

EUROFRAME - European Forecasting Network



Economic Assessment of the Euro Area: Forecasts and Policy Analysis

Spring Report 2007

Special Policy Issue:

Growth and Employment in the EU15

March 2007

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EXECUTIVE SUMMARY

The upturn in the Euro Area that was noted in our Autumn Report of 2006 continued in the second half of 2006. The slower growth in the third quarter that followed the strong rise in output in the first half of the year proved to be temporary. In the fourth quarter real GDP growth rebounded to a quarterly rate of 0.9 per cent. This brought GDP growth to 2.8 per cent in 2006 on a working day adjusted basis (2.6 per cent unadjusted), slightly above the forecast made by EUROFRAME-EFN in the Autumn report. In the fourth quarter output was 3.3 per cent higher than a year earlier, which is the best performance since 2001.

The economic expansion is broadly based with both domestic demand and the external sector having contributed substantially to growth in the second half of 2006. The upturn was clearly visible in the labour market. Employment grew at an annualised rate of around 1.5 per cent throughout the year, up from annual growth of 0.8 per cent in 2005. The unemployment rate continued to decline and was down to 7.4 per cent in January 2007, from 8.3 per cent in January 2006 and 8.9 per cent at the peak reached in March 2004. Annual inflation as measured by the HICP fell to only 1.6 per cent in October, down from 2.5 per cent in Spring mainly reflecting the drop in oil prices. Since then the rate of inflation has increased slightly albeit remaining below 2 per cent.

Weaker US growth, an appreciation of the euro, tighter monetary policy and restrictive budgetary policies set the context for our forecasts. We expect a continuation of the economic expansion in the Euro Area with real GDP growth slowing down only gradually to 2.5 per cent and 2.2 per cent, respectively, this year and next. The moderation of output growth is due mainly to a deceleration in export growth. We expect exports to grow by 6.2 percent in 2007 and by 5.1 percent in 2008, down from the 2006 figure of 8.1 percent. This reflects a slower expansion of export markets and a deterioration of price competitiveness as a result of a higher external value of the euro.

Domestic demand is projected to continue expanding at an almost unchanged pace of around 2.5 per cent in both 2007 and 2008. Within domestic demand, private consumption is likely to strengthen and to grow by 2.1 percent in 2007 and by 2.3 percent in 2008. These increases will be driven by further improvements in the labour market and a stronger rise in real disposable incomes. Private investment which had been the main driver of domestic demand last year is forecast to increase by another 5 per cent this year supported by strong demand for increasing capacities and on-going favourable financing conditions.

Summary of Key Forecast Indicators for Euro Area

	2002	2003	2004	2005	2006	2007	2008
Output Growth Rate	0.9	0.8	1.8	1.5	2.8	2.5	2.2
Inflation Rate (Harmonised)	2.3	2.1	2.2	2.2	2.2	1.8	2.0
Unemployment Rate	8.2	8.7	8.8	8.6	7.8	7.2	6.8
Govt. balance as % of GDP	-2.5	-3.1	-2.8	-2.4	-1.8	-1.2	-1.0

Next year, we expect somewhat slower investment growth (just under 4 percent) as profitability should decline, but to some extent this is also due to the effects of changes in depreciation rules in Germany. Imports will decelerate slightly; they are forecast to grow by 6.1 percent in both 2007 and 2008, down from 7.5 percent in 2006. This reflects the import content of diminishing export growth. The Euro Area-wide current account is forecast to remain in a marginal deficit position over the forecast horizon as the reduction in real net exports is more or less balanced by gains in the terms of trade.

A number of assumptions underlie the forecasts. Oil prices (based on an average of Brent and Dubai prices) are assumed to average US\$58 per barrel in 2007 and US\$60 per barrel in 2008. These levels represent falls relative to the 2006 average of US\$63 and are thought likely as a result of a lower pace of global expansion. The lower oil price will have the effect of reducing inflation globally. Within the Euro Area, we expect inflation to fall to 1.8 percent in 2007 despite the upward impact of the German VAT rise, before rising again to 2 percent in 2008. It is assumed that the dollar/euro exchange rate will be 1.35 at the end of 2007 and 1.40 at the end of 2008. These movements are thought likely based on the likely movements in interest rates in the US and the Euro Area. It is assumed that short-term interest rates in the Euro Area will be 4.1 percent at the end of 2007 and 2008. For the US, short-term interest rates are assumed to fall from their current level of 5.3 percent to 4.8 percent by the end of 2007 and down further to 4.5 percent by the end of 2008. This is expected to result from the reaction of the Federal Reserve to a fall in inflation in the US.

The world economy is projected to perform well in 2007 and 2008, lengthening the already exceptionally long period of robust growth. However, housing market problems will cause US economic growth to drop below potential, to 2.4 percent in 2007 and 2.3 percent in 2008. This lower rate of US growth will have ripple effects in neighbouring countries and the rest of the world. As a consequence, global economic growth is projected to taper off from a record high of 5.3% in 2006 to 4.5% in 2008, while projected world trade growth softens from 9.0% in 2006 to 6.2% in 2008. Emerging Asia, benefiting from the changing global division of labour, will remain the most dynamic region. China alone is likely to account for almost a third of global economic growth in the projection period.

A distinctive feature of last year's upturn has been the change in the regional distribution of Euro Area growth. In particular Germany, which had consistently and substantially underperformed the Euro Area average since the inception of the common currency, has closed the gap in 2006 as regards the annual average growth rate. We expect that the German recovery will be sustained in 2007 and that the German economy will grow in line with the Euro Area average over the forecast horizon.

The French economy on the other hand has lost ground in the past couple of years relative to the Euro Area average. After growing at around average growth rates, or slightly above, in the first years since the inception of the Euro Area, real GDP increased slightly less than the Euro Area total in 2005. In 2006, the growth gap widened further to a negative 0.7/0.8 percentage points. The gap is expected to fall in 2007 and 2008, with France growing by 0.3 and 0.2 percentage points below the Euro Area average in 2007 and 2008 respectively.

For Italy, the growth rate of 1.9 percent last year represents a sharp improvement from almost stagnation in 2005. This mainly reflects an improvement in industry that seems to have moved beyond a low-point after a prolonged period of adjustment to a loss in price competitiveness and increased competition from low-cost countries. We expect Italian industry to continue to contribute to economic growth both this year and next.

The main risks to the forecast concern oil prices, the huge global current account imbalances and rising wages in Europe. A simulation is run using the NiGEM model in which expected inflation is increased in Germany by 1 percent for 12 quarters, thereby raising wages. The main impact is on unemployment, which is about 0.2 percentage points higher after three years. Analyses of potential sources of adjustment in the US to its current account deficit, again using NiGEM, show how the impact on the Euro Area differs when the source is domestic to the US (such as a house price fall) or international (such as an exchange rate risk premium change). An analysis is also undertaken of the routes through which interest rate increases in the Euro Area impact upon the economy. The results point to the relative importance of exchange rate movements in response to interest rate changes in reducing inflation.

We expect that the ECB will raise rates further in the near future. The key interest rate will reach 4 percent in the summer and remain there until the end of 2008. This projection is supported by our estimation of a forward looking Taylor rule. At a level of 4 percent, the key interest rate will be lower than at the peak of the previous interest rate cycle. In 2000, the key rate was raised to 4.75 percent. We do not expect such a high rate for several reasons. First, the previous economic boom was stronger than we anticipate today, so the output gap was considerably higher at that time. Second, most estimates suggest that the steady state risk free real interest rate is currently lower than at the beginning of this decade.

The fiscal stance has been contractionary at the Euro Area level over the last years, mainly in countries running deficits. We expect the Euro Area fiscal stance to remain slightly contractionary in 2007 and 2008 albeit to a smaller extent. The general pattern of countries running deficits implementing fiscal contraction in order to meet the rules of the Stability and Growth Pact will remain, perhaps with the exception of France, ahead of general elections this year. Fiscal policies will remain neutral in general or slightly expansionary in countries running surpluses.

In the special policy topic of the report, the relationship between growth, employment and unemployment is explored. A number of themes emerge, including the following:

- Over the past decade, the trend increase in unemployment has been arrested in the Euro Area. Labour market performance has improved significantly for older workers and for women (due to more part-time jobs), but not for younger people and the low skilled.
- This picture masks large differences across countries. Fast growing economies were able to reduce unemployment rates rapidly during the last decade, in particular Ireland, Spain, Scandinavia and the United Kingdom. Unemployment in Germany and France, on the other hand, remained stubbornly high.
- In a panel study of 15 EU countries, the effect of GDP growth on the evolution of employment and unemployment was investigated. Over the period 1995 to 2005, about two-thirds of the variation in employment can be explained by economic growth. The effect of economic growth on the evolution of unemployment rates was also highly significant for the period 1995 to 2005, with 50 per cent of the variation in unemployment rates being explained by economic growth. As a result, it may be expected that the Lisbon strategies to increase economic growth (R&D, education etc.) will also help to reduce unemployment, together with necessary labour market reforms which remove barriers to employment and raise production without inflationary pressures.
- In the context of immigration, simulations using NiGEM for the UK suggest that a gradual rise in the labour force of $\frac{3}{4}$ per cent over 2-3 years leads to a temporary increase in unemployment of $\frac{1}{4}$ percentage point for a few years, with unemployment gradually disappearing as/if wages adjust.
- Increasing the employment-intensity of growth cannot be considered as a useful long-run strategy since it is the flip-side of poor productivity growth. However, temporary employment-intensive growth, induced by social security or other structural reforms, is welfare enhancing if it reduces structural unemployment.

1. OUTLOOK FOR THE EURO AREA

1.1 Overview

The world economy is projected to perform well in 2007 and 2008, lengthening the already exceptionally long period of robust growth. However, housing market problems will contribute to US economic growth dropping below potential, with ripple effects in neighbouring countries and the rest of the world. As a consequence, global economic growth is projected to taper off from a high of 5.3% in 2006 to 4.4% in 2008, while projected world trade growth softens from 9.0% in 2006 to 6.1% in 2008. Emerging Asia, benefiting from the changing global division of labour, will remain the most dynamic region. China alone is likely to account for almost a third of global economic growth in the projection period. With global growth moderating, oil prices should drop somewhat from the record high of 2006 and inflation is projected to come down. A drop in US inflation is likely to lead to rate cuts by the Federal Reserve. However, the ECB is projected to raise its policy rate further.

Table 1.1: Summary of Key Forecast Indicators for the Euro Area

	2002	2003	2004	2005	2006	2007	2008
Output Growth Rate	0.9	0.8	1.8	1.5	2.8	2.5	2.2
Inflation Rate (Harmonised)	2.3	2.1	2.2	2.2	2.2	1.8	2.0
Unemployment Rate	8.2	8.7	8.8	8.6	7.8	7.2	6.8
Govt. balance as % of GDP	-2.5	-3.1	-2.8	-2.4	-1.8	-1.2	-1.0

Despite somewhat less favourable international conditions and a restrictive budgetary policy in the biggest member state, GDP growth in the Euro Area is projected to remain above potential. Last year, GDP growth accelerated strongly to 2.8%¹, well above its potential growth rate for the first time since 2000. Growth was led by exports and business investment. Due to strong competitiveness, German economic growth was, for the first time in more than a decade, above the Euro Area average.

Weaker US growth, the appreciation of the euro, tighter monetary policy and restrictive budgetary policies are projected to cause economic growth in the Euro Area to fall to 2.5% in 2007 and to 2.2% in 2008. Nevertheless, unemployment is projected to drop further, while government deficits will decline. The output gap is close to zero at the end of the projection period, indicating that the current upswing is relatively moderate. Table 1.2 compares the current EUROFRAME-EFN forecast for GDP growth in major regions with the autumn forecast of last year. The outcome for world growth in 2006

¹ Working day adjusted. Unadjusted, GDP was up 2.6%.

was slightly stronger than projected six months ago. This reflects stronger growth in the Euro Area as well as in the emerging economies. While the 2007 outlook for North America is weaker than projected in our autumn forecast, this is more than offset by stronger growth in the Euro Area and in Asia, especially in China.

Table 1.2: GDP Growth Forecasts in Autumn 2006 and Spring 2007

	World		OECD		NAFTA		Euro Area		China	
	Autumn	Spring	Autumn	Spring	Autumn	Spring	Autumn	Spring	Autumn	Spring
2006	5.2	5.3	3.1	3.1	3.5	3.4	2.6	2.8	10.4	10.7
2007	4.7	4.8	2.6	2.4	2.6	2.5	1.9	2.5	9.5	9.8

The main risks to the forecast concern oil prices, the huge global current account imbalances and rising inflationary pressures in Europe due to tightening labour markets. The latter two risks are analysed in detail below, while oil price risks were analysed in previous reports. Rich Japan, rich OPEC countries and poor China currently finance the deep US current account deficit. Rebalancing of current account positions is likely to weaken Euro Area growth. Stronger wage growth in the Euro Area may in the short term boost consumption and output, but in the longer term it will be detrimental to economic growth.

1.2 Global Outlook

1.2.1 KEY DEVELOPMENTS

Below we discuss the key developments in commodity and financial markets underlying our current forecast.

OIL PRICES

Oil prices have remained volatile. After a record high of USD 78 per barrel (Brent) in early August last year, oil prices fell to close to USD 50 in January as an exceptionally mild winter in the Northern Hemisphere decreased demand, OPEC countries did not comply with agreed cuts in production and political tensions in the Middle East eased. The decline was strengthened by a change in behaviour of funds which started to bet on a fall in prices. However, as the weather in the US became unusually cold in February, as geopolitical tensions increased and as OPEC members improved their compliance with production targets, prices rose again to above USD 60 per barrel.

The group expects the oil market to remain tight as demand, especially of emerging economies, continue to be rather strong, oil investments continue to be relatively moderate and as OPEC will lower production if prices drop substantially. Oil prices are expected to stay around USD 60 per barrel (average of Brent and Dubai oil), substantially below the autumn projection of USD 68 per barrel. Naturally, oil prices would be substantially lower if global growth would falter. However, there is also a substantial upward risk to prices. Prices would rise if political tensions intensify and/or if global growth is stronger than projected.

INTEREST RATES

Monetary policy of key central banks has diverged since the middle of last year. The Federal Reserve has kept its federal funds rate at a somewhat restrictive level of 5.25%. The ECB has continued to make policy less accommodative in

pursuit of an inflation rate ‘close but under 2%’ in the medium term. In March, it raised its refinancing rate to 3.75%, almost double the 2% up to December 2005. The Bank of Japan ended its zero rate policy in July last year; it took till February to hike its policy rate further, to 0.5%. In the projection period, the divergence in monetary policy continues. Weaker growth and a drop in core inflation will lead to cuts in the US federal funds rate from the second half of this year onwards. The ECB will increase its rate further to 4% (see also Chapter 2). The Bank of Japan will gradually normalise its policy rate.

Long-term interest rates have not risen since mid-2006 and thus remain low in a historical perspective. Rather weak US data led to monthly drops up to November. More favourable data, reducing the risk of a substantial US slowdown, led to some rise in the following months, but this was mostly offset by global financial market turbulence at the end of February and in early March. Long-term rates are projected to be broadly flat in 2007 and to rise slightly in the Euro Area in 2008.

EXCHANGE RATES

At the end of last year and early this year, the euro has appreciated further vis-à-vis the dollar and even more vis-à-vis the Japanese yen. Against the dollar, the euro came close to its record high of 1.35 reached in early 2005. Cyclical divergence between the US and the Euro Area, differences in expected policy changes and the huge US current account deficit probably all played a role in the recent euro appreciation. Our projections are based on some further nominal effective appreciation of the euro, with a rate of 1.38 dollar per euro in 2008.

EQUITY PRICES

Between the turmoil in May-June 2006 and renewed turbulence in February, global equity prices rose with unusually low volatility, reflecting favourable global economic developments and abundant global liquidity. The most recent turbulence had no clear cause. It started in Shanghai, where equity prices fell by 8% on rumours of macro-economic policy tightening. Comments on a possible recession in the US by the former Fed chairman made markets more nervous. Severe problems in the US subprime mortgage industry heightened the turmoil. Nevertheless, in mid-March the corrections on most equity markets were limited, with most equity indices only slightly lower than at the end of last year. Our projections are based on a limited rise in equity prices during the projection period.

1.2.2 EXTERNAL ENVIRONMENT

North America

Output growth in North America accelerated slightly in 2006 relative to 2005 (3.4 and 3.2 per cent respectively), driven by growth in the US economy. Inflation moderated due to lower oil prices and a reduction in the rate of VAT in Canada. Looking forward, the expected deceleration of the US economy will negatively affect the whole region through lower US demand for Canadian and Mexican goods. This US slowdown will occur because of weaker domestic demand. Growth in the US is forecast to be 2.4 and 2.3 per cent 2007 and 2008 respectively, down from 3.3 per cent in 2006.

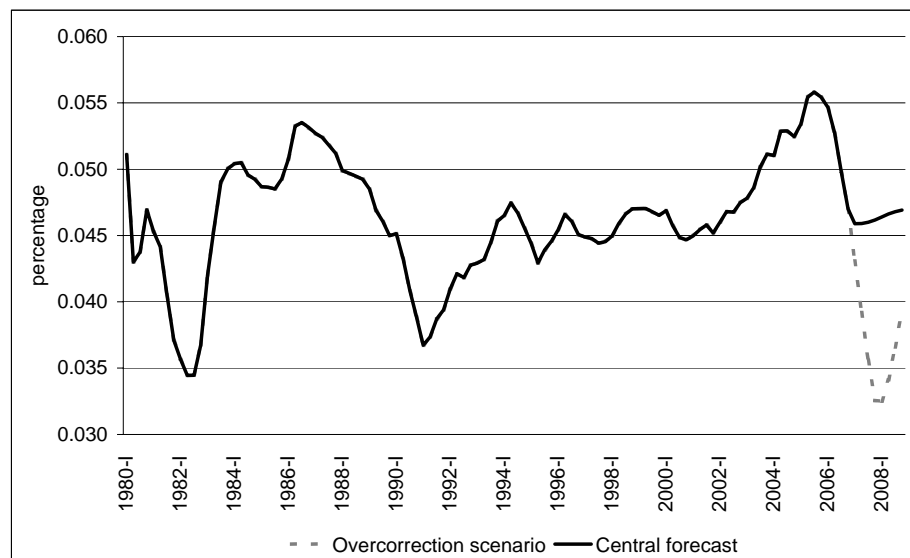
Residential investment in the US contributed much to the deceleration of GDP growth in the course of 2006. The correction in the housing sector

proved to be deeper than we had expected six months ago, as the share of residential investment in GDP (in volume terms) almost reached the average level of the 80s and the 90s in the fourth quarter of 2006. This outturn is broadly consistent with the alternative scenario we discussed in our last report (p. 23, Adjustment through the housing market). The simulations presented then suggested that GDP growth in the US would be 0.4 percentage points slower in the first year and 0.2 percentage points slower in the second year compared to our central forecast as a result of a more pronounced downturn in residential investment.

The ongoing moderation in house price increases has only marginally affected private consumption. Consumption has been sustained by the positive effects on disposable income from the decline in oil prices, the sustained strength of the labour market and some acceleration in wage and salary growth. Lower absorption of imported goods and services combined with a sound external environment led to an improvement in real net trade so that its contribution to GDP growth in 2006 was zero after several years of negative contributions to growth.

The adjustment in the housing sector and its spill-over effects to the rest of the economy, in particular on private consumption, remain the main risks in our forecast. According to the February Residential Construction Report, the sharp fall in housing permits seems to have slowed based on a three month moving averages. However, housing starts continue to decrease. Even if the worst of the housing sector correction is over, a large overhang of unoccupied housing suggests further possible reductions in residential investments in the first part of 2007, to be followed by a stabilization in the housing share of GDP at a level in line with the medium term average.

Figure 1.2.1. Housing Investment/GDP (volumes)



As figure 1.2.1 illustrates, during previous housing market recessions in the early 1980s and early 1990s there was a temporary overcorrection in the housing market to GDP ratio, with the ratio dropping to about 3½ per cent of GDP. An overcorrection of this magnitude, illustrated by the dotted line, would slow US GDP growth to 1.8 per cent in 2007 and 2.1 per cent in 2008. In turn, this would reduce growth by 0.1 percentage points in the Euro Area in 2007 and 2008. An overcorrection of the housing market of this magnitude would not necessarily lead to a recession in the US, but it is possible that the

quarterly dynamics could be associated with 2 consecutive quarters of output decline and hence a technical recession.

At the national level in 2006, house prices did not decline but they did continue to decelerate. However, this occurred without denting private consumption seriously. We forecast US house prices to further decelerate in 2007 and 2008 and we investigate in section 1.4.1 the effects on US and Euro Area growth of a fall in US house prices. The financial burden of households, including debt service payments, insurances of houses, and car leasing continues to increase, and has reached almost 20 per cent of disposable income (11 per cent for mortgages alone). Decelerating house prices and increasing financial burdens will tend to impact on disposable income and hence on consumer spending. This is expected to reduce the annual growth rate by almost one per cent relative to the previous three years.

The weak housing market negatively affected employment in the construction sector, but at a national level it was offset by improvements in other sectors (especially services) so that employment rose by 1.9 per cent in 2006 and in the first two months of 2007. The expected deceleration of GDP growth in 2007 and 2008 will imply a higher unemployment rate.

Inflationary pressures seem to be reducing due to the negative contributions of the components directly linked to the energy prices. In contrast, services have not shown significant reductions. In the first two months of 2007 the “owner’s equivalent rent” component of consumer prices grew by 4.2 per cent, whereas services components like medical care services and education had annual growth rates above 6 per cent. The transport component of inflation decreased by 0.7 per cent as it benefited from the fall in oil prices after summer 2006. We expect inflation to fall from the level in 2006, due to lower commodity prices and to the deceleration of domestic demand. A less tight labour market, in addition, should help to reduce inflationary pressures from wages and salaries. As a reaction to the decreasing inflationary environment, we forecast the Fed to cut interest rates by 75 basis points starting from summer 2007.

Finally, on the external imbalances, we do not expect major corrections. Slowing domestic demand growth will restrain imports and the weaker dollar should help exports. On balance we expect the current account deficit to improve by half percentage point of GDP over the forecast horizon (see section 1.4 below).

Asia

Output growth in Asia in the last quarter of 2006 was generally quite good although decelerating. One notable exception was Japan whose GDP growth reached 1.3 per cent on the previous quarter, after a third quarter growth rate which was barely beyond zero. In Japan both domestic and external demand contributed to the acceleration but consumption remained subdued (1.0 per cent, annual rate) due to the moderate rise in household income. Business investment is the main driver of growth, boosted by high corporate profits, low interest rates and buoyant external demand.

In February, the Bank of Japan raised the policy rate by 25 basis points, bringing it to 0.5 per cent. The decision was not unanimous showing both a willingness to reach a “normal” rate as quickly as possible while at the same time the uncertainty regarding the economic situation. This uncertainty is present in particular with respect to inflation which is still on the brink of negative

territory. The growth of CPI was zero percent in January and is on a downward trend, with decelerating impulses from import prices. Industrial production is slowing, sales are still declining and the leading indicator is pointing down. The interest rate differential with many industrialized countries is producing a diffuse yen carry trade, bringing the yen exchange rate to very low levels in the first months of 2007. This is a point of concern for the international environment because a sudden unwinding of this trade could trigger a very rapid appreciation of the yen and a depreciation of the US dollar with dangerous results for financial flows. As of now the yen valuation increases the competitiveness of Japanese exports thereby maintaining a positive outlook for them.

The Chinese economy is still growing at a very fast pace with a 10.4 percent yoy growth rate in the fourth quarter of 2006, albeit on a slightly decelerating path. In this context, it is worth mentioning a possible overestimation of export flows that may contribute to an overvaluing of real growth. The effectiveness of the policy measures (on interest rates, reserve requirements and administrative restrictions) in slowing down the overheating growth has been quite low. Recently, a new set of restrictions on reserve requirements (now 10 per cent) and interest rates (raised by 27 basis points to reach 6.39 for one year benchmark lending rate) was put in place in order to tackle the increasing inflationary pressure. Inflation is still low for an economy growing at over 10 per cent, but is rising (2.7 per cent yoy in February) and reached a level such that the real rate on deposits was negative. Consumption is growing at a fast pace according to the retail sales which grew by 14.7 per cent in January and February yoy. In the same period, the increase in real investments, the main target of the restrictive policy measures, was 23.4 per cent, only a bit slower than that registered a year ago.

In the last National People's Congress annual session at least three decisions were taken that could influence the macroeconomic situation in China and worldwide. A new landmark law on private property was approved, stating that from October 2007 "the property of the state, the collective, the individual and other obligees is protected by law and no units or individual may infringe upon it". A second law set a unified income tax for domestic and foreign companies at 25 per cent, wiping out the advantage granted to foreign enterprises until now (15 per cent is the current rate). This could produce a lower appetite for foreign direct investment. A third measure was the creation of China's State FX Investment Corporation (SFEIC) a sovereign wealth fund with an initial endowment of 300 bn\$ out of the international reserves of PBoC, aimed at profit maximizing management of the massive amount of reserves. This obviously creates a new important operator on the international financial markets which is likely to be more stock than bond-oriented.

The outlook for the Asian countries is still very positive although a deceleration in the pace of growth is foreseeable. This is due mainly to a worsening in non-Asian demand although this will be partly offset by Chinese and Indian growth in a context of tighter intra-area links.

Notwithstanding the policy restrictions of the monetary authorities, the Chinese economy will maintain a GDP growth rate of around 9 per cent. The Olympic games and the universal Expo will add further investment demand to an already buoyant environment. The monetary policy, even after the recent hikes, could be judged as being accommodative. Real rates of about 4 per cent are approximately 6 percentage points lower than real growth. In addition the high growth of money supply (17.9 per cent growth in M2 in the fourth

quarter of 2006, yoy), due to the huge external surplus and the consequent reserve accumulation, is contributing to the ample credit expansion. Any fall in international demand could dent the export performance but domestic demand should benefit from buoyant consumption due to the policies aimed at substituting consumption for investment. This shift is pursued by cutting personal taxes, increasing welfare transfers and minimum wages, and also by sustaining rural income and by the previously cited measures to curb investments.

Growth in Japan will be slower than in the rest of Asia. The public deficit and debt require a fiscal discipline that will not only constrain public expenditure and investments but will also impact on the expectations of households regarding future income. Consumption will probably remain subdued, given that wage growth has been barely positive in real terms. Lower international demand that will only be partially offset by the low exchange rate in the 2007 could lower investment growth in the short term. It is unlikely that there will be a further hike in the interest rate in 2007 because of low inflation. Low inflation is likely to persist over the forecast horizon, given a small yen appreciation and subdued import prices and wages.

