0.85	0.80	0.82	0.81	0.76[b)]
Spain	0.51	0.58	0.53	0.50	0.54	0.56	0.54	0.54[b)]
Greece	0.45	0.52	0.53	0.49	0.47	0.49	0.46	0.45[c)]
Portugal	0.39	0.41	0.44	0.41	0.47	0.49	0.48	0.47[b)]
Austria	0.69	0.75	0.79	0.76	0.77	0.80	0.76	0.72[b)]
Finland	0.67	0.73	0.73	0.73	0.76	0.71	0.67	0.71[a)]
Sweden	0.84	0.86	0.80	0.78	0.76	0.76	0.71	0.69[b)]
European Union	0.76	0.78	0.78	0.76	0.77	0.76	0.73	0.70

[a)] Calculated with total population of 1999.
[b)] Calculated with total population of 1998.
[c)] Calculated with total population of 1997.

Source: OECD, Statistical Compendium.

trend of convergence is only visible for Luxembourg and Ireland, while over the last 30 years most of the other countries converged temporarily but than diverged again, in particular during the 1990s.

It may be believed that this latter trend is essentially the outcome of de-synchronisation of business cycles between the two sides of the Atlantic. This may indeed be part of the story. Nevertheless, in 2000, which was, in our view, the peak of the current cycle on both sides of the Atlantic, Europe was considerably worse off (in relative terms) than at the beginning of the 1990s.

2. The Role of the Labour Market

What explains the exceptional performance of the United States in the 1990s? In Table 5.3 the supply determinants of growth are shown for both the United States and Europe. In the United States about half of the 3.4 per cent average GDP growth in the 1990s can be explained by the increase in labour input (per hour) (1.8 percentage points) and the other half by the increase in productivity (per hour) (1.7 percentage points). In Europe growth was only 1.8 per cent, and most of this growth can be explained by productivity gains (1.6 percentage points) while the contribution from additional labour input was very small (0.3 percentage points) and in some countries, such as Germany, even negative. While the United States succeeded in employing a growing labour force and in reducing the unemployment rate, European labour markets were much less flexible, and in many countries unemployment increased and participation rates declined.

Differences in labour market institutions play various roles in explaining the differential growth experience of Europe and the United States in the 1980s and 1990s.

First of all, labour market developments affect changes in labour input. The workforce has risen more in the United States than in Europe due to strong immigration. If the labour market works properly, as is approximately the case in the United States, this implies an equiproportionate increase in labour input, and thus faster growth than in Europe. If the age and skill structure of the immigrants and their participation rates were the same as those of Americans, this growth supplement would be entirely eliminated if one looked at per capita growth. However, this is not the case as immigrants are more likely to be of working age and may have higher participation rates even controlling for their age. On the other hand, they are typically less skilled than natives, which tends to reduce their contribution to growth. Hence their net effect on measured productivity is ambiguous.

In Europe, too, active population has increased due to demographic changes, changes in female participa-

Table 5.3

Determinants of Growth 1990–1999, Comparison between the United States and Europe
Average annual percentage change, in constant prices

	GDP	Labour input	Capital stock	Labour productivity	Change in productivity caused by: Capital deepening	TFP
United States						
1990–1995	2.4	1.4	1.9	1.0	0.2	0.9
1996–1999	4.4	2.1	3.7	2.3	0.5	1.8
1990–1999	3.4	1.8	2.8	1.7	0.4	1.4
Western Europe[a] (D)[b]						
1990–1995[c]	1.4 (1.6)	– 0.4 (– 0.6)	2.3 (3.0)	1.9 (2.3)	1.0 (1.2)	0.9 (1.0)
1996–1999	2.2 (1.7)	0.9 (– 0.4)	2.2 (2.3)	1.3 (2.1)	0.5 (1.1)	0.8 (1.1)
1990–1999	1.8 (1.7)	0.3 (– 0.5)	2.3 (2.7)	1.6 (2.2)	0.8 (1.2)	0.9 (1.1)
of which: high growth countries						
Finland						
1996–1999	5.5	2.3	0.9	3.1	– 0.5	3.7
Ireland						
1996–1999	9.9	5.8	4.7	4.0	– 0.4	4.5

[a] Weighted average of following countries: Germany (1992–95, 1996–99), Finland, France, Ireland, Italy, Netherlands, Norway, Sweden, Spain, United Kingdom. – [b] Germany. – [c] Germany 1992–95.

Source: Oliner and Sichel (2000), calculations by the author.

Box

Growth vs. Level Effects

Many economists involved in short-run macroeconomic analysis express their forecasts in terms of growth rates. However, the growth rate can be high for several different reasons. In particular, it can be high because the economy is adjusting to a shock which has permanently increased the level of GDP by a given amount. For example, an increase in labour market participation by 10 per cent typically increases GDP by 10 per cent. Upon impact, however, the effect is virtually zero as it takes time for the labour market to absorb these new entrants and for firms to accumulate the capital needed to create new jobs. Then, as competition by these new entrants depresses wages, firms will find it worthwhile to create new positions and to invest accordingly. As they do so, GDP rises, i.e. experiences a boost in its growth rate. Over time, however, as these new entrants are absorbed, wage pressure goes up, and the additional flow of job creation and investment gradually dies out. Growth slows, and GDP eventually grows at the same rate as before the shock, being simply 10 per cent higher than if the shock had not occurred. This is what is called a *level* effect. A similar response is observed if there is a permanent increase in the savings rate, for example, which, after a while raises the level of the capital output ratio and of GDP.

In contrast, a permanent increase in the resources devoted to R&D will increase the number of discoveries being made each year, and hence the pace at which productivity grows. This generates a permanent improvement in the underlying growth rate of the economy. For example, the economy may now grow at 3 per cent a year instead of 2 per cent a year forever.

Some economists doubt whether such permanent increases in productivity growth actually do occur in reality. They point out that innovation has decreasing returns and that people eventually run out of good ideas, so that the growth supplement permitted by an increment in resources devoted to R&D would eventually disappear. However, there is no doubt that the growth effects of a permanent boost to innovation are much longer lived than those of an increase in savings or in active population.

tion, and also an inflow of immigrants. But European labour markets, plagued by wage rigidity, did not react with a matching increase in employment. Instead, unemployment has risen. This has tended to push down per capita growth in Europe. Finally, another factor which boosted labour input in the United States, especially in the 1990s, is the fall in the natural rate of unemployment, which seems to have gone down from 6 per cent to 4 per cent. It is not clear what caused this, but some argue that it may simply be a composition effect due to a lower fraction of youth in the workforce (Shimer 1998). The argument is that the young automatically have a higher rate of unemployment because of their higher labour turnover rate. However, since the same phenomenon is taking place in Europe, it should not have differential effects to a first-order approximation.

If Europe had had more flexible labour markets, it would have employed more people and grown faster in the 1990s. Or, alternatively, Europe could have grown at the same rate while investing less, as the United States did, which would have meant higher consumption and higher welfare.

The contribution of an increase in labour input is neutralised if one looks at labour productivity or, better, at hourly productivity, since in this case output is divided by the appropriate labour input. Labour productivity depends on technology – as measured by total factor productivity – and on the capital/labour ratio. Here differences in labour market institutions tend to generate a positive growth differential in favour of Europe, because higher wages induce firms to substitute capital for labour up to the point where labour productivity is compatible with the wage level. When this process takes place, faster capital accumulation is observed than if wages were not rigid. This probably helps to explain why labour productivity rose faster in Europe than in the United States in the 1980s. However, this is nothing to rejoice about, since the extra capital accumulation is in *relative* terms. Total capital is lower than at the full employment level, but proportionately by less than employment.

Changes in the composition of the workforce, or adjustment of the capital/labour ratio to changes in labour market institutions are only transitory phenomena. That is, they change the long-run *level* of output, but not its growth rate (see Box). In the long run, growth depends on the level of technology (which we measure using total factor productivity). Until 1990, TFP used to grow at a much faster

rate in Europe than in the United States because Europe's technology level was catching up with the US level. Since then, a new phenomenon has occurred: the United States has grown faster than Europe in terms of TFP. At the same time it has closed its secular gap in investment rates. The next section investigates whether a new growth regime is now prevailing, and whether Europe should worry about it.

3. The Effect of Information Technology

Investment rates in the United States accelerated considerably in the 1990s. However, they have traditionally been below those of Europe and have remained so until very recently, as shown in Table 5.4. So it is unlikely that physical capital accumulation explains why the US-European gap widened in the 1990s, as it has merely caught up in terms of investment rates. In fact as shown in Table 5.3, capital stock growth in the business sector was somewhat higher in the United States than in Europe, but as labour increased much more in the United States, the capital deepening effect (i.e. the increase in capital intensity) was only half of that in Europe (0.4 against 0.8). Despite the smaller capital deepening effect, labour productivity growth in the United States was slightly higher in the 1990s than in Europe (1.7 per cent against 1.6 per cent). The reason for the higher US labour productivity growth was that its total factor productivity, which is an estimate of the role of technical progress, increased more (1.4 per cent against 0.9 per cent). The difference is even bigger in the second half of the 1990s, although part of this difference could also be cyclical as the United States experienced an exceptional boom while the recovery in Europe remained more moderate.

Table 5.4
Investment/GDP ratio
in %

	United States	Euro area
1960	17.2	23.2
1970	16.7	24.6
1975	15.5	22.3
1980	17.1	21.4
1985	18.3	18.7
1990	17.0	21.1
1995	17.9	19.9
2000	21.5	20.9

Total factor productivity is calculated as a residual after the contributions of labour and capital inputs have been accounted for.

Source: OECD Economic Outlook (2001).

Table 5.5
Total factor productivity, cumulative growth over 5-year periods

	Euro area	United States
1975–1980	14.5	3.0
1980–1985	9.2	6.9
1985–1990	10.3	5.1
1990–1995	4.6	7.3
1995–2000	6.3	12.2

Source: OECD Economic Outlook Database.

Table 5.5 looks at the growth rate of total factor productivity as calculated by the OECD over a longer time horizon.

The results are striking. Whereas total factor productivity grew much faster in Europe than in the United States prior to 1990, this pattern reversed in the 1990s. During that decade, the United States accumulated almost ten extra percentage points of productivity growth relative to Europe.

An important question is therefore: what explains this development? A leading hypothesis is that the United States has benefited from new information technologies much more than Europe. This advantage comes from several factors.

First, the United States is an important producer of IT goods such as semiconductors, computers and software. Table 5.6 summarizes the GDP share of these industries in the United States and in Europe. Clearly, the US share is higher than that of the European Union, and the three major Euro-zone countries produced ICT goods less proportionately than the United States. However, two

Table 5.6
Share of value added in information and communication technologies
in %

Country	Share of ICT in value added
Sweden	9.3
United States	8.7
United Kingdom	8.4
Finland	8.3
European Union	6.4
Germany	6.1
Italy	5.8
France	5.3

Source: OECD Statistical Compendium (2000).

notable exceptions stand out: The UK, and two Nordic countries, Sweden and Finland. These three countries have a share of value added in ICT which is similar to that of the United States.

These industries, which account for a larger fraction of US GDP, grew much faster than others. Therefore, one element of an explanation for the better US performance is a composition effect: the United States grows faster because a greater fraction of its GDP is in sectors which themselves have grown fast. One underlying reason is that IT products seem to be associated with a considerable potential for learning and productivity improvements.[1]

Second, an increasing fraction of investment has been in the form of information technology (IT). According to Jorgenson (2001), this investment has been on-going from the mid-1970s and, until recently, has been accelerating. However until the 1990s economists failed to see its effect on aggregate productivity, especially since total factor productivity growth slowed down to almost zero in the mid-1970s. In the meantime, it has shown up in the growth statistics. Information technology is comparable to the steam engine or electricity in that it is a general purpose technology which may raise productivity in all sectors of the economy. Adoption of IT in turn triggers technological and organisational innovations in the user sectors. For these reasons an adoption lag can have substantial negative consequences for the productive and innovative performance of an economy.[2]

Finally, the last half of the 1990s is associated with the development of the Internet. The Internet has been disproportionately developed in the United States, and it disproportionately benefits it. This is because it is a network, and the economic contributions of the network grow more than proportionately with its number of participants, as it is determined by the number of *matches* within the network. Thus, networks benefit larger markets and larger linguistic zones more than smaller ones. Both this market size effect and the use of English as a *lingua franca* imply that the number of sites in English vastly outnumber those in other languages.

According to Jorgenson (2001), over the period 1995 to 1999, the output of the US computer industry grew by 40 per cent, and that of the software industry by 20 per cent. Similar figures are found (36 per cent and 16 per cent, respectively) for growth in the stock of computers and software capital in the US economy. While this means that in 1999 information technology capital only represents 5 per cent of annual GDP, its contribution to the average annual growth rate of 3.4 per cent is about 1 percentage point. Furthermore, this is probably an under-estimate as the externalities generated by IT may account for some of the residual total factor productivity growth of 0.75 per cent, while IT has also facilitated the quality of the workforce associated with higher education.

From a broader perspective, one may ask why it has taken such a long time for IT to have a noticeable impact on growth. This is a matter of much speculation, but recent theoretical and empirical work has claimed that technological breakthroughs diffuse quite slowly and may not even be adopted for a while. The reason is that there are high learning costs associated with implementing the new technology. Furthermore, part of this learning is social in that one draws lessons from others' experience with the new technology. Consequently, a firm has a strategic incentive to delay adoption of the new technology until others have adopted it. Finally, when the new technology is invented there is an initial stock of capital specific to older technologies, and it may be valuable to wait for this capital to depreciate before investing in the new technology. As argued by Greenwood and Yorukoglu (1997), this implies that technological diffusion is slow. According to their estimates, it takes about 15 years for a new technology to be adopted by 50 per cent of firms.

