# Chapter 1. Euro area outlook and forecasts

## 1.1 Economic outlook for 2003 and 2004

In 2002, growth in the euro area was subdued. On average, GDP increased by 0.8%. Though at the beginning of the year, the recovery started, growth failed to gain momentum in the course of the year. In 2002, growth was solely driven by net exports. Domestic demand remained weak. In particular, investment was sluggish. Capacity utilization remained at low levels, though the capacity utilization rate in the manufacturing sector increased slightly in the second half of 2002. Thus, any pickup in demand could be met by existing capacities and companies had no incentives to increase their capital stock. Furthermore, the rapid decline in stock prices deteriorated the financing conditions. At the end of the year, the decline in investment came to a halt. A sustained increase in investment requires, however, a distinct recovery of profit prospects. As the industrial confidence indicator published by the European Commission shows, the short-term prospects remain weak at the beginning of 2003. In the course of last year, consumption growth picked up slightly as household real disposable income was supported by a decline in inflation. A more pronounced recovery of private consumption was prevented by the negative wealth effect caused by the rapid decline in stock prices, and by the increasing uncertainty regarding the future economic development. As the economic downturn has reached the labour market, fear of being laid off increased. This is visible in the deterioration of the consumer confidence indicator towards the end of 2002. As these factors impaired investment and private consumption, the increase in exports could not initiate a distinct recovery of domestic demand.

In the second half of 2002, industrial production stagnated after slight growth in the two preceding quarters. Production of intermediate goods and consumer durables decreased, while production of capital goods continued to rise somewhat. This points at sluggish GDP growth also in the next months.
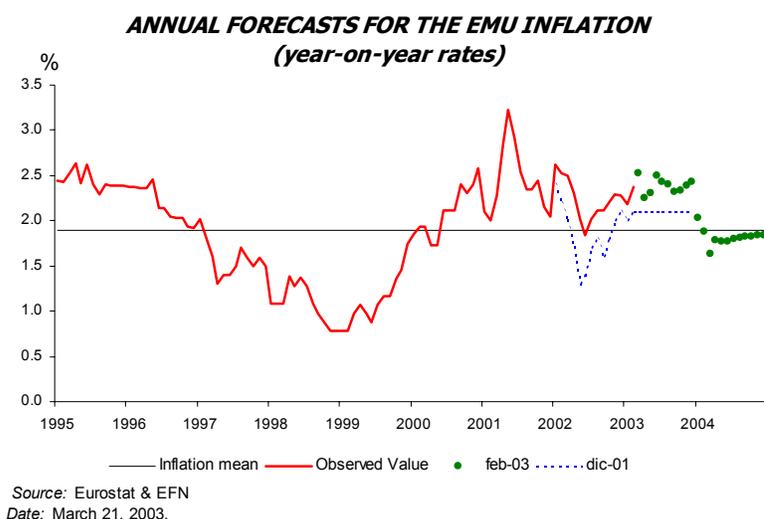
Uncertainty about the Iraq crisis has called the global economic recovery into question. During the winter of 2002/03 this uncertainty was reflected in weak stock markets and strong movements in the oil market and of exchange rates. Should the oil price remain at a high level over a prolonged period of time or go up even further, increasing production costs would squeeze profits of firms and impair the purchasing power of consumers. Immediately after the beginning of the war in Iraq the oil price dropped significantly, but it has to be seen whether this reduction will be lasting. While the appreciation of the euro versus the dollar has dampened the effects of the oil price hike, a continuation of this process would harm exports, which have been an important source of growth in the Euro area during the last years.

Very high oil prices and a continuing depreciation of the dollar are, however, not expected in this forecast for 2003 and 2004. Instead, we think that the current oil price level reasonably reflects the present risks for world oil supply and that the exchange rate for the dollar is partly determined by expectations about possible future costs of the US engagement in the Middle East. Thus, further price and exchange rate movements are not the main scenario of this forecast; as the oil price is assumed to

fluctuate around 24.5 and 23.5 US dollar per barrel in the remaining of 2003 and 2004, respectively.

In the previous EFN report the inflation forecasts were constructed using information relating to the HICP up to August, and a recovery of the year-on-year inflation rate for the remaining months of 2002 was predicted, mainly due to the expected evolution of energy prices. This recovery has in fact occurred, but with energy and core prices performing better than forecast in the previous report (not included in figure 1.1). The observed values for the year-on-year rate for December 2002 has been 2.2% instead of the 2.6% advanced in the previous report.

Figure 1.1



**ANNUAL FORECASTS FOR THE EMU INFLATION**
**(year-on-year rates)**

*Source:* Eurostat & EFN
*Date:* March 21, 2003.

With the publication by Eurostat of the harmonized indices of consumer prices corresponding to January 2003 significant weight modifications for 2003 and revisions of past data have been applied. As a results of that the figures for 2003 provide a more accurate measure of consumer prices, but year-on-year inflation rates are upward biased. Eurostat has announced that changes in weight could be responsible for one tenth of percentage point in the year-on-year rates of 2003.

Our forecasts for GDP growth are 1.2 and 2.1% fro 2003 and 2004 respectively. These forecasts hinge on the assumption that political tensions in the Middle East will decrease. In particular, we expect that the war in Iraq will not lead to significant disruptions in the world economy. In the second half of 2003, economic recovery in the major world regions will gain momentum. The expansionary fiscal and monetary policies will stimulate economic activities in the US. In Japan, a sustained growth is still hampered by lacking structural reforms. On the other hand, in some world regions economic activity has remained robust, in particular in central and eastern Europe as well as southeast Asia. Summing up, the stimulus for the euro area from world trade is expected to gain momentum, though only gradually, over the forecasting horizon. Euro area exports are expected to gradually gain momentum over the course in 2003. In 2004, our forecasts indicate no further acceleration of export growth.