Non Euro Area European Economies

In recent years, the main factor supporting growth in Russia has been the strong expansion of domestic demand, thanks to favourable export revenues that have benefited from the high prices of raw materials. Two-digit growth rates for private consumption and investment led to a yearly growth rate of more than 6 %. Due to the stabilisation of oil prices and growing import demand the current account surplus has been reduced. Oil production stagnated in 2006, one of the reasons being that oil exploration and investment in new fields had been neglected in the last decade. On the other hand, gas production expanded rather fast.

Recently, the government proposed a new economic programme to stimulate the diversification of growth and more innovations. Furthermore, it is expected that Russia, after the end of the bargaining process with the USA, will join the WTO midst of 2007, thus giving more impetus to trade. Nevertheless, during the forecast period, economic growth will slow down slightly. Inflation will be further reduced, but the unemployment rate will remain almost unchanged.

Both the Danish and Swedish economies are growing faster than the Euro Area. Pulled by strong domestic demand, these economies are already growing above their potential, although exports are also growing strongly in both countries. Robust growth has pushed unemployment rates low and tightened the labour markets. There are already some signs of labour shortages especially in construction, but inflation has, so far, remained low.

In Sweden, strong GDP growth last year coincided with rising and large current account surpluses, even though the Swedish krona strengthened vis-à-vis both the euro and the US dollar during the year. General government is running a surplus as well. Robust growth in Swedish export markets supports export growth, while the Riksbank aims to cool the domestic economy by tightening monetary policy. Swedish GDP growth will slow down somewhat but it will continue strong in 2007-8. A good economic performance will continue also in Denmark, albeit with growth that is expected to slow as capacity utilisation is already high. Imports are rising and the Danish current

account surplus is smaller as a percent of GDP than in Sweden due to stronger growth in imports. The Danish surplus is supported by North Sea oil and gas production, which both lower import demand for energy commodities and add to export revenues. A favourable international environment especially in Germany will support Danish growth in 2007-8.

Official estimates suggest that the UK's real economy expanded by 2.7 per cent in 2006, slightly above our estimates of its trend rate of growth. This strong economic growth, up from 1.9 per cent in 2005, was primarily driven by domestic demand. We expect robust growth of around $2\frac{3}{4}$ per cent this year, again, led by domestic demand. The domestic side of the economy has become more balanced with gross fixed investment providing more of a prop to the economy than in recent years. However, our forecast is for the economy to be supported by stronger growth of household consumption, in response to a pick-up in real household incomes and the rapid growth of both equity and housing assets in 2006. The UK housing market has recovered since the slowdown in 2005, and will support growth over our forecast horizon. Net trade remains a drag on the economy, and we expect this to continue this year. Figures for last year are distorted by the impact of Missing Trader Intra-Community (MTIC) fraud. Official estimates suggest that goods to the value of £28.7bn were involved in MTIC fraud, equivalent to 7.8 per cent of total UK exports in 2006, or 2.2 per cent of nominal GDP. This is up from a figure of £11.2bn, or 0.9 per cent of GDP, in 2005. Including MTIC fraud, annual growth of export and import volumes is estimated to have been 11.2 and 11.5 per cent respectively, in 2006. Excluding the impact of MTIC fraud, we expect export and import volume growth of around 6 per cent this year.

Inflation, as measured on a variety of indices, was at its highest since the early 1990s at the turn of the year. Inflation, as measured by the Consumer Prices Index, reached the 3 per cent upper bound of the inflation target in December 2006. Concerns remain that average earnings growth may accelerate in response to the recent rises in inflation. Our central projection does not show an acceleration in average earnings, although it remains an upside risk to our inflation forecast. Data for the start of 2007 show inflation rates moderating. Interest rate expectations have been on the rise over the past year. Overall we expect inflation to fall back through this year, with CPI hovering just above the Bank of England's target rate of 2 per cent over the next couple of years. Although due to the profile of CPI inflation throughout last year, the average annual figure for 2007 is above 2006.

Unemployment in the UK, as measured by the survey based International Labor Office definition, is currently around $5\frac{1}{2}$ per cent. We expect this to rise to around $5\frac{3}{4}$ per cent in 2008 as the demand for employment grows at a more modest pace than in the recent past. The UK has received a rapid boost to its labour supply from a number of sources. The main two being: net inward immigration and a rise in the participation of older workers. Net inward immigration to the UK has been high since 1998. Since 2004 a significant proportion of these have been from the A8². There has also been a rise in the labour market participation rate of older workers in the years before retirement, and indeed those that have passed state pension age.

Data suggests that the general government deficit was below 3 per cent in 2006. We expect general government deficit to remain below 3 per cent as the

² We refer to the A8 rather than the A10 since subjects of Cyprus and Malta have had long-standing rights to work in the UK.

public finances continue to improve over the short term. It should be noted that from 2008-9 we have assumed that government expenditure as a share of the economy declines. Indeed, published after the completion of this forecast, Budget 2007 has set the envelope for government spending over the coming years. Government spending as a share of GDP is expected to fall from 39.1 in 2007-8 to 38.5 per cent in 2010-11. The discretionary policy introduced was broadly revenue neutral, although this belies a significant amount of re-distribution within the economy.

In 2006, the rate of growth in the new member states accelerated significantly (up to 6.2% from 4.6% in 2005). Domestic demand was the driving force in these economies, an exception being Hungary. Investment was of particular importance and were stimulated by EU funded projects and FDI. In some countries, like Poland, Romania and Baltic states, investment increased by more than 10%. Growth in employment and even more the increase in wages (a reflection of both high growth in productivity and emigration to EU-15) contributed to income growth and hence strong consumption growth. Here again Hungary was an exception, with consumption stagnating due to an effective consolidation policy. A high growth rate in the global economy, and in particular, a higher growth rate in the EU, helped to increase exports in all new member states. In some countries (the Baltic states, Poland, Bulgaria) robust domestic demand led to higher imports and net exports made a negative contribution to GDP growth. In nearly all countries, we could observe a worsening of the current account figures relative to GDP. The strongest economic growth rates were seen in Latvia (12%) and Estonia (11.4%). In Hungary, Malta and Cyprus, with 3 to 4 % rates, growth was relatively modest. The biggest NMS - Poland – grew at 5.7%.

As the outlook for world growth will be weaker during the forecast period and as fiscal stabilization programmes will be pursued in several countries, we forecast growth in all NMS12 countries to slow down, to just above 5% on average. However, the rate will still be more than twice that of EU15. In several countries we expect a further worsening of the foreign trade balance, but for most countries we do not see a deterioration of the current account relative to GDP. We also expect a slow-down in investment (due to temporary obstacles in the utilization of funds from the new EU budget 2007-13). The Baltic countries again will be the fastest growing economies (7-9%), but the growth differential with other countries will shrink. Hungary's much lower growth rate of just 3% will reflect an increase in VAT and energy prices, which may dampen consumption, and also an expected cut in the budget deficit. On the whole, for several years now, growth in the NMS was relatively high and unemployment went down in most of these countries. For the forecast period, a similar development is expected, especially in the northern NMS countries where the labour market situation will become better in 2007 and 2008.

Inflation in NMS12 in 2006 was 3.2%, one percentage point higher than in the EU15 and Euro area, but slightly lower than in the preceding year. There was, however, a substantial heterogeneity among the NMS12 countries, where inflation ranged from the EU-lowest 1.3% (Poland) to the EU-highest 7.3% (Bulgaria) and 6.6% (Romania and Latvia). These divergent inflation developments reflect differences in the pace of economic growth and nominal exchange rate trends as well as various domestic supply-side shocks. In general, inflationary pressures in NMS in 2006 were fuelled by rising prices for services and foodstuffs (convergence towards EU15) and were dampened by prices of industrial goods that showed near-zero inflation.

Inflation is expected to rise slightly to 3.6% in 2007 and to 3.8% in 2008. This increase has to be seen in the context of strong domestic demand, robust exports and higher wage increases in many larger NMS, e.g. in Poland and Slovakia as well as upward tax adjustments (Hungary). An additional factor pushing inflation rates above the EU15 levels will be related to the Harrod-Balassa-Samuelson effect which is expected to remain in force in the forecast period giving a constant boost to prices of non-tradables.

1.3 Euro Area Detail

EURO AREA FORECAST

The upturn in the Euro Area continued in the second half of 2006. The slower growth in the third quarter that followed the strong rise in output in the first half of the year proved to be temporary. In the fourth quarter real GDP growth rebounded to a quarterly rate of 0.9 per cent. This brought GDP growth to 2.8 per cent in 2006 on a working day adjusted basis (2.6 per cent not adjusted), slightly above the forecast made by EUROFRAME-EFN in the Autumn 2006 report. In the fourth quarter output was 3.3 per cent higher than a year earlier, which is the best performance since 2001.

The economic expansion is broadly based with both domestic demand and the external sector having contributed substantially to growth in the second half of 2006. The slowdown in domestic demand registered for the fourth quarter cannot be taken at face value as it reflects a major reduction in inventories in Germany which is hard to explain and probably reflects problems in the measurement of exports which rose steeply in that quarter without a corresponding rise in export demand or a similar rise in imports that would have signalled large re-exports flows. Final domestic demand remained firmly on track. The upturn in fixed investment continued, although average quarterly growth slowed slightly to 0.8 per cent in the second half of 2006, from 1.5 per cent in the first half of the year. Private consumption picked up steam in the course of the year reflecting improved conditions in the labour market and some acceleration in the growth rate of real disposable incomes, partly due to lower energy prices. Annual inflation as measured by the HICP fell to only 1.6 per cent in October, down from 2.5 per cent in Spring mainly reflecting the drop in oil prices. Since then the rate of inflation has increased slightly albeit remaining below 2 per cent.

The ongoing upturn in the Euro Area economy was clearly visible in the labour market. Employment grew at an annualised rate of around 1.5 per cent throughout the year, up from annual growth of 0.8 per cent in 2005. The unemployment rate continued to decline and was down to 7.4 per cent in January 2007, from 8.3 per cent in January 2006 and 8.9 per cent at the peak reached in March 2004. Changes in the unemployment rates differed substantially across countries. Unemployment was reduced substantially in Germany, France, Italy and Finland, but the progress was less pronounced in a number of countries with already tight labour markets such as Ireland and the Netherlands. In Spain the unemployment rate did not decline significantly despite robust economic growth. The rate remained at around 8.5 per cent with exceptionally strong growth in labour supply due to strong immigration being a possible explanation. Strong immigration and increased participation was also a major factor limiting the decline in unemployment in Austria.

Despite the substantial reduction in unemployment, wage increases remained moderate in 2006. One important element behind this is probably increased

competition as a result of the ongoing process of globalisation of production processes. There was, however, a slight acceleration in average earnings growth at the Euro Area level, from 2.1 per cent in 2005 to 2.6 per cent in 2006. Given that unemployment rates are rapidly diminishing in an increasing number of countries, wages could accelerate further this year and next. Stronger gains in wages are expected to be especially pronounced in Germany, where earnings growth was particularly modest in previous years. Significant upward pressure on wages is also forecast for the Netherlands, Ireland and to some extent also for Finland. By contrast, there is no major acceleration of wage growth expected for the other Euro Area economies, including France, Italy and Spain where the external sector is struggling to maintain competitiveness which should keep wage growth in check over the forecast horizon. On aggregate, average earnings are forecast to rise by 2.9 per cent this year and 3.7 per cent next year, which should still be consistent with maintaining price level stability in the definition of the ECB.

The outlook for production in the near term is still benign, but indicators suggest that the economy might have already peaked. While the Economic Sentiment Index published by the European Commission is at a relatively high level, especially in the industrial sector, it has not increased further since autumn. The EUROFRAME-EFN indicator also suggests that growth will moderate slightly in the coming quarters. Part of this deceleration in the indicator can be explained by the expectation of slower growth as a response to the VAT-increase in Germany, where sentiment indicators declined most visibly in those sectors that are especially sensitive to potential effects of advanced purchases. However, our assessment of growth at the turn of the year is somewhat less pessimistic than these indicators suggest, in light of the most recent data on industrial output in Germany. Other factors weighing on economic sentiment include a moderation of growth in the rest of the world, particularly in the US, and the continued tightening of monetary policy by the ECB. These factors should, however, not lead to a severe deterioration in the economic environment in the Euro Area since the global economy is still expected to grow at above trend rates (see Chapter 1 on the global environment) and monetary policy is projected not to become restrictive to a significant extent.

The forecasts for 2007 and 2008 assume only limited further tightening of monetary policy by the ECB. It is expected to raise its main interest rate by 25 basis points on one more occasion (over the forecast horizon), bringing rates to 4 per cent by the early summer. At this level of short-term interest rates, monetary policy should be broadly neutral (see Chapter 2, Section 1 on monetary policy). Fiscal consolidation is projected to continue resulting in a further reduction in the aggregate Euro Area budget deficit from 1.8 per cent in 2006 to 1.2 per cent in 2007 and 1.0 per cent in 2008. Fiscal consolidation will be implemented mainly in countries running deficits, and the fiscal impulse will be only slightly restrictive at the Euro Area level in both years. All in all, the tightening of both monetary and fiscal policy is expected to continue in 2007, with no major change in policy stances.

Against this background we forecast a continuation of the economic expansion in the Euro Area with real GDP growth slowing down only gradually to 2.5 per cent and 2.2 per cent, respectively, this year and next. The moderation of output growth is due mainly to a deceleration in export growth that reflects slower expansion of export markets and a deterioration of price competitiveness as a result of a higher external value of the euro. Domestic

demand is projected to continue expanding at an almost unchanged pace of around 2.5 per cent. Within domestic demand private consumption is likely to strengthen driven on the back of further improvement in the labour market and a stronger rise in real disposable incomes. Private investment which had been the main driver of domestic demand last year is forecast to increase by another 5 per cent this year supported by strong demand for increasing capacities and still favourable financing conditions. Next year, we expect somewhat slower investment growth as capital profitability should decline, but to some extent this is also due to the effects of changes in depreciation rules in Germany. Imports will decelerate slightly reflecting the import content of diminishing export growth. The Euro Area-wide current account is forecast to remain in a marginal deficit position over the forecast horizon as the reduction in real net exports is more or less balanced by gains in the terms of trade. Country by country differences with respect to the current account balances will remain high.

A distinctive feature of last year's upturn has been the change in the regional distribution of intra-Euro Area growth. In particular Germany, which had consistently and substantially underperformed the Euro Area average since the inception of the common currency, has closed the gap in 2006 as regards the annual average growth rate and was even well above the rest of the Euro Area in terms of growth during the year (in terms of the fourth quarter on fourth quarter growth rate). German GDP growth in 2006 turned out to be higher than expected six months ago (2.9 per cent instead of 2.4). More importantly, in contrast to our expectation of last September, we now expect that the German recovery will be sustained in 2007 (see country detail) and the German economy will grow in line with the Euro Area average over the forecast horizon. Part of the improvement reflects an end to the long-lasting decline in the German construction sector that had been a feature of the German economy since 1995. In addition it can be attributed to the pronounced wage moderation that had been the result of rising unemployment and increased competition in the German labour market in recent years and which has raised the international competitiveness of German producers markedly especially relative to other Euro Area economies. Now, after several years of sluggishness, German domestic demand is picking up. Starting in 2005, corporate investment revived, and now private consumption is eventually on the mend on the back of a rapid improvement in the labour market.

Table 1.3.1 Euro Area Forecast^a

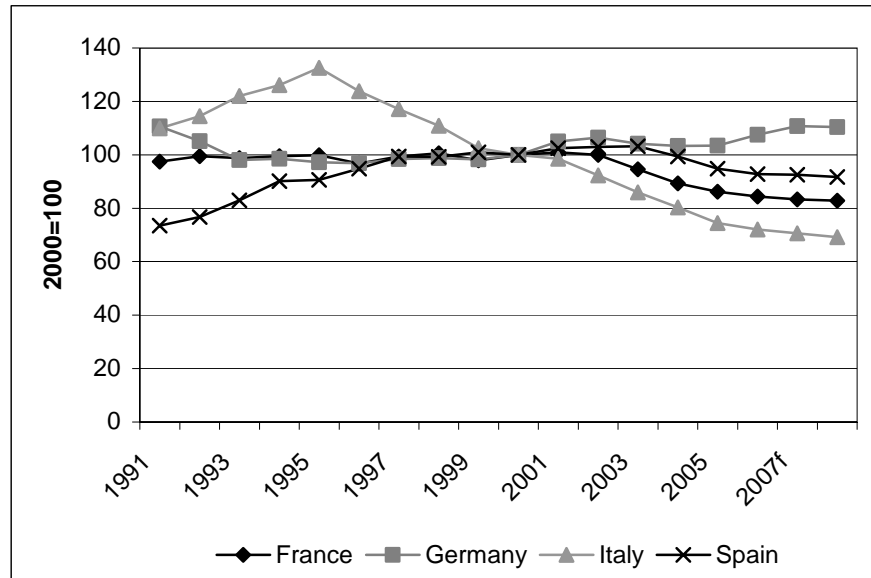
	2002	2003	2004	2005	2006	2007	2008
Consumption	0.9	1.2	1.4	1.5	1.8	2.1	2.3
Private investment	-3.4	2.1	3.3	2.9	5.3	4.8	3.8
Government expenditure	2.3	1.8	1.0	1.4	2.4	1.8	1.8
Stockbuilding ^(b)	-0.2	0.2	0.4	0.2	-0.1	-0.1	0.2
Total domestic demand	0.2	1.7	2.0	1.9	2.5	2.4	2.6
Export volumes	1.6	1.1	6.4	4.5	8.1	6.2	5.1
Import volumes	0.3	3.2	6.3	5.4	7.5	6.1	6.1
GDP	0.9	0.8	1.8	1.5	2.8	2.5	2.2
Average earnings	4.2	2.9	2.2	2.1	2.6	3.0	3.9
Harmonised consumer prices	2.3	2.1	2.2	2.2	2.2	1.8	2.0
Private consumption deflator	2.0	2.2	2.0	2.0	2.1	2.0	1.9
Real personal disposable income	1.3	0.9	1.5	1.0	1.4	2.3	2.4
Standardised Unemployment, %	8.2	8.7	8.8	8.6	7.8	7.2	6.8
Govt. balance as % of GDP	-2.5	-3.1	-2.8	-2.4	-1.8	-1.2	-1.0
Govt. debt as % of GDP	68.1	69.3	69.8	70.8	69	67	64.8
Current account as % of GDP	0.8	0.4	0.7	-0.1	-0.2	-0.1	-0.1

a GDP data shown in table are adjusted for working-day variation.

b change as a per cent of GDP.

While the relative growth in Germany greatly improved in 2006 the Italian economy – another chronic underperformer within the Euro Area in recent years – continued to grow substantially slower than the Euro Area average in 2006. In addition some of the momentum that was observed in the end of last year is judged to be temporary as the strong GDP growth is probably partly due to inadequate seasonal adjustment. However, the growth rate of 1.9 percent last year represents a sharp improvement from almost stagnation in 2005. This mainly reflects an improvement in industry that seems to have moved beyond a low-point after a prolonged period of adjustment to a loss in price competitiveness and increased competition from low-cost countries. We expect Italian industry to continue to contribute to economic growth both this year and next.

The French economy on the other hand has lost ground in the past couple of years relative to the Euro Area average. After growing at around average growth rates, or slightly above, in the first years since the inception of the Euro Area, real GDP increased slightly less than the Euro Area total in 2005. In 2006, the growth gap widened further to a negative 0.7/0.8 percentage points. The main reason behind the poorer French GDP performance was the negative contribution of net exports to GDP growth. A major reason behind this is the continued loss in market shares of French exporters in recent years (see Graph 1.3.1). While we do not expect market shares to turn around over the forecast horizon, we do project some moderation in the downward trend in the time to come.

Figure 1.3.1: Trade Shares of the major Euro Area Countries

With respect to the other Euro Area member countries, we expect relatively little changes in relative growth performances over the forecast horizon. Ireland, Greece, Spain, Finland and Austria all continue to grow faster than the Euro Area average, and the Netherlands should also register an increase in real GDP which is substantially higher than the average in 2008. Output in Belgium will continue to rise at around Euro Area average levels while Portugal is expected to reduce the negative growth gap substantially. Italian GDP growth will remain significantly below Euro Area GDP growth. On the whole, growth differentials are projected to be smaller than in previous years, with the unweighted standard deviation of country growth rates declining to 0.74 in 2008, from the level of around 1.5 registered in the 2003-2006.

The forecast is based on the following assumptions

Oil prices will average US\$57.8 per barrel in 2007 and US\$59.5 per barrel in 2008.

The dollar/euro exchange rate will be 1.35 at the end of 2007 and 1.40 at the end of 2008.

Short-term interest rate will be 4.1 percent at the end of 2007 and also at the end of 2008.

Forecasts are based on data available up to mid-March 2007.

The assumptions for commodity prices, exchange rates and interest rates used in the forecast were constructed by consensus, as the average projections of the 10 member Institutes. These are broadly consistent with current financial market expectations and forward markets, as the majority of Institutes use this information in constructing their own forecasts.

GERMANY

2006 was a year of strong recovery in Germany. Real GDP rose by 2.9 per cent in working days adjusted terms (2.7 per cent unadjusted - which is the figure usually referred to in Germany). In the second half of the year, real GDP continued to rise by almost 1 per cent per quarter, following the significant acceleration of growth in the first two quarters and after modest quarterly

growth in 2005. During the year, the expansion was driven by exports and a substantial acceleration in fixed investment. The turnaround in construction activity was also crucial. Private consumption showed some improvement but remained relatively sluggish. According to current official estimates, growth in the final quarter of 2006 was entirely due to net exports as domestic demand fell because of a massive reduction in inventories. There is, however, some scepticism as to whether the jump in exports in the statistics really reflects an increase in export activity, and the statistical office has reduced inventories massively in response. Imports rose moderately in line with final domestic demand. The recovery of the labour market continued forcefully, helped by favourable weather conditions. The seasonally adjusted number of unemployed fell below 4 million in the first two months of this year for the first time since May 2002, and the unemployment rate dropped by more than one percentage point to 7.7 per cent from the year before (standardised unemployment rate). Employment growth has been significant, with the number of regular jobs having risen by almost 2 per cent since the trough in early 2006.³

Our current forecast for GDP growth in 2007 is 2.5 percent, only slightly below the growth rate of last year. This is a substantial upward revision from our forecast made in September. In September, we had expected a significant slowdown of the German economy, partly as a result of the fiscal package that includes an increase of the regular VAT rate by 3 percentage points which became effective from the start of this year (see the EUROFRAME-EFN Autumn 2006 report for details). Contrary to our expectation of a reduction in output in the first months of 2007, in response to advanced purchases at the end of 2006, production seems to have continued expanding. In January 2007, industrial production including construction increased substantially and was significantly above its level in the fourth quarter of 2006. This raises the question whether the effects of the VAT increase on the quarterly pattern of demand has been grossly overestimated. A look at demand indicators, however, reveals that purchases of some important durables were advanced to 2006 as expected. Car registrations, for example, saw a steep rise at the end of last year followed by a major fall in the first months of this year. Similarly, retail sales surged in December and were weak in January. Since the turn of the year the business climate has weakened significantly in the sectors that were expected to be especially affected by the VAT hike such as retail trade and residential construction. The impact on consumer prices seems to be largely in line with expectations. According to our estimates, inflation has been pushed up by about three quarters of a percentage point. This estimate is also consistent with the development of core inflation (excluding energy and food), which rose by 1.1 percentage points between June 2006 and January 2007. The fact that the inflation rate only increased slightly in January is partly due to the coincidence of falling energy prices and to the fact that apparently some of the increase in prices had taken place already in previous months.

One of the reasons that output has remained strong in the first months of 2007 lies in the record levels of backlogs of orders – surpassing even the levels seen during the peak of the reunification boom – despite the fact that order inflows have been stagnant around the turn of the year. In addition, exports have been especially vibrant, corporate investment has helped to maintain production and construction activity has benefited from unusually mild winter

³ The substantial rise in employment is difficult to reconcile with the estimate of only modest growth of disposable income in the fourth quarter given in the Quarterly National Accounts. Similarly, a strong increase in VAT revenues is somehow at odds with the estimated moderate expansion of private consumption. Therefore, there seems to be scope for substantial upward revisions in the QNA (as we have seen in previous quarters).

weather. Overall, leading indicators point to robust GDP growth in the first half of the year. In the second part of this year we expect the upswing to continue and become increasingly self-sustained. Investment should rise rapidly in view of high capacity utilization and the improved outlook for domestic demand, although part of the increase may be investment brought forward to escape a change in the tax code that will lead to stricter depreciation rules from 2008 onwards. Private consumption is forecast to accelerate, reflecting stronger growth in real disposable income as a result of higher wage increases and increasing employment. Export growth, by contrast, will lose some momentum since the world economy is expected to grow at a more moderate pace. In 2008, real GDP is expected to grow by 2.3 per cent, with private consumption being an increasingly important pillar of demand. Fiscal policy is expected to be broadly neutral after being restrictive in both 2006 and 2007. Given robust economic growth, and under the assumption that better than projected revenue growth will not loosen the strings on the purse of the treasury too much, the deficit should shrink further to 0.3 per cent from 0.6 per cent which is expected to be achieved this year. While government expenditures will continue to rise at a slower rate than GDP, less pronounced than in previous years, and the income tax burden will rise due to tax progression, the reform of corporate taxation will cost around € 6.5 billion. (0.3 per cent of GDP). Unemployment is expected to decline further to 6.3 per cent in 2008, from 7.3 per cent in 2007 (2006: 8.4 per cent). Consumer price inflation will be 1.7 per cent in 2007 and increase to 1.9 per cent in 2008 due to higher wage growth and increased pricing power of firms.

Box 1: Wage Growth in Germany

Over the seven years to the end of 2006 real wage dynamics in Germany have been exceptionally weak, declining by 0.1 per cent per annum on average when we use the consumer deflator and rising by 0.3 per cent a year when we use the producer deflator. As a result the wage share in Germany has fallen by more than 3 per cent of GDP between 1999 and 2006. It appears that this period of slow growth in real wages and in the declining wage share has come to an end. We expect average hourly earnings to rise by 2.3 per cent this year and 3.8 per cent next year and in our forecast real wages, based on consumer prices, are forecast to grow at around 1.3 per cent a year, whilst our other measure will grow by 2.1 per cent a year. This will keep the labour share approximately constant over this period, with wages growing in line with fundamentals, and hence labour market developments can be seen as a return to normality. In the following simulation we investigate the effect that a sustained increase in German wage inflation has on the Euro Area economy.