According to these authors' numerical simulations, a technological breakthrough initially leads to a *slowdown* in the rate of measured productivity growth. This is because the introduction of a new technology requires a sustained investment in learning at the beginning of this technology's life

[1] For example, in 1965 Gordon E. Moore made the observation that the number of transistors contained by a micro-chip doubled every 18–24 months. One may have believed that this was typical of an infant industry, but the semiconductor industry is no longer in its infancy and Moore's law has not been invalidated yet after 35 years! As a result, growth in capacity has been astronomical. In 1971 a chip contained 2,300 transistors. In 2000 it contained 42 million. Conversely, the price of microprocessor, has experienced a tremendous downward trend. According to Jorgenson (2001), the price of a chip declined by 40 per cent per cent a year on average between 1974 and 1996. Given the increase in capacity of these integrated circuits, this means a 70 per cent yearly decline in the unit price of capacity.

[2] The international comparison of IT investment in volume terms is, however, distorted by differences in price measurement (hedonic versus traditional approach).

cycle. As a consequence, skilled labour is transferred from the direct production activity to learning, and the medium-run effect of that is that productivity in the output sector is depressed. Only in the long run does the economy reap the full benefits of the technological breakthrough, once the transitional period of learning the new technology is over and most skilled workers are employed again in the direct production activity. This vision squares well with the observation that in the mid-1970s, when the personal computer was invented, there was a severe slowdown in the rate of measured total factor productivity growth. This phenomenon has been and remains a matter of much debate. One leading interpretation is that it was due to soaring energy prices associated with the first oil shock. While it is hard entirely to dismiss the role of energy prices, as Greenwood and Yorukoglu do, it is plausible that the oil shock played a role in speeding the adoption of new technologies by further depressing the value of existing, energy-intensive vintages of capital. Evidence from the stock market squares well with this view. The mid-1970s were associated with a sharp drop in stock prices. This was followed by a recovery which turned into an explosion in the 1980s and 1990s. Hobijn and Jovanovic (2000) distinguish between the contribution to stock prices of firms that were already around in 1972, and were supposedly locked into an old technology, intensive in energy and unfriendly to IT, and firms that entered the market later and adopted new technology. A striking finding is that the rise in the stock market in the 1980s and 1990s is *entirely* due to new firms. Incumbents never recovered from the drop in their stock values triggered by high energy prices and technological breakthroughs. Furthermore, industries where stock prices dropped by the largest margin were precisely those where IT investment was subsequently the strongest. This phenomenon would not have taken place had the surge in energy prices been the sole reason for the fall in the value of incumbent firms, but also reflected markets' expectations that incumbent firms were not going to be able to compete with new entrants using superior technologies. For example, share prices dropped by 44 per cent in manufacturing (where IT represents a relatively low fraction of total capital) and rose by more than 70 per cent in services (where IT is a high fraction of the total capital stock). Therefore, the productivity slowdown could be re-interpreted as the net of two effects: a direct reduction in productivity in old technologies, and a diversion of skilled labour input toward learning the new technologies.

Another interesting aspect of the IT revolution, which has implications for Europe, is that it has been associated with an increase in the rate of "creative destruction", namely with greater entry and exit of firms. Hence, the rate of business failures almost trebled in the 1980s as compared to the 1960s and 1970s. And at the same time there was a four-fold increase in the rate of business incorporations.

Altogether, these pieces of evidence are reasonably convincing that IT played an important role in the recent boost in US economic performance. However, this does not imply that the proceeds of growth are shared equally among the population. In particular, the last three decades have been associated with a rise in US wage inequality. Between 1974 and 1985, workers below the 60th percentile of the distribution of wages all experienced negative wage growth, on average, while workers above that level experienced positive wage growth. Hence the income share of the bottom quintile (i.e. the poorest 20 per cent) fell from 4.2 per cent to 3.4 per cent between 1974 and 1995, while the top quintile income share has increased from 41.9 per cent to 49.2 per cent (Wolfson and Murphy, 1998).

While this increase in inequality is partly due to the collapse of egalitarian wage-setting institutions such as trade unions, labour economists are convinced that technical change is the driving force behind the rise in inequality, and recent evidence suggests that computers are one of the most important factors. Therefore, the force which allowed the United States to take-off in the last twenty years, widening the productivity gap with Europe, is also the one which made it more unequal and which may generate social conflicts in the future.

For example, Autor et al. (2001) have found a high correlation between computerisation at the industry level and a shift in the composition of labour input away from routine tasks in favour of non-routine cognitive tasks. This is direct evidence that computers substitute for tasks performed by low-skilled workers and are complementary with tasks performed by highly educated workers. According to their estimates, this means that, holding factor prices constant, the total proportion of college-

educated workers in the workforce should have increased by 15 percentage points between 1970 and 1990. This is a measure of the size of the demand shock triggered by computerisation. Similarly, Doms et al. (1997) find that plants that adopt new information technologies more than others have a greater proportion of highly educated workers, managers, and professionals.

Beyond the direct complementarity between new technologies and skills, these may tend to increase inequality because more educated workers are in a better position to learn them. Consequently, when a new technology is introduced, it is likely to attract only workers with a relatively high level of education, while the others remain working with the old technology. A consequence is that capital moves from the old to the new technology. This reduces the complementary input for workers who remained in the old technology, which in turn reduces their productivity and wages. Caselli (1999) has studied this phenomenon and points out that the IT revolution has indeed been associated with a greater dispersion of capital/labour ratios.

In the longer run, one may be more optimistic about the consequences of technological breakthroughs for the distribution of income. As time passes, the new technology becomes easier to operate. This is because educational levels go up, and also because there are strong market incentives eventually to design technology so as to make it easier for unskilled workers to use. This way, a large number of workers can use it, which increases the scale of production and thus the monopoly rents earned by those who designed the new technology.

This is what happened to the automobile industry when Henry Ford introduced the assembly line in 1913. This allowed a large number of low-skilled labourers to work on the new technology, which increased their productivity and wages relative to their previous activity in other sectors, and hence reduced inequality. The same phenomenon is observable in the computer industry, as more user-friendly operating systems and software are being introduced. Some formal models indeed predict that inequality tends to *overshoot* its long-run level after the introduction of a new technology, i.e. to go up and then down. Indeed the increase in inequality has levelled off in recent years.[3]

4. Documenting Europe's Technological Deficit

If we are willing to accept the hypothesis that information technologies played a key role in the US productivity surge in the 1990's, one may ask whether the inability of Europe to catch up has to do with a deficit in high technologies.

To begin with, there is evidence that the United States is more actively involved in research and development and more specialised in high-tech goods than Europe. For example, the OECD Science and Technology indicators imply that R&D expenditures are about 20 per cent higher, as a fraction of GDP, in the United States than in Europe. In 1998, the United States was paying 30 cents in royalties to the rest of the world for every dollar of royalties it received. The corresponding figures are 59 cents for the UK, $1.18 for Germany, $1.38 for France, $1.74 for Italy, and $6.64 for Spain.

Furthermore, Butler (1992) shows that high-tech manufacturing output represented 30 per cent of US manufacturing output in 1990, and 20 per cent of German manufacturing output. Between 1985 and 1990, this figure shows an upward trend in the United States, while it has stagnated in Germany. Similarly, Kravis and Lipsey (1992) have computed indices of comparative advantage in high-tech, medium-tech, and low-tech goods defined as the ratio of the export share in the corresponding technology group over total export shares. They report that in 1986, Germany's comparative advantage in high tech-goods had dropped to 0.86 from 1.08 in 1966. At the same time, the United States had enhanced its comparative advantage from 1.4 to 1.6, and Japan's had slightly deteriorated from 1.7 to 1.6.

Does this pattern also apply to information technologies? If one takes the software industry as an example, a recent OECD study (1998) shows that it accounts for 2.7 per cent of GDP in the United States versus only 0.9 per cent in France. The corresponding figures for employment are 0.9 per cent and 0.7 per cent respectively, implying greatly higher labour productivity in that sector in the United States as compared with France. On the other

[3] According to Wolfson and Murphy (1998), bottom wages started growing again between 1985 and 1995, but this was not sufficient to reverse inequality. However, the bottom income share was almost constant between 1985 and 1995.

hand, if one aggregates all IT sectors together, then Europe has comparable or even higher employment shares (OECD, 2000). But productivity in this sector is again much higher in the United States, 40 per cent higher than in Germany and almost twice as high as in France. Indeed, Business Week has reported that out of the 100 top firms in the New Economy, only six are European, and three of these are Scandinavian (in Cohen and Debonneuil, 2001).

Thus, Europe tends to specialise less in the production of high-tech goods than does the United States. This pattern of trade is mirrored by the pattern of specialisation in research and development. For example, in 1993 the US accounted for 54 per cent of world patents in biotechnology, 51 per cent in computers, and 32 per cent in communication, versus 13 per cent, 14 per cent and 13 per cent, respectively, for France plus Germany. On the other hand, these two countries accounted for 25 per cent of world patents in instruments, 25 per cent in construction, and 52 per cent in transportation, vs. 6 per cent, 5 per cent and 3 per cent for the United States (Office de la Science, 1997). Also, in the United States, the IT sector accounts for 35 per cent of total business R & D, while the corresponding figures are 26 per cent for France and 20 per cent for Germany (OECD, 2000). In other words, Europe innovates in medium-tech, mature industries, while the United States is at the cutting edge.

Why does this matter? There is no *a priori* reason why producing yoghurts should be more detrimental to the welfare of consumers than producing micro-chips. However, it is likely that specialisation in high-tech industries has side benefits which may enhance growth and benefit the economy as a whole. These industries offer more opportunities for learning and innovation than low-tech ones, and allow the economy to grow faster and obtain more rents associated with intellectual property rights. The above mentioned evidence on the fall in semiconductor prices and the explosive increase in micro-chip capacity suggests that this is indeed the case.

In principle, this may be offset by relative price effects: the terms of trade of the fast-growing, high-tech economy deteriorate relative to the slow-growing, low-tech one because low-tech goods are not perfect substitutes for high-tech goods. In other words, low-tech economies also benefit from the extra growth potential of high-tech ones, because yoghurts become more expensive relative to computers. However, the comparative growth experience of Europe and the United States over the last ten years suggests that these price effects are not strong enough to offset the growth premium associated with specialisation in high-tech goods.

While high-technology innovations and production have important implications for growth, using them is even more important. Hence, the question now is whether Europe is also lagging in the adoption of new technologies.

Table 5.7 relates to the diffusion of the Internet by reporting the number of Internet hosts per 1,000 inhabitants. Admittedly this also measures specialisation in the production of information technology. But to the extent that site content is country specific, the greater the density of hosts, the easier

Table 5.7
Number of Internet hosts per 1,000 inhabitants in July 2001

Country	Internet host per 1,000 inhabitants (Rank)
United States	275.28 (1)
Finland	183.28 (2)
Canada	183.07 (3)
Iceland	179.74 (4)
Sweden	177.02 (5)
Norway	130.27 (6)
Netherlands	118.81 (7)
New Zealand	106.17 (8)
OECD	100.60
Denmark	98.53 (9)
Australia	91.08 (10)
Austria	84.12 (11)
Switzerland	74.09 (12)
United Kingdom	69.71 (13)
Belgium	59.70 (14)
EU	53.04
Germany	50.33 (15)
Japan	48.19 (16)
Italy	40.44 (17)
Ireland	34.60 (18)
France	27.20 (19)
Spain	26.17 (20)
Hungary	19.20 (21)
Greece	17.37 (22)
Czech Republic	16.77 (23)
Poland	14.23 (24)
Portugal	13.82 (25)
Korea	11.07 (26)
Slovak Republic	7.66 (27)
Mexico	4.66 (28)
Turkey	3.63 (29)

An Internet host is a domain name (name server) that has an IP address (A) record associated with it. This would be any computer sytem connected to the Internet (via full or part-time, direct or dial-up connections).

Source: www.netsizer.com.

Table 5.8
Access lines to the telephone

Country	1980	1990	1997
Australia	0.35 (9)	0.46	0.51
Austria	0.29 (15)	0.42	0.46
Belgium	0.25 (18)	0.39	0.48
Canada	0.41 (5)	0.55	0.62 (7)
Switzerland	0.45 (2)	0.58	0.64 (4)
Czech Republic	0.11 (23)	0.16	0.32
Germany	0.26 (17)	0.40	0.55
Denmark	0.43 (4)	0.57	0.64 (4)
Spain	0.19 (21)	0.32	0.40
Finland	0.36 (7)	0.54	0.56
France	0.30 (14)	0.50	0.58 (8)
United Kingdom	0.31 (13)	0.44	0.54
Greece	0.24 (19)	0.39	0.52
Hungary	0.06 (26)	0.10	0.32
Ireland	0.14 (22)	0.28	0.42
Iceland	0.37 (6)	0.51	0.57
Italy	0.23 (20)	0.39	0.45
Japan	0.33 (12)	0.44	0.48
Korea	0.07 (25)	0.36	0.52
Luxembourg	0.36 (7)	0.48	0.67 (2)
Mexico	0.04 (28)	0.06	0.10
Netherlands	0.35 (9)	0.46	0.57
Norway	0.29 (15)	0.50	0.63 (6)
New Zealand	0.35 (9)	0.44	0.51
OECD	0.28	0.39	0.49
Poland	0.05 (27)	0.09	0.19
Portugal	0.10 (24)	0.24	0.41
Sweden	0.58 (1)	0.68	0.68 (1)
Turkey	0.03 (29)	0.12	0.28
United States	0.44 (3)	0.54	0.66 (3)

Source: OECD, Telecommunications Database (1999).

the access to information that is useful to resident households and firms.

Major European countries are far behind the United States, by a factor of more than ten in the case of France. Another notable fact is that small Nordic countries fare much better, with a density comparable to that of the United States. In spite of this exception, Europe is clearly behind the United States – the EU has an Internet density less than a fifth of that of the United States.

One could speculate that these wide differences simply reflect a late start and that Europe is catching up quickly. However, there is no sign of such a trend. Between 1997 and 1999, for example, the density of Internet hosts trebled in the United States and France, and only doubled in Germany. Thus it does not appear to be growing faster in Europe than in the United States.

As Table 5.8 shows, there is also a deficit in terms of access lines to the telephone. However, this deficit is less pronounced: the order of magnitude is 10–20 per cent of US density for major European countries, with the Nordic countries standing out again as an exception.