2

The expected economic recovery in the US is likely to affect the euro area countries to different degrees. Each country not only benefits directly from the economic recovery in the US by its bilateral trade linkages, but also due to the linkages with the other countries which are also positively influenced by the US expansion. Furthermore, international trade is not the only channel of business cycle transmission. A further source of shock propagation is the increasing interdependence of capital markets. In addition, the investment decisions of multinational companies are also important. Therefore, an overall measure of the influence of economic developments abroad on the domestic economy is required. France and Germany depend to a larger degree on external economic developments than Italy and Spain. If the growth rate of industrial production in the US increases by one percentage point, the cumulative gain in the growth rate of industrial production after the adjustment processes have run their course amounts to more than 0.8 percentage points in France and Germany. The corresponding figures for Spain and Italy are somewhat lower. Thus for 2003 we forecast a 2.2%rate of growth for the annual average of the industrial production in US and only 0.8% for the Euro zone.

The improvement of the global economic perspectives in the course of 2003 will help to restore confidence of investors and consumers. In the last two years over-capacities were already reduced considerably, and the increase in demand will encourage companies to invest more. In addition, the financing conditions will be supported by low interest rates in the Euro area. Furthermore, the rise in unit labour costs will be significantly lower than in the previous years. In addition, technical progress forces companies to renew their equipment more rapidly. This is reinforced by the rising share of ICT goods in the capital stock. Investment activity is also supported by the pick up in demand. Due to the persistently high unemployment, private consumption will only accelerate at a low pace. The recent pronounced appreciation of the euro, together with sluggish demand on export markets, started to take its toll. In the fourth quarter of 2002, exports stagnated. We expect that also in the first half of the current year euro area exports will be hampered by these factors. With increasing world demand and the fading out of the effects of the euro appreciation we expect euro area exports to gain momentum in the second half of the year. Our forecast, however, hinges on the assumption that the war in Iraq will only be short and that repercussions on the world economy remain limited. The forecasts of the main macroeconomic aggregates are summarized in table 1.1.

Table 1.1: Economic outlook for the Euro area

| | 2000 | 2001 | 2002 | 2003: 1st half Point Forecast | 2003: 1st half Interval Forecast | 2003: annual Point Forecast | 2003: annual Interval Forecast | 2004: annual Point Forecast | 2004: annual Interval Forecast |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0.6 | | 0.6 | | 1.4 |
| GDP | 3.5 | 1.4 | 0.8 | 1.1 | 1.7 | 1.2 | 1.8 | 2.1 | 2.8 |
| | | | | | 1.8 | | 1.4 | | 1.4 |
| Potential Output | 2.9 | 2.8 | 2.1 | 2.1 | 2.4 | 1.9 | 2.3 | 1.9 | 2.4 |
| | | | | | 0.2 | | 0.2 | | 1.0 |
| Private Consumption | 2.5 | 1.8 | 0.6 | 1.0 | 1.8 | 1.0 | 1.8 | 2.0 | 3.1 |
| Government | | | | | 1.7 | | 1.6 | | 0.9 |
| Consumption | 2.0 | 2.1 | 2.5 | 1.9 | 2.2 | 1.8 | 2.1 | 1.3 | 1.7 |
| | | | | | -2.5 | | -1.1 | | 1.9 |
| Fixed Capital Formation | 4.9 | -0.6 | -2.5 | -0.6 | 1.3 | 0.9 | 2.9 | 4.3 | 6.5 |
| | | | | | -0.2 | | -0.1 | | 0.0 |
| Inventories/GDP | 0.2 | -0.2 | -0.3 | -0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| | | | | | 1.7 | | 1.0 | | 3.4 |
| Exports | 12.6 | 2.8 | 1.2 | 3.7 | 5.8 | 3.3 | 5.6 | 6.3 | 9.0 |
| | | | | | 1.2 | | 1.3 | | 4.4 |
| Imports | 11.3 | 1.5 | -0.3 | 3.7 | 6.2 | 4.0 | 6.7 | 7.7 | 10.9 |
| | | | | | 8.6 | | 8.7 | | 8.7 |
| Unemployment Rate | 8.5 | 8.0 | 8.3 | 8.7 | 8.8 | 8.8 | 8.9 | 9.0 | 9.4 |
| | | | | | 8.1 | | 7.9 | | 8.3 |
| NAIRU | 9.1 | 8.6 | 8.2 | 8.2 | 8.3 | 8.2 | 8.4 | 8.6 | 9.0 |
| | | | | | 2.9 | | 4.1 | | 6.3 |
| World Trade | 12.5 | 0.6 | 2.2 | 4.9 | 6.9 | 6.0 | 7.9 | 8.9 | 11.5 |
| Euro Nominal Effective | | | | | 5.0 | | 2.2 | | -4.8 |
| Exchange Rate | -11.1 | 1.8 | 3.0 | 9.3 | 13.6 | 6.6 | 11.0 | 0.2 | 5.2 |
| Euro Real Effective | | | | | 5.7 | | 2.9 | | -4.4 |
| Exchange Rate | -10.4 | 2.7 | 4.3 | 9.9 | 14.1 | 7.3 | 11.7 | 0.6 | 5.6 |
| | | | | | 2.2 | | 2.4 | | 3.0 |
| Short Term Interest Rate | 4.4 | 4.3 | 3.3 | 2.7 | 3.2 | 2.8 | 3.3 | 3.6 | 4.2 |
| | | | | | 3.6 | | 3.6 | | 3.4 |
| Long Term Interest Rate | 5.4 | 5.0 | 4.9 | 4.1 | 4.6 | 4.1 | 4.6 | 4.1 | 4.8 |
| | | | | | 2.6 | | 2.6 | | 2.4 |
| Labour Costs | 3.2 | 3.3 | 3.6 | 3.1 | 3.5 | 3.0 | 3.4 | 3.0 | 3.6 |
| | | | | | 0.4 | | 0.9 | | 1.5 |
| Labour Productivity | 1.3 | 0.4 | 0.1 | 1.0 | 1.6 | 1.3 | 1.8 | 2.1 | 2.6 |
| | | | | | 1.8 | | 1.7 | | 0.8 |
| HICP | 2.1 | 2.4 | 2.2 | 2.3 | 2.8 | 2.4 | 3.1 | 1.8 | 2.8 |
| Private Consumption | | | | | 1.5 | | 1.8 | | 1.4 |
| Deflator | 2.1 | 2.4 | 2.0 | 2.0 | 2.5 | 2.3 | 2.8 | 2.0 | 2.6 |
| | | | | | 1.3 | | 1.5 | | 1.2 |
| GDP Deflator | 1.3 | 2.4 | 2.3 | 1.9 | 2.5 | 2.1 | 2.7 | 2.0 | 2.8 |
| Industrial Production | 3.5 | 0.4 | -0.8 | 0.3 | | 0.8 | | 2.0 | |