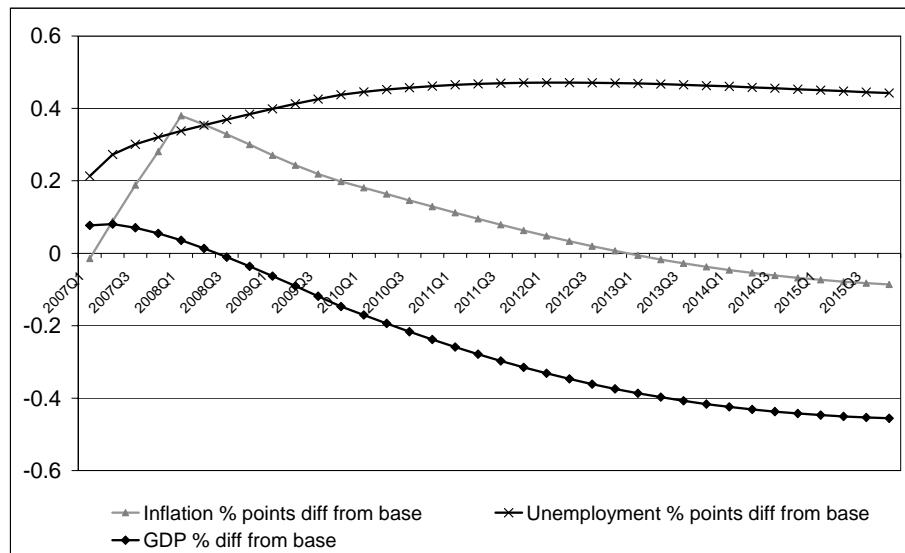
In NiGEM wages are set in a forward-looking environment, and there are several ways to change them. We do not think we are seeing any major change in behaviour at present, except in relation to the unusual patterns of the last few years. We can evaluate this judgement by asking what would be happening if wages were not being driven by fundamentals by rather by a wage shock. Our wage equations are estimated and come from Barrell and Dury (2003) and are based on Barrell and Anderton (1995). Expectations are instrumented in a forward and backward wage bargain. A change in bargaining structure can change the intercept of the equation and hence change the equilibrium level of employment. We can shift the equation residual to see what happens when bargaining changes. In addition expectations may drift and we can emulate that in backward mode.

The equation is estimated in error correction form (in italics), with a long run moderating influence from unemployment, *geu*. The dependent variable, *gewage*, is the nominal wage per person hour, which depends on the difference between the real product wage (*gerpwage*) and productivity, which is driven by technical progress. The *ced* is the price level and *wgeinf* is expected inflation, and the equation is dynamically and statically homogenous.

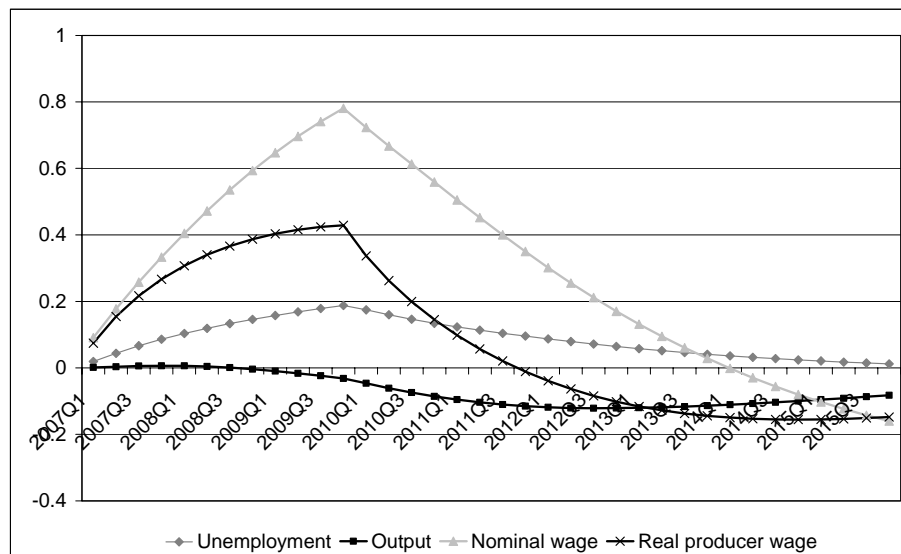
$$\begin{aligned} \log(\text{gewage})-\log(\text{gewage}(-1)) = & 1.196632 - 0.00364*\text{geu}(-1) \\ & 0.16732*\{\log(\text{gerpwage}(-1) - \log(\text{productivity}(-1))\} \\ & + (1.0-0.62441)* \log(\text{wgeinf}) \\ & + 0.62441* \log(\text{geced}/\text{geced}(-1)) \end{aligned}$$

We can change the intercept either temporarily or permanently, but it is a parameter that depends on reservation wages so we need a reason to shock it. We raise the intercept in the long run structural part of the wage equation by 1% permanently. Unemployment rises and inflation increases but the ECB raises rates and stays on target. We assume forward looking wages, financial markets and policy makers. Wages rise before unemployment and inflation rise and real disposable incomes rise initially, and hence consumption and output rise for a year or so. Interest rates and the exchange rate increase.

Figure B1: The Effects of Wage Pressure in Germany



A change in bargaining behaviour induces wage pressure, raises inflation noticeably and increases sustainable unemployment. A wage shock may also be an inflation expectations misperception, and we do have a simple learning equation for expectations that we can use, and we can shock it endogenously. We raised expected inflation by 1.0 for 12 quarters, which raises wages in the bargain. When we did this the misperception had little effect on inflation, but unemployment rose continually because the misperception is built into the bargain. The increase in unemployment is around 0.2 percentage points after three years, but there is no initial increase in output. We assume the shift in expectations is removed after three years and hence our long run solution remains unchanged.

Figure B2: Expectations effects in Germany

It is unlikely that emerging wage pressure are being driven by such a strong drift in inflation expectations, and there is also no good reason to assume that there has been a shift in bargaining power towards employees. Both of these would involve a rise in unemployment along with the rise in wage growth, and between 2005 and 2006 unemployment fell from 9.45 per cent to 8.37 percent in Germany, and we anticipate it will fall further to 7.3 percentage points in 2008. The faster increase in wages embedded in our forecast is reflecting the improvement in the economic environment and should therefore not be seen as a wage shock to the economy, if we were to see unexpectedly strong wage pressure it is much more likely to come from emerging demand pressures that we have not yet observed, and hence it should be seen as a signal for strong growth not rising unemployment.

FRANCE

French GDP grew by 2 per cent in 2006 following a mere 1.2 per cent in 2005. Domestic demand excluding stockbuilding grew by 2.7 per cent in 2006, substantially more rapidly than output. Household consumption remained the main engine for growth (rising by 2.7 per cent), while government consumption rose by almost 2 per cent and investment by 3.5 per cent. A reduction in inventories reduced growth by 0.3 percentage points. The contribution of net external trade to GDP growth remained negative for the fourth year in a row, although to a smaller extent, reducing output growth by 0.3 percentage points in 2006, after an average annual 0.8 percentage points from 2003 to 2005.

The quarterly path for output growth was highly volatile in 2006 and could hardly be reconciled with information delivered by survey data in the second and third quarters of the year (GDP grew by 1.1 per cent in the second quarter and by 0.0 in the third quarter). However with 0.6 per cent growth in the fourth quarter, GDP growth was back in line with survey data. On the basis of data available up to end February, OFCE's quarterly GDP growth indicator predicts a 0.7% growth for each of the first two quarters of the year which is slightly above our EUROFRAME-EFN forecast. This is similar with last year's developments, when OFCE's indicator predicted slightly more optimistic than observed growth in 2006, which may perhaps suggest future upwards revisions in national accounts.

Industrial production remains weak, with growth 0.6 per cent lower in the last three months ending in January 2007 than a year earlier. Production in the automobile industry continues to be one of the major components dragging down industrial output (-6.9 % at the turn of the year as compared to a year earlier), although having declined less rapidly in the second half of the year.

We expect French GDP to grow by around 2.2 per cent in 2007 and by 2 per cent in 2008, remaining slightly below the Euro Area average (resp. 2.5 and 2.2 per cent). In terms of demand components, the main weakness of the French economy is on the export side. French exporters have been losing substantial market shares over the last few years, which cannot be fully explained by developments in price competitiveness and contrasts strongly with German gains in export market shares over the same period. Among possible explanations for the losses in French export market shares, would be the specialisation of French exporters who are less specialised in investment goods, as opposed to German exporters who benefit more from strong demand in investment goods in times of acceleration of growth and also from buoyant demand from emerging countries. However, the unexplained losses in French export market shares of the last few years may have come to an end in 2006, when French export growth was more in line with export demand and export price competitiveness. Our forecasts for exchange rates will not allow French exports to gain market share in the forecasting horizon and the deceleration of export demand will dampen export growth. Net external trade's contribution to GDP growth will be close to 0 per cent.

Inflation has remained subdued, with the HCPI rising by an annual 1.2 per cent only in February 2007 (as compared to 1.8% in the Euro Area) and there are hardly any signs of rising inflationary pressures in the coming months. We expect HCPI inflation to accelerate slightly from 1.3 per cent in 2007 to 1.6 in 2008. Under our GDP growth assumptions and the progressive declining effect of past employment policy measure, the unemployment rate (in terms of the Eurostat standardised measure) could settle at around 8.5 this year and next, from 9% in 2006.

Fiscal policy may be slightly expansionary in 2007, contrary to the objectives announced in the latest update of the Stability Programme (where a 0.4 percentage point of GDP improvement in the structural deficit was announced). We project government spending to rise more rapidly than announced in the last update of the SP up to 2008 (by close to 2% in real terms rather than 0.6 per cent in the SP's update). At the end of March 2007, forecasts for fiscal plans are however highly uncertain because of the presidential elections to held in late April followed by parliamentary elections in June. Our forecasts include the income tax cuts announced in the last budget, but other measures may be implemented later this year. Fiscal policy will probably not be as contractionary as announced in the latest SP's update where a substantial negative fiscal impulse was announced (0.7 percentage point of GDP). We only expect a slight fiscal tightening in 2008, which would leave the government deficit close to 2.8 per cent of GDP in both years.

ITALY

Italian GDP grew by 1.9 per cent in 2006 (1.6 per cent in the Autumn Report) largely due to strong and unexpected growth in the fourth quarter (1.1 per cent

q-o-q, partly due to exceptional factors⁴). This constitutes a significant improvement from the 0.1 per cent growth rate recorded in 2005. The main driving force was the recovery in industrial production which grew by 2.3 per cent and so ended a five year long recession. The recovery was spread across most components but especially concentrated among export-oriented industries. In fact, Italian exporters took good advantage of the German recovery, and of investment demand especially. In addition, signs of a shift in exports towards higher quality products and the effect of a deep restructuring of manufacturing production through off-shoring and re-branding of products may have improved the competitive position of firms.

The industrial production index decreased by 1.4 per cent (m-o-m) in January, after a downwardly-revised increase of 1.4 per cent (m-o-m) in December. This confirms our forecast of a deceleration in the first quarter of 2007, due to a pay-back from the stronger-than-expected increase in the fourth quarter, in addition to the likely unwinding of German orders (due to the VAT hike) and the increase in Italian personal tax rates. Taking account of the reduction in the pace of recovery in the first half of the year, our GDP forecast for 2007 has been revised to 1.8 per cent (y-o-y), given that 1.2 per cent is carried over growth.

Unemployment has continued to decline and the rate currently stands at 6.8 per cent, while employment grew by 1.6 per cent after declining for six quarters. This is likely to reflect the regularisations of immigrants, but also a strong increase in employment in industry, after seven years of decline. Notwithstanding the employment increase, productivity growth accelerated last year. The apparent increase in the labour intensiveness of production appears to be a structural phenomenon and, with labour force participation rates among women and older workers quite low for European averages, this process could continue for some time.

We expect Italian CPI inflation to moderate from 2.1 per cent in 2006 to 1.8 per cent this year, the same as our forecast for overall Euro Area HICP inflation. Other than common factors driving the Euro Area inflation dynamics – favourable energy base effects and the impact of euro appreciation – the moderation of annual CPI inflation will also reflect Italy's specific factors. First, the effects of the Bersani Decree should help to contain inflation by lowering prices of some medicines and certain type of services; second, the reduction of the payroll tax wedge should be translated to lower prices.

The deficit-to-GDP ratio increased from 4.1 per cent in 2005 to 4.4 per cent in 2006. Net of extraordinary burdens⁵ the deficit-to-GDP ratio decreased to 2.4 per cent.

The sharp improvement in Italy's government balance in 2006 came from the huge increase in tax revenues. Several factors played a role: the favourable

⁴ While the figures are calendar day adjusted, this does not take into account the position of December holidays within the weeks, which exceptionally reduces the number of "free" holidays in December.

⁵ Extraordinary burdens are due, first, to the VAT sentence issued by the European Court of Justice on deductibility for motor vehicles, that imply Italian taxpayers will be refunded for unduly paid VAT for an amount of 1.2 p.p. of GDP; second, the effects of the decision of including in public deficit 0.9 p.p. of GDP of liabilities linked to the financing of High-speed/high capacity rail network system. This debt is formally in the books of the rail infrastructure management company RFI/TAV, an entity external to the Public Administration, but the "true debtor" is in charge of the Government, as Eurostat set in May 2005.

economic situation has enlarged tax basis especially affecting corporate taxes and VAT; the measures introduced by the Budget law for 2006 were more effective than expected and finally, some consolidation measures (introduced in July by the so called “Decreto Bersani”) exerted a positive influence on fiscal balances. Due to these factors, revenue grew by 10 per cent with respect to 2005 (37.7 billion euro): according to the government, 8.1 billion euro are due to one-off factors, 5 billion from the Budget Law, 10 billion from the economic recovery. The difference, around 37 per cent of total increase, is linked to the anti tax evasion measures and to an improvement of tax compliance. As a result, the tax burden increased by 1.7 percentage points of GDP, from 40.6 to 42.3 per cent.

On March 16th the update of the government forecast was released⁶: the deficit to GDP ratio has been revised downwards to 2.3 per cent for both 2007 and 2008, due to an upward revision of GDP growth⁷ and to the better than expected results for 2006, that carry over into 2007.

Because the nature of the extraordinary revenue increases in 2006 is not completely clear, we consider them as being brought forward in anticipation of the measures included in the Budget Law for 2007 aimed at increasing tax compliance and reducing tax evasion. Keeping the cyclically adjusted budget balance unchanged, we expect the deficit to-GDP ratio to be coherent with the SP target of 2.8 per cent this year, due to the adoption of a restrictive fiscal package, that set permanent measures in place of temporary ones, and the favourable macroeconomic scenario. This will result in a less restrictive fiscal impulse this year, as part of the measures introduced by the Budget law in order to reduce tax evasion and increase tax compliance had already come into effect in 2006.

Looking ahead, cuts in the social contributions leading to a reduction in labour costs should facilitate export performance and business investment. Adding to that a steady decline in the unemployment rate, coupled with a stabilisation of inflation at around 2.0 per cent, supporting consumption growth, GDP growth is forecast to rise to around 1.5 per cent in 2008.

1.4 Additional topics

1.4.1 GLOBAL IMBALANCES AND US ADJUSTMENT

The US current account is large and may not be sustainable, and correction could start domestically through a change in absorption or internationally through a market driven correction of the real exchange rate. The US has been issuing a lot of debt, as have US households. Risk premia could rise in the housing market causing prices to fall and demand to contract. Alternatively risk premia on US assets potentially held abroad could rise, with a wedge arising between US and other countries real interest rates. The source of the adjustment matters both in the short run and the long run. Adjustment within the US in the short run has smaller spillovers to the rest of the world than adjustment through the exchange rate.

We implement a small change in the US risk premium in our model NiGEM. We assume financial markets, labour markets and the investment decisions are forward looking, with forward looking long term interest rates affecting

⁶ Relazione unificata sull'economia e la finanza pubblica (Unified quarterly report on the economy and cash borrowing requirement), Ministry of Economy and Finance.

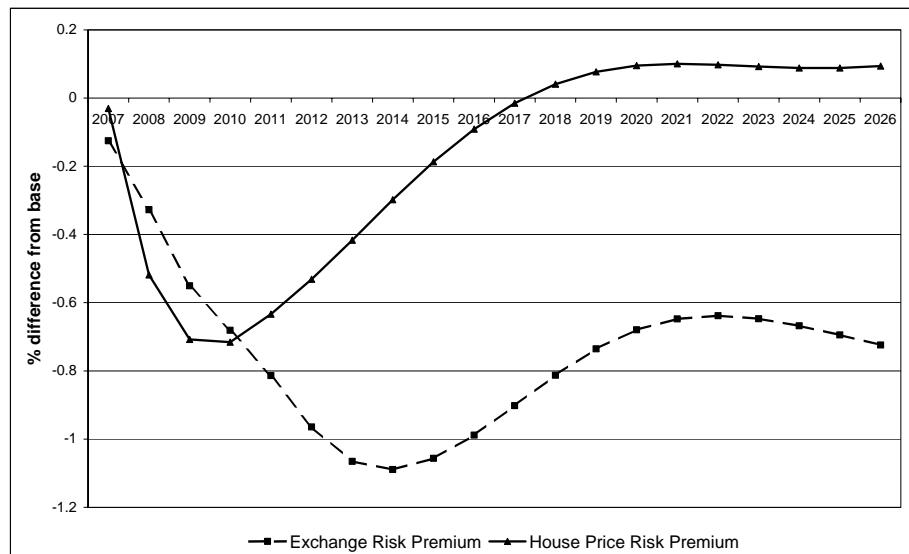
⁷ From 1.3 pp to 2 pp in 2007, from 1.5 pp to 1.7 pp in 2008.

investment directly. We shift the premium through the residual on the forward looking arbitrage equation

$$e_t = e_{t+1}((1 + rf_t)/(1 + rh_t))(1 + rp_t) \tag{1}$$

where rh_t is the interest rate at home, rf_t is the interest rate in the partner country and rp_t is a risk premium. We shift the risk premium by enough to improve the US current account by 1.0 per cent of GDP in the medium term, and this raises long term real interest rates in the US by about 0.6 percentage points, and cuts them elsewhere, inducing an immediate jump in the US real exchange rate of 4 per cent. US output growth would slow immediately as a result of the impacts of permanently higher real interest rates, as we can see from Figure 1.4.1, even though the US has devalued.

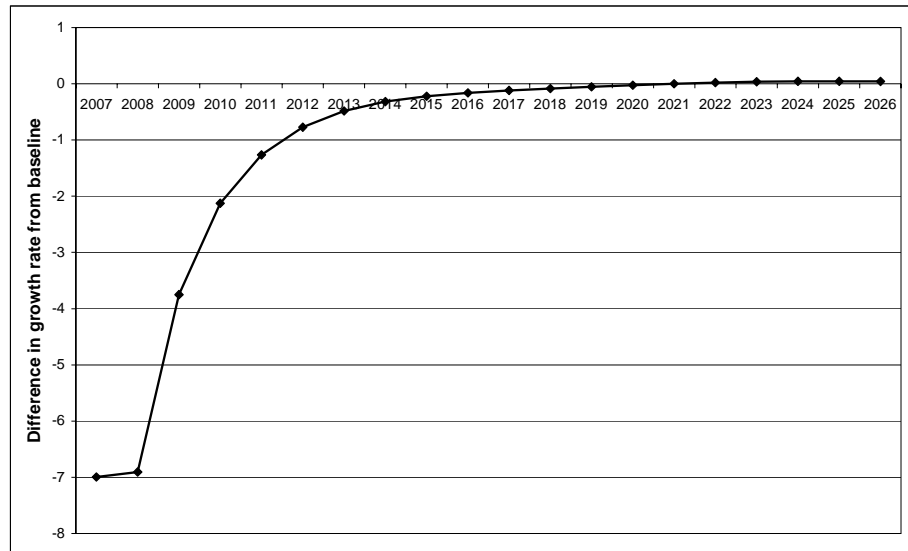
Figure 1.4.1: Impacts on US GDP



There may have been an accumulation of risk in the US banking system because of poorly collateralised loans, and lenders may become more cautious. We may model this by putting a risk premium (rph) mark up above the risk free rate (rh) into the forward looking house price equation we have on the model as set out in equation (2) which can be rewritten as an infinite sum of future discounted rental flows

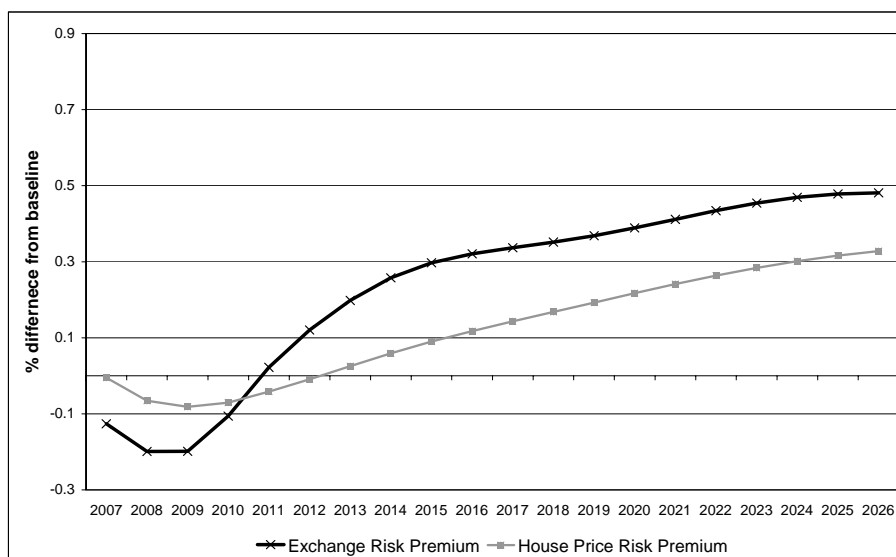
$$ph_t = ph_{t+1} / ((1 + rh_t)(1 + rph_t)) + rental_t \tag{2}$$

House prices (ph) move in line with the expected discounted current value of future rental values, and a rise in the premium causes them to jump down, and then they continue to fall for several more years as we can see from Figure 1.4.2.

Figure 1.4.2: US House Prices

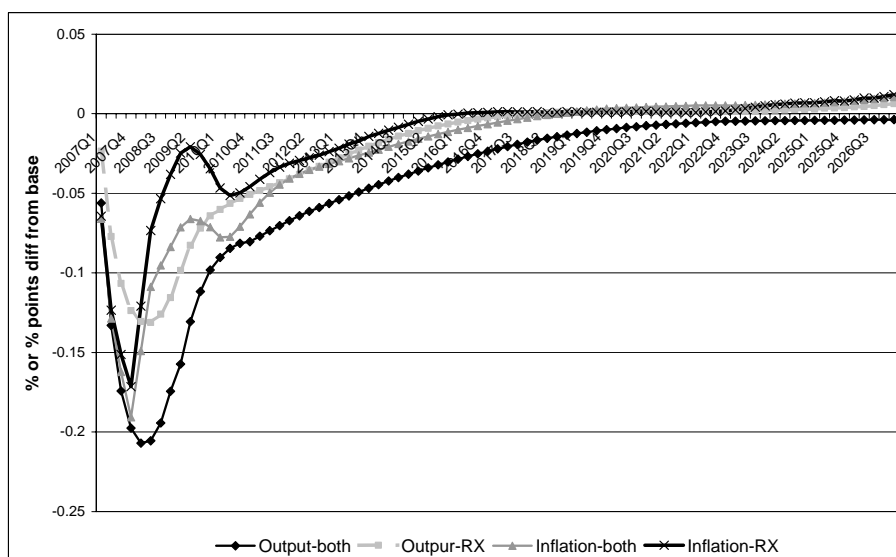
We induce a risk premium that produces a large enough shift in demand to improve the US current account in the same way as our exchange rate risk premium. The fall, as compared to baseline, of 23 per cent in house prices over three years or so affects consumption, both through its dynamic effects and through its long run impact on wealth, as Barrell and Davis (2005) detail in their discussion of our US consumption function. Figure 1.4.1 plots the impacts on US GDP as compared to our exchange rate shock. If US house prices adjust consumption falls, savings rise and hence long term real interest rates fall by 0.5 percentage points and output rise marginally above base in the long run. If adjustment is through exchange risk premia US output is lower because real interest rates there are higher.

Impacts on the Euro Area differ between these two scenarios because of the associated impacts on the real exchange rate, even though the impacts on the US are similar in the first four years. If the adjustment is internal to the US, then demand impacts on the Euro Area come mainly through absorption, whilst a risk premium market based adjustment also has an impact through the noticeable appreciation of 3.6 per cent in the real effective euro exchange rate. We can see from Figure 1.4.3 that a one point of GDP improvement in the US current account will have 3 times the effect on Euro Area output in the second year of the experiment when driven by external factors than when driven by internal ones. If the current account were to improve by 3 per cent of GDP as a result of a risk premium shock then Euro Area growth could slow by up to half a point a year for two to three years. In the long run real interest rates would be lower by half a point in the exchange risk premium case and a third of a point in the housing market adjustment scenario, and hence output would be higher as the capital stock would increase. If the US adjustment were internal the impacts on Europe would be much less. In both cases in the long run real interest rates are lower and hence output remains above our baseline.

Figure 1.4.3: Impacts on Euro Area GDP

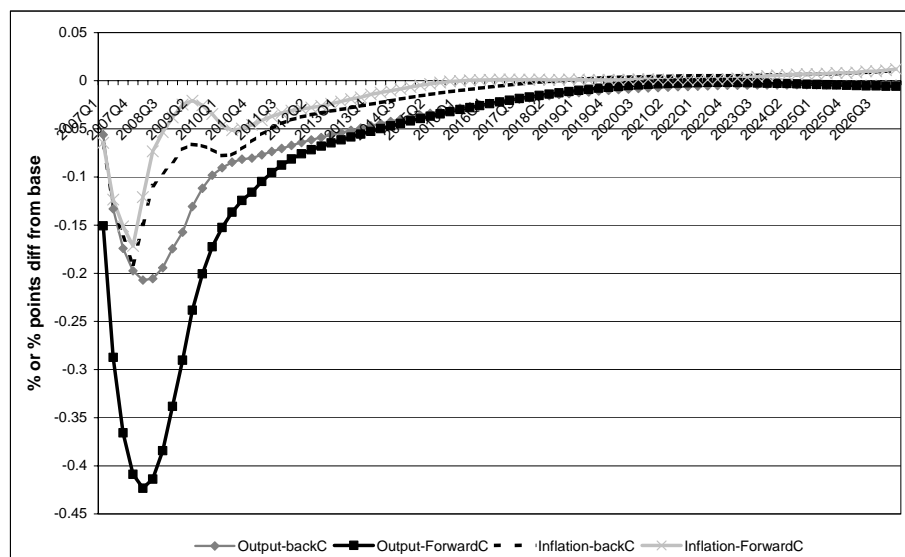
1.4.2 INTEREST RATE EFFECTS IN THE EURO AREA

It is useful to understand the channels through which the interest rate works. Initial effects may come from exchange rate changes, whilst longer term effects may come from the effects of output on inflation. We undertake a set of experiments to decompose these channels. In Figure 1.4.4 we look at the effect of a 1.0 percentage point increase in the interest rate in the Euro Area sustained for two years, and then we set interest rates following a Taylor rule. A rise in interest rates cause the exchange rate to jump up, and therefore we take the exchange rate change that comes with this innovation and put it back on the model with fixed interest rates. This allows us to say how much of the change comes from the exchange rate effect alone. We assume forward looking financial markets and wage bargainers, but consumers are assumed to be myopic.