According to our hypothesis, therefore, Nordic countries should have kept pace with the United States in growth terms. This is in fact only true for Finland in the second half of the 1990s, which grew by 5.5 per cent, a figure comparable to the 4.4 per cent growth rate of the United States.

One technology in which Europe has the reputation of leading the United States is cellular phones. While it is true that some prominent cell phone manufacturers are European, in terms of use this is not so much true. Table 5.9 reports the number of subscriptions per 1,000 inhabitants in 1997.

At this date, Nordic countries were all using cell phones much more than the United States. But all other European countries were clearly lagging, with Italy on a par.

Further below we discuss possible causes of the European IT gap. One important element, however, is the difference in prices between the two sides of the Atlantic. In particular, according to the OECD, the average price of Internet access is about twice as high in countries such as France, Germany or the United Kingdom as compared with the United States. Interestingly, Nordic prices are much more in line with US ones. This suggests that differences in supply, rather than demand, underlie the European handicap in Internet penetration.

That Europe invests less in IT than the United States is also evident from data on the software industry and on computer services. In 1995, this market's turnover was $212 trillion in the United

Table 5.9
Number of subscriptions to (analog and digital) mobile phones per 1,000 inhabitants in 1997

Finland	456
Norway	384
Sweden	358
Denmark	275
Italy	205
United States	204
Portugal	154
Ireland	144
Austria	143
United Kingdom	143
Spain	109
Netherlands	108
Germany	99
France	98
Belgium	96

Souce: OECD Telecommunications Database (1999).

States, against only $60 trillion in France plus Germany, which together have a population of about half that of the United States.

5. Explaining Europe's Technological Deficit

If it is true that the gap between Europe and the United States widened because the former failed to adopt new information technologies, why did this happen?

A first set of explanations relies on the idea that *product and labour market regulations* deter specialisation in high-tech industries and reduce the incentives for technical change. As we have pointed out above, in the United States adoption of new technologies was associated with an increase in creative destruction – both the rate of entry and exit in the market increased. In contrast, in Europe firm creation does not seem very dynamic. For example, according to the *Global Entrepreneurship Monitor* (1999), the percentage of adults participating in entrepreneurial activity is 4 per cent in Germany, 3.5 per cent in Italy and the UK, and only 1.8 per cent in France, vs. 10 per cent in the United States.[4]

Europe's deficit in terms of enterprise creation and risk-taking may be explained by a variety of regulatory factors:

- Heavy regulation in product markets increases barriers to entry. For example, as we have seen above, Internet penetration is limited by high costs, evidently due to reduced competition in Europe's telecom industry, which has been deregulated much more recently than that of the United States. These arguments, combined with the above-mentioned evidence on the key role played by IT in the US growth surge, suggest that the dynamic gains from deregulating such sectors, i.e. the gains from increased innovation and dynamism, may be even higher than the static gains to consumers in the form of lower prices.
- Venture capital markets also appear to have played a role, and have developed later in Europe than in the United States. These markets in Europe have a long way to go before they are comparable in relative size with the United States. For example, the French *Nouveau Marché*, which is the equivalent of the NASDAQ, had a total market capitalisation of €22 billion as of 31.12.00, as opposed to the *Premier Marché*, the equivalent of the NYSE, whose capitalisation at the same date was €1463 billion. Thus the *Nouveau Marché's* capitalization is just a minute 1.5 per cent of the *Premier Marché*. In contrast, the ratio between NASDAQ's capitalisation and NYSE capitalisation in 2000 was as high as 55 per cent (WestLB Panmure, 2001). Of course, this difference reflects supply as well as demand factors. If risk-taking is penalised by taxes and regulation, lack of managerial culture, or inadequate human capital, then we expect risk markets to be smaller in Europe, even in the absence of any impediment to their functioning. But the sheer size of the difference suggests that more is at work. In some sense, venture capital markets failed to take off in Europe, perhaps reflecting a vicious circle of expectations that they would remain marginal. If a financial market is expected to be too thin, it has poor properties in terms of diversification and liquidity. This in turn makes people reluctant to invest in it, thus validating the expectation that it will not grow (Pagano, 1993). A coordinated effort must be made to get out of this financial underdevelopment trap.
- Labour market regulation is also likely to play an important role. Dismissal costs prevent downsizing in obsolete industries, thus retaining human resources in low productivity sectors. This reduces the scope for the expansion of new sectors and the ability of Europe to compete with the United States in new technologies. In the long run, Europe finds itself with an economic structure biased toward older technologies, implying lower productivity and lower living standards. If new technologies are more intensive in dynamic learning externalities, then the productivity gap may widen as time passes. Furthermore, many national regulations concerning dismissals go beyond the simple penalisation of redundancies: they often assimilate a change in tasks assigned to incumbent workers with a dismissal, so that a court may rule out such changes. Because of such practices, not only specialisation in new technologies is discouraged, but also their use as an input for firms producing other types of goods.

[4] Indeed, the Global Entrepreneurship Monitor (2000) finds a positive correlation between the level of IT infrastructure and entrepreneurship, although the causality is unclear.

More fundamentally, labour market regulation distorts the pattern of comparative advantage away from new, high-tech goods and in favour of mature, low-tech or medium-tech goods (Saint-Paul, 1997, 2001). The reason is that demand is more volatile at earlier stages of the product life cycle, as has been found by studies of turnover (Dunne et al., 1990, Davis and Haltiwanger, 1992). Given that employment protection increases the true cost of labour by an amount which is the greater, the greater the likelihood that the job will be destroyed, they penalize young firms and industries more than mature ones. Figure 5.1 below illustrates this argument by depicting the cost of producing a good as a function of its age, for a "rigid" (heavily regulated) country and a flexible one.

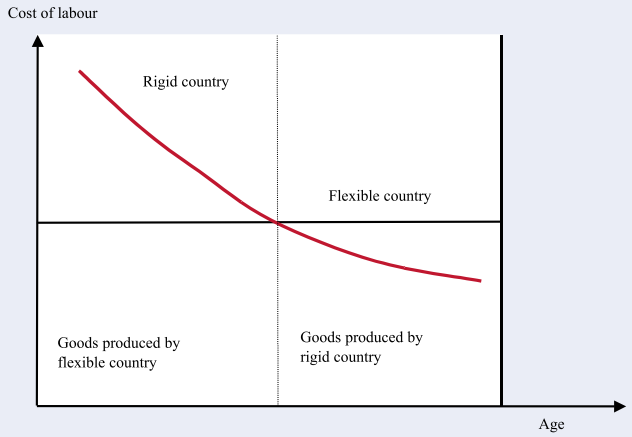
Because volatility falls with age, so does the cost of labour in the rigid country, whereas it does not depend on volatility in the flexible one. Consequently, the rigid country will specialise in goods that are at a mature stage of their life cycle, and the flexible country will specialise in young goods. The welfare consequences of this pattern need not harm the rigid country; but they will if specialising in young goods implies a bigger growth potential in the long run.

Yet if this is the right explanation, why is it that small Nordic countries have managed to keep pace to the United States in high technology, despite the fact that dismissal costs there are comparable with those prevailing in Continental Europe? One possible explanation is that they have designed alternative adjustment devices, such as active labour market policies.

Finally, another institution which may have played a role is the *Educational System*. While an even greater proportion of people go to college in the United States than in Europe, at the doctoral level the US system is far more elitist and engages in much more cutting-edge research. US universities spend considerable resources on screening applicants and attracting the best students. They develop an adequate reward structure by waiving tuition fees and offering grants to good students. During their studies, graduate students are subjected to intense training which puts them at the frontier of research. At the level of recruitment of assistant professors, the best candidates – who are identified by word-of-mouth – receive special treatment, getting substantially higher pay and research money as well as a reduction in teaching loads. In contrast, in most European countries the system makes little distinction between excellent and average students and excellent and average researchers; wages and working conditions are mediocre and identical for all of them; they typically depend little on achievements. The end result is not surprising: mediocre and average researchers stay, while many of the best emigrate to the United States. In our view, this can only be solved in the long run if the reward structure for knowledge producers is altered, bringing it more in line with the US system, or with the competitive system of professional sportsmen and artists – the best of the latter, incidentally, are typically rewarded very well by the taxpayer, and this is not seen as a problem.

Figure 5.1

SPECIALIZATION AS AN OUTCOME OF DIFFERENTIAL DEPENDENCE OF LABOUR COSTS ON PRODUCT MATURITY



Another set of explanations, however, downplays the role of institutions and ascribes most of the differences in technology between Europe and the United States to differences in factor endowment. In particular, Beaudry and Green (2000) have argued that a greater endowment of physical capital relative to human capital implies a greater specialisation in the "old" technology if, relative to it, the new technology is more intensive in human capital relative to physical capital. According to that view, the

lower adoption of new information technology in Europe is simply the outcome of its relative abundance of physical capital, which itself comes from a higher savings rate over several decades as well as a lower population inflow due to migration. There is no *a priori* reason to worry about this, since greater abundance of capital harms no one. Furthermore, if this explanation is to be believed, one good side-effect of greater capital abundance is that Europe has avoided the sharp rise in inequality which was observed in the United States. For example, while in the United States real wages for men with ten to twelve years of education have fallen by 20 per cent since 1980, they have risen by 10 per cent in Germany.

On the other hand, the same phenomenon may be observed in technology adoption and inequality if instead of having more physical capital than the United States, Europe has less human capital.

In order to see whether factor endowments have followed divergent trends on the two sides of the Atlantic, we look at trends in physical and human capital. Table 5.10 compares the evolution of human capital, as measured by average years of education of the population, between the United States, France and Germany. In all countries it follows an upward trend, but Europe remains clearly behind the United States. If college graduates have an advantage at learning and using new technologies, improvements in US educational levels, which were associated with a rise in the proportion of college graduates, favoured IT adoption and specialisation much more than improvements in European levels, which were more associated with an increase in the proportion of high school graduates.

This hypothesis is all the more interesting since Nordic countries, which stand out as an exception to the European deficit in IT adoption, have educational levels more similar to the United States than to French and German levels, as is shown in Table 5.11:

Table 5.10

Average years of education

Period	France	Germany	USA
1960	5.78	8.28	8.66
1965	5.86	8.25	9.25
1970	5.86	8.27	9.79
1975	6.08	7.73	10.01
1980	6.77	8.41	11.91
1985	7.31	8.98	11.71
1990	7.56	9.06	12
1995	7.94	9.57	12.18
2000	8.37	9.75	12.25

Source: Barro-Lee Data Set.

Table 5.11

Average years of education

Period	Finland	Norway	Sweden
1960	5.37	6.11	7.65
1965	5.78	6.18	7.66
1970	6.5	7.36	7.47
1975	7.23	7.71	8.44
1980	8.33	8.28	9.47
1985	7.95	8.4	9.22
1990	9.48	10.85	9.57
1995	9.82	11.82	11.23
2000	10.14	11.86	11.36

Source: Barro-Lee Data Set.

Admittedly, differences in years of schooling do not take into account differences in educational quality. In order to have an idea of that we can look at educational achievements. Table 5.12 compares test scores between the United States, France and Germany:

This table suggests that there is no significant difference for 13 year-old students, although the 1972 science study suggests a substantially lower achievement in the United States. But a subsequent study, limited to the United States only, revealed a sharp improvement, so that there is reason to believe that the United States has improved its educational achievement since then.

To summarise: there is no *a priori* reason that differences in school quality are strong enough to overturn the conclusion that the United States has a larger stock of human capital per capita. While all three countries have accumulated human capital, the United States may well have ended up in a zone where it has reinforced its comparative advantage in high technologies.

Table 5.12

Test scores

Subject/year	France	Germany	USA
Math, 1993–98, 13 yr.	49.2	48.4	47.6
Science, 1970–72, 17 yr.	30.5	44.8	22.8
Science, 1993–98, 13 yr.	45.1	49.9	50.8
Reading, 1990–91, 13 yr.	54.9	52.2	53.5
Average score in cross-country comparable proficiency tests.			

Source: Barro-Lee Data Set.

Table 5.13

Capital intensity

	USA	France	Germany
K/L, 1975	26.1	24.2	36.9
K/L, 1990	34.7	35.6	50.1
Growth rate %	32	47	36

Source: Barro-Lee Data Set.

Turning now to physical capital intensity, Table 5.13 reports capital/labour ratios. These data are somewhat consistent with the view that physical capital abundance deters adoption of new information technologies, since production in Germany is more capital-intensive than in the United States, while the capital/labour ratio rose faster in France than in the United States, leading it to overtake the United States.

This discussion suggests that differences in factor endowments have played a significant role in explaining differences in technology levels across the Atlantic. This being said, despite the "Nordic exception", we are reluctant to dismiss the view that excess regulation is harmful for growth and innovation. The differences in entrepreneurial activity, for example, are large and appear in all sectors. It is hard to explain them as just a consequence of the fact that Europe uses the old technologies more. And regulation certainly has to do with the fact that while their high education level and small size has induced Nordic countries to specialise in IT, they have not managed to grow at the same rate as the United States in recent years.

Finally, the strong slowdown in the United States in 2001 raises the question of whether the IT boom will have any long-lasting effect at all. We believe that it will. New technologies are not introduced smoothly and can be subject to business cycles if they lead to excess investment followed by a brutal adjustment. But they can still have long-run effects, and countries that invest heavily in a technology may well end up with a permanent productivity bonus relative to others, as well as a comparative advantage in using and improving such technology.

6. Conclusion and Recommendations

The preceding analysis suggests that the following reforms would help in fighting the productivity deficit that Europe seems to have accumulated since the 1990s:

1. Proceed further with the introduction of competition in the telecom market, as we have seen that higher access prices are strongly correlated with lower IT penetration.
2. Develop incentives in terms of financial rewards and working conditions for top researchers to remain in European universities. This implies introducing a competitive labour market for such positions and an incentive structure for universities to engage in high level research.
3. While labour market reform is a wider issue that cannot be dealt with independently of the welfare state (see Chapter six), before a social consensus is reached on this issue, it is worth considering the introduction of exemptions to labour regulation (e.g. dismissal costs and working hours) for start-up firms in selected high-tech industries.
4. One should investigate the reasons for the underdevelopment of venture capital markets in Europe and remove them. If it is due to investors having wrong expectations about the future prospects for such markets, one could consider a co-ordinated move to escape from this expectational trap.