Percentage change in the average level compared with the same period a year earlier, except for unemployment rate and NAIRU that are expressed in levels. Point forecasts and 80% confidence bounds are taken from EFN forecasting models and based on 2000 stochastic simulations.

Inflation forecasts for 2003 are characterised by stable year-on-year core inflation rates, consolidating the reductions on core inflation which took place in the last part of 2002 and in January 2003. Thus the average annual core inflation rate is forecast at 2.0% for 2003 and 2004. The month-to-month annual rates will vary from the negative value of 0.5% in January to a positive value of 0.5% in March and in December. Since sale prices were included in the calculation of the HICP, the month-to-month total inflation and core inflation rates vary more than before. This also presents a problem when it comes to obtaining seasonally adjusted data, since there is evidence that the sales effect needs to be modelled with stochastic coefficients - as is the case in this and the last report - because new seasons' products do not enter at the same time every year. It is not clear that a more useful inflation measure is obtained by including sale prices in the HICP, and further research is required on the convenience of considering sale prices.

After the peak of total inflation in March 2003 at 2.5% the forecasts oscillate around a mean value of 2.4% in 2003 and around 1.8% in 2004.

A causal analysis of the inflation forecasts shows that the inflationary pressure of the deviation of money from nominal output is practically compensated by the effects of the output gap and the deviation of inflation from the trend in unit labour costs. The remaining factors affecting inflation will slightly reduce its value from its historical mean. Consequently, the average quarter-on-quarter inflation rate for 2003(1Q)-2003(4Q) is forecast as 0.59% (2.38% in annualised terms) and for the mean value of the 2004(1Q)-2004(4Q) period at 0.46% (1.85% in annualised terms). Under these conditions the ECB will be in a position to maintain and further reduce interest rates in the short-term.

In order to compare the performance of inflation in the EMU and the US in 2002, we need to correct the official US figures by removing the contribution of owner´s equivalent rent of primary residence, which is not included in the EMU HICP. We also establish a homogeneous measure for core inflation, which differs from the official core measures in both areas. These results are shown in table 1.2 and reveal that the average annual inflation rates for the US and EMU in 2002 have been 0.9 and 2.2%, respectively. If we break total inflation down into three components, core, food and energy, the differential in all three cases is in favour of the US. The most interesting figures refer to core price differentials. The core inflation differential in the service sector is historically greater in the US than the EMU, and it tends to remain at a stable 0.4 percentage points for the next two years. But manufactured goods inflation in the US shows negative average annual rates, with positive values in the EMU near 1%. Different factors may be responsible for this differential, but since it is so persistent, the different degree to which technological innovations are implemented could be particularly significant. On the other hand, these negative inflation values can not be considered as a sign of deflation, since service prices continue to grow in the US with annual rates of over 3%.

| | 1998 | 1999 | 2000 | 2001 | 2002 | Forecasts 2003 | Forecasts 2004 |
|---|---|---|---|---|---|---|---|

Table 1.2: Inflation Rates in the EMU and US

(year-on-year)*

| | 1998 | 1999 | 2000 | 2001 | 2002 | Forecasts 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| **TOTAL INFLATION** | | | | | | | |
| Euro-zone (100%). | 1.1 | 1.1 | 2.1 | 2.4 | 2.2 | **2.4** | **1.8** |
| USA (81.5%). [1] | 1.1 | 2.1 | 3.5 | 2.6 | 0.9 | **2.1** | **1.6** |
| **A HOMOGENEOUS MEASURE OF CORE INFLATION [2]** | | | | | | | |
| **Services and Non-energy industrial goods excluding  food and tobacco.** Euro-zone (72.46%). | 1.4 | 1.1 | 1.1 | 1.9 | 2.4 | **1.8** | **1.9** |
| USA (55.6%).[1] | 1.8 | 1.4 | 2.1 | 2.1 | 1.6 | **1.4** | **1.8** |
| **DIFFERENT   COMPONENTS   OF THE  HOMOGENEOUS  MEASURE OF CORE INFLATION** | | | | | | | |
| **(1)  Services.** Euro-zone (40.91%). | 1.9 | 1.5 | 1.5 | 2.7 | 3.1 | **2.7** | **2.7** |
| USA (27.4%).[1] | 2.9 | 2.7 | 3.5 | 3.6 | 3.6 | **3.1** | **3.1** |
| **(2) Non-energy industrial goods excluding food and tobacco.** Euro-zone (31.55%). | 0.9 | 0.7 | 0.5 | 0.9 | 1.4 | **0.7** | **0.9** |
| USA (29.0%). | -0.1 | -0.5 | -0.1 | -0.2 | -1.5 | **-1.2** | **-0.2** |

[1] less owner´s equivalent rent of primary residence which is not considered in the HICP of the EMU.
[2] This homogeneous measure of underlying inflation does not coincide with the usual measure of core inflation for the EMU nor for the USA. It has been specially constructed in order to compare core inflation in both areas

Source: EUROSTAT & BLS & IFL. Date:  March 21/2003

## Box 1.1: Assumptions concerning global economic conditions

The exogenous variables for the forecast concerning the economic development in the US and Japan as well as the oil price are shown in table 1.3. For the most important world economic regions outside the EU, i.e. the US and Japan, a gradual economic recovery over the forecasting horizon is expected. This is reflected in an increase both in the GDP growth and inflation rates. The oil price is expected to decline slightly to a level of 23.5 US dollar per barrel.