Figure 1.4.4: Isolating the Exchange Rate Effect

In the first year in our model almost 90 per cent of the effects or -0.14 on inflation of the rise in interest rates come through the effects of the associated rise in the exchange rate, with the direct effects of interest rates being smaller and coming through later. In the second year inflation is 0.11 lower than the baseline, with 40 per cent of this coming from demand effects. Around one third of the demand effect comes from the interest rate. These effects may seem small as compared to those suggested by Central Banks. If we assume forward looking consumers in the Euro Area then the demand effects of a rise in the interest rates are more than twice as big, as we can see from Figure 1.4.5. The exchange rate effect of the innovation are the same, and hence the differences in the inflation effect come from the different assumptions about consumers. As a result inflation effects are noticeably larger, especially in the second year. However, they remain small.

Figure 1.4.5: Forward and Backward Consumers



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Barrell R., and Dury, K. (2003) ‘Asymmetric labour markets in a converging Europe: Do differences matter?’ *National Institute Economic Review* No. 183, January 2003

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FORECAST TABLES

Annex Table 1: Summary of Key Forecast Indicators for Euro Area^a

	2002	2003	2004	2005	2006	2007	2008
Output Growth Rate	0.9	0.8	1.8	1.5	2.8	2.5	2.2
Inflation Rate	2.3	2.1	2.2	2.2	2.2	1.8	2
Unemployment Rate	8.2	8.7	8.8	8.6	7.8	7.2	6.8
Gov. Balance as % GDP	-2.5	-3.1	-2.8	-2.4	-1.8	-1.2	-1

a GDP data shown

in the tables are adjusted for working-day variation.

Annex Table 2: Real GDP in Major Economies

	World	OECD	NAFTA	China	EU-27	Euro Area	USA	Japan	Germany	France	Italy	UK
	Annual percentage changes											
1996-2002	3.6	2.7	3.3	8.6	2.5	2.4	3.3	0.8	1.6	2.3	1.7	2.9
2003	4.1	2	2.4	10	1.3	0.8	2.5	1.5	-0.2	1.1	0.1	2.7
2004	5.3	3.2	3.9	10.1	2.3	1.8	3.9	2.7	0.8	2	1	3.3
2005	4.9	2.6	3.2	10.2	1.8	1.5	3.2	1.9	1.1	1.2	0.2	1.9
2006	5.3	3.1	3.4	10.7	3	2.8	3.3	2.2	2.9	2	1.9	2.7
2007	4.8	2.4	2.5	9.8	2.7	2.5	2.4	2.3	2.5	2.2	1.7	2.6
2008	4.5	2.5	2.4	9.1	2.4	2.2	2.3	2.1	2.2	2	1.4	2.3

Annex Table 3: Private Consumption Deflator in Major Economies

	OECD	NAFTA	China	EU-15	Euro Area	USA	Japan	Germany	France	Italy	UK
	Annual percentage changes										
1996-2002	2.1	2.5	1.5	1.9	1.9	1.8	-0.4	1	1.1	2.7	2.2
2003	1.8	2.2	1.2	2.1	2.2	2	-0.9	1.6	1.7	2.8	1.9
2004	2.1	2.7	3.9	1.9	2	2.6	-0.7	1.6	1.6	2.6	1.7
2005	2.1	2.9	1.9	2.1	2	2.9	-0.8	1.3	1.8	2.4	2.5
2006	2.2	2.7	1.5	2.1	2.1	2.8	-0.3	1.3	1.2	2.7	2.3
2007	2.2	2.6	2	2.1	2	2.3	0.4	1.5	1.6	2.4	2.9
2008	2.3	2.6	1.8	2.1	1.9	2.5	1.2	1.9	1.6	2.2	2.7

Annex Table 4: World Trade Volume and Prices

	World trade volume	World export prices in \$	Oil price (\$ per barrel) ^a
	Annual percentage changes		
1996-2002	6.5	-2.8	20.4
2003	5.1	9	27.8
2004	10.3	7.9	35.9
2005	7.3	3.7	51.8
2006	9	2.5	63.4
2007	6.4	5	57.8
2008	6.2	3.9	59.5

^a Based on the unweighted average of the Brent, WTI (West Texas Intermediate) and Dubai oil prices.

Annex Table 5: Interest Rates

	Short-term interest rates				Long-term interest rates			
	USA	Japan	Euro Area	UK	USA	Japan	Euro Area	UK
2003	1.2	0.0	2.3	3.7	4	1.1	4.1	4.5
2004	1.6	0.0	2.1	4.6	4.3	1.5	4.1	4.9
2005	3.5	0.0	2.2	4.7	4.3	1.3	3.4	4.4
2006	5.2	0.2	3.1	4.8	4.8	1.8	3.9	4.5
2007	5.1	0.7	4	5.7	4.7	1.8	4.0	4.9
2008	4.5	1.0	4.1	5.6	4.8	2.0	4.2	4.9
2006Q1	4.7	0.1	2.6	4.5	4.6	1.7	3.7	4.2
2006Q2	5.2	0.1	2.9	4.6	5.1	1.9	4.1	4.6
2006Q3	5.4	0.4	3.2	4.9	4.9	1.7	3.8	4.6
2006Q4	5.3	0.4	3.6	5.2	4.6	1.7	3.9	4.6
2007Q1	5.3	0.6	3.8	5.5	4.7	1.7	3.9	4.9
2007Q2	5.2	0.6	4.0	5.7	4.7	1.8	4.0	4.9
2007Q3	4.9	0.7	4.1	5.7	4.8	1.8	4.0	4.9
2007Q4	4.8	0.8	4.1	5.7	4.7	1.9	4.1	4.9
2008Q1	4.6	0.9	4.1	5.7	4.7	1.9	4.2	4.9
2008Q2	4.5	1.0	4.1	5.6	4.8	2.0	4.2	4.9
2008Q3	4.5	1.1	4.1	5.5	4.8	2.0	4.3	4.9
2008Q4	4.5	1.2	4.1	5.4	4.8	2.1	4.3	4.9

Annex Table 8: Real GDP in the European Union ^a

	2003	2004	2005	2006	2007	2008
	Annual percentage changes					
Austria	0.8	2.3	2.6	3.3	3.0	2.6
Belgium	1.0	2.7	1.5	3.0	2.3	2.1
Denmark	0.4	2.1	3.1	3.2	2.6	2.6
Finland	1.9	3.5	3.0	5.5	2.6	2.6
France	1.1	2.0	1.2	2.0	2.2	2.0
Germany	-0.2	0.8	1.1	2.9	2.5	2.2
Greece	4.9	4.7	3.7	4.3	3.4	3.5
Ireland	4.3	4.3	5.5	6.2	5.1	4.0
Italy	0.1	1.0	0.2	1.9	1.7	1.4
Netherlands	0.3	2.0	1.5	2.9	2.6	2.7
Portugal	-1.1	1.2	0.4	1.3	1.9	2.0
Spain	3.0	3.2	3.5	3.9	3.4	3.0
Sweden	1.8	3.6	2.9	4.7	3.3	3.0
United Kingdom	2.7	3.3	1.9	2.7	2.6	2.3
Poland	4.0	5.2	3.4	5.7	5.5	5.0
Hungary	4.1	4.9	3.6	4.5	3.0	3.0
Czech Rep	3.6	4.2	6.1	6.2	5.1	5.6
Estonia	7.1	8.1	10.5	11.4	8.6	7.6
Latvia	7.2	8.2	11.2	12.0	8.4	7.1
Lithuania	10.3	7.3	7.6	7.4	6.8	6.1
Slovakia	4.2	5.4	6.0	8.3	8.0	5.9
Slovenia	2.5	4.0	4.3	5.5	4.3	3.9
Romania	4.7	5.2	3.7	7.8	6.2	5.4
Bulgaria	4.5	5.6	5.5	6.4	5.9	5.3
Euro Area	0.8	1.8	1.5	2.8	2.5	2.2
EU-15	1.1	2.1	1.6	2.8	2.6	2.3
NMS-12	4.2	5.1	4.6	6.2	5.4	5.0
EU-27	1.3	2.3	1.8	3.0	2.7	2.4

^a GDP data shown in the tables are adjusted for working-day variation.

Annex Table 9: Harmonised Inflation in the European Union

	2003	2004	2005	2006	2007	2008
	Annual percentage changes					
Austria	1.3	1.9	2.1	1.7	1.7	1.7
Belgium	1.5	1.9	2.5	2.3	1.6	1.7
Denmark	2.0	0.9	1.7	1.8	1.8	2.0
Finland	1.3	0.1	0.8	1.3	1.3	1.3
France	2.2	2.3	1.9	1.9	1.3	1.6
Germany	1.0	1.8	1.9	1.8	1.7	1.9
Greece	3.4	3.0	3.5	3.3	2.7	2.6
Ireland	4.0	2.3	2.2	2.7	2.9	2.3
Italy	2.8	2.3	2.2	2.2	1.9	2.2
Netherlands	2.2	1.4	1.5	1.6	1.3	1.3
Portugal	3.3	2.5	2.1	3.0	2.5	1.8
Spain	3.1	3.1	3.4	3.6	2.5	2.5
Sweden	2.3	1.0	0.8	1.5	1.6	1.8
UK	1.4	1.3	2.1	2.3	2.4	2.2
Poland	0.7	3.6	2.2	1.3	2.2	2.6
Hungary	4.7	6.8	3.5	4.0	6.6	4.3
Czech Rep	-0.1	2.6	1.6	2.1	2.3	2.8
Estonia	1.4	3.0	4.1	4.3	4.0	3.0
Latvia	2.9	6.2	6.9	6.6	6.8	5.1
Lithuania	-1.1	1.2	2.7	3.8	4.2	2.7
Slovakia	8.5	7.4	2.8	4.3	2.5	2.9
Slovenia	5.7	3.7	2.5	2.5	2.7	2.7
Romania	15.3	11.9	9.1	6.6	5.4	7.2
Bulgaria	2.3	6.2	5.0	7.3	6.2	6.8
Euro Area	2.1	2.2	2.2	2.2	1.8	2.0
EU-15	2.0	2.0	2.1	2.2	1.8	2.0
NMS-12	3.1	5.0	3.4	3.2	3.6	3.8
EU-27	2.1	2.3	2.3	2.3	2.0	2.1

Annex Table 10: Fiscal Balances in the EU-15

	2003	2004	2005	2006	2007	2008
	% GDP					
Austria	-1.6	-1.2	-1.5	-1.1	-1.0	-1.0
Belgium	0.0	0.0	-2.3	-0.5	-0.3	-0.3
Denmark	0.0	1.7	4.0	3.2	2.6	2.2
Finland	2.5	2.3	2.7	3.9	3.5	3.3
France	-4.2	-3.7	-2.9	-2.8	-2.8	-2.7
Germany	-4.0	-3.7	-3.2	-1.7	-0.5	-0.3
Greece	-4.9	-6.2	-4.2	-3.7	-3.1	-2.6
Ireland	0.2	1.5	1.0	2.2	1.8	1.5
Italy	-3.5	-3.4	-4.1	-4.4	-2.6	-2.2
Netherlands	-3.1	-1.8	-0.3	0.2	-0.1	0.7
Portugal	-2.9	-3.2	-6.0	-4.5	-3.8	-2.9
Spain	0.0	-0.2	1.1	1.4	0.8	0.6
Sweden	0.1	1.8	3.0	3.0	2.5	2.0
United Kingdom	-3.2	-3.2	-3.0	-2.9	-2.9	-2.8
Euro Area	-3.1	-2.8	-2.4	-1.8	-1.2	-1.0
Eu-15	-2.9	-2.6	-2.2	-1.7	-1.3	-1.1

Annex Table 11: Standardised Unemployment Rate in the European Union

	2003	2004	2005	2006	2007	2008
	% Total labour force					
Austria	4.3	4.8	5.2	4.8	4.5	4.4
Belgium	8.2	8.4	8.4	8.2	7.8	7.8
Denmark	5.4	5.5	4.8	3.9	3.4	3.6
Finland	9.0	8.9	8.4	7.8	7.2	7.2
France	9.4	9.6	9.7	9.0	8.4	8.5
Germany	9.1	9.5	9.5	8.4	7.4	6.4
Greece	9.7	10.5	9.8	8.9	8.5	8.1
Ireland	4.7	4.5	4.4	4.4	4.4	4.8
Italy	8.4	8.0	7.7	6.8	6.2	6.1
Netherlands	3.7	4.5	4.7	3.9	3.3	3.0
Portugal	6.2	6.6	7.6	7.4	7.2	7.1
Spain	11.1	10.6	9.2	8.6	8.4	8.0
Sweden	5.6	6.3	6.0	5.6	5.5	5.0
UK	5.0	4.8	4.9	5.4	5.7	5.8
Poland	19.6	19.0	17.8	14.0	12.2	11.6
Hungary	5.9	6.1	7.1	7.5	8.1	7.0
Czech Rep	7.8	8.3	7.9	7.2	6.5	5.9
Estonia	10.1	9.7	7.9	5.5	4.6	4.4
Latvia	10.6	10.4	8.9	6.8	5.8	5.2
Lithuania	12.5	11.4	8.3	5.9	6.2	6.1
Slovakia	17.6	18.2	16.2	13.3	10.7	9.9
Slovenia	6.7	6.3	6.5	6.0	5.0	5.0
Romania	7.0	8.1	7.1	7.4	7.1	7.2
Bulgaria	13.6	12.1	10.1	8.9	8.1	7.7
Euro Area	8.7	8.8	8.6	7.8	7.2	6.8
EU-15	8.0	8.1	7.9	7.4	6.9	6.6
NMS-12	14.4	14.1	13.4	12.3	10.8	10.3
EU-27	9.0	9.1	8.7	7.9	7.3	7.0

2. EUROPEAN POLICY MONITORING

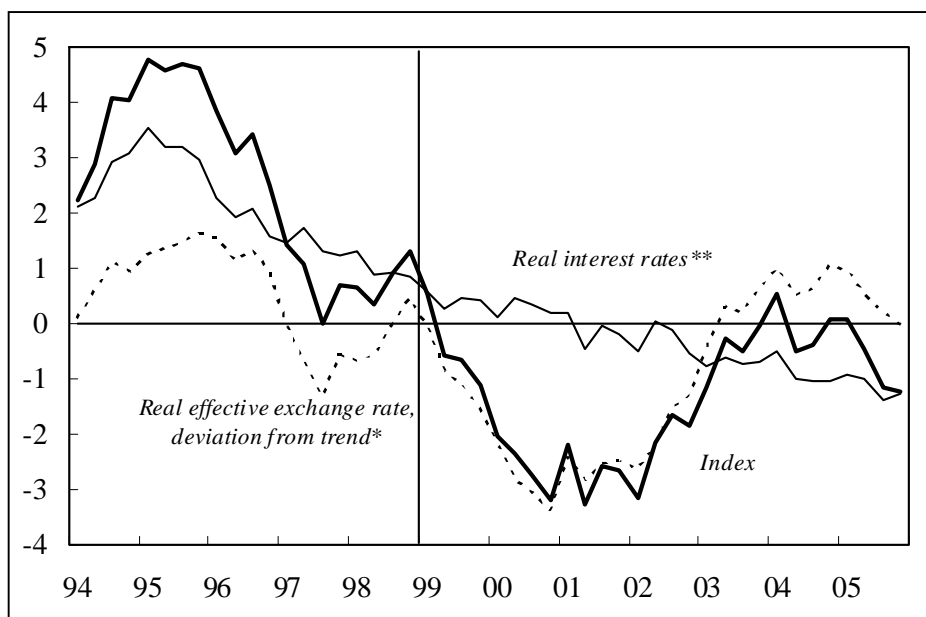
2.1 Monetary Policy in the Euro Area

Against the background of the recovery, the European Central Bank has tightened its policy again this year. At the beginning of March, the key interest rate (the minimum bid rate in the Eurosystem's main refinancing operations) was raised to 3.75 percent. This was in line with market expectations because money market rates had risen since the previous hike last December. By mid-March 2007, the 3-month EURIBOR went up to 3.9 percent. The real short-term interest rate, calculated as the difference between the nominal rate and core inflation, rose slightly to approximately 2 percent which is roughly equivalent to the historical average. Bond yields which had risen until the summer of 2006 have moved only very little and remained close to 4 percent since then. In real terms, long-term rates are slightly below their long-term average independent of the inflation measure used; for example, inflationary expectations, approximated by the ten-year break-even inflation rate for bonds, are close to 2 percent. The international competitiveness of exporters in the Euro Area has changed only modestly in the past six months. While the euro appreciated strongly against the Japanese yen, the other bilateral exchange rates have hardly moved. Therefore, in real and effective terms (EER-44, CPI basis), the external value of the euro remained roughly constant. One reason for monetary tightening has been the strong expansion of monetary and credit aggregates. M3 growth has accelerated since the middle of 2004 and reached more than 9 ½ percent in the beginning of this year. Credits to the private sector expanded at rates well above 10 percent although there has been some deceleration in recent months. Until the end of February, monetary conditions were positively affected by the continued increase of stock prices. However, a correction set in after that.

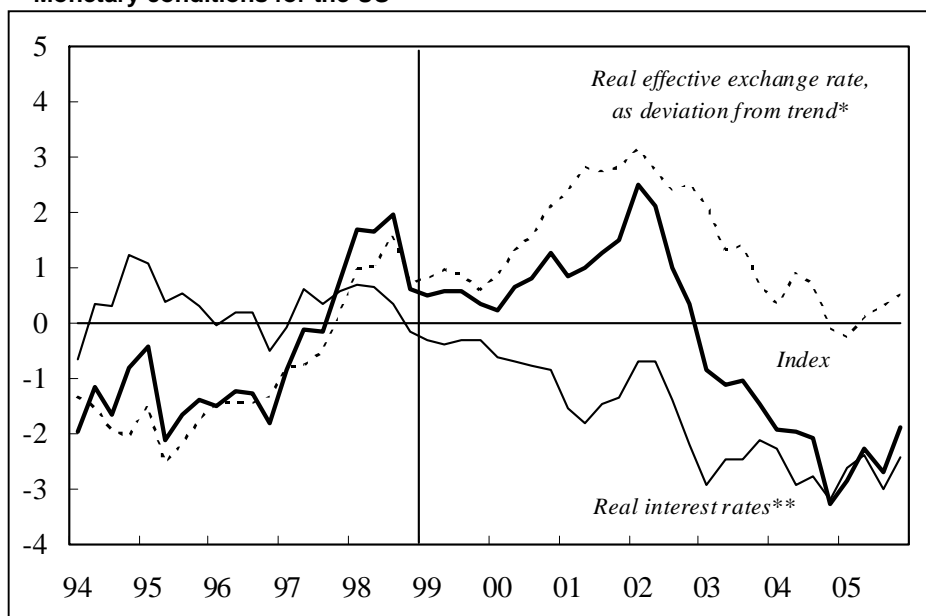
All in all, monetary conditions have deteriorated slightly in recent months. This is confirmed by the so-called monetary conditions index (MCI) which is a combination of real interest rates adjusted for trend growth of real GDP and the detrended real effective exchange rate (Figure 2.1). The index has deteriorated somewhat since the end of last year, after a period of about two years with improving conditions. In comparison, monetary conditions in the US have deteriorated already since the beginning of 2005 when the Fed started to raise the target for the Federal Funds rate. However, since inflation went up as well, the increase of the interest rate component is not so strong; in addition, long-term rates which are also included in the MCI presented here did not increase very much.

Figure 2.1: Monetary Conditions for the Euro Area and the US

Monetary conditions for the Euro Area



Monetary conditions for the US



Notes: The index is calculated as: 1*Interest rate component+ 0.2*Exchange rate component.

*1991–2005 average; component weighted according to its weight in the index (0.2); **Average of long-term and short-term interest rates less annual consumer price inflation less smoothed GDP growth.

Sources: OECD, national sources, own estimates.

We expect that the ECB will raise rates further in the near future. The key interest rate will reach 4 percent in the summer and remain there until the end of 2008. This projection is supported by our estimate of a forward looking

Taylor rule.¹ According to our forecast, overall capacity utilization in the Euro Area will increase further, and according to the Professional Forecasters, the inflation rate will be near 2 percent. Assuming that the ECB will behave in the same fashion as in the past, the key interest rate will probably be raised to 4 percent.

In fact, the ECB signaled at the beginning of March that interest rates may have to go up further. This seems to be compatible with the forecast mentioned above. One reason is that the economic outlook for the Euro Area has continued to improve. This is also reflected in the Eurosystem staff macroeconomic projections (Table 2.1). The forecast for real GDP growth in 2007 is now 2.5 percent. In contrast, the inflation forecast was revised downwards in the light of recent developments.² This is mainly due to revisions of the assumption concerning the oil price. For example, while the September 2006 forecast was based on an oil price of 77.6 \$ per barrel, the assumption is now 59.9 \$. While this should not affect the outlook for the core rate of inflation, this measure might, according to the ECB, increase due to the wage pressure following the strong upturn of economic activity and the improvement on the labor market. Therefore, the ECB will probably tighten its policy stance once more this year.

Table 2.1: Eurosystem Staff Macroeconomic Projections for the Euro Area^a

Date	Real GDP Growth	HICP Inflation
June 2006	1.8	2.2
September 2006	2.1	2.4
December 2006	2.2	2.0
March 2007	2.5	1.8

^aMiddle of the respective confidence bands (percentage change over previous year).

Source: ECB, Monthly Bulletin, various issues.

At a level of 4 percent, the key interest rate will be lower than at the peak of the previous interest rate cycle. In 2000, the key rate was raised to 4.75 percent. We do not expect such a high rate for several reasons: First, the previous economic boom was stronger than we anticipate today, so the output gap was considerably higher at that time; second, most estimates suggest that the steady state risk free real interest rate is currently lower than at the beginning of this decade.

2.2 Fiscal Policy in the Euro Area

The outlook for public finances improved in the euro area in 2006 more rapidly than expected one year or even six months ago, both in Member States Stability programmes updates (SPs) and by EUROFRAME-EFN institutes. The improvement reflects partly higher than expected GDP growth and partly stronger than expected fiscal tightening and/or unusually high revenues. The improvement of the outlook both in terms of GDP growth and government deficit was especially striking in Germany.

¹ See Box 2.1 in the Autumn 2006 Report.

² Since June 2006 the ECB publishes the projections under the technical assumption that important variables such as interest rates and the oil price will behave according to market expectations given at a particular cut-off date. For example, the 3-month EURIBOR rate is assumed to average 4.2 percent in 2007.

The fiscal stance has been contractionary at the euro area level over the last years, mainly in countries running deficits. We expect the euro area fiscal stance to remain slightly contractionary in 2007 and 2008 albeit to a smaller extent than before. The general pattern of countries running deficits implementing fiscal contraction in order to meet the rules of the Stability and Growth Pact will remain, perhaps with the exception of France, ahead of general elections this year. Fiscal policies will remain in general neutral or slightly expansionary in countries running surpluses.

This chapter considers euro area fiscal prospects in the light of the updates of the Stability programmes (SPs) released at the turn of the year. We will address successively: GDP growth scenarios, deficits targets and the fiscal stance in the euro area.

GROWTH PROSPECTS

Euro area GDP grew by 2.8 per cent in 2006 (working day adjusted, 2.6 unadjusted) instead of 2.6 expected in our EUROFRAME-EFN forecast six months ago. This brings euro area growth at the highest pace since 2001. Growth was higher than anticipated mainly in Germany (2.9 per cent, working day adjusted, instead of 2.4 expected in our last Autumn forecast). Growth was also higher for Italy (1.9 instead of 1.6) although this is due mainly to an unexpectedly high growth in the fourth quarter of the year.

The EUROFRAME-EFN Spring 2007 forecast expects euro area GDP to grow by 2.5 per cent this year and by 2.3 next year (see Table 1.1). For 2007, our forecast is higher than in the SPs where euro area GDP is expected to grow by 2.1 per cent only. Our upward revision to the GDP forecast reflects partly a carry over effect of the high GDP growth figures registered in several countries at the end of 2006. We expect only one country to grow much more rapidly than announced in the SP this year: Germany (by 2.7 per cent instead of 1.8 in the SP).

For 2008, the euro area GDP growth forecast derived from the SPs is similar to ours, at around 2.2 per cent. This contrasts with previous years when SPs looked optimistic at the euro area level as compared with EUROFRAME-EFN and most forecasts.

The macroeconomic scenarios of the last SPs updates are judged broadly realistic by EUROFRAME-EFN for most euro area countries. A major exception is Germany where we think the SP is pessimistic in terms of GDP and potential output growth for the coming years. We expect German GDP to grow by 2.6 per cent³ this year and by 2.5 per cent next year, substantially more rapidly than the annual 1.8 per cent considered in the German SP. The assumption of potential output growth is also judged pessimistic by the EUROFRAME-EFN institutes: the German SP considers a potential growth of 1.5 per cent, while the estimate of the Kiel Institute is now close to 2 per cent, slightly below the NiGEM's trend output estimate.

Differences of view on other countries are smaller. The Italian SPs is judged pessimistic in terms of GDP growth for this year, where we expect GDP to grow by 1.7 per cent, instead of 1.3 per cent in the SPs. It should be noted

³ Non adjusted from working days.

however that our forecast includes a positive carry over effect of the high growth of the last quarter of 2006 released after the SPs. We also expect Dutch GDP to grow more rapidly in 2008 than announced in the SP (2.7 instead of 1.8), while we are slightly less optimistic for smaller and fast growing economies.