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Welfare to Work

1. Replacing or Supplementing Labour Market Incomes?

Social policy evens out the distribution of income. It prevents social unrest, it satisfies the taxpayers' sense of justice and it insures against random variations in people's lifetime careers. Ideally, it insures risks that are not privately insurable, either because risk markets suffer from adverse selection or because private insurance comes too late in a person's life, when the veil of ignorance has already been lifted.

Welfare programmes "... serve to even out differences in life chances, to achieve greater equality between generations and to redress inequality by race, gender, or health status. More generally, these programmes are intended to help people reallocate income over the lifecycle, to insure against events which cause income loss, and to provide a sense of security to all citizens" (Atkinson 1999, pp. 5–6).

This is the theory. In practice poverty is dominated by joblessness, and large quantities of money are spent on the condition that the beneficiaries do not work and do not earn. The replacement of labour income with public transfers becomes the dominant form of assistance.

As employment is the most important source of income, the replacement of labour income is a plausible implication of the social-policy motives expressed by Atkinson. The problem, however, is that the fraction of people not having a job is not exogenously given but depends heavily on policy itself. Benefits under the condition of not working operate like a wage paid for idleness which the market wage has to exceed. Since no one is willing to work at a market wage below the social benefit attainable without working – with the exception of those who fear being stigmatised as "welfare scroungers" – this benefit is a lower bound on market wages.

However, in a market economy, an upper bound on an individual's market wage is given by his (or her) productivity, i.e. the value added he or she is capable of creating. Thus there is a fundamental problem with people whose productivity is below the benefit that the welfare state is willing to provide. These people, in principle, cannot find a job in a market economy under traditional policies. The wage has to be above their benefit to make them offer their labour, and the wage has to be below productivity to make firms demand this labour. The two conditions are mutually exclusive. Although driven by good intentions, the wage replacement policy turns out to be a policy of increasing the reservation wage – the wage below which a worker will refuse a job – and of preventing the creation of jobs which otherwise would have been available.

This problem used to be minor when benefits were low relative to average incomes. However, the gradual expansion of the welfare state (expressed as the proportion of gross domestic product being spent on unemployment compensation and social assistance) has increased the number of people who are affected and has therefore increased the number of unemployed, in particular among the less educated, whose productivity is low relative to the minimum income which the state provides them. Unfortunately, this situation seems unlikely to change in the future.

The productivity effects of the New Economy are likely to stimulate aggregate income growth and with it the growth of social standards. However, the number of people who just cannot keep up with the New Economy and who are unable to cope with modern work requirements may be increasing. The digital divide may not only be a problem among nations but also among the people within a nation.

European integration may increase the desire for harmonisation of social standards. If traditional welfare benefits are harmonised, many people in the less-developed regions of Europe may find themselves in a situation where their labour productivity is below common European benefit standards. In Europe, there are regions where labour

productivity is only a quarter of that elsewhere. Harmonising social standards without changing the conditions under which social benefits are paid would undoubtedly create mass unemployment in many of the less-developed regions if the benefits were sufficient for the more productive regions. The problem of the Mezzogiorno would spread.

Thus it is opportune to search for alternative ways of designing the welfare state, ways that make it possible to help the needy without driving many of them into unemployment. Basically, these ways involve redefining poverty and the conditions under which the welfare state delivers its benefits.

To satisfy Atkinson's definition of welfare programmes, it is not necessary to make benefits conditional on people being jobless. They could also be made conditional on people being employed and not earning enough. A new definition of poverty would capture that. It is not a person who does not work who is poor but someone who works to his physical and mental capacity and is nevertheless unable to earn a sufficient income.

With this definition of poverty, the welfare state would not replace labour income but supplement it when it is inadequate. Supplementing income to reach a social target level has very different implications for the functioning of the labour market than the current system because it circumvents the problem described above. Even people with very low labour productivity would be able to find jobs because social benefits would no longer establish a lower bound to wages. People would be willing to work at very low wages, because they know that this would make them eligible for social benefits, and, for the same welfare-state expenditures, they could even have higher incomes than in the current system.

A number of mainly Anglo-Saxon countries have followed this line of reform and have moved from a wage replacing to a work complementing welfare system. This chapter will report on the experience of welfare-to-work programmes and develop a proposal for a useful reform along these lines, respecting European norms of social protection.

2. The Traditional Approach

In the OECD countries, an important part of social protection against unemployment is unemployment insurance. In order to be eligible for compensation, claimants must have worked and contributed to the insurance fund for a given period of time, must be involuntarily unemployed and they must be actively looking for work.

Financial assistance for those no longer eligible for unemployment insurance takes two forms: unemployment assistance and social aid. Unemployment assistance is designed as a follow-up benefit to unemployment compensation, paying a lower benefit than unemployment insurance. Social aid is given to those who qualify for neither unemployment insurance nor unemployment assistance. The government acts as a provider of last resort to secure a minimum standard of living. Social assistance in the EU member countries normally has an unlimited duration (see European Commission, MISSOC 2000).

2.1. Replacement Policy

The traditional social security systems of most OECD countries can be characterised as passive. Benefits are provided to secure a minimum standard of living, and recipients receive the benefits without a strong obligation to look for work. This is especially true for social aid, which is provided without any significant obligation imposed on the recipient. Such a social security system leads to welfare dependency. It encourages inactivity, does not provide sufficient incentives to look for work and increases the opportunity cost of working in the market economy. In short, by following a wage replacement policy, the traditional social security system pushes the reservation wage up and thus destroys part of the employment opportunities which otherwise would have been available.

The extent to which the required wages are artificially pushed up is influenced by the level of unemployment benefits and social assistance, the duration of entitlement, the coverage of the system and the strictness with which the system is operated – as well as social attitudes.

The influence of the welfare system on reservation wages can be represented and quantified by the net replacement rate (NRR) defined as:

$$\text{NRR} = \frac{\text{Benefit income when unemployed} - \text{tax on benefit income}}{\text{Earned income} + \text{benefit income when employed} - \text{tax on earnings and benefits}}$$

The net replacement rate is the fraction of current or potential income which the social system provides to a person if he or she does not work. It varies according to the type of household, employee, sector of industry, wage and salary group and the reasons for not working.

Table 6.1 shows the net replacement rates for an average production worker receiving unemployment benefits (at the beginning of receipt of benefits) or social assistance (long-term benefit recipient). It demonstrates that the net replacement rate at the beginning of unemployment is relatively high for a couple with two children but lower for someone who is single. Hence, the bread-winner has little incentive to seek regular work. This is all the more true if the (participating) spouse is long-term unemployed. There are, of course, differences in the net replacement rate from one country to another. The net replacement rates for long-term benefit recipients are lowest in the United States and Spain and highest in the Scandinavian countries (except Norway), Switzerland and the Netherlands.

The replacement rate can be explained by the intended insurance function. However, a replacement rate also defines a minimum reservation wage, below which no one is willing to accept a job. In fact, for most people the minimum reservation wage may be even higher than that because when they decide to work they not only require a compensation for the lost special benefits but also for the time lost for leisure and for working at home or even for the loss of black market income. The higher the replacement rate, the better is the insurance protection, but the lower is the number of jobs which employers are willing to provide, given the skill distribution of the unemployed.

Table 6.1
Net replacement rates by family type at the APW level[a], 1997

	On unemployment benefits[b]		On social assistance[c]	
	Single	Couple 2 children	Single	Couple 2 children
Austria	57	73	54	70
Denmark	62	77	48	97
Finland	60	84	58	97
France	71	74	38	50
Germany	60	74	54	52
Ireland	33	62	33	62
Italy	36	54	28	62
Netherlands	75	85	60	79
Norway	66	73	36	54
Portugal	79	77	42	61
Spain	76	74	25	43
Sweden	72	84	58	100
Switzerland	73	84	61	90
United Kingdom	50	64	50	73
Australia	37	74	37	74
Canada	63	69	25	59
United States	60	61	7	48

[a] APW: Average production worker. – [b] In the first month of benefit receipt: after tax and including unemployment benefits, family, and housing benefits. – [c] For long-term benefit recipients (60 months): after tax and including social assistance, family, and housing benefits.

Source: OECD (1999), pp. 34 and 37.

2.2 High Unemployment of Low-Skilled Workers

The destruction of jobs and output resulting from the traditional policy is particularly severe at the lower end of the income distribution. The information provided in Table 6.1 refers to an average production worker. Workers with an income below the average will have a higher replacement rate than that reported in the table, and what is more: the replacement rate would be above one for people who do not work because their productivity and potential wage is below the level of social aid. However, since they do not work, the wage at which they would find employment is not known. Thus, no statistical information is available on the replacement rates of this important group.

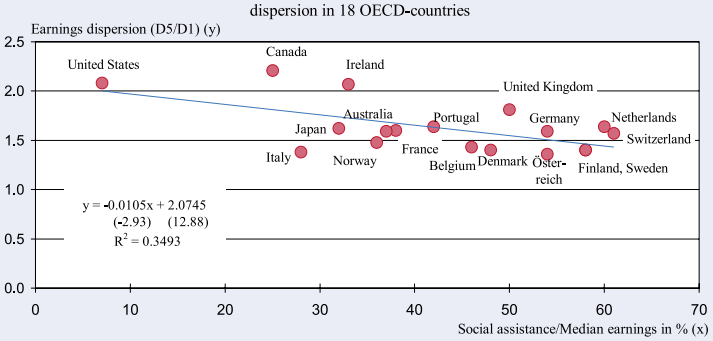
Social aid (and to a lesser extent unemployment assistance) is particularly problematic for the functioning of the labour market because, unlike unemployment insurance, it is a lower bound on the feasible wage distribution very much like a legally prescribed minimum wage. This lower bound is of limited importance for average production workers, but it destroys jobs for the less well qualified whose labour productivity is below the social aid level or not sufficiently above it to compensate for the work effort.

The consequence of social aid is that it compresses the wage distribution and concentrates unemployment on the lower qualification (or productivity) levels. As even less educated people are normally able to fulfil some useful functions in the economy, a wage is conceivable at which these people could find employment. The problem is that society considers this

Figure 6.1

SOCIAL ASSISTANCE AND EARNINGS DISPERSION IN THE OECD, 1997

Relationship between the relative level of social assistance for a single-person household and earnings dispersion in 18 OECD-countries



Note: The net replacement rate is calculated for the level of social assistance of a single and the earning of an average production worker. OECD database on earnings deciles refers to gross earnings. The eranings dispersion is the relation between median gross income (D5) to the gross income of the lowest decile (D1).

Source: OECD (1999), p. 37.

Table 6.2

Unemployment rates by education for population 25 to 64 years of age, 1999

		Below upper secondary education	All levels of education
Austria[a)]	Men	8.0	3.9
	Women	6.0	4.3
Denmark	Men	6.8	3.6
	Women	7.2	5.0
Finland	Men	12.0	8.1
	Women	14.4	9.3
France	Men	14.1	9.0
	Women	16.7	12.3
Germany	Men	17.7	8.4
	Women	14.1	9.5
Ireland[a)]	Men	11.7	7.4
	Women	11.4	6.5
Italy	Men	7.8	6.7
	Women	16.6	13.0
Netherlands	Men	3.6	2.1
	Women	6.7	4.1
Norway[a)]	Men	3.4	2.2
	Women	2.4	2.1
Portugal	Men	3.9	3.8
	Women	4.6	4.5
Spain	Men	10.5	9.2
	Women	22.8	20.1
Sweden	Men	8.5	6.5
	Women	9.7	5.8
Switzerland	Men	4.1	2.2
	Women	5.7	3.1
United Kingdom	Men	12.7	5.5
	Women	7.3	4.1
Australia	Men	9.2	6.1
	Women	7.6	5.4
Canada	Men	10.7	6.4
	Women	10.3	6.0
United States	Men	7.0	3.5
	Women	8.8	3.5

[a)] 1998.

Source: (2001) p. 274.

wage to be too low and it is therefore replaced by a higher level of social aid; but the good intentions turn out to have adverse employment consequences for those people who seemingly benefit.

Figure 6.1 gives some indication of the compression of the wage distribution through the social system. It regresses the earnings dispersion amongst relatively low earners as measured by the ratio of the median decile to the lowest decile of the wage distribution with the ratio of social aid and the average wage income across the 18 OECD countries for which the data were available. There is a significant negative correlation between these variables indicating that in countries like the United States and Canada, which have low levels of ordinary welfare payments, the distribution is indeed much wider than in countries like Denmark, Austria, Finland and Sweden where welfare payments are rather high.

Table 6.2 gives an overview of the employment situation among the EU countries. The majority of European countries are reporting high rates of unemployment. Many of the low-skilled unemployed are unemployed for over a year. The standardised unemployment rate for EU members is nearly 9 per cent. In every country, and for both sexes, the less skilled have the higher rate of unemployment. Average unemployment rates in excess of 10 per cent occur only in France, Italy, and Spain, and even there they are experienced only by women. For the less skilled such rates prevail in

Table 6.3
Underground economy as a percentage of GDP, 1998

	1998
Austria	9.1
Denmark	18.4
France	14.9
Germany	14.7
Ireland	16.3
Italy	27.8
Netherlands	13.5
Norway	19.7
Spain	23.4
Sweden	20.0
Switzerland	8.0
United Kingdom	13.0
Australia	14.1
Canada	15.0
United States	8.9

Source: F. Schneider (2000).

Finland, France, Germany, Ireland, Italy (for women), Spain, the UK (for men), and Canada. The unweighted average unemployment rate of workers with a "below upper-secondary education" is roughly 50 per cent higher than the general unemployment rate of the 12 EU member countries examined in Table 6.1.

Again, it should be noted that the statistical information is incomplete and misleading since those whose productivity is below social aid do not work enough to qualify for benefits and often do not look for work and, therefore, do not count as unemployed.