Table 1.3: Assumptions concerning global economic conditions

|  | 2003: first half | 2003: annual | 2004: annual |
|---|---|---|---|
| Japan Consumer Price Inflation | -0.5 | -0.6 | -0.6 |
| Japan GDP Growth Rate | 1.3 | 0.6 | 0.7 |
| Japan Long-term Interest Rate | 0.8 | 0.8 | 0.8 |
| Japan Short-term Interest Rate | 0.1 | 0.1 | 0.1 |
| US Consumer Price Inflation | 2.3 | 2.3 | 2.1 |
| US GDP Growth Rate | 2.3 | 2.4 | 3.7 |
| US Long-term Interest Rate | 3.9 | 3.9 | 3.9 |
| US Short-term Interest Rate | 1.6 | 1.6 | 1.6 |
| Oil Price, USD / Barrel | 30.0 | 24.5 | 23.5 |

## Box 1.2: Casual Interpretation of Inflation forecasts and monetary policy.

The inflation forecasts in this report are obtained by breaking down the HICP into several components, for which time series models are estimated, we denote them disaggregated forecasts. These models include additional explanatory variables contemplating the effects of sales and price rounding due to the introduction of the euro. When forecasting consumer energy prices, international crude oil prices are the leading indicator in a non-linear model. With respect to direct aggregate forecast procedures, the approach followed in this report makes use of relevant information about different price trends along markets. The procedure employed also uses all the monthly information available on inflation. The disaggregated forecasts identify market differences and provide some clues about the main factors causing inflation, as it has been seen in the main text when comparing the forecasts for the EMU and the US. But this procedure does not currently include causal economic variables to explain inflation. In order to obtain a causal explanation for inflation forecasts we perform a simple regression between these forecasts, $y_t$, and the forecasts that would result from the macroeconomic model used in this report, $x_t$ we denote them congruent econometric forecasts. In the macroeconomic model use in this report, inflation is explained by deviations from two long run restrictions, one linking prices with unit labour cost trends and another with money. Other explanatory variables are changes in import prices, the output gap, changes in unit labour costs and lagged inflation values. The estimated regression is:

$$y_t = \underset{(0.07)}{0.95} \, x_t + r_t \qquad \sigma(r_t) = 0.001, \quad R^2 = 0.99.$$

Where yt are the disaggregated forecasts and xt the congruent econometric forecasts.

This regression shows that the mean values in both forecasts are not significantly different, but specific forecasts could differ considerably, with a 95% confidence interval given by ±0.2 percentage points.

If we replace the xt forecasts in the above regression with their composition in terms of the explanatory variables used to calculate them, we obtain a causal explanation for the inflation forecasts included in this report (yt). The component rt (the part of the disaggregated forecasts which is not explained by the econometric forecasts) can be interpreted as the impact on total inflation of the heterogeneous inflation situation of different markets or the bias in the econometric model's causal explanation derived from not contemplating specific market effects.

Applying the above to the mean value of the quarter-on-quarter inflation rate forecasts, we obtain the break down presented in table 1.4. Table 1.4 shows that the amount of money in relation to output is pushing inflation up, that there are three factors pushing in the opposite direction and that another three currently have a practically insignificant effect. The heterogeneous inflation situation on different markets is favouring lower inflation rates in the future because, although energy prices will grow faster in 2003 (in the yearly average) than in 2002, inflation in services and food will grow at a slower rate, mainly due to the absence of euro-rounding effects in 2003. The other, more relevant, two economic factors at present acting as forces reducing inflation are the unit labour cost trend and the output gap. This means that given the expected evolution of unit labour costs and the output gap, a loose monetary policy can continue. If the output gap increases or the incorporation of more technology reduces the unit labour cost trend, there will be more scope for easing monetary policy, provided, as expected, that the short-term factors affecting inflation do not change in an adverse manner. We can conclude that, in the economic conditions described, the ECB will be in a position to maintain or even further reduce interest rates in the short term.

Figure 1.1 shows that forecasts made at different times converge to a stable value of between 1.8 and 2.1%. This is also found with forecasts made in 1998 and 1999, and is due to the fact that inflation in the euro-area is a stationary variable. Thus, the path forecasts necessarily converge to a historical mean, which is 0.48% for the quarter-to-quarter rate, if appropriate corrections, to take indirect taxes changes and euro-rounding effects into account, are made. Inflation convergence is clearly also obtained with basically linear econometric models, in which case, if the above corrections are not included, the path forecasts converge to a quarter-to-quarter rate of 0.53%.

The above results suggest that the 2% inflation target should not be considered as an upper limit value, but as a mid-value around a ±2σ range, where σ could be taken as 0.5 percentage points, which is approximately the standard deviation when predicting the EMU year-on-year inflation rate one year ahead. This reinforces our previous consideration concerning monetary policy in the short term.

Table 1.4: Contributions to the average inflation rate

| Average quarter-to-quarter inflation rate (seasonally adjusted) | Contributions to the average inflation rate | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Constant Term | Changes in import prices | Changes in unit labour cost | Lagged Inflation | Output Gap | Deviations from trend in unit labour costs | Deviation of money from nominal output | Heterogeneous inflation situations through markets |
| 2002(4Q)-2003(4Q) | | | | | | | | |
| 0.49 | 0.53 | -0.01 | -0.01 | -0.01 | -0.35 | -0.62 | 1.04 | -0.08 |
| 2004(1Q)-2004(4Q) | | | | | | | | |
| 0.47 | 0.53 | 0 | -0.05 | -0.01 | -0.28 | -0.80 | 1.16 | -0.08 |

*Industrial Production*

The appraisal of the recent evolution of industrial production (excluding construction) in the Euro-zone by comparing observed rates of growth (year-on-year) with the predictions in the two previous reports (see figure 1.2) is not direct, because important revisions have also been published. In any case it is clear that innovations in the industrial production index (IPI) have been negative in recent months.