Table 2.2. Euro area GDP growth and general government balances according to the stability programmes

	GDP growth assumptions (per cent)										General government balance (per cent of GDP)										
	Stability Programmes										Actual	Stability Programmes									
	J99	J00	J01	J02	J03	J04	J05	J06	J07		J99	J00	J01	J02	J03	J04	J05	J06	J07		
98	2.8									2.8	-2.1	-1.9								-2.3	
99	2.5	2.2								2.8	-1.7	-1.4	-1.2							-1.3	
00	2.6	2.8	3.3							3.9	-1.5	-1.1	-0.7	-0.8						-1.0	
01	2.6	2.5	3.1	1.7	1.5					1.9	-1.0	-0.8	-0.6	-1.2	-1.6					-1.8	
02		2.5	2.9	1.9	1.0					0.9		-0.6	-0.3	-0.9	-2.2					-2.6	
03		2.5	2.8	2.6	2.1	0.6				0.8		-0.2	0.0	-0.5	-1.8	-2.7				-3.1	
04			2.8	2.6	2.6	1.9	2.0			1.8			0.4	0.1	-1.1	-2.4	-2.7			-2.8	
05				2.6	2.6	2.5	2.3	1.4	1.3	1.5				0.3	-0.6	-1.8	-2.3	-2.6	-2.4	-2.4	
06					2.6	2.5	2.4	2.1	2.5	2.8 ¹					-0.2	-1.3	-1.8	-2.4	-2.0	-1.8 ¹	
07						2.5	2.4	2.0	2.1	2.5 ¹					-0.9	-1.3	-1.9	-1.4	-1.3 ¹		
08							2.4	2.2	2.2	2.2 ¹						-1.0	-1.4	-1.1	-1.1 ¹		
09								2.2	2.2	-							-0.9	-0.6	-		
10									2.2	-									-0.1	-	

1. EUROFRAME-EFN, Spring 2007 Forecast. GDP figures are shown here working day adjusted. Unadjusted figures are resp. 2.6 in 2006, 2.5 in 2007, 2.3 in 2008.

Sources: EUROFRAME-EFN, Stability programmes, Eurostat, own calculations.

DEFICIT TARGETS

Government balances improved more rapidly than expected in a number of area countries in 2006. We now expect the euro area deficit to have reached 1.8 per cent of GDP in 2006, instead of 2.0 in our Autumn forecast. Meanwhile, our GDP forecast has been revised only marginally upwards (by 0.2 percentage point).

At country level, one of the most unexpected improvements at the euro area level took place in Germany, where the government deficit is now assumed to have reached 1.7 per cent of GDP in 2006, versus 2.4 in our six month ago forecast. On the basis of an average revenues to GDP elasticity of 1, higher than expected growth can be said to have reduced the Euro Area government deficit-to-GDP ratio by only 0.1 percentage points. Higher than expected growth may explain only 0.25 percentage point of GDP improvement in the German budget ratio.

The non-cyclical improvement of government balances has been higher than we expected in 2006 for several euro area countries. It is difficult to disentangle at this stage the improvement resulting from more contractionary

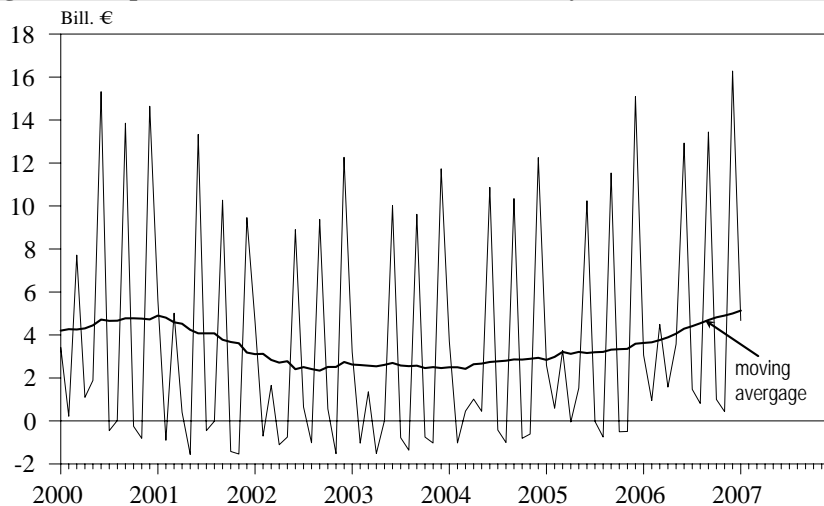
than announced fiscal measures and from a higher than usual elasticity of revenues to GDP. We plan to address this issue more in depth in our next Autumn report, when more information is available on public finances. Box 1 provides an illustration of developments in Germany as concerns capital income taxation and VAT income tax in the last year. The stronger than expected rise in tax revenues was also particularly significant in Italy, where it may reflect partly the effect of anti tax evasion measures and an improvement in tax compliance (see Section on Italy in this report). The improvement in the fiscal balance does not show at first glance, since the observed deficit increased from 4.1 per cent of GDP in 2006 to 4.4 per cent in 2007. But excluding exceptional measures, namely the refund of the VAT on motor vehicles (1.2 per cent of GDP) and the inclusion of liabilities linked the funding of the rail network system (0.9 per cent of GDP), the deficit has indeed improved in 2006 to 2.3 per cent of GDP, well below the target of the SP.

Box 2 : Higher than expected revenues in 2006: the example of Germany

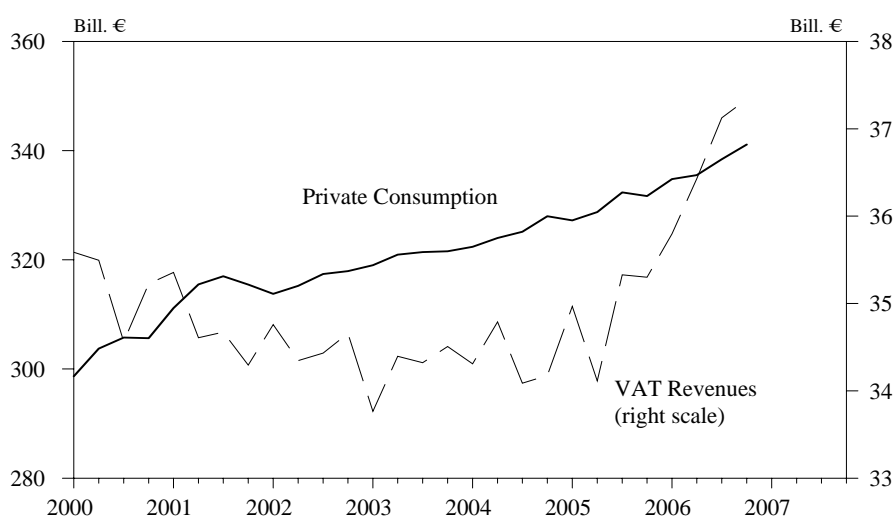
The rise in tax revenues was much stronger than nominal GDP in 2006 and much stronger than anybody had expected. Tax revenues rose by 8 percent (in cash basis), while nominal GDP increased by 3 percent only. After having declined early in this decade, the tax ratio rose by 1 percentage point. It reached the level which had been “normal” in the 1990s.

The increase in capital income taxation (corporate income tax, assessed income tax, withholding tax on dividends and interest income) was very high in 2006 (Figure A). Besides, the revenues of the Gewerbesteuer (tax on profits and on parts of interest paid by firms) in 2006 were 19 percent higher than in 2005. VAT revenues rose more rapidly than private consumption, their most important determinant (Figure B).

Figure A: Capital Income Tax Revenues in Germany 2000–2007



Source: Ministry of Finance.

Figure B: Private Consumption^a and VAT Revenues^a in Germany 2000-2007

^a Seasonally Adjusted

Source: Deutsche Bundesbank.

The reason why tax revenues surged in 2006 is not clear up to now. There are only some tentative elements of explanation:

- The upswing was probably stronger than currently indicated by national accounts data. This refers to the sum of wages as well as to company profits and households consumption.
- Taxable incomes and profits were higher than expected due to an underestimation of the effects of tax base broadening measures (e.g. restrictions to carry losses forward) which had been decided upon in recent years.
- Due to the lag structure of assessed taxes there was a reaction on the disappointing development of tax revenues in the period 2002–2004.
- As a result of the upswing the number of insolvent firms went down. Thus, losses of VAT revenues probably were much smaller than in the previous years.

Overall, the development of tax revenues in 2006 may have been a reaction after poor developments in the period 2002–2005. We do not assume that there will be a further strong increase of tax revenues in 2007 and 2008, apart from the usual influence of cyclical factors.

Deficit targets announced in the SPs will be met at the euro area level in 2006 (1.8 per cent of GDP versus 2.0 announced), and in all euro area countries. This leaves 3 countries with deficits above the 3% of GDP threshold: Italy, Portugal and Greece (see Table 2.4).

Deficits targets will also be met, or more than met, in the forecasting horizon under our assumptions, with one major exception: France. We expect the deficit to remain at around 2.8 per cent both in 2007 and 2008, rather than to decrease to 1.8 (see below). The German deficit will come close to 0 per cent of GDP in 2008 (versus -1.5 per cent in the SP). The Italian deficit will stand at 2.2 per cent, in line with the SPs. Portugal and Greece will bring their

deficit slightly below 3%, which would leave no country under an excessive deficit procedure in the euro area.

EXPECTED FISCAL STANCE

The fiscal stance associated with our forecast is slightly contractionary both in 2007 and 2008 at the euro area level. The assessment of the fiscal stance depends not only on GDP growth and government balances, but also on potential growth estimates that may vary significantly from one method to another.

Table 2.3 shows the fiscal stance as in the SPs. Table 2.4 shows two estimates of the fiscal stance in the euro area, based on our forecasts for GDP and government deficits. The first measure uses potential output growth taken from the SP's, leading to a potential growth close to 2% for the euro area as whole. The second measure uses NiGEM estimates that suggest euro area trend output has been accelerating in recent years from 1.6 per cent in 2003 to 2.1 per cent in 2006, mainly under the effect of a more rapid German trend output. At the country level, Germany is currently a major case for uncertainty in terms of potential output growth. The recent German economic acceleration of growth has led to upwards revisions of German potential output growth, now assumed to be closer to 2 percent than the 1.5 percent underlying the German SP projections.

The fiscal stances associated with the two measures are given to provide some bounds of the fiscal stance underway in the euro area. Under both measures, the contraction is smaller than anticipated in the SPs at the euro area level: close to 0.2 per cent of GDP each year, versus 0.5 in the SPs. However, the fiscal stance is close to that of the SPs for most countries, and with two major exceptions: Italy and France. In Italy, we expect the fiscal stance to be less restrictive than announced in the SP this year. This is because part of the contractionary measures announced for 2007 seem to have already impacted revenues in 2006. In France, the SPs update anticipates a contractionary fiscal stance of 0.4 percentage point of GDP in 2007 and 0.7 in 2008, which is in line with the annual 0.5 percentage point of GDP reduction in deficit requested for countries running deficits. However, we expect government spending to rise more rapidly than announced in the last update of the SP up to 2008 (by close to 2 per cent in real terms rather than 0.6 per cent in the SP). At the end of March 2007, forecasts for fiscal plans are however highly uncertain in the prospect of the presidential elections to held in late April followed by parliamentary elections in June. We expect only a slight fiscal tightening in 2008, which would leave the government deficit close to 2.8 per cent of GDP in both years.

Over the forecast horizon, we expect the fiscal stance to be restrictive in all countries running higher than 3% of GDP deficits. Fiscal policy will remain contractionary this year in Germany and become almost neutral next year. It will be neutral or slightly expansionary in countries running already close to or in surplus balances (Spain, Finland, Ireland).

Table 2.3: GDP growth, fiscal balances and fiscal impulses in the updates of the stability programmes, end 2006

	2005	2006	2007	2008	2009	2010
Real GDP growth, per cent						
Germany	0,9	2,3	1,4	1,8	1,8	1,8
France	1,2	2,3	2,3	2,3	2,3	2,3
Italy	0,0	1,6	1,3	1,5	1,6	1,7
Spain	3,5	3,8	3,4	3,3	3,3	3,3*
The Netherlands	1,5	3,3	3,0	1,8	1,8	1,8*
Belgium	1,2	2,7	2,2	2,1	2,2	2,2
Austria	-	-	-	-	-	-
Finland	2,9	4,5	3,0	2,9	2,6	2,1
Portugal	0,4	1,4	1,8	2,4	3,0	3,0
Greece	3,7	4,0	3,9	4,0	4,1	4,1*
Ireland	5,5	5,4	5,7	5,3	4,6	4,3*
Luxemburg	4,0	5,5	4,0	5,0	4,0	4,0*
Euro area	1,3	2,5	2,1	2,2	2,2	2,2
General government balance, per cent of GDP						
Germany	-3,2	-2,1	-1,5	-1,5	-1,0	-0,5
France	-2,9	-2,7	-2,5	-1,8	-0,9	0,0
Italy	-4,1	-4,8	-2,8	-2,2	-1,5	-0,7
Spain	1,1	1,4	1,0	0,9	0,9	0,9*
The Netherlands	-0,3	0,1	0,2	0,3	0,9	0,9*
Belgium	0,1	0,0	0,3	0,5	0,7	0,9
Austria	-	-	-	-	-	-
Finland	2,5	2,9	2,8	2,7	2,7	2,4
Portugal	-6,0	-4,6	-3,7	-2,6	-1,5	-0,4
Greece	-5,2	-2,6	-2,4	-1,8	-1,2	-0,6*
Ireland	1,1	2,3	1,2	0,9	0,6	0,3*
Luxemburg	-1,0	-1,5	-0,9	-0,4	0,1	0,1*
Euro area	-2,4	-2,0	-1,4	-1,1	-0,6	-0,1
Fiscal impulse, per cent of GDP⁽¹⁾						
Germany		-0,7	-0,7	0,1	-0,4	-0,4
France		-0,4	-0,4	-0,7	-0,9	-0,9
Italy		0,1	-1,4	-0,6	-0,7	-0,8
Spain		0,0	0,5	0,0	-0,1	-0,1*
The Netherlands		0,0	0,4	-0,2	-1,0	0,2*
Belgium		0,9	-0,7	-0,2	-0,1	-0,1
Austria		-	-	-	-	-
Finland		0,3	0,1	0,1	0,0	0,3
Portugal		-2,3	-1,1	-0,9	-0,6	-0,6
Greece		-1,8	-0,5	-0,6	-0,6	-0,6*
Ireland		-1,4	1,3	0,4	0,4	0,2*
Luxemburg		1,1	-0,8	-0,2	-0,7	-0,2*
Euro area		-0,4	-0,5	-0,3	-0,5	-0,5

⁽¹⁾ The fiscal impulse is estimated here as the opposite of the change in the cyclically-adjusted primary balance, as estimated by the SP and excluding one-off measures. One-off measures can be seen in Table 2.4. The latter are in line with SPs estimates, and differ for Italy in 2006 (-0.5% of GDP) from our own estimate (-1.3% of GDP).

*Own assumptions.

Austria had released no SPs update yet in March 2007.

Sources: *Stability programmes*, Seventh updates, end 2006, own assumptions.

Table 2.4. GDP growth, fiscal balances in the EUROFRAME-EFN forecast and fiscal impulses under two estimates

	2004	2005	2006	2007	2008
Real GDP growth, per cent					
Germany ⁽¹⁾	0.8	0.9	2.7	2.6	2.5
France	2.0	1.2	2.0	2.2	2.0
Italy	1.0	0.2	1.9	1.7	1.4
Spain	3.2	3.5	3.9	3.4	3.0
The Netherlands	2.0	1.5	2.9	2.6	2.7
Belgium	2.7	1.5	3.0	2.3	2.1
Austria	2.3	2.6	3.3	3.0	2.6
Finland	3.5	3.0	5.5	2.6	2.6
Portugal	1.2	0.4	1.3	1.9	2.0
Greece	4.7	3.7	4.3	3.4	3.5
Ireland	4.3	5.5	6.2	5.1	4.0
Euro area-11 ⁽²⁾	1.7	1.4	2.6	2.5	2.3
General government balance, per cent of GDP					
Germany	-3,7	-3,2	-1,7	-0,5	-0,3
France	-3,7	-2,9	-2,8	-2,8	-2,7
Italy	-3,4	-4,1	-4,4	-2,5	-2,2
Spain	-0,2	1,1	1,4	0,8	0,6
The Netherlands	-1,8	-0,3	0,2	-0,1	0,7
Belgium	0,0	-2,3	-0,5	-0,3	-0,3
Austria	-1,2	-1,5	-1,1	-1,0	-1,0
Finland	2,3	2,7	3,9	3,5	3,3
Portugal	-3,2	-6,0	-4,5	-3,8	-2,9
Greece	-6,2	-4,2	-3,7	-3,1	-2,6
Ireland	1,5	1,0	2,2	1,8	1,5
Euro area-11	-2,8	-2,4	-1,8	-1,2	-1,0
One-off measures, per cent of GDP					
Germany	0	0	0	0	0
France	0.1	0.5	0.0	0	0
Italy	1.2	0.5	-1.3	0.1	0.1
Spain	-0.7	0	0	0	0
The Netherlands	0	0	0	0	0
Belgium	0.0	0.4	0.6	0	0
Austria	0	0	0	0	0
Finland	0	0	0	0.3	0.4
Portugal	2.3	0.2	0	0	0
Greece	0.0	0.0	0.6	0	0
Ireland	0.5	-0.4	-0.2	0	0
Euro area-11	0.2	0.2	-0.2	0.0	0.0
Fiscal impulse, under SP potential output growth assumptions, per cent of GDP ⁽³⁾					
Germany	-0,6	-0,8	-0,9	-0,6	0,3
France	-0,5	-0,9	-0,7	0,1	-0,2
Italy	-0,5	-0,4	-1,4	-0,4	-0,3
Spain	-0,3	-0,4	0,1	0,6	0,0
The Netherlands	-1,1	-1,4	0,1	0,7	-0,5
Belgium	0,9	2,4	-0,4	-0,6	0,0
Austria	0,0	0,7	0,4	0,4	0,3
Finland	0,4	-0,5	-0,2	0,5	0,2
Portugal	-0,2	-0,1	-2,5	-0,8	-0,9
Greece	3,9	-1,7	0,7	-1,2	-0,8
Ireland	-1,5	-0,6	-0,9	0,3	-0,3
Euro area-11	-0,4	-0,6	-0,7	-0,2	-0,1
Fiscal impulse, under NiGEM trend output growth assumptions, per cent of GDP ⁽⁴⁾					

Germany	-0,4	-0,8	-1,0	-0,8	0,0
France	-0,3	-0,7	-0,5	0,3	0,0
Italy	-0,2	-0,1	-1,3	-0,4	-0,4
Spain	-0,2	-0,3	0,1	0,7	0,2
The Netherlands	-1,2	-1,3	0,1	0,6	-0,7
Belgium	0,8	2,5	-0,4	-0,5	0,0
Austria	-0,1	0,6	0,1	0,2	0,0
Finland	0,3	-0,4	-0,3	0,5	0,0
Portugal	0,5	0,6	-2,0	-0,5	-0,8
Greece	1,6	-1,6	0,6	-1,0	-0,5
Ireland	-0,9	-0,2	-0,3	0,7	-0,1
Euro area-11	-0,3	-0,4	-0,7	-0,2	-0,1

⁽¹⁾ Not working day adjusted. ⁽²⁾ Excluding Luxembourg and Slovenia. ⁽³⁾ Excluding one-off measures. Fiscal impulse is the opposite of the change in the cyclically-adjusted primary balance, derived from EUROFRAME-EFN forecasts for GDP growth, fiscal balances and one-off measures, with potential output growth as in the stability programmes. ⁽⁴⁾ Excluding one-off measures. Fiscal impulse here is the opposite of the change in the cyclically-adjusted primary balance, derived from EUROFRAME-EFN forecasts for GDP growth, fiscal balances and one-off measures, with trend output growth as in NiGEM

Sources: EUROFRAME-EFN Spring 2007 forecast, *Stability programmes*, seventh updates, end 2006, Eurostat, own assumptions

SPECIAL POLICY
TOPIC:

GROWTH AND
EMPLOYMENT
IN THE EU15¹

¹This paper was prepared by a EUROFRAME-EFN team led by WIFO with contributions of CPPB, DIW, ESRI, ETLA, IfW, NIESR, OFCE, PROMETEIA. We thank Waltraud Popp for her excellent research assistance. We are grateful to Karl Pichelmann and DGECFIN staff for fruitful discussion.

1. Introduction

The high level of unemployment remains one of the major concerns of economic policy. Labour market figures in many European countries are unsatisfactory although they improved significantly during the recent cyclical upswing.

High unemployment is not a European trait. Until the 1980s, unemployment rates in Europe were lower than in the US. Over the last two decades, unemployment rates in the Euro area have remained at a very high level.

Most economists and international organisations explained high unemployment in Europe first by shocks, then by rigid labour market institutions (OECD, 1994). To reduce unemployment would require labour market reforms such as abating unemployment benefits, making wage costs more flexible downwards, cutting taxes on labour and easing labour dismissals. In the reassessment of the *Jobs Study*, the OECD took the edge off its original recommendations and concluded that various combinations of labour market institutions are suited to promote employment (OECD, 2006A).

A report by five Euroframe institutes highlighted the role of labour market institutions and gave some estimates of the equilibrium rate of unemployment (IfW *et al.*, 2002). In the special EFN-report presented here the relationship between growth, employment and unemployment is explored from different view points in order to develop adequate strategies to reduce unemployment. The report combines recent studies from all Euroframe institutes.

Over the past decade, the trend increase in unemployment has been arrested in the Euro area. Labour market performance has improved significantly for older workers and for women (due to more part-time jobs), but not for younger people and the low skilled. The number of full-time jobs has not increased since 2000. The lack of full-time jobs hits particularly young entrants; the unemployment rate of young people is three times as high as that of the prime-age population.

This picture masks, however, large **differences across countries**. Fast growing economies were able to reduce unemployment rates rapidly during the last decade, in particular Ireland, Spain, Scandinavia and the United Kingdom. Unemployment in Germany and France, on the other hand, remained stubbornly high. In Italy and Spain, the decline in unemployment from very high levels was much stronger than could be expected from economic developments. Labour market flexibility – especially low-wage contracts for high-skilled young people – played a crucial, but not undisputed role (“1,000 € generation”). Labour productivity stagnated in these two countries, which cannot be a strategy for long.

The Scandinavian welfare states and the Anglo-American market economies, assisted by soaring house prices, were coping much better with economic and employment problems during the last decade than continental Europe. The reduction of unemployment was higher than could be expected from the development of employment. This suggests that successful measures were implemented to bring the unemployed back to work: particularly activation policies in Scandinavia and in-work benefits in the UK.

In a **panel study** of 15 EU countries, the effect of GDP growth on the evolution of employment and unemployment was investigated. (The impact of labour market institutions was the topic of another study by some Euroframe institutes – see IfW *et al.*, 2002). Over the period 1995 to 2005, about two-thirds of the variation in employment can be explained by economic growth. The effect of GDP growth on employment is not linear, but concave: At low economic growth rates, the reaction of employment is stronger – obviously due to the ample supply of labour which is pushed into low-wage jobs. At high growth rates, the reaction of employment flattens, because labour becomes

scarce. In such a situation, productivity per employee grows more rapidly due to more overtime worked and heightened labour intensity.

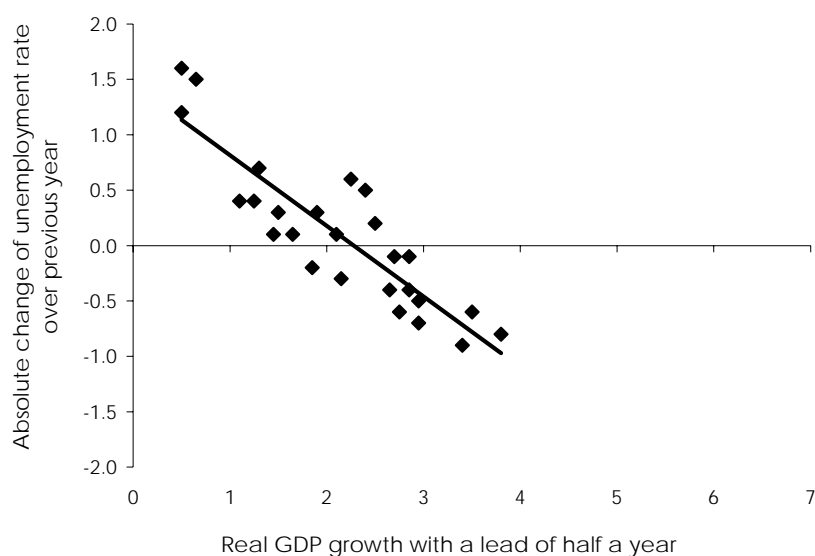
Real wages have a significant but rather small effect in the employment equation; low-wage jobs for young people appear to play an important role in this respect. Another significant determinant of employment is the structure of production and demand. A rising share of exports tends to dampen employment growth due to the high capital intensity of manufacturing exports; a rising share of consumption (services) tends to raise employment growth. Poor labour market developments in export-oriented Germany and a good performance in the service-oriented United Kingdom may underpin these findings.

The **lags** between growth and employment were also investigated. On average, in EU countries employment is lagging three-quarters behind GDP growth. This is a clear indication that growth is primarily important for employment, not the other way round. However, in countries with high GDP growth and shortages of skilled labour (Ireland, Spain), there was no lag between growth and employment. This suggests that in these countries labour supply was the crucial limiting factor for growth. In the majority of countries, however, weak economic growth was limiting the expansion of employment in the period 1995 to 2005.

The effect of economic growth on the evolution of **unemployment rates** was also highly significant for the period 1995 to 2005: 50 per cent of the variation of the unemployment rates could be explained by economic growth, 15 per cent by the development of the population in the working age. Thus, economic growth affects not only employment, but also unemployment in the medium term. A decline in the working-age population tends to put a break on growth and employment, but it alleviates the unemployment situation. The fall in the working-age population, expected for the next decades, will thus tend to reduce the unemployment rate. This coincides with NiGEM results that a supply shock from immigration may add to unemployment until wages react.

In the EU15, the close relationship between GDP growth and the lagged change in the unemployment rate ('Okun's law') holds also for the **longer period** 1980-2005 (see Figure 1). In this period, the unemployment rate remained constant at a GDP growth rate of 2.3 per cent. An increase of GDP growth above this rate by 1 percentage point resulted in a decline of the unemployment rate by 0.6 percentage point.