2.3 Black Market Activities

The policy of providing social assistance through replacing labour income has not only destroyed jobs by increasing reservation wages; it has also worked as a policy of subsidising black market activities. It is true, of course, that this was not intended, but as informal labour is the natural alternative to formal labour and as the payment of benefits stops when formal labour income is obtained, it is clear how the incentives have worked.

Table 6.3 reveals that the underground economy has reached a high level in most OECD countries. Black market activities are, of course, only partially brought about by the generous provision of social assistance. Other factors like high tax rates also play a significant role.

The replacement policy, however, not only provides incentives to work in the informal market, but also to use informal labour for home improvements, especially where home ownership is widespread. The spread of do-it-yourself stores not only reflects a fashion but also a rational reaction to economic incentives which undermine the division of labour and prevent the productivity gains that it entails.

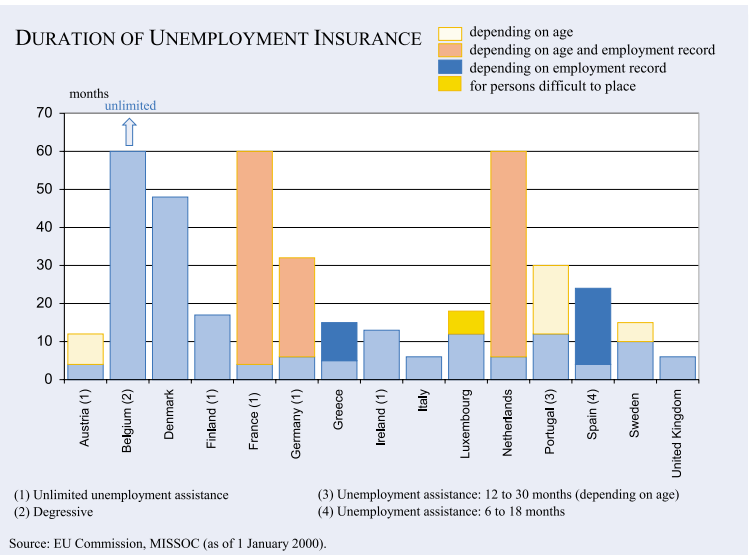
2.4 Attempts to Keep Disincentive Effects under Control

The disincentive effects have not been overlooked by policy-makers, but in most countries policy reactions have not called into question the traditional policy as such. There have been a number of attempts, however, to keep the disincentive effects under control.

One obvious provision in this regard has been the limitation of the periods during which people are eligible for benefits. Figure 6.2 gives an overview for EU countries.

In some countries, however, eligibility is of unlimited duration. Belgium is an extreme example, but even a country like Germany, which at first glance seems to have restrictive rules, pays unemployment

Figure 6.2



Source: EU Commission, MISSOC (as of 1 January 2000).

assistance (Arbeitslosenhilfe) at a replacement rate of slightly more than 50% for an indefinite period of time.[1] Entering the formal labour market as unemployed and then moonlighting is an extremely attractive option under these conditions.

Another attempt to keep misuse under control is the imposition of sanctions if a job is left voluntarily or if a job offered an unemployed person is not accepted. Table 6.4 gives an overview of the situation in some European countries. At first glance, the table signals a rather harsh approach in some countries, which even exclude the unemployed from benefits if they refuse a job twice.

The actual policies are, however, much milder than suggested by the table, since the jobs rejected must have been appropriate, and the definition of what is appropriate is always a matter of ambiguity. Also, of course, the provisions do not alter the fact that public money flows if people do not work and stops flowing if they begin to work. This is a challenge to the ingenuity of beneficiaries to invent reasons why an appropriate job cannot be found or why one offered is not appropriate.

The problem may not be avoidable with unemployment insurance because benefits have to be provided if someone does not work. However, the provision of social aid and social assistance to the long-term unemployed or people who have never entered the labour force is clearly another matter. Here, in particular, the traditional policy should be reconsidered.

3. Welfare-to-Work Policies: Wage Replacement vs. Wage Supplement

The alternative to the policy of wage replacement is a policy of wage supplementation. Benefits are not given on condition of staying away from formal employment but on condition of participating in it and nevertheless not earning enough. When the reason for the assistance is not a random or temporary loss in employment but a permanent handicap that results in labour productivity too low to permit earning sufficient income even with full-time work, the policy of supplementation may be a useful alterna-

[1] The United States provides unemployment insurance for six months but no unemployment assistance.

Table 6.4
Periods of benefit sanction following a voluntary quit and refusal of work or an ALMP placement

	First voluntary quit or dismissal for fault	Refusal of work or ALMP placement		
		First refusal	Second refusal	Subsequent refusals
Denmark	5 weeks	1 week (job), exclusion (ALMP)[a)]	exclusion	
Finland	3 months[b)]	2 months[b)] (job), 0–2 months (ALMP)	2 months or exclusion	2 months or exclusion
France	4 months[c)]	temporary or definitive exclusion[d)]	temporary or definitive exclusion[d)]	Temporary or definitive exclusion[d)]
Germany	12 weeks[e)]	12 weeks[e)]	exclusion[f)]	
Norway	8 weeks	8 weeks	12 weeks	26 weeks
Spain	exclusion[g)]	exclusion		
Switzerland	6–12 weeks	6–12 weeks	6–12 weeks or exclusion[h)]	6–12 weeks or exclusion[h)]
United Kingdom	1–26 weeks	1–26 weeks (job), 2 weeks (ALMP)	1–26 weeks (job), 4 weeks (ALMP)	1–26 weeks (job), 4 weeks (ALMP)
Australia	4–5 weeks	4–5 weeks	6 weeks	8 weeks

Note: ALMP: active labour market policy.
[a)] A first refusal of an ALMP placement leads to exclusion only during the "active period" (after 12 months of unemployment). – [b)] Reduced to 1 month if the job in question is for less than 5 days. – [c)] Admission to benefit after 4 months of unemployment is conditional on providing active job search during these 4 months. – [d)] The word »exclusion« in this table generally implies an indefinite benefit stop or definite loss of remaining benefit entitlement. Legislation also provides for temporary exclusions. When an attitude of refusal of work is observed, exclusion is in principle definitive. – [e)] Reduced in some circumstances. – [f)] Exclusion follows when sanctions totalling 24 weeks have been pronounced. – [g)] Exclusion in cases of a quit, but a 3-month waiting period in cases of dismissal for fault. – [h)] A second refusal of an ALMP place leads to exclusion, and a second or third refusal of a job might lead to exclusion.

Source: OECD Employment Outlook 2000, p. 135.

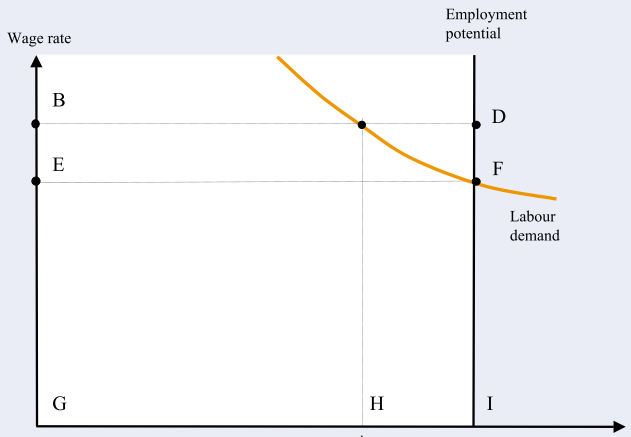
tive which could at least partly replace traditional welfare programmes.

3.1 The Basic Argument

We consider a stratified society consisting of groups of (potential) workers each characterised by a particular (potential) productivity level. Figure 6.3 illustrates the case of a relatively low productivity group. Given the total amount of capital assigned to this group and the conditions pertaining in other labour market segments, there is a well-defined demand curve for labour of this quality as a function of its (net) cost to an employer. The supply of labour is assumed to be inelastic. In the absence of intervention, the market-clearing wage would be w^*, but this is below the socially acceptable minimum wage w. To prevent anyone from having to live on an income as low as w^* two policies are possible.

Figure 6.3

WAGE REPLACEMENT VERSUS WAGE SUPPLEMENT



Source: Sinn et al. (2001).

One is a wage replacement policy and the other is a policy of wage supplementation. The first offers a public benefit payment of the minimum socially acceptable income. This places a floor under the market wage and A*–A people, who are in excess of the market demand for such low productivity workers at wage w, will be unemployed. Between them they will receive public funds represented by the area CDHI.

Under the alternative policy of supplementing low earnings from public resources there is no floor to the market wage which for everyone in the relevant skill class falls to w^*. Their income is brought up to the social minimum w by an employment subsidy w-w^*, costing the government an amount represented by the area BDFE.

We now need to relax some of the assumptions underlying Figure 6.3. The demand curve was drawn on the assumption of a given stock of capital available to co-operate with the category of low productivity labour being considered. If the policy is changed only for this group, raising its employment, we would expect capital to be reallocated from co-operating with other groups, raising the productivity of the group in question and reducing the cost of the wage supplementation programme.

The situation is slightly more complicated but qualitatively unchanged, if there are several distinct groups (or a continuum) of low-skilled workers whose equilibrium wage would fall below w in the absence of intervention. It is also important to acknowledge that the combined effect of raising the employment of the least skilled groups and diverting capital to co-operate with them will be to depress the market wage for some other groups of workers whose wage was, and remains, above w. These workers, and their representatives in organised trade unions, are therefore likely to resent and resist the policy change advocated here.

The big advantage of the wage supplement policy is that it does not generate unemployment. It is possible to help the low-skilled workers without eliminating some of the jobs necessary to employ all of them. This is not only better, because it preserves the dignity of the people in need and gives them a chance of improving their qualifications on the job, but also because it goes along with a higher level of GDP. In Figure 6.3, the additional employment results in additional value added produced which is equal to the area CFIH.

The analysis shows that the frequent claim that more growth is needed to generate more employment may have to be turned around for, in fact, it is the additional employment that generates more output. We believe that a change over from the wage replacement policy to the wage supplement policy would be a key element in a programme that would generate more output in Europe.

The policy switch will not necessarily increase budgetary costs. The replacement policy gives a large subsidy to a small number of people. The supplement policy gives a small subsidy to a large number of people. Which case will cost the government less cannot be determined *a priori*.

In Figure 6.3, the answer depends on the relative sizes of the areas CDIH and BDFE. The size of these areas is a function of the labour demand elasticity in the low-wage sector.[2] Information on labour demand elasticities is scarce. With a linear homogeneous production function the constant- capital wage elasticity of labour demand is the ratio of the elasticity of substitution and the non-labour income share in GDP. While the former has been estimated to be in the range of 0.6 to 0.7, the latter can be assumed to be about 1/3. Thus, the absolute labour demand elasticity with a given stock of capital (and endogenous output) lies in the range of 1.5–2.[3] These estimates do not refer to the low-wage sector and do not consider the dynamics of labour demand resulting from the fact that lower wages will induce more capital investment. In the low-wage sector, the labour demand elasticity is higher than in the overall economy. If dynamic aspects are included, the elasticity increases further. Taking into account the special situation of the low-wage sector, long-term adjustments and the self-financing aspect of the promotion of higher employment, a wage supplement policy can be expected to cost the government less than the traditional policy and it would also generate more employment and a higher GDP.

If the wage were raised from w^* to the same level w (Figure 6.3) regardless of the workers' productivity level, very low productivity persons would have no incentive to study or otherwise raise their productivity a little; unless they could qualify themselves for a job paying more than w, they would be no better off. On the other hand, to pay a significant subsidy to everyone who works would be impossibly expensive. In practice, therefore, wage supplements are made a function of wages paid (or more often of earnings). Typically, the supplement or tax credit rises with earnings over a certain range of lower earnings and is spaced out over a range of higher earnings. The first effect ensures some incentive to improve one's skills and productivity – possibly through formal qualifications. The second has the disadvantage of adding to the effect of positive marginal income tax rates in tending to discourage both work and training. This disadvantage is hardly avoidable, but it seems less problematic than leaving people in idleness. The advantage of a wage supplementation policy is that, unlike the current systems, people can actually be induced to work and that it involves lower budget costs for the government, while achieving the same social objective.

3.2 Real-World Examples: A Country Comparison

The wage supplement policy is no longer pure theory. Several OECD countries have introduced policies that provide incentives to low-skilled workers to participate in the labour market. These policies go beyond the well-known active labour market policy or the tightening of the eligibility requirements for social benefits. Instead, they constitute a

[2] The crucial variable for finding out which policy is cheaper is the labour demand elasticity. Express the unemployed $A^*–A$ resulting from the replacement policy as part of the total labour force A^*,

$A^* – A = \gamma A^*$ (= HI),

and let the subsidy in the supplementing case be given by

$w – w^* = \delta w$ (= DF).

The ratio of the budgetary costs K in the two cases is then given by

$$\frac{K_r}{K_s} = \frac{(A^*–A)w}{(w–w^*)A^*} = \frac{\gamma A^* w}{\delta w A^*} = \frac{\gamma}{\delta}$$

where the subscripts r and *s* stand for the replacement and supplementing policies. The ratio of γ and δ is the demand elasticity for labour. This becomes clear if the first two equations are rewritten as

$$\gamma = \frac{A^*–A}{A^*} = \frac{\Delta A}{A^*}$$

and

$$\delta = \frac{w–w^*}{w} = \frac{\Delta w}{w}.$$

According to these equations, γ is a relative change of employment and δ is a relative change of the wage rate. The ratio of these variables,

$$\frac{\gamma}{\delta} = \frac{\Delta A/A^*}{\Delta w/w},$$

is the labour demand elasticity. Obviously, if, and only if, $|\gamma/\delta| > 1$ is the supplement policy the cheaper alternative since then $K_r / K_s > 1$.
See Sinn (2000).