The year-on-year rate of growth in the index of industrial production (IPI) has shown a profile very similar to the one forecast in the previous report with a trough in August and a peak in November, but in all these months the observed rates of growth have been below the forecasts (see figure 1.2). Nevertheless the greatest negative innovation appeared in data corresponding to December 2002, with again a negative year-on-year rate of growth.

Looking at the month-on-month rate of growth on trend data, obtained by the SEATS program applied to the original data extended with the forecasts made in this report,- box 1.3 discusses the advantages of a trend signal over the seasonally adjusted data- it can be observed that the mean rate of growth in the first semester was 0.17% with monthly values between 0.13 and 0.21%. After transition months the rates of growth were negative during all the last four months of 2002 with a mean value of minus 0.16% (see table 1.5). These figures point out the different situation of the Euro-zone industrial sector during year 2002. In January a turning point in the growth cycle was observed and a mild but firm recovery continue during the next five months, but this was interrupted in the last part of the year. Consequently the average annual rate of growth in the Euro-zone industrial sector during 2002 was minus 0.8%, very similar to the US economy, but in the last case recovering from a minus 3.5% rate in 2001 and in the Euro-zone declining from an average positive rate of growth of 0.4% in 2001. Therefore, it can be said that the recovery of the Euro-zone industrial sector came to a halt at the end of 2002 but it continued in the US.

Figure 1.2: Updates in annual rates forecasts for EMU.
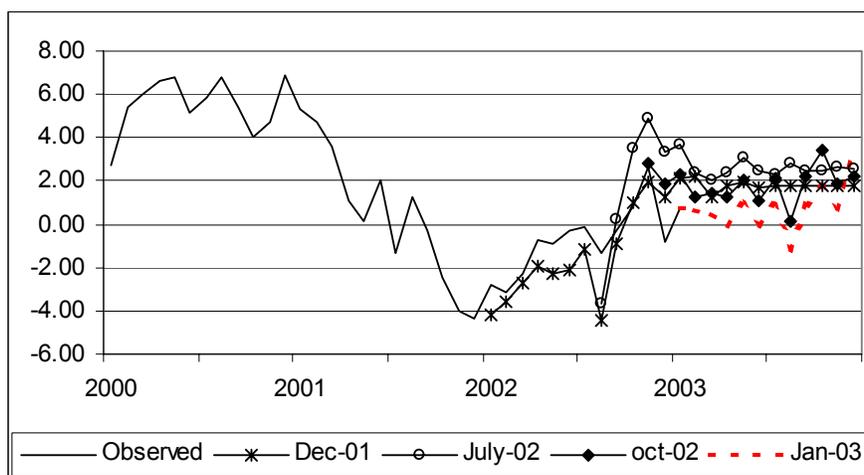


Date: March 20th 2003. Source: Eurostat and IFL.

Table 1.5:  Monthly trend* rates of growth.

|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2001 | -0.05 | -0.26 | -0.40 | -0.46 | -0.42 | -0.35 | -0.32 | -0.30 | -0.31 | -0.36 | -0.24 | 0.02 |
| 2002 | 0.18 | 0.20 | 0.18 | 0.13 | 0.13 | 0.18 | 0.21 | 0.13 | -0.06 | -0.19 | -0.22 | -0.17 |
| **2003** | **0.00** | **0.11** | **0.13** | **0.17** | **0.19** | **0.14** | **0.08** | **0.13** | **0.25** | **0.27** | **0.22** | **0.19** |
| **2004** | **0.15** | **0.15** | **0.18** | **0.17** | **0.12** | **0.08** | **0.09** | **0.15** | **0.26** | **0.31** | **0.29** | **0.23** |

Trends have been obtained with TRAMO/SEATS applied to our forecasts for the original Industrial Production Index not seasonally adjusted. Date 20th, March 2003. Source: Eurostat & IFL.

The forecast for 2003 is a growth rate of  2% for US and only 0.8% for the EMU (see figure 1.3). In conclusion, recovery will re-appear in the EMU industrial sector in 2003 but a considerably lower rate than previously expected and with moderate medium-term expectations, with the average annual rate of growth for 2004 forecast at 2.0% compared with 3.2% for the same sector in the US. (see table 1.6)

Table 1.6: Annual rates for industrial production in EMU and US[1].

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|---|---|---|---|---|---|---|
| Capital goods | 7.8 | 2.5 | 9.4 | 1.3 | -2.5 | **3.1** | **3.6** |
| Durable consumer goods | 4.6 | 1.4 | 6.5 | -2.5 | -5.1 | **-1.9** | **0.3** |
| Intermediate goods | 4.0 | 1.9 | 5.9 | -0.8 | 0.3 | **0.6** | **2.0** |
| Non Durable consumer goods | 2.4 | 1.6 | 1.4 | 1.0 | -0.2 | **-0.9** | **0.9** |
| Energy | 1.1 | 1.0 | 2.0 | 1.2 | 0.5 | **-0.1** | **0.9** |
| TOTAL EMU | 4.3 | 1.9 | 5.5 | 0.4 | -0.8 | **0.8** | **2.0** |
| TOTAL US | 5.6 | 4.3 | 4.7 | -3.5 | -0.7 | **2.2** | **3.2** |

(1) Bold figures are forecasts. Source: Eurostat and IFL.