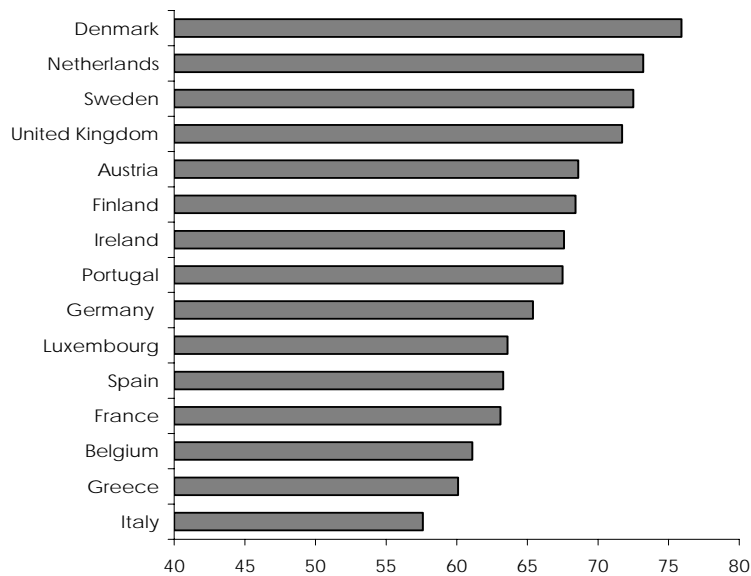
Figure 1: GDP growth and unemployment in the EU15, 1980 - 2005



The Lisbon strategy for more and better jobs aims at raising the growth and employment potential by increasing productivity and improving labour market

performance. The Lisbon strategy shifted the emphasis from unemployment to **employment rates**. The targeted rise in the employment rate implies an increase in labour force participation and a reduction of unemployment. Over the last decade, rising employment rates in the Euro area did not result in higher GDP growth – as expected by most economists – since they were matched by lower **productivity** increases. This may be explained by increasing part-time work, a rising low wage/productivity sector and by Europe's lag in ICT use in services. The rationale behind the Lisbon process is that technological progress is neutral and there is no long-run trade-off between employment and productivity. The study in Annex 1 confirms this view for most EU countries with the exception of the UK and the Netherlands. Only in the UK and the Netherlands where there appears to be a long-run trade-off.

Figure 2: Employment rates in the EU15 in 2005
Percent of population aged 15-64

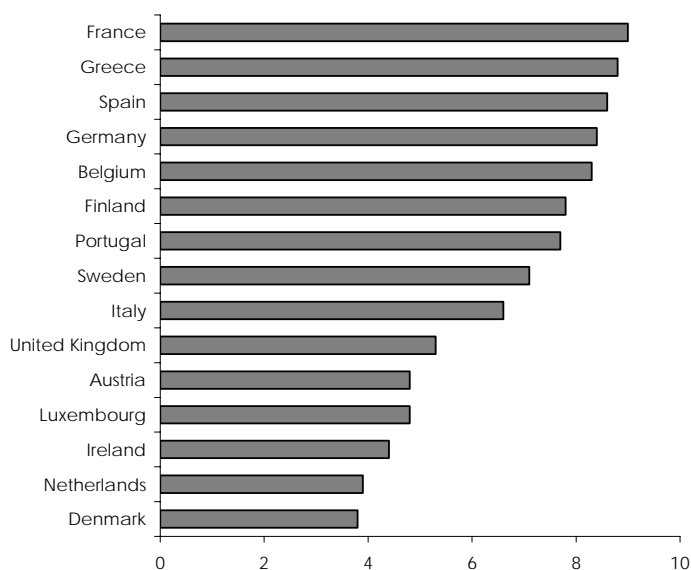


Source: Eurostat.

The **levels of unemployment rates** should be interpreted very cautiously in international comparisons since they are affected by the social benefit systems. Relatively low rates of open unemployment may be achieved by:

- early retirement schemes;
- generous invalidity systems;
- family and educational leave while keeping one's job;
- fiscal incentives for marginal jobs (more than one hour per week, one Euro jobs).

Figure 3: Unemployment rates in the EU15 in 2006
Percent of Labour Force



Source: Eurostat.

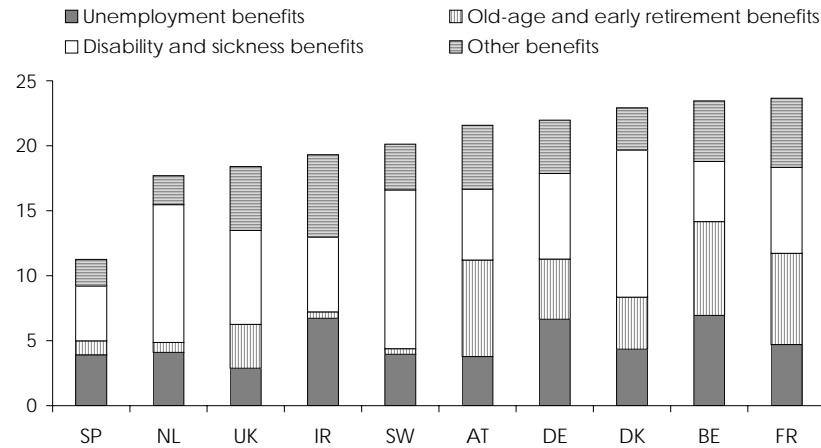
In Austria, Belgium and Italy the unemployment rate is dampened by extremely high early retirement rates, dismissals are concentrated on older workers. The employment rate of older persons (55-64 years) is only about 30 per cent in these countries. In Austria, about 5 per cent of the labour force are unemployed according to Eurostat definitions, another 5 per cent make up their living by payments from the labour market service (seasonally unemployed, trained and sick unemployed etc.) and another 7 per cent receive early retirement pensions. Early retirement is an inadequate policy instrument; it restricts particularly the supply of qualified labour in a following cyclical upswing. In the Scandinavian countries and the Netherlands employment rates are driven up by very high rates of disability and sickness. In Denmark, praised for the flexicurity model, the share of the working-age population living on social benefits was as high as in Germany and France (at least up to 2000). In the UK and Ireland a rather small share of the population lives on unemployment benefits, but a rather large share on welfare payments.

Labour market institutions (employment protection, temporary contracts, bargaining systems, replacement rates, etc.) are very important to explain differences between unemployment across countries. But as Blanchard (2005, p.21) points out, their explanatory power for the development of unemployment is rather limited.

The crucial role of labour market institutions is:

- to remove barriers to employment;
- to raise the 'production ceiling', i.e. to increase production beyond a certain level without inflationary pressures;
- to distribute the burden of unemployment between enterprises, individuals and different parts of the welfare system.

Figure 4: Individuals receiving a welfare benefit
Percentage of the working age population in 1999



Source: OECD, Employment Outlook 2003
Countries shown in ascending order of benefit dependency rates.

There appears to be a positive empirical relationship between the level of **GDP per head and employment**. This may be explained primarily by the higher participation rate of women in rich countries, reflecting the higher education of women and cultural factors. The level of employment rates is influenced by non-economic factors; a low female employment rate is not necessarily indicating labour market problems for women. The relationship between GDP per head and the unemployment rate is even more pronounced. Rich countries can afford to prevent open unemployment by labour market and social policies.

Unemployment rates for unskilled and **low-wage** workers have been high in many Euro area countries. This is the result of globalisation, new technologies, poor working conditions in these jobs and little financial incentives to start work. Moreover, in a situation of high unemployment, graduate workers will apply for jobs for which they are over skilled; they may squeeze out the unskilled, but it is difficult to find empirical evidence to back this.

Special strategies were developed to reduce low skilled unemployment. In a nutshell: most continental countries primarily tried to reduce the firms' labour costs for low-wage jobs (e.g. by cuts in social security contributions, One-Euro-jobs etc.). The Anglo-American countries gave the unemployed an incentive to work (through earned income tax credits and minimum wages), and the Scandinavian countries successfully implemented activation strategies on the principle of mutual obligations.

In many continental countries, social security cuts and employment subsidies were used to reduce unemployment. In Germany, the Hartz reforms were implemented, in France there were several cuts in social security contributions for low-wage groups. It appears that cuts in social security contributions for low-wage jobs are costly, particularly in countries with rather equal income distribution. But once adopted as in France, such measures can hardly be eliminated without substantial negative effects on employment. According to the analysis given in Annex 6, vouchers for targeted unemployed seem to be a useful instrument.

An increase in **labour supply** will normally be absorbed by the labour market, thus increasing economic growth and employment. But with lack of demand or "overshooting" supply shocks (e.g. by immigration) there is a risk of rising unemployment. The past few years have seen a growing debate on the question of **migration**, particularly in the United Kingdom, Ireland, Spain

and Austria. In the case of immigration, wages should be expected to fall and the return on capital to rise. If wages are sticky downwards due to minimum wages and collective agreements, an expansion of the labour force may lead to an increase in unemployment, particularly if the immigrants are young workers in low-skill occupations. Simulations with NIGEM for the UK suggest that a gradual rise in the labour force of $\frac{3}{4}$ per cent over 2-3 years leads to a temporary increase in unemployment of $\frac{1}{4}$ percentage point for a few years, with unemployment gradually disappearing as/if wages adjust. It is an open question whether low-skill wages will react with given minimum wage regulations.

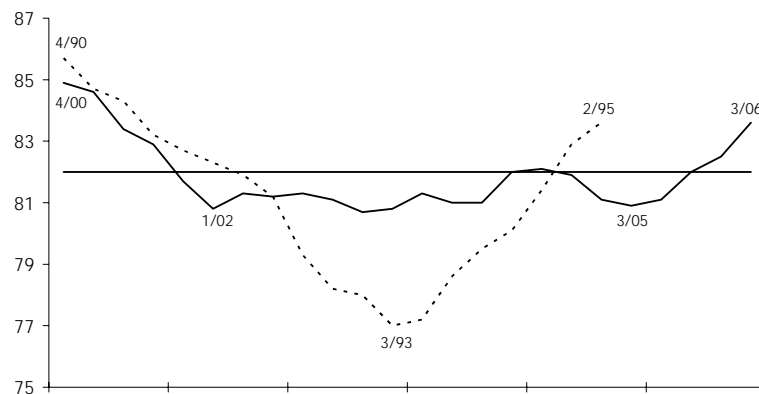
2. Growth and Employment

The Lisbon strategy has addressed the two issues – growth and jobs – jointly. It replaced the strategy of increasing the employment content of growth by wage/productivity moderation. The underlying rationale of the Lisbon process is: “At any point in time, output and employment are determined by aggregate demand. Monetary and fiscal policy can be used to influence aggregate demand. But the level of sustainable demand depends on supply conditions in the economy” (Pichelmann, 2006).

Clearly, resource constraints set a limit to sustainable economic expansion. But demand conditions, on the other hand, set a limit to the utilisation of existing resources. “You need both pairs of scissors to cut” (Alfred Marshall). In the period 2001-2005 manufacturing capacities in the Euro area were underutilised (see Figure 5), about 9 per cent of the labour force were on the dole, many university graduates could only find jobs far below their qualifications (the “project generation” or the “1000 € generation”), and many people were discouraged to look for work by given labour market conditions. An investment boom in the Euro area started when the “capacity threshold” was reached. Higher input of R&D can stimulate economic growth only if it is used in form of investment, and higher education can stimulate growth only if the acquired skills are fully utilised in the work process.

Economic growth and unemployment are systematically negatively correlated over time and countries (see Zagler, 2004). According to the conventional textbook there should be no correlation at all between economic growth and unemployment: Growth will ultimately be determined by technical progress and the supply of labour. Unemployment will be determined by its natural rate, depending mainly on the replacement rate and the tax wedge. The fundamental determinants of unemployment are labour market institutions affecting the hiring and firing rate (IfW *et al.*, 2002).

Figure 5: Capacity utilisation in manufacturing in the Euro area
Percent



Source: Eurostat

The Aghion-Howitt model of endogenous growth differs from the neoclassical textbook. It claims that growth is the cause of unemployment, not

vice versa. Growth reduces the equilibrium rate of unemployment by changing the incentives of workers to search and accept new offers, and by firms to post a vacancy. The hysteresis hypothesis, on the one hand, implies that changes in GDP growth account for permanent shifts in the unemployment rate; joblessness does not converge to a fixed equilibrium level (see Annex 10.1).

Verdoorn first explored the relationship between output and productivity growth. He found a positive correlation, which he explained by increasing returns: faster output growth increases productivity, particularly in the manufacturing sector. Kaldor analysed the relationship between growth and unemployment, however “Okun's law” became the most famous. Okun found that a 3 per cent increase in output growth is associated with a 1 per cent fall in the unemployment rate. In the end, the relationship between growth, employment and unemployment is an empirical question.

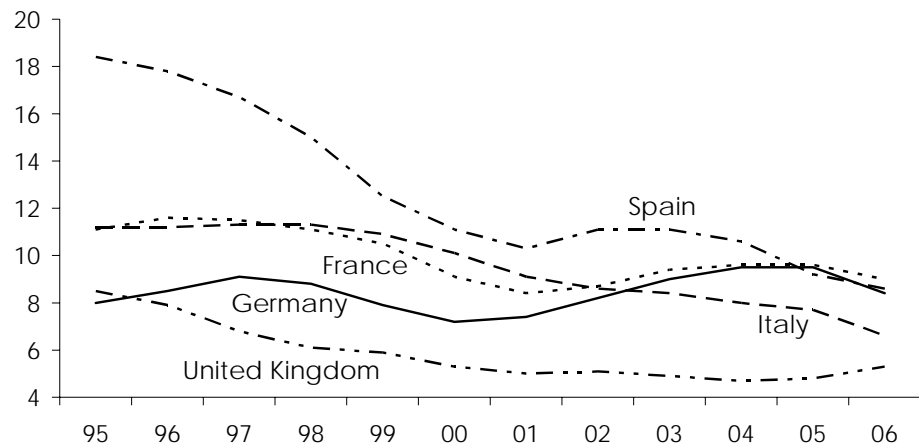
2.1 EMPLOYMENT AND UNEMPLOYMENT IN THE EU15

In this chapter, the development of employment and unemployment in the EU15 is briefly reviewed. The differences across countries and their likely reasons are highlighted.

Decline in Unemployment Rates since 1995

In 2006, unemployment in the Euro area was considerably lower than in the mid-1990s. On average, the unemployment rate was 8 per cent in 2006, about 2 percentage points below the 1995 level. The number of unemployed varied strongly over the cycle and across Euro area countries. In Ireland, Spain, the Netherlands and interestingly also Italy, unemployment in 2006 was much lower than in the mid-1990s. Whereas, in Germany, Austria, Portugal and Greece unemployment is today even higher than in 1995. The determinants of these developments will be explored in the following chapter.

*Figure 6: Unemployment rates in the large EU countries
Percent of Labour Force*

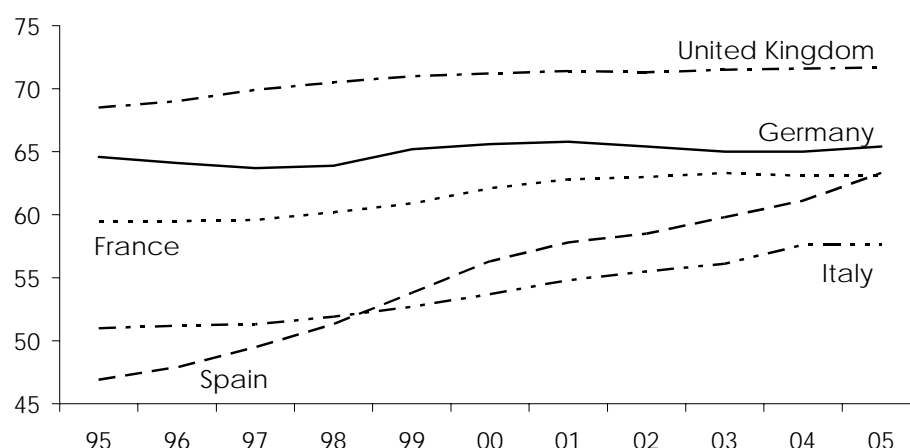


Source: Eurostat.

Rising Employment Rates

Employment rates in the Euro area increased considerably during the period 1995 to 2005: from 58 per cent to 63.6 per cent. In Spain, Greece, the Netherlands and Finland the increase was particularly strong. There have been only two countries with stagnating rates of employment: Germany and Austria.

Figure 7: Employment rates in the large EU countries
Percent of population aged 15-64



Source: Eurostat.

The rise in the employment rate was mainly due to strongly increasing part-time work and a rising low-wage sector (marketisation of household services and paid internships).

Part-time Work and Full-time Equivalent Employment Rates

Part-time work is an increasing trend in the Euro area. In 1995, 13.7 per cent of all employed persons worked part time (less than 35 working hours a week), in 2005 their share was 18.9 per cent. Part-time work increased strongly in Italy, Austria, Belgium, and Germany and – from an already very high level – also in the Netherlands. This was primarily due to the effect of increasing numbers of women engaged in part-time work. Only in the Netherlands did the part-time work of men increase significantly (see Chapter 2.6.2).

Due to the increase in part-time work, the employment rates are over-estimating the expansion of labour input. Employment rates at full-time equivalents (FTE) are one way to correct for this. However, these data are less reliable because of the poor quality of data on working time. In the Euro area, employment rates at full-time equivalents increased by about 3 percentage points between 1995 and 2005, much less than if uncorrected for working time (+5 percentage points). The growth of employment measured in full time equivalents was particularly strong in Spain, Ireland and Finland (not in the Netherlands). There are only two countries in which FTE employment rates declined in the last decade: Germany and Austria.

The number of full-time jobs in the Euro area has been roughly constant since 2000, only part-time jobs increased sharply. There is a great structural mismatch: The number of part-time jobs is increasing, but the majority of the unemployed are seeking full-time jobs. The policy conclusion is: the competitiveness of the unemployed vis-à-vis part-time workers and new immigrants should be improved (by training, employment subsidies/vouchers etc.) to reduce fiscal expenditures on passive unemployment benefits.

Table 1: Labour Market Indicators in 2005

Per Cent	Full-time equivalent	Total	Part-time Employment	Females	Older Workers	Unemployment Rate
Denmark	68.1	75.9	22.1	71.9	59.5	4.8
Sweden	66.0	72.5	24.7	70.4	69.4	7.8
Portugal	65.9	67.5	11.2	61.7	50.5	7.6
Finland	65.6	68.4	13.7	66.5	52.7	8.4
Ireland	62.5	67.6	16.8	58.3	51.6	4.3
United Kingdom	61.9	71.7	25.4	65.9	56.9	4.7
Austria	60.7	68.6	21.1	62.0	31.8	5.2

Greece	59.5	60.1	5.0	46.1	41.6	9.8
Spain	59.2	63.3	12.4	51.2	43.1	9.2
Luxembourg	59.2	63.6	17.4	53.7	31.7	4.5
France	58.5	63.1	17.2	57.6	37.9	9.7
Germany	56.7	65.4	24.0	59.6	45.4	9.5
Netherlands	56.4	73.2	46.1	66.4	46.1	4.7
Belgium	56.3	61.1	22.0	53.8	31.8	8.4
Italy	54.4	57.6	12.8	45.3	31.4	7.7

Source: Eurostat, OECD, WIFO calculations.

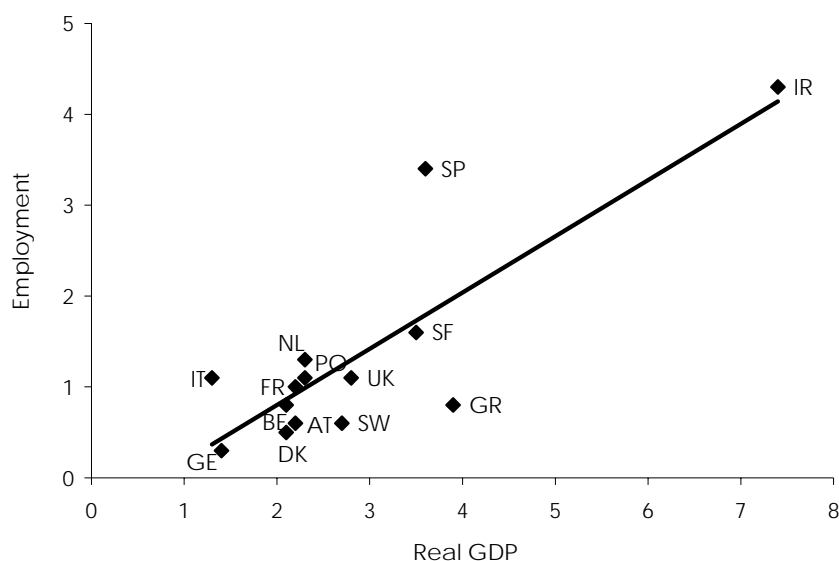
2.2 EFFECT OF GDP GROWTH ON EMPLOYMENT AND UNEMPLOYMENT

An important factor that determines the evolution of employment and unemployment is economic growth. A look at a cross-section diagram of EU countries shows that those members of the EU with high economic growth rates enjoy a relatively attractive advance in employment, while employment tends to lag behind in those countries with slower growth rates (see Figure 8).

The relation between GDP growth and employment since 1995 has been much closer than in the decades before. This is primarily the outcome of labour market flexibility in the form of the enormous increase in part-time and marginal jobs. Hours worked have been increasing much less than employment. The result has been a marked decline in officially measured labour productivity (output per head).

Figure 8: GDP growth and employment 1995 - 2005

Average year-to-year percentage changes



Source: Eurostat, OECD

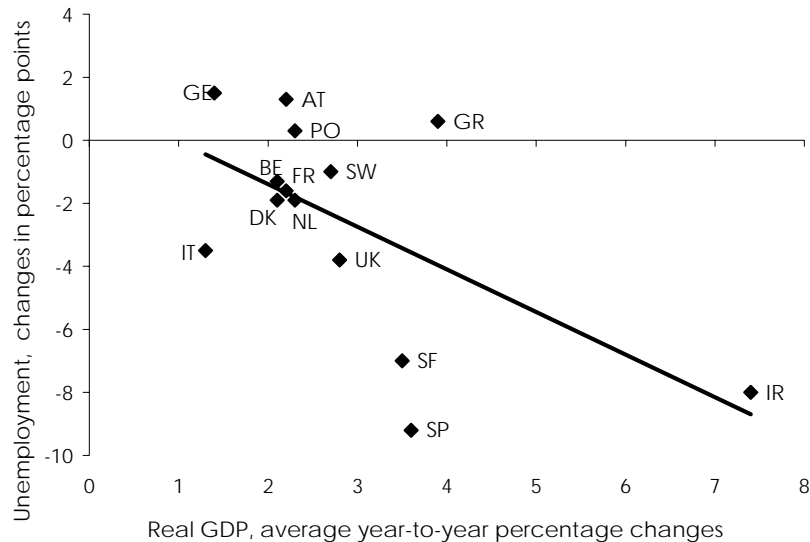
On average, labour productivity has been increasing by only about 1 per cent per year since 1995; this is less than half the rate of the decades before. High increases in labour productivity have only been experienced by the catching-up countries Slovenia, Greece, Ireland and by Finland. In Italy and Spain, official figures show a stagnation of productivity for a whole decade. This is partly explained by immigrant legislation, rising part-time work and an increasing low-wage sector for young people.

The development of unemployment in the EU masks large **differences across countries**. Fast growing economies were able to reduce unemployment rates markedly during the last decade, in particular Ireland, Spain, Finland and the United Kingdom. Unemployment in Germany and Austria, on the other hand, has been even higher than ten years ago. A special country report is

devoted to Italy where labour market flexibility – especially short-term contracts for young people - played a crucial role.

Economic growth also has a large influence on the development of unemployment. However, this influence is not as strong as that on employment, because unemployment is influenced by additional factors. These include, above all, the demographic trends in the working age population, replacement rates and labour market policy measures (training programmes, etc.).

Figure 9: GDP growth and unemployment 1995 - 2005



Source: Eurostat, OECD

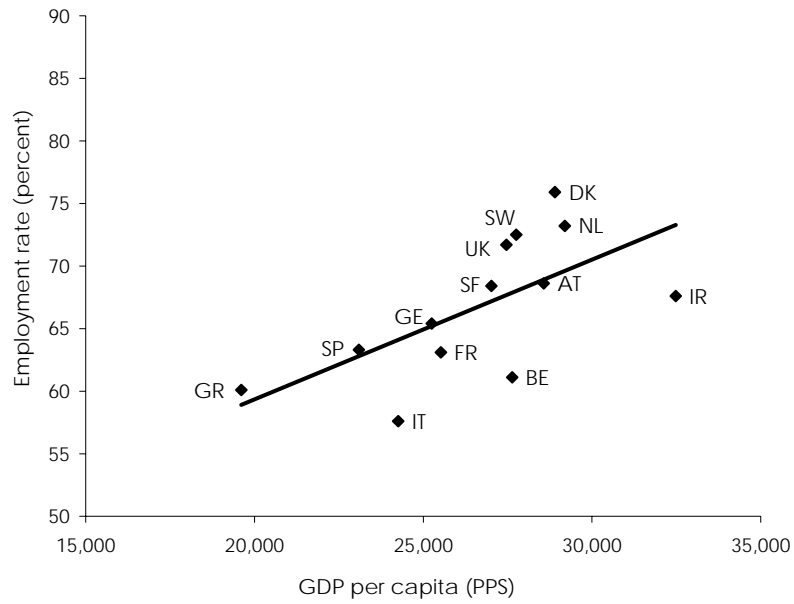
In Finland, Denmark and the United Kingdom, the reduction in unemployment was higher than should be expected from the evolution of employment. This suggests that successful measures to cut unemployment were implemented in these countries: e.g., activation of the unemployed in Denmark and Finland, in-work benefits in the UK.

There appears to be a relationship between the level of GDP per head and the employment rate. This may be explained mainly by three factors:

- high wealth requires financial services and gives room for health and care services;
- the marketisation of household work is more pronounced in highly developed countries;
- the participation rate of women is substantially higher in rich countries, reflecting higher education and cultural factors.