[3] Burgess (1988) determined a value of 1.85 and Nickel and Symons (1990) estimated 1.92. Franz and König (1986) only found a value of one. Estimates of the output-constant demand elasticities are lower, usually in the range between – 0.3 and – 0.5, because they assume that capital input diminishes as employment goes up. See Fuchs, Krueger, Poterba (1998) and Hammermesh (1993). Of course, reference to the output-constant elasticity makes no sense in the present context, since capital input will increase rather than diminish when wages fall. The relevant elasticity for our purposes is one which incorporates all endogenous factor adjustments, and that elasticity is even higher than the capital-constant elasticity to which the text refers.

fundamental change of welfare policy. Social benefits are no longer provided to inactive persons but to people who are employed or who make efforts to become employed.

The welfare-to-work policies consist of a variety of measures:

- Employment-conditional benefits, tax credits or wage subsidies and payroll-tax rebates given to employers.
- The obligation of benefit recipients to be active (participation in public employment or job training). Otherwise, they lose their entitlement to benefits. By taking part in these activities, the benefit recipient will increase his or her human capital and become accustomed to working.
- The shortening of the duration of benefits. New benefits are often made available only for a limited period of time.
- The promotion of intensive job search.

There are mainly eight countries that have actually introduced major welfare-to-work programmes: the United States, Canada, the United Kingdom, Ireland, Denmark, France, the Netherlands and Sweden. The programmes differ substantially. The major features of six of these programmes are summarised in Table 6.5.

The US welfare-to-work programme consists essentially of an employment-conditioned tax credit (the Earned Income Tax Credit – EITC) and a workfare system. The UK's approach comprises the "working families' tax credit" and the "new deal programme". Denmark is making those active who have been unemployed for a long time and has made the eligibility criteria for social benefits more demanding. Sweden is "activating" the long-term unemployed and is offering a two-year wage subsidy to employers who hire unemployed workers aged 57 or older. In France, firms implementing the 35-hour week are entitled to relief on the employer's social security contributions; an employment-conditional tax credit was introduced in 2001. The Netherlands obliges the long-term unemployed to participate in public employment or training programmes and reduces employers' social security contributions when hiring certain types of unemployed workers. In the following we shall look more closely at the experience of the different systems.

United States

The US welfare-to-work programme provides employees in low-wage occupations with an earned income tax credit (EITC) whose goal is to create work incentives for low-wage earners and boost their incomes. The beneficiaries are subject to federal income tax. If the tax credit is higher than the income tax owed, the difference is paid out to the eligible families. Otherwise, it is deducted from the income tax. The earned income tax credit is administered by the Internal Revenue Service.

Employment is required for eligibility and the programme is primarily aimed at working people with children. The amount of tax credit received is based on gross earnings. Figure 6.4 illustrates the three ranges of the earned income tax credit. In the first range the increase in the tax credit is proportional to income. In the second range the tax credit remains constant. In the third range it declines until a maximum income is reached. The amount of tax credit and the income limits differ according to household type. Dis-

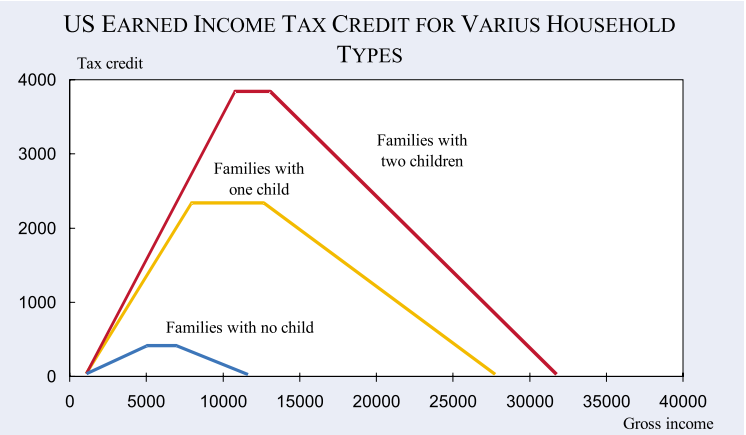
Table 6.5

Welfare-to-work programmes

Elements	US	UK	Denmark	Sweden	France	Netherlands
Employment-conditional benefits and tax credits	X	X			X	
Wage subsidies		X		X		
Payroll tax rebates					X	X
Obligation to work for welfare recipients	X	X	X	X		X
Duration of benefit provision limited	X					
Support of job search	X					
Other: Tightening of eligibility requirements for social benefits			X			
Active labour market policy			X	X		X

Source: CESifo DICE Database.

Figure 6.4



Source: R. Zahradnik, I.J. Lav, A D.C. Earned Income Tax Credit Could Provide Tax Relief and Reduce Child Poverty, Center on Budget and Policy Priorities, February 9, 2000.

tinctions are made in the case of families with two or more children, families with one child, and people without children. The highest credit is given to families with two or more children.

The parameters of the earned income tax credit in the year 2000 are shown in Table 6.6. A family with two or more children and a yearly income of between $1 and $9,720, for example, receives a tax credit of 40 cents for every additional dollar earned. With a gross income of $9,720 the maximum credit of $3,888 is reached. This remains constant until gross income reaches $12,690. For every dollar earned above $12,690, the tax credit is then reduced by 21 cents. With gross income reaching $31,152, the tax credit is reduced to zero. In the third range in which the tax credit is reduced, the marginal charges on income are higher than the marginal rate of income tax. As a rule, in this range of tax credit reduction, the marginal effective tax rate capturing both the reduction of the earned income tax credit and the increase in ordinary taxes amounts to about 50%.

In 1999, nearly 19 million workers took advantage of the tax credit. It amounted to an average of $1,632 (Economic Report of the President 2001, p. 200).

In addition to the earned income tax credit, the US has pursued a workfare model since 1996. The temporary assistance to needy families (TANF) programme was introduced in order to overcome welfare dependency. The legal entitlement to welfare was eliminated, and willingness to accept work was made a condition for welfare assistance. If this work requirement is not fulfilled, the claim to welfare lapses. The principle of reciprocity was firmly established: the state is obliged to provide money and jobs and, in return, the welfare recipient is obliged to work. In addition, the TANF programme sets a limit of five years on welfare benefits during a person's life time. Moreover, it gives priority to work over education and training. Finally, to a greater extent than in the past, the federal government gives the individual states authority to decide the (final) nature of their welfare programmes. Global subsidies to the states' budgets have created an incentive for the implementation of welfare reform.

United Kingdom

Along with the United States, the United Kingdom has had a long tradition of assisting working people who have low incomes. In 1971 a family income supplement was introduced. This was replaced in 1988 by the Family Credit (FC). This in-work benefit was in turn replaced at the end of 1999 by the Working

Table 6.6

US federal earned income tax credit parameters in 2000

Household type	Phase I		Phase II	Phase III	
	Credit percentage	Income limits[a] ($)	Maximum benefits ($)	Phase-out rate (%)	Income limits[a] ($)
Families with one child	34.0	0–6,920	2,353	15.98	12,690–27,413
Families with two or more children	40.0	0–9,720	3,888	21.06	12,690–31,152
Families with no children	7.65	0–4,610	353	7.65	5,770–10,380

[a] Annual amounts for income or EITC assistance.

Source: H. Johnson (1999).

Families' Tax Credit (WFTC) (see Figure 6.5). The credit is paid to all low-income families with children who have at least one adult working for at least 16 hours per week. The payments are set at a level that guarantees families a minimum income of £200 per week, with additional payments for larger families. Furthermore, 70 per cent of all childcare costs (up to £150) are covered. A small additional payment is made if at least one adult per family works for more than 30 hours per week. When earnings exceed £90, the credit is reduced by 55 per cent of any additional earnings. However, because this adjustment is only made every six months, temporary marginal increases in hours worked are not discouraged. This "taper rate" comes in addition to income tax and social insurance contributions. The credit is paid through wage packets every month. In 2000, it covered 1.1 million recipients (in a country with a total of around 20 million households and 27 million wage and salary earners), costing over £5 billion per year – about two-thirds of a percentage point of GDP.

Since 1998, the working families' tax credit has been supplemented by a new arrangement, which aims at increasing peoples' employability and at helping them find work. It consists of a number of different strands. The new deal's target group are the young long-term unemployed, aged 18 to 24. After young people have been unemployed for 6 months, they enter a "gateway" of intensive counselling with a personal adviser. This can last for a maximum of 4 months, during which time they are expected either to be placed into a regular job or to have entered one of four subsidised programmes, lasting at least six months:

- A subsidised job with a regular employer (secured by a 6-month subsidy of £75 a week)
- Work experience in the voluntary sector (while receiving benefits plus £15 a week)
- Work experience in an environmental project (while receiving benefits plus £15 a week)
- Full-time vocational education (while receiving benefits).

All of the programmes described above include at least one day a week of training.

The new arrangement is well funded and has received general approval. Since April 1998, many young people have been provided with work, and long-term unemployment among young people has already declined by two-thirds (in a period of falling unemployment).

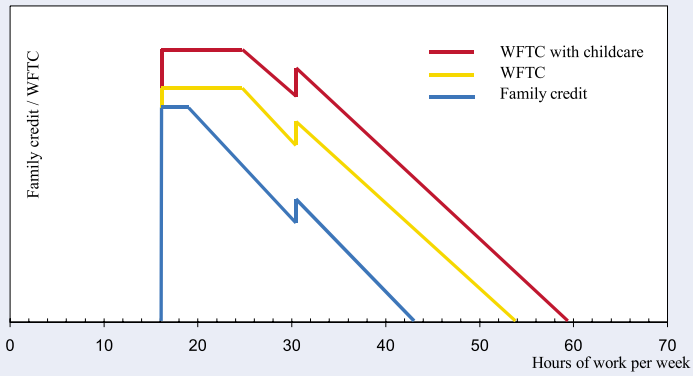
In addition, a pilot programme was initiated for those aged 25 and over who have been unemployed for two years or more. It offers personal advisers, a subsidised job, full-time education, training and continuing guidance for finding work.

Denmark

Denmark's welfare-to-work policy does not provide in-work benefits. Thus it does not really fit the listing made here. Nevertheless, the Danish approach is worth including because it involves exceptionally harsh punishment for people who do not accept job offers. Recent reforms included two elements. One is compulsory activation, introduced in 1996. Compulsory activation applies to the longer-term unemployed. It requires these unemployed to participate in full-time private and public on-the-job training in return for receiving unemployment benefits and social assistance. The length of unemployment before compulsory activation takes place is one year for those aged 25 years and older. For younger people, compulsory activation already applies after six months, and in addition the benefits are cut in half. One of the aims of this "right and duty" policy is to stimulate adequate job-search

Figure 6.5

A COPARISON OF FAMILIY CREDIT AND WORKING FAMILIES' TAX CREDIT (WFTC)



Source: R. Blundell, A. Duncan, J. McCrae, C. Meghir, The Labour Market Impact of the Working Families' Tax Credit, in: Fiscal Studies, Vol. 21, No.1, 2000, p. 78.

behaviour, thereby avoiding the need for compulsory activation.

The other element of the reforms is the tightening of the generous unemployment benefit system itself. The benefit period has now been reduced to four years, and activation does not start for a new benefit period. The eligibility criteria for unemployment benefits have been made more demanding. After the first job refusal, there is a one week penalty and after the second refusal unemployment benefits are cut altogether. The duration of occupational protection allowing unemployed people to refuse a job offer that involves a change of occupation has been reduced to three months. At the same time surveillance of benefit eligibility has been tightened.

Sweden

In Sweden, the so-called activity guarantee came into force in 2000. It applies to people who receive either unemployment or other social benefits and who have not had ordinary (unsubsidised) work for 27 months. This group comprised 50,000 persons (1¼ percent of the workforce) at the end of 2000 who are obliged to participate in full-time activation to maintain their benefit entitlement.

The activity guarantee requires job seekers to participate in an active labour market programme or some other education or training in order to increase their human capital. Each activation period within the framework of the activity guarantee is planned for a maximum duration of six months, at the end of which an evaluation is made and a new six-month period may be planned. There is no fixed time limit to the total duration of the activity guarantee period; in principle it may be open-ended.

In addition to this new form of activating the long-term unemployed, a generous two-year wage subsidy is offered to employers hiring unemployed workers aged 57 or above during the activity guarantee period. This subsidy is 75 per cent of the wages, although it is subject to a maximum of SEK 525 per day.

France

France's welfare-to-work policy consists mainly of programmes intended to increase employment and to train specific groups having difficulty in finding work. Employers are exempt from social contributions or receive wage subsidies if they offer employment initiative contracts, on-the-job training, apprenticeships, etc. Since 1 January 2000, firms implementing the 35-hour week have been entitled to more generous relief on employers' social security contributions. The scheme combines both flat-rate relief and declining-rate relief. The relief decreases from FRF 21,500 per year if the legal minimum wage (SMIC) is paid to FRF 4,000 if a wage 80% above the minimum wage is paid. Thereafter, a flat-rate exemption of FRF 4,000 is provided.

In addition to the existing programmes, an employment-based tax credit was introduced in September 2001. Workers not earning more than 1.4 times the minimum wage (FRF 99,016 per year) will receive the tax credit. A couple with two children will receive FRF 3,400 up to FRF 9,400. This three-year programme is estimated to cost FRF 25 billion.

Netherlands

The Netherlands' welfare-to-work programme consists of an extensive programme of subsidised jobs for long-term unemployed workers who normally receive social assistance benefits (called Melkert jobs after the former Minister of Social Affairs and Employment). The aim is to provide about 60,000 jobs for 32 hours a week, at either the legal minimum wage or slightly above. It includes four different programmes: Melkerts 1, 2, 3 and 4. The jobs are created in municipalities (maintenance of public areas, education, child care, etc.) and in healthcare (hospitals, home care etc.). Recipients of social assistance who refuse these jobs suffer benefit sanctions.

In order to increase labour demand, employers' social security contributions for low-paid workers were cut (SPAK). Employers paying less than 115 per cent of the legal minimum wage are entitled to these cuts. SPAK reduces gross labour costs by 10 per cent. Moreover, firms hiring long-term unemployed workers can qualify for an additional reduction in social security contributions for a period of four years (VLW). The combination of SPAK and VLW can cut labour costs by up to 23 per cent.