Figure 1.3: Observed and forecasted annual rates for industrial production in EMU.
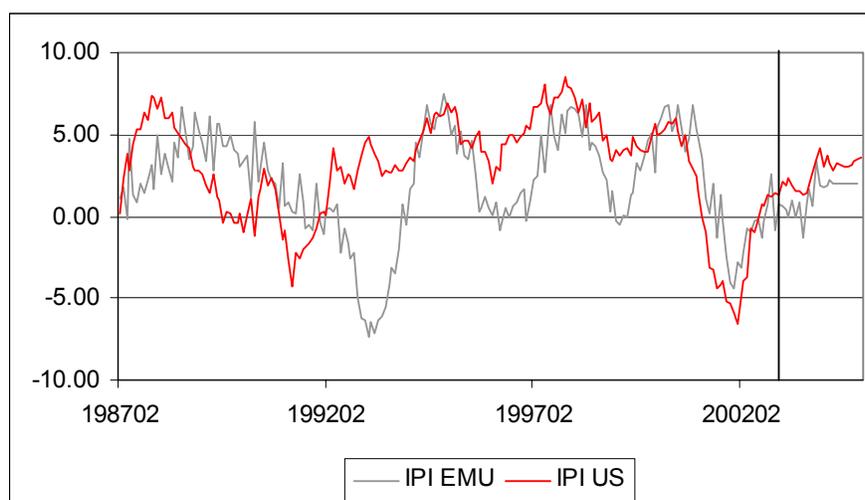


An econometric analysis of GDP by production sectors using for each sector time series models including as an explanatory variable the expected rate of growth of GDP, generates GDP forecasts for 2003-2004 from which it can be appreciated in table 1.7, the contribution of the different production sectors to GDP growth.

Table 1.7: Contribution of the production sectors to GDP growth

| | Contributions of production sectors | | | | | |
|---|---|---|---|---|---|---|
| Year | GDP growth | Agriculture | Industrial | Construction | Services | Net taxes |
| 1999 | 2.81 | 0.07 | 0.22 | 0.14 | 2.10 | 0.28 |
| 2000 | 3.47 | -0.02 | 0.88 | 0.12 | 2.49 | 0.00 |
| 2001 | 1.42 | 0.03 | 0.22 | -0.03 | 1.47 | -0.21 |
| 2002 | 0.77 | 0.01 | 0.03 | -0.07 | 0.96 | -0.16 |
| 2003 | 1.20 | 0 | 0.10 | -0.02 | 0.93 | 0.19 |
| 2004 | 2.10 | 0 | 0.45 | 0.01 | 1.42 | 0.22 |

11

## 1.2 Comparison with alternative forecasts

The forecasts presented above are obtained by the EFN macroeconometric model, described in details in the Spring 2002 report. Table 1.8 reports a comparison of the EFN forecasts regarding the main macroeconomic aggregates with alternative forecasts, notably those of the European Commission, the OECD, and Consensus Economics Inc.

Table 1.8: Comparison of EFN Forecasts with alternative Forecasts

|  | EFN | | EU | | OECD | | Consensus | |
|---|---|---|---|---|---|---|---|---|
|  | 2003 | 2004 | 2003 | 2004 | 2003 | 2004 | 2003 | 2004 |
| GDP | 1.2 | 2.1 | 1.8 | 2.6 | 1.8 | 2.7 | 1.1 | 2.1 |
| Private Consumption | 1.0 | 2.0 | 1.7 | 2.3 | 1.5 | 2.5 | 1.2 | 1.9 |
| Government Consumption | 1.8 | 1.3 | 1.4 | 1.6 | 1.6 | 1.4 | 1.4 | 1.3 |
| Fixed Capital Formation | 0.9 | 4.3 | 2.0 | 4.0 | 1.6 | 3.1 | 0.2 | 2.8 |
| Unemployment Rate | 8.8 | 9.0 | 8.3 | 8.0 | 8.5 | 8.3 | 8.7 | 8.5 |
| Consumer Prices (HICP) | 2.4 | 1.8 | 2.0 | 1.8 | 1.9 | 1.8 | 1.8 | 1.6 |

EU: European Commission, European Economy, No. 5, 2002; OECD: OECD Economic Outlook, No. 72, December 2002; Consensus: Consensus Economics Inc., Consensus Forecasts, March 2003

For 2003, the EFN forecast for GDP growth is close to the consensus forecast, while the other forecasts are higher. The divergences can be ascribed to the different information sets. In particular, the Commission and the OECD published their forecasts at a time when a more optimistic outlook for the world economy was prevailing. Compared to the latter two organizations, the EFN forecast for private consumption is more pessimistic, reflecting higher unemployment. This implies a lower contribution of private consumption and – due to the demand effect – capital formation to GDP growth in 2003. The lack in domestic demand causes a slower acceleration of imports and therefore a larger contribution of net exports is implied. For 2004, we expect a negative contribution of net exports to GDP growth, and, compared to the Commission and the OECD, a more subdued recovery of domestic demand.[1] In addition, our outlook concerning the labour market is more pessimistic than the alternative forecasts. On the other hand, we expect a more pronounced recovery of investment.

Our inflation forecasts are higher than all the alternatives in table 1.8 possibly due to the fact that the former incorporates the impact of the increases of the international crude prices occurred up to March 2003.

## 1.3 Forecast comparison with previous outlook

Table 1.9 shows a comparison between our spring forecast for 2002 and 2003 with the forecasts in the previous reports and with the actual outcome 2002. In autumn, no forecast for 2004 was published. Over time the growth rates of GDP and all expenditure aggregates have been slightly revised downwards, except for government

---

[1] The increase of working days in 2004 is expected to have only a negligible effect on the economic performance.

consumption. The changes can partly be explained by data revisions and the longer time span of available data, implying a different starting point of the forecast. In addition, the outlook concerning the recovery of the world economy has been reduced. This is reflected in the lower growth rate of world trade. In the euro area, in particular private consumption is expected to grow slower, especially in 2003. Here, the more gloomy unemployment outlook is reflected Company investment contracted more than expected in 2002 and is now forecast to expand at a slower pace in 2003. In addition, the forecasts for both exports and imports have been revised downwards. The worse exports performance is caused by the lower growth rate of world trade which is traced to the slower than expected recovery of the US economy. Due to the weaker domestic demand in the euro area, imports are expected to increase at a slower pace. It should be kept in mind that especially the data at the end of the sample are subject to revisions in the future.