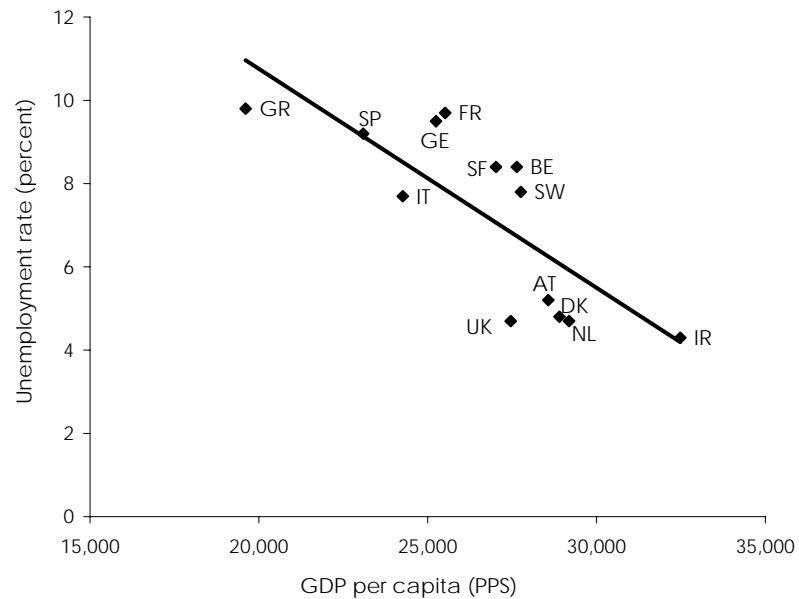
The relationship between GDP per head and the unemployment rate is even closer. Rich countries have not only high employment rates of well-educated women, but they can also afford to avoid open unemployment by active labour market measures and social benefit systems (keeping the job in case of sickness and family care).

Figure 10: GDP per capita and employment in 2005



Source: Eurostat

Figure 11: GDP per capita and unemployment in 2005



Source: Eurostat

2.3 TIME LAGS BETWEEN GDP GROWTH AND EMPLOYMENT

Labour market time series are frequently referred to as lagging indicators in literature. The direction of the effect of growth and employment is a key issue: Does higher growth lead to higher employment with a certain time lag or do labour market reforms (lower wages and higher flexibility) lead to more employment and thus to higher growth? The analysis investigates the comovement and the cyclical correlation by determining cross-correlations as well as using Granger causality tests for each of the countries.

The cross-correlations of the time series show the typical time lag of the reaction of employment to economic growth for almost all EU countries. In the EU, it takes on average around three quarters until employment fully reacts to economic developments. During an economic upswing, for example, at first

productivity increases through overtime work etc. The lag structures reflect the time needed and the costs that new hiring implicate for enterprises.

Only in Ireland, Spain and Denmark did the two indicators develop in tandem. This can be explained by the benign economic development and the high capacity utilisation of the pool of available labour in these countries. When an economy is booming and operating at full capacity, the labour market factors play a decisive role for the further development of the economy. An increase in the supply of labour in this situation triggers an immediate rise in economic growth that would otherwise be checked by the scarcity of labour.

2.4 FACTORS DETERMINING EMPLOYMENT AND UNEMPLOYMENT

The effect of economic growth, real wages and demand structures on employment is analysed with the help of a panel regression for Europe.

The data used for the estimation were taken from a cross-section of the EU15 over a period of 13 years (1992-2004). Due to the sharp increase in part-time employment over the past few years, employment is measured in full-time equivalents. National factors are taken into account using country-specific constant terms (fixed effects). The endogenous variable is the relative change in full-time equivalent employees. The determinants investigated were relative economic growth, the relative change in real wages and the absolute change in the share of consumption and exports in GDP¹. As described in the preceding section, employment adjusts to economic growth with a time lag. This dynamic development must be considered in the estimates. Two models were calculated for this investigation. Model (I) is a static panel with fixed effects (LSDV) that includes GDP growth lagged by one period as an additional explanatory variable. Model (II) is a dynamic panel estimated with a corrected LSDV (LSDVc)², with the lagged dependent variable being used as an additional explanatory variable. The coefficients of the explanatory variables are very similar in both models. The results are summarised in Table 2.

¹ Relative changes are approximated in the regression as the difference of the logarithmic values. The related regression coefficients can be interpreted as short-term elasticity. The coefficients for the absolute differences in demand structures can be interpreted as semi-elasticity.

² The corrected LSDV (LSDVc) is used to approximate and correct the Nickel bias that occurs in short-term dynamic panels.

The model assumes the following conditions for employment derived from an inverse production function:

$$\log E_t = f(\log y_t, \log w_t, \text{demand structure}_t)$$

The relationship is estimated in first differences and considers the adjustment of the lagged response of employment to economic growth. The following regressions are estimated:

(I) static panel

$$\Delta \log E_t = \Delta \log y_t + \Delta \log y_{t-1} + \Delta \log w_t + \Delta \frac{c_t}{y_t}$$

$$\Delta \log E_t = \Delta \log y_t + \Delta \log y_{t-1} + \Delta \log w_t + \Delta \frac{x_t}{y_t}$$

(II) dynamic panel

$$\Delta \log E_t = \Delta \log E_{t-1} + \Delta \log y_t + \Delta \log w_t + \Delta \frac{c_t}{y_t}$$

$$\Delta \log E_t = \Delta \log E_{t-1} + \Delta \log y_t + \Delta \log w_t + \Delta \frac{x_t}{y_t}$$

Enlarged model, including additional squared GDP growth:

(I) static panel

$$\Delta \log E_t = \Delta \log y_t + \Delta \log y_{t-1} + (\Delta \log y_t)^2 + \Delta \log w_t + \Delta \frac{c_t}{y_t}$$

$$\Delta \log E_t = \Delta \log y_t + \Delta \log y_{t-1} + (\Delta \log y_t)^2 + \Delta \log w_t + \Delta \frac{x_t}{y_t}$$

(II) dynamic panel

$$\Delta \log E_t = \Delta \log E_{t-1} + \Delta \log y_t + (\Delta \log y_t)^2 + \Delta \log w_t + \Delta \frac{c_t}{y_t}$$

$$\Delta \log E_t = \Delta \log E_{t-1} + \Delta \log y_t + (\Delta \log y_t)^2 + \Delta \log w_t + \Delta \frac{x_t}{y_t}$$

Considering the determination of unemployment in this framework, the following long-term structure is assumed:

$$u_t = f(\log y_t, \log pop_t, \log w_t, \text{demand structure}_t)$$

Like above, the regression equations are:

(I) static panel

$$\Delta u_t = \Delta \log y_t + \Delta \log y_{t-1} + \Delta \log pop_t + \Delta \log w_t + \Delta \frac{c_t}{y_t}$$

$$\Delta u_t = \Delta \log y_t + \Delta \log y_{t-1} + \Delta \log pop_t + \Delta \log w_t + \Delta \frac{x_t}{y_t}$$

(II) dynamic panel

$$\Delta u_t = \Delta u_{t-1} + \Delta \log y_t + \Delta \log pop_t + \Delta \log w_t$$

**Table 2: Results of the panel regression equations for the EU15
Determinants of employment**

Endogenous variable:	Model (I)	Model (II)	Model (I)	Model (II)
Employment				
Exogenous variables:				
Employment _{t-1}		0.509** (11.39)		0.542** (11.56)
Real GDP	0.444** (7.07)	0.471** (11.06)	0.461** (8.54)	0.404** (9.32)
Real GDP _{t-1}	0.312** (7.43)		0.348** (7.20)	
Real wages	-0.149** (-4.10)	-0.076** (-2.14)	-0.110** (-3.86)	-0.083** (-2.31)
Private consumption ratio	0.292** (2.19)	0.294** (3.19)		
Export ratio			-0.093** (-2.29)	0.003 (-0.20)
Constant	-1.275** (-7.28)		-1.212** (-5.68)	
R ²	0.71		0.60	
Long-term elasticity of GDP	0.76	0.95	0.80	0.88

Source: WIFO calculations

t-statistics in parentheses. ** Indicates significance at the 5 per cent level. Model (I) is a static panel and was calculated by a fixed effects estimation method (LSDV). Model (II) is a dynamic panel and was estimated with the corrected LSDV.

In the EU15 on average, the results of the estimations reveal high values for the short-term and the long-term elasticity³ of employment with respect to economic growth. At a constant rise in productivity - or one that balances out on the average of the countries - a rise in economic growth can be translated completely into a rise in employment. In accordance with the regression results, an additional increase in GDP by 1 per cent above trend, results in an average additional increase in employment across the EU countries by 0.7 per cent to 0.9 per cent depending on the model. A study by the ECB (2004) on the development of employment in the Euro area reveals similarly high employment elasticity in a comparable panel regression. As illustrated by Table 2, the short-term marginal employment intensity of economic growth is around 0.5 per cent. With additional growth of 1 per cent of GDP in the EU countries, on average employment in these countries reacts by a rise of 0.5 per cent in the same year. The coefficients are higher here in the panel than in comparable estimates for Austria (see WIFO macro model).

Compared to GDP, the development of real wages and that of the demand structure shows a relatively minor effect on employment (at given economic growth). The share of consumption in GDP has a significantly positive influence on employment trends in the two models, and an increase in the consumption ratio by 1 percentage point results in an average increase in employment of around 0.3 per cent throughout the EU countries. If the demand structure changes at constant economic output, and consumption is compensated by increased exporting activity, there is a negative effect on employment growth, although it is only slight. Due to the lower labour intensity of exports, consumption is on average more labour intensive than exports throughout the EU countries. The positive influence of additional exports (in contrast to a shift in demand aggregates) on growth (and subsequently on employment) does not flow into this regression analysis. For the sample studied, the coefficient of real wages is significantly negative in all models, albeit only slightly. On average, within the EU countries, a reduction in real wages of 1 per cent results in a rise in employment of 0.1 per cent. Any positive influence on GDP growth cannot be seen in the short-term results.

³ The long-term elasticity results in Model (I) from the sum of the short-term elasticity plus all significant lags. In Model (II) it results from the relationship between short-term elasticity and 1 minus the co-efficient of delayed employment.

The positive income effect of higher wages (on consumption and thus on economic growth and subsequently on employment) is compensated by the cost-induced employment effect. Instead of real wages, an attempt was also made to integrate real unit labour costs – which have a relationship to productivity – as an exogenous variable into the model, but the explanatory content turned out to be insignificant.

The influence of economic growth on employment is not necessarily linear, but can also have a concave form. When economic growth is low, the reaction of employment is stronger – obviously due to the ample supply of labour on the market. At high growth rates, the reaction of employment flattens, because labour becomes scarcer making it harder for employment to increase. In this situation, productivity increases more steeply due to more overtime worked and heightened labour intensity. This effect is taken into account in the regression analysis by using squared GDP growth as an additional exogenous variable⁴. The negative coefficient confirms the concave form. Table 3 shows the results of the enlarged model. The average elasticity of GDP growth with respect to employment is higher in the enlarged model than the coefficients of GDP growth from the linear relationship. The further exogenous variables result in similar coefficients.

**Table 3: Results of the panel regression equations for the EU15
Determinants of employment (enlarged model)**

Endogenous variable:	Model (I)	Model (II)	Model (I)	Model (II)
Employment				
Exogenous variables:				
Employment _{t-1}		0.513** (11.59)		0.552** (11.95)
Real GDP	0.674** (8.43)	0.571** (9.10)	0.601** (7.99)	0.553** (8.43)
Real GDP _{t-1}	0.339** (9.26)		0.364** (8.61)	
Real wages	-0.182** (-4.58)	-0.088** (-2.50)	-0.133** (-4.03)	-0.095** (-2.70)
Private consumption ratio	0.192 (1.55)	0.251** (2.74)		
Export ratio			-0.049 (-1.89)	0.022 (-0.52)
GDP ²	-0.036** (-4.33)	-0.016** (-2.11)	-0.024** (-2.82)	-0.021** (-2.70)
Constant	-1.511** (-9.75)		-1.330** (-7.05)	
R ²	0.74		0.61	
Average elasticity of GDP ¹	0.602	0.539	0.553	0.489

Source: WIFO calculations

t-statistics in parentheses.** Indicates significance at the 5 per cent level. Model (I) is a static panel and was calculated by a fixed effects estimation method (LSDV). Model (II) is a dynamic panel and was estimated with the corrected LSDV.¹ Average of the elasticity measured at diverse points.

In addition to the pace of economic growth, the development of the unemployment rate is influenced by the development of the supply of labour and policy measures aimed at the labour market (training, financial assistance, flexibility). For this reason, the relationship between economic growth and the development of the unemployment rate is not as close as that between growth and employment (see Figures 8 and 9). This is made clear by the results of the following investigation.

Just like in the previous employment equation, the determinants for the change in the unemployment rate are analysed with the help of a static and a

⁴ A higher R²-value in the estimate supports the explanatory power of the additional variables but problems may arise due to multi-colinearity. However, in this case no significant correlation was found between the explanatory variables. A Chi²-test with a p-value of 0 clearly refuses the hypothesis that the variables together are not significantly different from 0.

dynamic panel regression model - Model (I) and Model (II) – for the countries of the EU 15. Table 4 shows the results. The key explanatory variables are economic growth and the change in the working age population. If the latter increases by 1 per cent, then the average unemployment rate of the EU countries rises by around 0.7 percentage points. However, the causal relationship is not fully explained. Especially in the smaller European countries, migration may be the cause of repercussions from the situation on the labour market on demographic developments. The regression coefficients also show that economic growth has a high explanatory capacity for the development of unemployment rates. An increase in GDP by 1 per cent above trend results over the medium term, on the EU average, in a decline in the unemployment rate by 0.4 percentage point. Parallel to the results of the employment function, employment intensive consumption has a dampening effect on the unemployment rate; an increase in consumption by 1 percentage point leads to a decline in the unemployment rate of around 0.2 percentage points. The elasticity of the unemployment rate with respect to a change in the export share in GDP is positive, but negligibly small. Generally, structural variables influence changes in unemployment rates to a lesser extent than changes in employment rates. Furthermore, the analysis reveals that a change in real wages is only of minor significance for an explanation of unemployment.

**Table 4: Results of the panel regression equations for the EU15
Determinants of unemployment**

Endogenous variable:	Model (I)	Model (I)	Model (II)
Unemployment rate			
Exogenous variables:			
Unemployment _{t-1}			0.475** (-10.24)
Real GDP	-0.325** (-8.11)	-0.319** (-7.91)	-0.211** (-9.27)
Real GDP _{t-1}	-0.168** (-4.45)	-0.165** (-4.60)	
Population	0.760** (5.37)	0.839** (5.78)	0.672** (6.40)
Real wages	0.029 (1.35)	0.049** (2.17)	0.043 (1.79)
Private consumption ratio	-0.263** (-2.99)		
Export ratio		0.072** (3.25)	
Constant	0.852** (7.82)	0.749** (7.03)	
R ²	0.61	0.61	
Long-term elasticity of GDP ¹	0.47	0.47	0.40

Source: WIFO calculations

t-statistics in parentheses.** Indicates significance at the 5 per cent level. Model (I) is a static panel and was calculated by a fixed effects estimation method (LSDV). Model (II) is a dynamic panel and was estimated with the corrected LSDV.

2.5 PRODUCTIVITY AND EMPLOYMENT

The Lisbon strategy for more and better jobs aims at raising the growth and employment potential by increasing productivity and improving labour market performance. The targeted rise in the employment rate implies an increase in labour force participation and a reduction of unemployment.

The great weakness of European employment programmes in the last decades was to solve the issue of unemployment by discouraging labour supply: by early retirement schemes, discouraging married women to work, reducing working hours and overtime (McMorrow–Pichelmann–Roeger, 2005). This idea was overcome by the Lisbon strategy. It tried to close the gap in GDP per head between the EU and the US through supply side policies. GDP per capita at PPP in the EU-15 is about 70 per cent of the US level, two-

thirds of this gap are due to lower labour input (hours worked and employment rates) and one-third is due to lower productivity per hour. The number of hours worked reveals the preference for income or leisure; higher productivity and higher employment rates are useful targets.

There were mainly two criticisms to this strategy:

- the supply-side potential must also be fully utilised, i.e., there needs to be sufficient demand and investment to turn the additional input of R&D, education and labour into additional output,
- there may be a trade-off between employment and productivity since raising the employment rate will result in a larger number of workers per unit of capital.

There are divergent developments of employment and productivity in the short and medium term, but there are few reasons for a long-term trade-off. Long-run technical progress is assumed to be neutral with respect to employment. Empirically, over long periods, the employment rate appears to be unrelated to productivity growth. In the short run, productivity and employment are often positively linked; both are picking up in a cyclical upswing and flattening in a downturn.

In the period 1995 to 2005, there was a significant rise in the EU employment rate, but a slowdown in productivity increases. This slowdown in GDP per employed person may be explained by cyclical conditions (low capacity utilisation), lower investment (less capital deepening), strongly increasing part-time work and a rising low-wage sector (marketisation of household services, health/care services and paid internships).

High growth periods are characterised by a shortage of skilled labour and by skill-upgrading. In low growth periods there is often a skill-downgrading, e.g., university graduates working in occupations and at salaries that do not reflect their educational level. Obviously, the utilisation of skills affects productivity developments. In low growth periods, there is a supply pressure on the labour market ending up in low wage jobs, paid internships, etc. There is, however, only limited empirical evidence to support this hypothesis for the last decades.

In Annex 1 the relationship between productivity and employment is investigated. Whether or not there is a trade-off between employment and productivity is an essential question for the Lisbon process. In the EU there is a fairly uniform and significant short-run negative impulse on employment from a positive productivity shock. But according to the paper this effect becomes smaller and is in the long run statistically insignificant in most countries. In the long run, productivity and employment are not correlated.

Also a paper by McMorrow–Pichelmann–Roeger (2005) dismisses the notion of a genuine trade-off between employment and productivity growth. Misguided policies exploiting such a trade-off have to be avoided: such as early retirement.

Wage claims are clearly reacting to the unemployment rate, but there must be some empirical doubt on the extent of the unemployment reaction to a decline in real wage costs. Between 1995 and 2005 unemployment was rising in two EU countries: Germany and Austria. In these two countries alone, the reduction of unit labour costs was most pronounced amongst all EU countries. Wage moderation and labour shedding apparently led to an export boom in Germany and Austria, but restrained domestic demand at the same time. In the Netherlands, on the other hand, the strategy of wage moderation (“internal devaluation”) worked quite well, since rising housing wealth stimulated consumption. A strategy of wage moderation would be advisable in many of the Southern countries of the Euro area. These countries experienced a substantial loss in price competitiveness by relatively high increases in unit labour costs and prices during the last decade. Their key strategy to regaining price competitiveness is nominal wage moderation and enhancing productivity.

2.6 COUNTRY EXPERIENCES

2.6.1 Italy: High Employment Increases with Low GDP Growth

In Italy, the rise in employment and the decline in unemployment were much stronger than could be expected from economic developments. Macroeconomic performance was very weak, but the number of employed persons increased faster than in the Euro area and the unemployment rate dropped from 11 per cent to 7 per cent.

These developments may be explained by several factors that are explored in Annex 2:

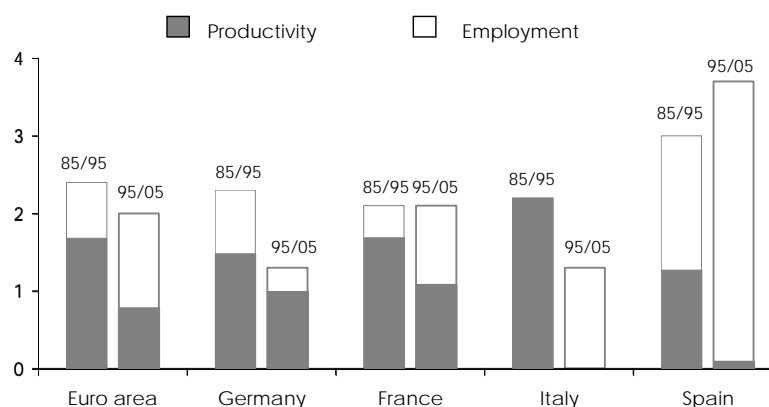
- Immigrants who had worked illegally were admitted to the legal labour market. The increase in employment statistics is therefore overestimating labour market performance.
- Labour market reforms in Italy helped to contain non-wage labour costs, to reduce the cost of searching and to match demand and supply. Two important reforms radically changed the Italian labour market: the Treu package in 1997 and the Biagi law in 2003.
- Labour cost moderation was concentrated particularly on new employment contracts for the young. Temporary contracts for young people sharply increased (from about 30 per cent in 2000 to 40 per cent in 2006), but unlike in Spain not for all employees. Despite more moderate wage increases, Italy's relative unit labour cost position further deteriorated.
- Part-time employment played an important role in increasing the participation rate of women. Female part-time work increased from 20.9 per cent in 1993 to 25.6 per cent in 2005.

In Italy, the employment content of growth has increased dramatically since the 1990s. There is econometric evidence of a structural break in the 1990s; real wages have a significant negative effect on employment only since 1997.

But the other side of the coin is that productivity (output per employed person) stagnated. Increasing the employment content of growth may be a good strategy for a slackening economy. But a stagnation of productivity cannot be a long-run goal and is not a sustainable long-term strategy. There is no doubt that the reduction of unemployment in Italy did not lead to higher economic growth, but to a stagnation of productivity.

The large increase in low-wage jobs (paid internships) for well-educated young people in Italy and Spain was alleviated by the "Mediterranean Model" where the family plays a big role and young people remain within their parent's household for longer.

Figure 12: Productivity and employment growth
Percent p.a.



Source: WIFO calculations

2.6.2: Part-time Employment in the Netherlands

The high rate of part-time employment is a striking feature of the Dutch labour market which is analysed in Annex 4. In particular women with children work substantially less than standard full-time hours, while a substantial fraction of men with children work fewer than full-time hours also. Many women choose to work two or three days per week, while most men work full-time and some men work four days (=32 hours) per week.

As part-time employment started to increase before the introduction of laws to reinforce the position of part-time workers, it is likely that policy followed the preferences within Dutch society (and did not cause the growth of part-time employment). Part-time employment has contributed to the combination of work and family life, and therefore has facilitated the growth of female labour force participation. The impact of part-time working on the growth of the production capacity of the Dutch economy is, however, unclear as full-time workers may have been induced to work part time.

Part-time employment clearly has advantages. First, it offers opportunities to balance work and other (family and care) responsibilities. Second, part-time workers may form a flexible pool that allow firms to adjust more easily to the business cycle by adjusting working hours in the desired direction. Higher utilisation of employees raises firms' profits. Moreover, firms do not pay overtime premia for extra hours of part-time workers.

The contribution of part-time employment to the emancipation of women is unclear. On the one hand, it may facilitate female labour force participation, so that their human capital does not erode. This opens possibilities to re-entering into full-time employment once the children have been raised. Currently this is not common practice, but behaviour may change in the future. On the other hand, part-time employment nevertheless slows down investment in human capital, simply due to less work experience. And this may have a negative impact on women's careers.

The Dutch government assisted the preference towards part-time work. In 1993, the Dutch government reinforced the legal position of part-time workers by regulating the statutory minimum wage and the minimum holiday allowance. Previously, these rights did not apply to employees working less than one-third of normal full-time hours. In 1996, the government passed a law that gave part-time workers an explicit right to equal treatment – pro rata – on wages, overtime payments, bonuses and training. In 2000, the government even awarded workers the right to request an upward or downward adjustment to the number of working hours within their current job, which employers

have to honour unless there are conflicting business interests. The Dutch tax system does not contain an Earned Income Tax Credit (EITC) or other tax credits and subsidies that may make part-time employment particularly attractive.

2.6.3 Employment and Unemployment Thresholds: the Example of Austria

Growth must surpass a certain threshold before employment starts to rise and unemployment starts to decline. These threshold values can only serve to a limited extent as economic policy indicators, however. They do not constitute a constant measure, as they change over the long term – due to technological progress and developments in the institutional framework on the labour market – as well as over the business cycle.

These thresholds are determined for Austria based on time series and a regression analysis. The employment threshold is defined as that rate of economic growth that is necessary to keep employment (or the volume of labour) constant. Analogously, the unemployment threshold refers to the critical growth rate at which the unemployment rate remains unchanged. This concept is very popular, but also controversial because thresholds are not fixed measures, but fluctuate over time. In the course of the business cycle, they vary over the short term with the degree of capacity utilisation. At rising capacity utilisation, productivity increases, raising the employment threshold. In times of recession, the employment threshold is much lower. Long-term structural changes in the economy (e.g., sectoral structural changes or a change in capital intensity) may lead to systemic changes in employment thresholds. Critics of the concept furthermore point out that the threshold values could be lowered by a flexibility of the labour market (or by shortening working hours). Therefore, past developments are hardly indicative of future trends.

The empirical determination of the employment threshold is based on *Verdoorn's Law*, which establishes a linear relationship between productivity and economic growth⁵. Employment is able to rise in an economy only if overall economic production increases at a faster rate than labour productivity. Here, it is calculated as the growth of real GDP per person in active dependent employment and supplies a guideline for the employment threshold. The steep increase in employment since 2000 has slowed the pace of labour productivity over the time series. The rise in active dependent employment was influenced strongly by the increase in part-time employment. For this reason, a conversion of labour productivity into full-time equivalents is more indicative. The time series show that the increase in productivity is subject to cyclical, seasonal and irregular fluctuations. In order to derive information for the determination of the employment threshold, a filter was used to eliminate all high frequency fluctuations from the time series and a smooth non-linear trend was defined. The setting usually applied for quarterly values ($\lambda = 1600$) is selected for the HP filter so as to remove all oscillations with a duration of less than 32 quarters.

This time series analysis for Austria results in a relatively stable medium-term employment threshold measured in full-time equivalents of almost 2 per cent. This level applies to periods of economic growth of a solid 2 per cent. (At a growth trend of 3 per cent or 1 per cent, the threshold value is accordingly higher or lower.) As a consequence of the steep rise in part-time employment, the threshold for employment (not converted into full-time) is

⁵ Verdoorn's Law states that productivity growth depends linearly on economic growth. The increase in productivity results from the difference in the growth rates of production and employment. Thus, a linear relationship exists between economic and employment growth. This can be analysed by applying the regression approach in order to make a statement on the threshold value. However, the law requires production growth to correspond to that of capital.

substantially lower (around 1½ per cent). However, this level is of minor relevance, because it has little to do with labour volumes.

Additionally, the employment threshold for the period investigated from 1995 to 2005 was also determined using a regression model. The average GDP growth rate was 2.2 per cent during this period. This approach yields a similar result as the time series analysed above at a growth trend of around 2 per cent. A least square regression analysis was conducted to estimate the change in active dependent employment (in full-time equivalents) in response to economic growth and a constant. To obtain the employment threshold from the results of the estimates, the rise in employment is set to zero and the threshold value results from the ratio of the coefficients $-\alpha/\beta$ with 1.9. However, a R^2 of 0.4 indicates the small explanatory content of the exogenous variables.