3.3 Evaluation of the US Experience

Since the labour market conditions and the welfare-to-work programmes differ from country to country and since some of these programmes have only been introduced in recent years, a comparative assessment of their effects is not yet possible. However, there is now ample evidence on the results of US reforms.

The US welfare-to-work programme, consisting of the earned income tax credit (EITC) and the temporary assistance to needy families (TANF), had the objectives of increasing labour supply and employment and supporting the poor.

The latter objective has largely been achieved. Half of all payments go to families with income below the poverty line.

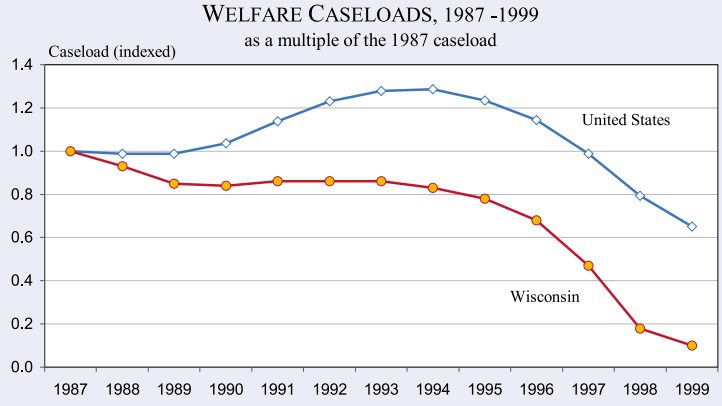
With regard to increasing labour supply, one must distinguish between two effects: the encouragement of participation in the labour force and the encouragement of the supply of additional working hours by those already employed. There is no doubt that participation has increased. The rise in net incomes and the accompanying decrease in net replacement rates has created work incentives. The effect on the supply of working hours, however, unsurprisingly, is not as clear. As income increases due to the earned income tax credit, a household can afford to enjoy more leisure and reduce working hours (the income effect). On the other hand, there are substitution effects caused by changes in relative prices between leisure and working time (the substitution effect). The substitution effect depends on which of the three ranges applies (see Figure 6.4). In the initial range, where the state subsidises each dollar earned with 40 cents, there is a clear substitution effect towards working more. In the flat intermediary range, there is no substitution effect. And in the third range where the tax credit is phased out the substitution effect is negative. Empirical studies confirm that there are, in fact, these effects, but they also show that the net overall effect on hours worked is positive. The people entering the labour force because of the tax credit and working longer in response to a higher net marginal wage are more important than those who work slightly less because the phasing out of the credit creates a highly effective marginal tax burden. The great achievement of the programme has been to integrate the unemployed into an orderly working life.

Part of the prosperous growth and the employment miracle in the United States during the last two decades can, in our opinion, be attributed to this effect. The additional jobs brought about growth since the employed were productive and generated income which financed additional consumption. This was supply-side policy at its best.

There is particularly good information on the results of the 1996 welfare reform carried out in Wisconsin. Basically these can be summarised as follows.

- The number of TANF welfare recipients has been reduced considerably. This is illustrated in Figure 6.6.
- Aggregate welfare expenditure has fallen.
- About 70 per cent of former welfare recipients were successful in finding jobs. They are now in a position to provide for themselves by working. 30 per cent do not work after leaving welfare.
- Illegal work is becoming less attractive and, indeed, unattainable for those obliged to work in the formal sector.
- Income of former welfare recipients who find a job has increased. It has decreased for those who continue not to work.

Figure 6.6



Notes: The data refer to to ordinary welfare payments (AFDC) and temporary assistance to needy families (TANF). Wisconsin data: calendar year monthly average. U.S. data: federal fiscal year monthly average.

Source: U.S. Department of Health and Human Services, Administration for Children and Families; Wisconsin Department of Workforce Development, Economic Support Division.

- In-work benefits are lower than out-of-work benefits because they are only needed as a supplement to earned income.
- Close targeting of beneficiaries is a prerequisite for all measures.
- Work as a condition for social benefits activates a self-selection mechanism amongst welfare recipients which helps to limit abuses. In addition, welfare recipients are induced to be more active.

4. A Proposal for Europe

Helping the needy under the condition that they remain idle is a strange idea which has little in common with both the basic principles of justice and the positions of Europe's traditional parties, whether conservative, labour oriented, social democratic, Christian or green. Replacing wage income of the unemployed sounds better than paying for idleness, but it results in similar policy measures. Unemployment largely follows from paying people under the condition that they not work. The wage replacement policy that characterises Europe's welfare states increases the reservation wage, pushing it dangerously close to too many people's productivity or even above it.

The high and persistent level of unemployment in Europe makes it necessary to reconsider the European welfare state, the wage replacement policy and the definition of poverty.

Unemployment benefits in the usual sense of the word have a useful insurance function against random, temporary job losses. They should therefore remain a crucial ingredient. If the benefits are given only for a limited period of time, if the replacement rate is moderate, if recipients face penalties in case of job rejection and if they are forced to actively seek employment, this type of insurance will only generate limited moral hazard effects relative to the income security it provides.

Unemployment assistance that is paid for an unlimited period of time is much more problematic, since it provides a reasonable income to those who earned a relatively high wage and is all too often only the basis for additional income from moonlighting to make ends meet. Unemployment assistance of this sort should be abolished altogether and integrated with the payment of social aid.

Social aid itself needs to be reformed, however. Since it is fixed in absolute terms, independently of the previous wage, it prevents all those people from participating in the labour market whose labour productivity is lower than, or not sufficiently above, social aid. Labour productivity is an upper bound on wages, and social aid is a lower bound. The two bounds define an empty set of job opportunities for an increasing number of people.

We believe that a modified earned income tax credit system of the American type, albeit with significantly higher benefit levels, is to be recommended. Instead of taking money away if someone decides to accept a job, he or she should be given money. And instead of defining poverty as not having a job, it should be defined in terms of earning too little when working. This principle was explained in the introduction.

One major difference from the American system refers to the treatment of those who do not find a job despite the new policies or claim not to have found a job. To maintain their work incentives, they should receive only very low benefits during their search. The US benefit level satisfying this requirement may be too low, however, when judged by European social preferences. In fact, the minimum income definitions specified by social laws and supreme courts of justice preclude a simple translation of the American solution to Europe. To avoid this difficulty we include public jobs in the programme we propose.

Starting from a system with a given level of social aid which satisfies a country's minimum income requirement, we define four different categories of people and the welfare payments for which they are eligible.

1. People who cannot work for medical or social reasons to be defined by law. They receive the traditional type of social aid.

2. People who can work, but do not, for whatever reason. These people receive only a benefit level of the American type, much below the current level of social aid in Western Europe, but much above American levels.

3. People who work in simple government jobs. They receive a wage income equal to the country's minimum income requirement (the previous social aid). The government is obliged to provide the necessary number of jobs.

4. People who work in the private sector. They receive the earned income tax credit, properly adjusted to ensure that the sum of market wage and government subsidy exceeds the minimum income requirement (i.e. the income earned by category three).

This system defines an income ladder which people will be able to climb. It reduces the lower bound on wages to the level of social aid received by the second category of people and creates the additional jobs that are needed if that level is sufficiently low.

While it is true that, in the short run, the lower bound on wages could also be given by union wages, we believe that union wages will soon react to the new incentives and ensure that their members become eligible for the earned income tax credit.

In countries with statutory minimum wages it may be necessary, however, to reduce these wages to the level of social aid as given to people in category two above or to define minimum incomes such that they include the funds received from the government. This should not be a major problem.

It is crucial for the principles of our proposal that the second category exists. It is necessary to make sure that people climb the income ladder by working more rather than less. There will not be many people belonging to this category, though, and those who do will not be a problem. People who cannot work are in category one and people who need more income but cannot find a job in the private sector will be in category three. The few who congregate in category two must have alternative incomes from undeclared work in the informal economy which makes it preferable not to spend their time on the jobs provided by the government.

Compared to a traditional welfare system, the system we propose will shift the vast majority of the current welfare recipients into categories three and four. Most people will find a job in the private sector because low wages will fall. They will still be better off than before, because the sum of the earned income tax credit and the market wage will exceed the previous level of social aid. The others, who fail to find a job in the private sector, will work for the government where they receive an income that satisfies the legal or supreme court minimum income definitions.

In the short run, after introducing the new system, many people may find themselves in category three. Instead of receiving social aid for free they will have to work for it. Over time, however, the free market wage for simple labour will decline and more and more jobs will be created, as the American example has shown. Thus more people will gradually be integrated into the private job market, and category three will run dry. In the end, unemployment among the less skilled will largely be eliminated, and the economy will be closer to the full employment low-wage situation depicted by point F in Figure 6.3.

In sum, our proposal will create a better welfare state by improving its incentive structure and provide more income to the needy, given the overall expenditure which the government can afford. This new type of activating welfare state will better satisfy the goals defined at the outset than the current one, and it will bring about a higher activity level and more economic growth from which all will benefit.

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CAP Reform

Recent problems with animal health, particularly Bovine Spongiform Encephalopathy (BSE) and Foot and Mouth Disease (FMD) in England, where they contributed to a fall in the income of a typical 500 acre farm from £80,000 in 1999 to £40,000 in 2000 and £2,500 in 2001, have added to pressure to reform the CAP. Other pressures come from its effect on the community budget, on third world economies, on relations with countries exporting the products we export – but on a more commercial basis and the consequences for the enlargement of the European Union to include its eastern neighbours, such as Hungary and Poland, which have large agricultural sectors. The political balance within Europe may have changed recently, particularly with the role of the Green Party in Germany's ruling coalition. Environmental issues, such as those raised by the "Set Aside" policy under which farmers are paid not to cultivate some 14 per cent of previously cultivated land, have taken an increasing role in agricultural (and agri-environmental) policy.

The need to reform the Common Agricultural Policy has been recognised for many years and a start has indeed been made in switching support from output subsidies, which encourage intensification with adverse environmental effects, to agro-environmental programmes which support conservation and rural incomes without adding to agricultural surpluses. Progress is, however, inadequate to meet the growing pressures for reform.

The pressures come from several directions: the oldest is the financial pressure reflected in the fact that the CAP absorbs 48 per cent of the EU's communal budgetary resources or EUR 41.5 billion – see Table 7.1. One would expect the EU's budget, as opposed to that of its member states, to be concentrated either on redistribution from richer to poorer members or on externalities and public goods that operate at a supra-national level – such as greenhouse gases or mutual defence. Agricultural support is an indirectly redistributive arrangement and, for historical reasons, the CAP still provides more support to "northern" crops grown in France and Germany than to "southern" crops grown in Spain and Portugal. Together they have the same area under cultivation as France but in 1999 received 15 per cent of expenditure compared to France's 23.6 per cent. Nor does it benefit the poorest farmers. While support averages £20,000 per farm, the maximum is twenty times that.

The second, and related, pressure is from the planned enlargement of the EU to the East.

Table 7.1

Comparison between domestic and international prices for main agricultural products
Price 1999–2000

EUR/ton	EU	World	Gap in %		EU Spending EUR billion
Wheat	133	118	13	}	
				} arable	16.64
Maize	140	92	52	}	
Rice (milled)	600	300	100	}	
Sugar	650	250	160	}	
Bananas	660	360	83	} other plants	9.23
Citrus Fruit	485	467	4	}	
Tomatoes	787	633	24	}	
Beef Meat	2,780	1,176	57		4.46
Pig Meat	1,120	1,113	1	}	
Poultry Meat	1,335	977	37	}	
Sheep Meat	3,333	1,476	126	sheep/goat	1.53
Whole Milk Powder	2,605	1,384	88	}	
Skimmed Milk Powder	2,055	1,419	45	} dairy	2.77
Butter	2,954	1,307	126	}	
Cheese	3,500	2,154	62	}	
Rural Development					4.1
Other					2
Total					41.47

Source: EU Commission DG-Agri (2000), "EU Trade Concession to Developed Countries (Everything But Arms)", p. 7.

Poland, in particular, of the first wave candidates, is a large country (40 million people) with a large agricultural sector (accounting for 18 per cent of the civilian working population – four times the EU average).

To extend CAP support prices to Polish (and Hungarian) output would be costly. The CAP is not financed by any means entirely by the budget; consumers also pay prices higher than those on world markets. Thus the entrants should be expected to respond to CAP membership by raising output and reducing consumption – changes which have to imply larger European surpluses to be disposed of on world markets at much lower prices than have been paid to EU producers.

This is one of the areas in which the terms of the Accession Treaties have yet to be finalised – but there can be no doubt that EU enlargement would aggravate the costs of the CAP. This is true not only of costs borne directly by EU consumers and tax payers but also in the form of strained relations with allies and trading partners. The increased net surplus of Europe in agricultural products would tend to depress world prices and antagonise established commercial exporters such as Argentina, Australia and Canada.

The EU's relations with developing countries in this area are complex. This is because they are treated differentially on the basis not only of their poverty but also whether they were ever colonies of EU member states. Generally, the agricultural protection associated with the CAP militates against imports from the third world. Some poor countries, however, have privileged access to EU markets for some products. Although they would lose in a completely liberalised system it has been calculated that, as a group, developing countries would benefit more from liberalisation than they do from existing EU development-aid budgets – aid does less than compensate for barriers to agricultural exports even before one considers other exports, such as textiles.

One of the products given special, and limited, privileged access to the EU market, is bananas. This privilege has been contested by the United States on behalf of US-owned plantation and packing companies growing them typically in Latin America. The EU regime has been amended under pressure but it never conferred benefits on its intended beneficiaries that warranted the costs to other parties – including the costs of administration.

Table 7.2
Agricultural support in selected OECD countries, 2000

	Producer support		Consumer Support	
	USD billion[a)]	%[b)]	USD billion[c)]	%[d)]
Norway	2	66	– 1	– 44
Japan	60	64	– 68	– 54
EU	90	38	– 44	– 29
US	50	22	+ 4	2
Australia	1	6	negligible	– 3
OECD Total/average	245	34	– 147	– 26

[a)] Total support to producers by way of budgetary transfers and the benefits of protective tariffs;
[b)] as% of gross farm receipts.
[c)] Total support to consumers of agricultural products – negative figures represent effective taxation on consumers by way of taxes on agricultural products including imports. Producer support from general taxation (and associated deadweight costs) are not represented as (negative) consumer support.
[d)] As % of total value of consumption expenditure on agricultural products at farm gate prices.
World prices are assumed unaffected by national support operations.