Table 1.9: Comparison of spring forecast with previous outlooks

|  | actual 2002 | Spring 2003 2003 | Autumn 2002 2002 | 2003 | Spring 2002 2002 | 2003 |
|---|---|---|---|---|---|---|
| GDP | 0.8 | 1.2 | 0.9 | 2.2 | 1.2 | 2.2 |
| Private Consumption | 0.6 | 1.0 | 0.5 | 1.4 | 1.8 | 2.1 |
| Government Consumption | 2.5 | 1.8 | 1.7 | 1.2 | 1.5 | 0.9 |
| Fixed Capital Formation | -2.5 | 0.9 | -1.7 | 2.3 | -1.4 | 0.2 |
| Exports | 1.2 | 3.3 | 1.7 | 8.7 | 2.3 | 9.1 |
| Imports | -0.3 | 4.0 | 0.1 | 8.6 | 2.1 | 8.3 |
| Unemployment Rate | 8.3 | 8.8 | 8.3 | 8.6 | 8.4 | 8.1 |
| HICP Inflation | 2.2 | 2.4 | 2.3 | 2.1 | 2.0 | 2.2 |
| World Trade | 2.2* | 6.2 | 4.6 | 10.2 | 1.7 | 10.3 |

* estimated

The inflation forecasts are higher than in previous reports mainly due to the changes in the expectations of crude oil prices.

## 1.4 Structural factors hamper growth

In 2003 and 2004, domestic factors will be the driving force of GDP growth (see figure 1.4). But the Euro area will be able to benefit from its large size only if domestic conditions permit it to do so. It is however striking to note that potential output growth of the Euro area is continuously decreasing over the years in our forecast horizon. Similarly, the NAIRU remains extremely high and productivity gains are limited. In total, despite the fact that domestic demand will recover gradually, compared to the last economic upswing, domestic demand will remain subdued. The lack of private investment is critical in this regard, as it hampers capital accumulation and potential GDP. Therefore, policies devised to strengthen long-term growth are required.

In the current situation, supporting domestic demand implies restoring confidence of consumers and investors. Fiscal and monetary policy measures could be embedded in a comprehensive political strategy. In addition, the inflation analysis shows that given the expected evolution of unit labour costs and the output gap, a looser monetary policy can continue without diverting inflation from its local -last eleven years- mean level of 1.9%. It seems then that the ECB will have in the short-run scope to apply another reduction in its main interest rate.

Figure 1.4  Contributions to GDP growth
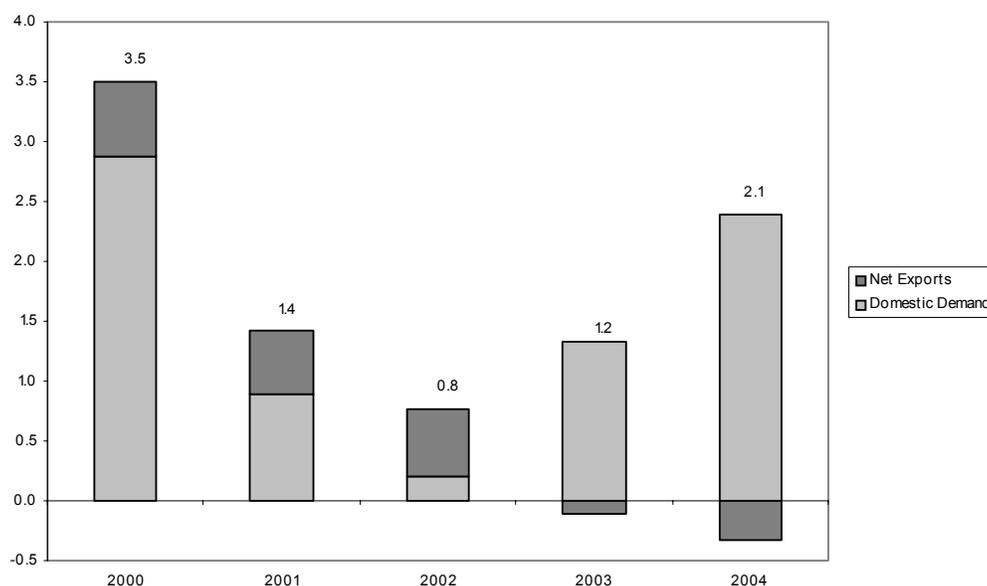


Percentage points; figures above the columns indicate overall GDP growth; 2003 and 2004: EFN forecasts

Thus, structural reforms are at stake. For instance, restoring confidence in the pension systems, by adapting their design to the ongoing ageing of the labour force could restore consumer confidence. Moreover, since private consumption growth is hampered by high unemployment in the Euro area, any progress on the front of employment, for example, reforms to bring more flexibility to the labour market, may translate into additional demand and thus additional growth. In the same way, increasing integration of goods and services markets and deregulations of formerly sheltered industries would stimulate employment and overall growth in the long run.

## 1.5  Accelerating labour costs, sluggish investment

Since 2000, labour productivity has been growing slower than wages. The acceleration of unit labour costs has lowered profit margins and investment. Consequently, the creation of employment has come to a halt. According to our forecast, the unemployment rate is expected to rise to 9.0 percent over the next two years.

According to OECD estimates, the bulk of unemployment is long-term and caused by microeconomic factors, such as unfavourable institutional structures, especially in labour markets. Because much of the wage bargaining process is centralised, wages and labour costs are not flexible enough to reflect labour market conditions adequately. Sector-wide agreements ignore heterogeneity at the level of the individual firm, while opening clauses are not easy to apply.

14

However, one should also stress that reforms of factor markets are currently in progress in Europe, and thanks to the internal market programme, the deregulation of goods and services markets is precisely what Europe has embarked upon. While the pace of reforms needs to be maintained, simplistic recommendations should be avoided, since social cohesion is a necessary condition for long run growth, and not only for welfare. This is particularly true in episodes of slow down of the economy, where safety nets are required to ease adjustments.