The two methods result in an employment threshold of almost 2 per cent in full-time equivalents. This applies to an economic growth rate of a solid 2 per cent over the medium term. At this growth rate, the unemployment threshold in Austria is almost 2.5 per cent over the medium term. It is composed of the employment threshold and the increase in the supply of labour, which has been around ½ per cent in the past few years.

In conclusion it is possible to calculate stable figures for the employment threshold for the short to medium term for Austria. It is around 2 per cent (full-time equivalent). For economic policy considerations, it is important to recognise that the employment threshold follows the productivity growth of labour. Rising productivity is generally viewed as an important driver of higher economic growth and the aim is to support productivity. However, at the same time this means that it will become more difficult to turn higher growth into employment.

Table 5: Employment and unemployment thresholds for Austria per cent

	Employment threshold ¹	Employment threshold ¹ (full-time equivalent)	Unemployment threshold ¹	Real GDP growth
1995-2000	2.1	2.3	2.5	2.6
2000-2005	1.4	1.8	2.2	1.8
1995-2005	1.7	2.0	2.4	2.2

Source: WIFO calculations.

¹At a real GDP growth of ... per cent employment starts to increase and unemployment to decline.

3. Low-wage Sector Strategies

Unemployment rates of unskilled and low-wage workers have been high in many Euro area countries. Therefore, special strategies were developed to reduce unemployment of these groups. In a nutshell most continental countries primarily tried to reduce the firms' labour costs for low-wage jobs (e.g. by cuts in social security contributions, One-Euro-jobs etc.). The Anglo-American countries gave the unemployed an incentive to work (through earned income tax credits), and the Scandinavian countries successfully implemented activation strategies on the principle of mutual obligations (case management etc.).

There is another long-run option to reduce the number of unskilled unemployed which is not given adequate attention by policy makers: investing in human capital by keeping children in the educational system so that they can complete high school and preferably go on to third level. While this cannot address the problem of unemployment in the short run, it will better match demand and supply in the long run. In a world where skills are becoming increasingly important, educational systems play an essential role in equalising and raising opportunities (OECD, 2007).

3.1 LOW-SKILLED JOBS: THE FRENCH STRATEGY

The French economy has been unable to tackle mass unemployment since 1974. During the last decade, the unemployment rate fell only in a few episodes below 9 per cent. Unemployment of unskilled workers has been very high. In a situation of high unemployment, graduate workers apply for jobs for which they are over skilled. Having the choice, companies hire them, and non-graduates do not find jobs. In this context, the priority is not to increase unskilled labour supply, which is rising anyway through immigration. A tighter labour market could improve the situation of the unskilled.

Unskilled jobs are threatened by competition from low-wage emerging countries. In this respect, the French situation – explored in Annex 4 - is not different to other EU countries. The minimum wage and the minimum income prevent the wages of the unskilled to fall sufficiently to clear the market.

Table 6: Minimum wages in Europe and in the US

	2005		2004 Employees at the
	€	Per cent of average workers' wage	minimum wage level Per cent of total employees
Luxembourg	1,467	43.5	18.0
Netherlands	1,265	40.2	2.1
Belgium	1,210	39.9	n.a.
UK	1,197	50.3	1.4
France	1,197	47.5	15.6
Ireland	1,183	44.8	3.1
Greece	668	43.8	n.a.
US	666	25.2	1.4
Spain	599	29.8	0.8
Czech Republic	240	38.7	2.0
Hungary	232	38.9	8.0
Poland	205	33.0	4.5

Source: Eurostat.

There are a number of reasons for a specific strategy for unskilled workers:

- the effect of globalisation on the relative position of unskilled workers;
- relatively high minimum wages (SMIC) in France;
- the minimum income (RMI) narrows the gap between wages and insurance benefits for unskilled workers, thus they can fall into an “inactivity trap”;
- targeted measures are less costly.

Specific strategies in France to reduce unemployment of low-wage workers were:

- cuts in social security contributions to lower the cost of hiring unskilled workers for companies;
- working tax credit (“prime pour emploi”) to increase the gap between wage income and benefits;
- control of minimum wages.

Social security contribution cuts on low wages cost about 1 per cent of GDP. They are often questioned, because they are expensive and their effect on employment is difficult to assess. The estimated effect varies enormously between the available studies. Using an average estimate, the measure costs €15,000 per created job which is quite a lot. Above all, they give an incentive for companies to create special low-wage jobs without prospects in terms of promotion. With the rising educational attainment of young people, the promotion of a large low-wage sector is questionable.

According to the “Cour des comptes report”:

- Social security cuts are not very useful in manufacturing where the priority would be to develop high-value added activities rather than protect low-wage sectors.
- These cuts have hardly an impact on job creation in department stores, while allowing them to increase their margins.
- In the hotel-cafe-restaurant sector, social security cuts would have been an incentive for companies to create more low-paid jobs without an impact on total employment.

It appears that cuts in social security contributions for the low-skilled and low-wage jobs are costly, particularly in countries with rather equal income distribution. But once adopted, such measures can hardly be eliminated without substantial negative effects on employment.

3.2 LOW-WAGE EMPLOYMENT IN THE NETHERLANDS

Like most EU countries the Netherlands are confronted with a high rate of unemployment and non-participation among low-skilled workers. Whereas the participation rate of individuals with primary education roughly equals 50 per cent and with lower secondary education it is about 75 per cent, these rates are roughly 80 per cent for individuals with higher secondary education and 90 per cent for higher educated people.

Several causes can be designated to the relatively high non-participation and unemployment rates of the low skilled. The first possibility is that there is a quality mismatch between the supply and demand for labour. Another possibility is that a low-wage workers' productivity is too low relative to the minimum wage the employer has to pay, the so-called productivity trap. A third possibility arises from the poverty trap. In this case, accepting a job does not improve an individuals' net income and therefore the unemployed are reluctant to apply for a job. Above all, bad working conditions for low-skilled workers may deter people from participating in the labour market; such jobs are left to the immigrants.

Raising the employment rate of low-skilled workers is also important from a fiscal perspective: it raises the tax base and lowers welfare expenditures. Several studies also stress the social benefits of a paid job for the individuals themselves.

Since the mid-1990s, various policy measures targeted at the low skilled have been intensified (see Annex 5). These policies can be divided into policies that stimulate participation and job creation on the one hand (carrots), and policies that discourage non-participation on the other hand (sticks). Carrots give positive incentives, but they cost money. Sticks give negative incentives and bring in money.

The rise and persistence of long-term unemployment in the last decades has persuaded the Dutch government to increase expenditures on subsidised employment sharply during the mid-1990s. Recently, the focus has changed from policies that stimulate participation (“carrots”) to those that discourage receiving benefits (“sticks”). For example, wage costs subsidies and relief jobs have been largely phased out. This is partly compensated by intensifying the (basically flat) earned income tax credit.

On the other hand, the Dutch government implemented various policy measures that deter benefit claimants from applying for a benefit and stimulate them to look for a job. Examples of these policies are the reduction in the maximum duration of unemployment insurance benefits, the freeze of the minimum wage (2003-2005) and the considerable tightening of the admission criteria for social assistance, unemployment and disability benefits.

According to the CGE model for the Netherlands, the reduction of benefits (sticks) is one of the best ways to increase the labour supply and

reduce unemployment. This is also a central feature of the Hartz reforms. Not only from a social, but also from an economic point of view, there is a certain limit to a substantial reduction of unemployment benefits. Emigration of the unemployed (e.g. from Germany to Austria) reduces the potential labour supply.

3.3 MAIN ELEMENTS OF THE GERMAN LABOUR MARKET (HARTZ-) REFORMS AND FIRST RESULTS OF EVALUATION

Chronology of the Reforms

The persistent high unemployment rate in Germany stimulated discussion about a more efficient labour market service and led in 2002 to the establishment of the Hartz-Commission. The Commission comprised enterprises, unions, craft associations, politicians, but no economists were members.

After an intensive discussion, the so-called Hartz reforms were implemented in four steps between January 2003 and January 2005. Hartz IV is usually considered as the key reform of the labour market. The following are the most important elements of the Hartz reforms:

Hartz I (2003)

- Mandated registration even for impending unemployment.
- Stricter rules to accept 'reasonable' employment.
- In case of a rejected job offer, the burden of proof now rests with the job seeker (possible benefit reduction).
- More efficient training and programmes targeted at the elderly (in case of new contracts above age 55 no contributions to unemployment insurance, longer temporary contracts allowed).
- Personal Service Agencies (PSA) to 'vitalise' job placements.

Hartz II (2003)

- Job centres instead of unemployment offices: both unemployed workers and social welfare recipients should have a common point of contact.
- Introduction of the 'Ich-AG' ('I Inc.') start-up assistance.
- Mini jobs – changed additional earnings limits for transfer recipients.
- Government sponsoring of household-related services.

Hartz III (2004: minor changes)

- Merging and renaming of different labour market programmes (ABM and SAM) and services and stronger focus on the future reintegration prospects of the unemployed.
- Short-time work transfers paid to employers during restructuring programmes.
- Uniform entitlement to unemployment assistance (abolishment of special entitlements e.g. for seasonal workers).

Hartz IV – the key reform (2005)

- Merging of long-term unemployment assistance with social welfare transfers – thereby inclusion of fit-to-work individuals previously not registered as unemployed.

- Provision of public utility jobs for fit-to-work transfer recipients ('One-Euro Jobs' – transfers plus one Euro per hour worked).
- Further tightening of 'reasonableness' clause (sub-union wages and standard regional wages must now be accepted; otherwise transfers might be cut).
- Introduction of 'entry assistance' as a financial incentive to take up employment.

Main results of the first evaluations concerning the effectiveness of the Hartz-reforms⁶

The results of the first extensive evaluations are:

- The new forms and organisation of occupational or vocational training contributed to faster and in terms of numbers higher job success. This was not merely as a result of a more intensive choice of participants but of a higher quality of training.
- The new, more generous 'entry assistance' was efficient especially for older – up to then unemployed – women in East Germany. Three years after the first use of this assistance, the share of persons employed in jobs with social insurance obligation was 19 to 42 per cent higher than in comparable, not assisted groups.
- 'Start-up assistance' for newly created small enterprises or self-employment proved to be successful, though subsequently some of these jobs were lost. More than 1 million participants took part in the 'Ich-AG' (I-inc.).
- The reform of the 'mini-job model' led to the creation of additional (about one and a half million) mini-jobs. But there are signs, that many of these mini-jobs were created by giving up or avoiding full-time jobs, thus avoiding the payment of otherwise high social insurance contributions.

To sum up:

The reform of the organisational structure of the Federal Labour Agency (BA) showed initial success. The focus shifted from social to labour policy. Whereas previous negative assessments of job creation programmes were confirmed, integration assistance was used more efficiently than in the past. Better occupational training as well as the 'Start-up' assistance proved to be most efficient.

Certainly, current results of evaluations are preliminary, but there is visible progress. As long as there was low growth and thus not enough new jobs in Germany, putting pressure on the unemployed could not always lead to acceptable employment. It is true that up to now not many additional jobs have been created by the Hartz measures, but the positive sides of the reform may result in a longer upswing, the flexibility and the potential of the labour market certainly have increased and this will help to avoid bottlenecks.

What will remain from the reforms in the longer run?

- Unemployment assistance has been cut down to the level of welfare payments, thus trying to minimise undesired incentives to stay unemployed.

⁶ Cf. e.g. Hartz: Bilanz der Arbeitsmarkt- und Beschäftigungspolitik. In: Bruno Kaltenborn (ed.), *Blickpunkt Arbeit und Wirtschaft* 12/2006; DIW Berlin, IZA, Infas: *Evaluation der Maßnahmen zur Umsetzung der Vorschläge der Hartz-Kommission, Bericht 2006 für das Bundesministerium für Arbeit und Soziales*, Juni 2006; Marco Caliendo und Viktor Steiner, *Ich-AG und Überbrückungsgeld – Neue Ergebnisse bestätigen Erfolg*. In: *Wochenbericht des DIW Berlin* No. 3/2007.

- Reduction of transfer payments to 12 months (18 months for elderly).
- Public employment programmes will no longer lead to a renewed eligibility for unemployment compensation.
- Work requirement for recipients of unemployment aid.
- Elimination of most rules for ‘reasonableness’ of job offers for recipients of unemployment aid.

3.4 THE EFFECT OF EMPLOYMENT SUBSIDIES

The impact of employment subsidies and vouchers is analysed in two papers attached in Annex 6. In many OECD countries, the relative position of employees at the bottom of the wage distribution has deteriorated over the past decade. Whereas in the US this worsening has taken the form of lower relative real wages, in a number of continental European countries the deterioration appears in higher relative unemployment rates for unskilled people. Confronted with these problems, policy makers have been searching for labour market instruments to reduce unemployment while avoiding large disparities in income. A popular tool are low-wage subsidies which have been widely advocated, e.g. by Phelps.

The central policy problem posed by unskilled workers is that they are associated to low wages or low employment opportunities or both. Raising their wages would reduce firm’s demand for them, while lowering their wages would be socially unacceptable. Low wage subsidies response to this policy problem drives a wedge between the income these workers receive and their labour costs. These subsidies, in various guises, have been implemented in various countries, including France (PPE and social contribution cuts), Germany (Kombilohn), Great Britain (Working Families Tax Credits) and the United States (Earned Income Tax Credit).

The existing literature on the effects of low-wage subsidies has tended to ignore their impact on skill formation. Thus, a possible negative effect on the incentives to acquire human capital and thereby on skilled employment is not taken into account. Therefore, it is commonly supposed that since low-wage subsidies reduce the labour cost of low-wage workers, they must stimulate aggregate employment. The paper in Annex 6 calls this presumption into question.

According to the Annex paper, low-wage subsidies have three important effects:

- they promote employment of unskilled workers who tend to be the ones who earn low wages;
- they reduce the incentive to become skilled by raising the pay-off of unskilled work relative to skilled work, so that there are more unskilled workers associated with a relatively low employment rate. (However, workers acquire qualifications on the job; therefore it is useful to get them on the job. Moreover, the effects of wage subsidies on the returns to education are likely to be small as they only apply to those at the bottom of the distribution.)
- the government budget constraint has to be taken into account, which is supposed to cause an additional tax burden for the skilled. This amplifies the negative effect of low-wage subsidies to acquire human capital.

The first effect on the one hand and the second and third effect on the other hand pull in opposite directions in terms of employment. The analysis comes to the conclusion that low wage subsidies do not raise employment in total, since the negative skill acquisition effect and the budget effect are higher than the positive direct employment effect.

In another paper of Annex 6 the effectiveness of alternative types of employment subsidies is analysed. The paper proposes a new criterion for the evaluation of employment subsidies: approximately welfare-efficient policies, i.e. policies that:

- improve employment and welfare;
- do not raise earnings inequality; and
- are self-financing.

The result is a subsidy ranking: hiring vouchers targeted at the long-term unemployed seem to be a useful instrument. They can be welfare efficient in the above sense. Hiring vouchers targeted at the long-term unemployed are more effective than targeted at low-income workers. The less skilled the targeted workers are and the longer they have been unemployed, the more effective are the hiring vouchers.

4. Immigration and the Labour Market

4.1 EFFECTS OF IMMIGRATION

The past few years have seen a growing debate on the question of migration. There has been a sharp inflow of migrants into the United Kingdom, Ireland, Spain and Austria, raising a range of economic and social issues.

The immigration flows associated with EU enlargement are likely to be relatively small for most countries. Nevertheless, as illustrated here, there should be noticeable impacts in individual countries. Amongst the NMS the poorest and smallest economies appear to have experienced the largest population shocks. The concentration of recent NMS emigration in the English speaking economies suggests that there are likely to be noticeable impacts there as well. However, in comparison to the immigration that normally occurs from countries outside the EU, the migration associated with the enlargement of the EU in May 2004 has so far proved modest. We have already noted that the UK and Italy experienced substantial increases in net immigration in recent years. Other EU countries, not considered here, have experienced similar sharp increases in migration flows in the recent past including Spain where the annual inflow of foreign nationals has steadily increased from 99 thousand in 1999 to 646 thousand in 2004 (OECD, 2006B).

The NIGEM simulations suggest that the effect of a net increase in Polish emigration of around $\frac{1}{3}$ million people of working age is to reduce output permanently by around 1 per cent. The reduction in output comes as a result of having fewer workers, but the reduction is not one for one. This is due to the assumption that the capital stock does not fully adjust, leaving the capital-labour ratio permanently higher. In the longer term, business sector capital adjusts downward to match the decline in the labour force. However, public infrastructures (such as transport) and the housing stock are assumed not to adjust fully over the time period shown. Both public and housing capital enter the production function and, since these do not adjust fully, productivity in Poland is permanently higher by around $\frac{1}{3}$ per cent. Qualitatively the effects on output and productivity are similar for the other NMS countries, with more noticeable effects in Lithuania and Latvia where particularly large migrations have been observed.

In Ireland and the UK the reverse pattern is observed. The increase in the labour force raises potential output, and in the longer term output rises to match this increase. As in the case of Poland, described above, the match is not one for one, since productivity changes. In Ireland and the UK productivity falls as public sector infrastructure and the housing stock are assumed not to adjust fully, failing to rise to maintain the ratio of capital to labour. Intuitively this assumption seems more restrictive for the receiving countries than for the sending countries, for which it seems reasonable to assume that emigration would not lead to an immediate dismantling of public

infrastructure. If it were to adjust the effects on GDP would be larger in the EU-15 countries than our simulations suggest, and productivity would be less depressed. In the longer term these calculations imply that output in the UK is $\frac{2}{3}$ per cent higher than it would otherwise be. In Ireland output is higher by 1.7 per cent reflecting mainly the bigger size of the migration shock.

Unanticipated immigration of people of working age increases the supply of labour without any corresponding increase in the stock of capital. The Stolper-Samuelson theorem implies that, with labour becoming more abundant, wages should be expected to fall and the return on capital to rise. This analysis assumes that all labour is employed and that wages adjust to clear the market. If wages are sticky downward, due to minimum wages or collective agreements, then an increase in the labour force may well lead to an increase in unemployment. Immigrants may keep indigenous workers out of jobs. There is a good reason why an inflow of young workers in low-skill occupations would be likely to add to unemployment instead of resulting in a fall in pay rates. In these occupations in particular, the minimum wage sets a floor to the wage level.

Simulations with NIGEM for the UK suggest that a gradual rise in the labour force of $\frac{3}{4}$ per cent over 2-3 years leads to a temporary increase in unemployment of $\frac{1}{4}$ percentage point for a few years, with the unemployment gradually disappearing as wages adjust according to the forward looking assumptions of the model (see Annex 7). Over the longer term GDP per capita is increased, since the increase in the labour force is more than the percentage increase in the total population.

Another example of these trends can be found in **Austria** (see Annex 8). In the early 1990s, the inflow of foreign workers was fully liberalised in Austria for almost two years since there was a labour shortage after German reunification. There was an inflow of more than 100,000 foreign workers within a short period of time. Simulations suggest that, on balance, 70 per cent of the additional foreign workers increased employment and 30 per cent added to unemployment. Young foreign workers partly replaced older foreign and indigenous workers.

The very high inflow of foreign labour in these years of liberalisation came as a kind of shock; it was partly supply-driven. In the 1970s, on the other hand, the large inflow of foreign workers to Austria was mainly demand-driven, i.e. they got work permits only if no unemployed were available for the job. In this case there was no substitution effect and no increase in unemployment.

Since 1990, family reunification (an echo effect of earlier labour migration) and immigration on humanitarian grounds have taken precedence over labour migration in Austria. Immigrants are to a large extent un- and semiskilled, not much different from those of the first generation migrants. In recent years, despite the comparatively small inflow of workers from the new member states, the Austrian labour market could not fully absorb the rapid increase in foreign labour supply. Following the end of the transition agreements, Austria will face a large inflow from the new member states, particularly commuters. The distance between Bratislava and Vienna is only 65 kilometers. In recent years, despite the legal restrictions the flows of migrants from neighbouring countries to Austria was about as high as in the UK, as a percentage of the population, and much higher than in Sweden.

4.2 IMMIGRATION IN IRELAND

Ireland's exceptional economic growth in recent years has led to an influx of immigrants. Ireland is unusual in terms of the speed with which the non-national percentage of its population has risen. In the 2002 Census, 7 per cent of the population was found to be non-nationals. In the 2006 Census, the corresponding figure was 10 per cent. The immigrants arrived in response to the economic growth of the "Celtic tiger" era.

A second unusual dimension of Ireland's migration experience is the speed with which it turned from being a country of out-migration to being a country of in-migration. As recently as the early 1990s Ireland was experiencing a net outflow. As the population at the time was only 3.5 million, the outflow in 1988 and 1989 represented over 1 per cent of the population; this was high by international standards.

A third unique feature of immigration into Ireland has been the high levels of education among the immigrants. Immigrants in Ireland have notably higher levels of education than the domestic population. Of the immigrant population in Ireland 85 per cent who arrived between 1993 and 2003 are high skilled (at least secondary level) compared with 67 per cent of the native population. This is in contrast to the experience, for example, in the US and most EU countries where immigrants are generally less skilled than the native population. Though immigrants in Ireland are a highly educated group they are not all employed in occupations that fully reflect their education levels.

Immigrants increased GDP by lowering skilled wages, overcoming shortages and improving Ireland's competitiveness. The paper attached in Annex 9 highlights the positive role of skilled immigration, but touches also the problems with unskilled immigration: An immigrant flow that is largely unskilled would increase GDP, but the impact on unskilled workers would be very negative: falling wages and higher unemployment of unskilled workers as well as falling GDP per head. From a policy perspective, the lesson is that policy should aim at promoting the inflow of skilled workers. But there is no guarantee that the inflow will continue to be high skilled, particularly with respect to the inflow from new EU member countries.

Given the favourable economic climate into which Ireland's immigrants are arriving, it is interesting to ask how their earnings and welfare dependence compare with the native population. To the extent that strong economic growth produces good labour market opportunities for immigrants, earnings disadvantages may be lessened and any tendency towards welfare dependence may be reduced. Data from a nationally representative sample drawn in 2004 are used to assess the earnings of immigrants in Ireland relative to the native population and also the rate of welfare receipt across the two groups. Immigrants are found to earn 18 per cent less than natives, controlling for education and years of work experience. However, this single figure hides differences across immigrants from English-speaking and non-English speaking countries. The ESRI study also finds evidence of a wage gap for immigrants with third-level education, relative to comparable natives. On average, immigrants are half as likely to have been in receipt of social welfare payments in the previous twelve months relative to natives. A difference in welfare participation remains when it is controlled for the higher education attainment of immigrants.

5. Policy Conclusions

- During the last decades, GDP growth had a highly significant effect on employment and unemployment. Thus it may be expected, that the Lisbon strategies to increase economic growth (R&D, education, etc.) will also help to reduce unemployment, together with necessary labour market reforms.
- Labour market institutions play a crucial role in explaining the differences in unemployment rates across countries, but not per se over time (Blanchard, 2005). However, the interaction of the institutional framework with macroeconomic shocks is important. Labour market reforms may remove barriers to employment (IfW *et al.*, 2002) and raise the level of production that can be achieved without inflationary pressures. Changes in labour market institutions

will be important for the future development of structural unemployment in many EU countries.

- Increasing the employment intensity of growth (by reducing the capital-labour ratio etc.) cannot be considered as a useful long-run strategy since it is the “flip-side of poor productivity growth” (Kroeger, 2005). This cannot be the aim of long-run policy, but only a short-run remedy in hard economic times. Nevertheless, reforms in the financing of the social security systems can lower labour costs, and temporary employment-intensive growth can be welfare enhancing if it reduces structural unemployment.
- According to the Lisbon strategy no long-run trade-off between productivity and employment should be observed. In the long run there appears to be no such trade-off in most EU countries. But during the last decade, the substantial increase in employment rates did not result in higher GDP growth, as widely expected, since it was matched by smaller productivity increases. These two opposite trends reflect higher labour market flexibility (rise in part-time work, increasing importance of the low wage and productivity segment). In this regard, the opposite forces seem to be only of temporary relevance.
- The increase in part-time employment was a major factor in raising the employment rate, particularly in the Netherlands. Part-time work eased the combination of paid work and family obligations. The rise in female employment entailed a further increase of jobs through marketisation of household work. However, the stagnation of full-time jobs in the Euro area since 2000 has impeded the integration of the unemployed; the majority of them are looking for full-time jobs.
- Reducing the labour supply (by early retirement etc.) is not an appropriate instrument to tackle unemployment since shortages of qualified labour will arise during a cyclical upswing and also due to unfavourable demographic trends. Curtailing incentives for early retirement contributed to higher participation rates of older people. Nevertheless, participation rates of the elderly are still low in many countries. An increase in labour supply will normally be absorbed by the labour market, thus increasing economic growth and employment. But with lack of demand or an “overshooting” supply shock (e.g. through immigration) there is a risk of rising unemployment since the wages of the unskilled are sticky downward. While the effect of an “immigration shock” on unemployment will cancel out if wages react, the impact on the income distribution will remain. During the last decade, the development of the working-age population had a significant effect on unemployment. The decline in the working-age population in the next decade will thus help to reduce unemployment.
- Wage moderation for new entrants, in particular the young, helped to reduce unemployment in the Mediterranean countries (Italy and Spain), where the family still provides an important safety net. But the increase in low-wage employment of young people was at the cost of productivity. Wage moderation could not stop the increase of unemployment in Germany and Austria where the induced export boom was counteracted by weak domestic demand.
- In many countries, relatively strong employment protection and bargained wages for permanent employees and very flexible temporary contracts for the young led to a dual labour market.
- Cuts in social insurance contributions, as widely used in France, are a costly instrument to reduce unemployment. But once introduced such

measures can hardly be eliminated without a negative employment shock.

- Activation of the unemployed as practiced in the Nordic countries (mutual obligations) has proved to be a useful instrument in reducing unemployment. Labour market policies and unemployment benefits should be designed in a way that does not trap people into inactivity.
- Vouchers targeted at the unemployed are a cost-efficient instrument to reduce unemployment, in particular to improve the competitiveness of the unemployed vis-à-vis other groups (new immigrants etc.). Such vouchers seem to be a useful but not undisputed instrument.
- Besides an adequate macroeconomic strategy, low replacement rates and a minimum wage "to make work pay" helped to reduce unemployment in the United Kingdom and Ireland, but at the risk of poverty. In these countries, a relatively high share of the working-age population is living on welfare payments. High replacement rates do not necessarily result in high unemployment since the unemployed have no right to choose. But relatively high replacement rates need to be supplemented by pressure on the unemployed to accept jobs (e.g., activation strategies in the Scandinavian countries).

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