Source: OECD.

Admittedly the EU is not the greatest protector of domestic agriculture (see Table 7.2). Norway and Japan offer even more extreme examples and the United States offers support to specific crops such as tobacco and peanuts. Indeed the EU is representative of other OECD members in this area.

The strains associated with production surpluses add to tensions associated with European reservations about production methods, particularly in the United States, but also in, for instance, Argentina. These problems relate particularly to meat, and to a lesser extent, dairy products based on the application to livestock of hormones (to stimulate growth) and antibiotics (to combat disease, especially in densely packed flocks e.g., of poultry). The question of genetically modified products also divides Europe from America.

Every one of these cases raises two questions: does the treatment or modification have effects on the product (e.g., residues) that makes its consumption by humans a threat to their health? Secondly, does the use of the technique pose threats to the health of the environment or to the wellbeing of its wild or human inhabitants?

There are arguments about the effects of residues on the health of human consumers of foodstuffs produced in these ways. The Americans, however, are as sensitive to threats to their health (even if not as sensitive to the taste of their food) as any European population. This provides some grounds for believing that the direct threats of such products to human health are indeed small. On the other hand the environmental effects are real in every case. Hormones (and antibiotics) are liable to get into groundwater – and ultimately into drinking water. The widespread and routine use of antibiotics increases the risks of the emergence of resistant strains of diseases that threaten man (such as MRSA). Genetically modified crops release pollen etc. that can travel considerable distances and could lead to changes in wild varieties, including weeds, in ways that are virtually impossible to predict – and could be adverse.

The European authorities have reacted to each of these threats by restricting the use of the relevant procedures within the EU – and also by restricting the importation of hormone (and antibiotic) treated meat and requiring the labelling of products incorporating genetically modified material, which, given European attitudes, approximates an import ban. However the arguments used above, suggesting that the environmental threats are greater than the threats directly to consumers, imply that restrictions on production are more appropriate than restrictions on imports or on consumption – unless residues from US hormone-fed and antibiotic-treated products passed through European consumers into the European environment – a relatively small risk.

Admittedly, in the absence of any interference in trade, a productivity raising innovation that was adopted in one country (the United States) but banned in another (Europe) would increase output and net exports in the first and reduce them in the second. The number of people and amount of land devoted to the relevant product in Europe would fall. It would still be open to European governments, reluctant to let this happen, not to ban imports from the United States but to impose a tariff or, more realistically, to raise support prices for the relevant products.

Unfortunately, it is not only things like hormones and antibiotics whose use in agriculture threatens the environment. The same is true of all production incentives. Raising the price of agricultural products can only raise output if land is used more intensively or if traditional permanent pastures, heaths and moorland are ploughed up, or water-meadows drained. All are likely to damage the environment and biodiversity. More intensive use of given land involves chemical fertilizers whose run-off into surface waters is damaging, and spraying of crops with pesticides in ways damaging to insects and those who depend on them for food. Ploughing up open land and rooting out hedgerows (for which EU subsidies have added to the needs of large machines) destroys wildlife habitats.

There are also questions about the implications of agricultural practices on the welfare of farm animals. How much space should a broiler chicken, a piglet, or a veal calf have? How free should they be to move around etc., etc? And under what conditions should they be transported, live, to "finishing" pastures or to slaughterhouses?

On all these questions the EU sets minimum standards and, as in other areas, national governments are free to impose higher standards on their own producers – but not to restrict imports from producers in other countries who meet only lower- or minimum-standards.

In most of the cases mentioned above, the UK imposes considerably higher standards than the EU minimum – which does not seem a very sensible policy. It diverts production from the UK to other parts of the EU to the obvious detriment of UK producers and no advantage to the animals concerned who 'migrate' involuntarily to countries with lower standards.

Although the perverse or ineffective policy is, in this case, a national one, the EU could help to meet the problems at issue. What is required is a set of definitions of progressively higher standards or methods of production (i.e. more conducive to animal welfare) and a labelling regime, together with enforcement and monitoring measures, so that consumers could be reliably informed of the welfare standards to which the producers of the product they use conformed.

Instead of agitating for higher welfare standards to be enforced on producers in a particular member state (without any perceptible beneficial effect on animal welfare), NGOs, and their members, should concentrate on:

- raising the EU's minimum standards
- monitoring enforcement and compliance with all standards and labelling requirements throughout the EU
- persuading consumers throughout the EU to buy products produced in conformity with higher rather than lower standards – despite the price differential.

At the moment many questionable meat products are imported into the UK (and presumably other member countries) from outside the EU. It would seem reasonable to require improved labelling of such products even if WTO rules precluded a requirement that they be labelled in accordance with the EU's agreed grading of animal welfare standards – the issue that the EU's proposed requirements in relation to genetic modification will also raise.

Is there any link between the various concerns expressed above, intensification, medication, animal welfare and the two disasters that have recently struck British livestock farming: BSE and Foot and Mouth disease (FMD)? It is hard to blame either disaster on the CAP since both, though not entirely restricted to the UK, have been limited and controlled elsewhere in Europe.

The threat to human health, in the form of new variant Creuzfeld Jakob disease (vCJD) had precedents in Britain in scares about salmonella, particularly in eggs, and listeria, particularly in certain cheeses. Many animal products – or vegetables fertilised with animal manure – can be a threat to human health (in the last case through e-coli).

What, if any, are the lessons of these cases for the CAP? Many of the threats (salmonella, e-coli, listeria) are endemic but can be limited or contained by prescribing appropriate production processes and by warning particularly vulnerable consumers. BSE and FMD are different. Although FMD is endemic in other parts of the world it is not unreasonable to hope to eliminate it from Europe – but measures designed to prevent entry by the virus from outside can never be guaranteed to be 100 per cent effective. It is therefore necessary to have contingency plans for an outbreak and to ensure that other arrangements do not make our agriculture unnecessarily vulnerable to an outbreak should one occur.

In the recent British case the outbreak was made worse by the amount of transport of livestock that had become normal. One factor is the EU regulation of abattoirs that has led to many closing down to be replaced by a small number to which animals have to be transported great distances. Another is the development of a lot of 'arbitrage' activity, particularly involving sheep being trucked between one local or regional market and another. It might be appropriate to tax rather than subsidise the transport of livestock both on welfare grounds and to make the system more robust to any future outbreak.

BSE presented a special challenge as we knew so little about the operation of the prions now thought to be the responsible agent. The problem arose from inappropriate feedstuffs (meat products) being fed to cattle after treatment at an inadequately high temperature. Most of the necessary regulations are now in place throughout Europe although compliance appears to be less than perfect. The British press regularly reports the finding of spinal chord material in meat imported from the Continent where it should have been removed at the slaughterhouse.

A reduction in the intensity of EU agriculture could only reduce all these health risks – which have also been aggravated by over-stocking. High density raising of livestock which requires feed supplements, presenting risks avoided when they are entirely grass fed, is liable to damage the structure of soils etc., and increases the risk and spread of infectious diseases in the animal population unless offset by widespread medication.

Thus reduced intensity is called for both in livestock and arable farming for environmental reasons as well as consideration of both animal and human health. How is reduced intensity to be achieved while maintaining the viability of rural populations if farmers' net income is, on average, no more than the value of CAP subsidies? Clearly what is needed is a shift from production subsidies to environmental support and inducements for elderly farmers to retire, and recognition that rural communities can be supported as well by assistance to craftsmen, and even computer programmers, as by support to farmers. Diversification is essential if rural communities are to thrive.

The general shape of the required shift is very widely acknowledged. It raises three questions:

- how fast should it be?
- should it be at EU or national level?
- how can the alternative arrangement be as neutral and nondiscriminatory as agricultural price supports?

Support for crafts generally might not go only to rural craftsmen even if its only rationale was to support rural communities. Agricultural products are unique in being produced only in the countryside.

Support of other kinds, including compensation for environmental management, is liable to be even more bureaucratic and inevitably to have discretionary elements difficult to reconcile with non-discriminating, competition-neutral support. It might be possible to put income support on such a basis – offering support to each community on the basis of its population and its per capita income – but that would not be true of environmental objectives beyond those achievable by measures such as taxes on fertilisers and pesticides related to the environmental damage they cause. Any more positive management of the countryside – and payment for it – inevitably calls for negotiations of individually tailored, and priced, agreements.

These considerations would appear to point towards national, or even sub-national, administration of such schemes rather than their maintenance within a union-wide framework – although some agreement on the limits of the relevant state-aids may be called for – as in other areas.

Finally, then, the question of the speed appropriate to the redirection of policy. It is tempting to say that these reforms are so long overdue, while the pressure for change has been growing, that it could not come too soon. Remember also that it is not proposed here that net support to rural communities should necessarily fall. Nevertheless there are some limits on the feasible rate of change. The essential steps are:

- to reduce support and intervention prices towards world prices
- to liberalise imports of agriculture products
- to reduce EU levies to finance the CAP and to encourage national governments to spend the funds on support for the incomes and the environment of country dwellers
- possibly to adjust interstate transfers accordingly
- to improve information, eg., on product labels, and monitoring of particular schemes.

In principle there is no reason that such a programme could not be substantially completed within five years.

The members of the European Economic Advisory Group at CESifo

Giancarlo Corsetti (Ph.D. Yale 1992) is professor of Economics at the University of Rome III, and visiting professor at Yale University. He has taught at the University of Rome, Columbia, Yale and Bologna. His main field of interest is international economics. His main contributions to the field include a tractable general equilibrium model of international transmission that has become a standard workhorse model for the analysis of optimal monetary policy in open economies; a study of the role of international policy cooperation in a currency crisis, applied to the European currency turmoil in 1992–93; a theoretical inquiry in the fiscal and financial roots of exchange rate instability; and a model of the role of large players in currency and financial crises. On the international transmission of shocks, his work also includes a widely-quoted analysis of the currency and financial crises in South East Asia, as well as an analysis of empirical tests of contagion versus interdependence. On EMU-related issues, he has contributed with a critique of the Treaty of Maastricht, and an analysis of the launch of the euro, disentangling market expectations of growth differentials with the US as a driving factor of the euro-dollar exchange rate. He is the editor of the euro homepage, a popular web site tracking euro-related studies and news since 1999. Among his affiliations, in addition to being a member of the CESifo European Economic Advisory Group, he is consultant to the Bank of Italy, visiting professor at the New York Fed, and a CEPR research fellow.

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Final
Programme

March 21, 2002

12:30 Cold buffet lunch

13:15 Welcome and Introduction: Hans-Werner Sinn,
President, Ifo Institute for Economic Research

13:30 The United States in the World Economy
Torsten Sloek, IMF

14:00 The European Economy
Hans-Werner Sinn, Ifo Institute

14:30 Discussion

15:30 Coffee break

16.00 Policy Recommendations of the
European Economic Advisory Group at CESifo
Giancarlo Corsetti, Universita di Roma Tre

17:00 Panel Discussion:
»Policy Challenges for Europe – How to Move the European Economy onto a Higher Growth Path«
Barry Bosworth (Brookings), Pierre Jacquet (French Development Agency), Giampaolo Galli (Confindustria), Jürgen Kröger (EU), Flemming Larsen (IMF Europe), and Wolfgang Schill (ECB)

18:30 General discussion

19:30 Dinner at the Restaurant Spatenhaus

March 22, 2002

9:00 Welcome and Introduction: Gernot Nerb
Head, Dept. of Business Surveys, Ifo Institute

9:30 Major Branches of European Industry

Chemicals
Malcolm Mitchell, Chief Economist, BP-Chemicals

Steel Industry
Armand Sadler, Chief Economist, Arcelor

Electronics
Dieter May, VP Corporate Strategy, Infineon

Engineering Industries
Heinrich Blauert, Director General,
The Association of Swedish Engineering Industries

Automobiles
Jamal N. El Hout, VP Planning,
General Motors Europe

11:30 Summary
Hans-Günther Vieweg, Ifo Institute

12:00 Discussion

13:00 Conclusion Hans-Werner Sinn

Hot buffet lunch

14:30 End of conference

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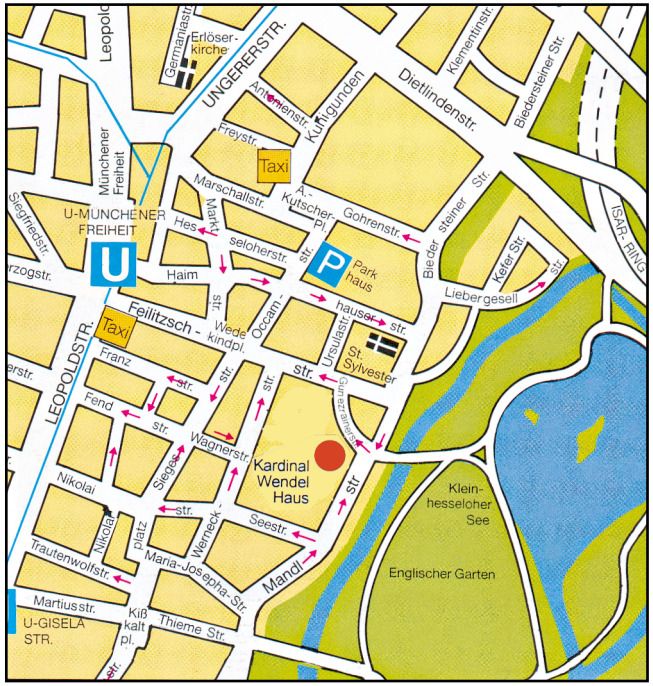

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On foot through Feilitzschstr. and Gunezrainerstr. to Mandlstr. 23.

By car: See the city map. Please consider the many one-way streets and the limited parking in Schwabing. The closest parking garage is at Occamstr. 18.

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International Spring Conference: “Prospects for the European Economy”

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