As far as potential output is concerned, early retirement is exerting a negative impact on labour supply and potential output. Trying to generate a higher participation rate of the elderly by introducing a later retirement age is one strategic policy that could be adopted to offset these effects. This would also serve to ease the pension squeeze evident in many Euro area countries, since contributions for social security can hardly be increased repeatedly. Steadily depressed investment, weak performances in numerous technological sectors and low R&D expenditures by firms also bear a responsibility in the current situation. Such concern over investment is particularly important for certain member states of the Euro area, since real interest rates diverge profoundly among them.

## 1.6 Inflation differentials, real interest rates and monetary policy

This report forecasts annual harmonized consumer price inflation for 2003 at the upper limit of the inflation range considered to be compatible with price stability by the ECB. Among member countries, however, inflation rates for 2002 differed considerably, varying from 1.3% in Germany to 4.7% in Ireland and for 2003 this variation is forecast from 1.0 to 4.5%. Even for the most important economies of the Euro area, differences are substantial, see table 1.10. This phenomenon is due partly to structural convergence processes, and partly to differences in the strength of demand among member countries.

Lower inflation should help to eliminate or narrow these differences by making products from countries with lower growth more competitive over time. However, in a currency union like the Euro area, this competitiveness effect is counteracted by the fact of country-specific real interest rates being higher in countries with weaker demand. This leads to a widening in the differences in demand and occurs because nominal interest rates are uniform in the Euro area.

For most private spending decisions, these national rates are more important than the Euro area average. It might also be argued that it is the longer term real interest rate rather than short term rates that influences demand and for the longer term, expectations about future inflation are relevant. Data from financial markets show however that inflation rates are not expected to converge significantly any time soon.

In principle, policy should not try to counteract divergent inflation rates since these are, after all, sound reactions of the price system to market forces. Monetary policy, however, is well advised to pay attention not only to average real interest rates in the Euro area as a whole, but also to its structure in the countries comprising the area. This issue is not addressed adequately by official explanations of monetary policy because the ECB wishes to avoid a re-nationalization of monetary policy.

Table 1.10: Real short term interest rates in selected euro area countries

|      | FRA  | GER  | ITA  | ESP   | EURO | SD   |
|------|------|------|------|-------|------|------|
| 1999 | 2.40 | 2.33 | 1.31 | 0.73  | 1.83 | 0.65 |
| 2000 | 2.56 | 2.31 | 1.80 | 0.91  | 2.04 | 0.59 |
| 2001 | 2.48 | 1.85 | 1.93 | 1.43  | 1.75 | 0.81 |
| 2002 | 1.39 | 2.00 | 0.71 | -0.27 | 1.1  | 0.92 |

FRA=France, GER=Germany, ITA=Italy, ESP=Spain, EURO=Euro area. Real short term interest rates in percentage points, measured by the EURIBOR three-month deposits rate minus HICP inflation rate of member state. Individual real interest rates are weighted by GDP shares for the Euro area rate. Standard deviation (SD) refers to all member states.

**BOX 1.3 Optimal revisions in seasonally adjusted data**

Official statisticians often face the situation where the stochastic signal of a time series (such as trend or seasonal) must be estimated. Because the filters are centred and symmetric, the estimation of signals requires future observations not yet available. For recent enough periods asymmetric filters have then to be used, which yield "preliminary" estimators. As time passes and new observations become available, those preliminary estimators will be revised until the historical or final estimator is obtained. The difference between the preliminary and final estimator is the "revision error" we consider here. Two issues are contemplated: the size of the revision in the concurrent estimator, and the duration of the revision period.

Revisions pose a non-trivial practical problem and it has often been suggested that filters yielding small revisions and implying short revision periods are to be preferred. But this recommendation is based more on wishful thinking than on rigorous analysis. If specifically confuses two different things.

- The characteristics of a good method for estimating the signal.

- The properties "desirable" for the seasonality present in the series

For a given signal, the characteristics of the "optimal" revision (producing the minimum MSE estimator of the signal) depend on the characteristics of the series at hand. Moreover, in a model-based approach, the exact model for the optimal revision is straightforward. It can be shown that series with small signal-to-noise ratios imply large revisions, and vice versa; this result appears to be common sense since, when the signal is buried in noise, more smoothing is required to clean the measurement. Furthermore, the price paid for using filters with less revisions can be, when inadequate, unreasonably high (in terms of the accuracy with which the signal is

estimated). The idea of minimising revisions (which would eventually lead to the use of dummy variables or -(permanently) phase inducing- pure AR filters), should be replaced by one of "optimal revisions".

Likewise, the duration of the revision period also depends on the structure of the series. Revisions should on some occasions be long and on others completed in a few periods. However, it is often the case that large revisions are associated with rapid convergence, and vice versa. In practice, then, the duration of the revision process is of secondary importance, since it will be long for series for which total revision size is small. From a general perspective, the optimal estimator of an unobserved signal is the conditional projection of the signal, given the set of observations available. Hence, in essence, it is the same type of estimator that produces an optimal forecast, since the future value to be predicted is also unobservable. Therefore, revisions in the estimator of a signal should be seen as equivalent to revisions in forecasts when they are updated. As no-one would recommend the use of forecasts with minimum revisions (at the cost of accuracy), neither is it recommendable to reduce revisions below their optimal level.

There is one final point worth mentioning. Although, for a given signal and a given series, there is little sense in choosing an estimator in order to minimise revisions, analysts should bear in mind that the search for signals with optimal estimators displaying more stable behaviour is a perfectly legitimate alternative. For example, if the signal of interest is the seasonally adjusted series, the use of trends may be considered. Although the revision of the concurrent estimator of the trend may be no smaller than that of the seasonally adjusted series, convergence of the preliminary and final estimators is much faster; moreover, forecasting errors related to trends are also typically smaller.

A conclusion can be summarized as follows: analysts should not choose the estimator of stochastic signals using the criteria of minimizing revisions since small size revisions tend to converge slowly. In fact, the larger the revision error, the faster the convergence. An alternative is to use more stable signals. For example, in seasonal adjustment the trend would be preferred to the seasonally adjusted series.