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## QUARTERLY REPORT ON THE EURO AREA

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## Editorial

The recovery is now taking hold in the euro area. After a disappointing first half of the year, GDP growth resumed in the third quarter and strong gains in business confidence over the past months indicate that activity is set to pick up further speed in the months ahead. Owing to a simultaneous upturn in all major parts of the world, the international environment is becoming increasingly supportive. Domestic demand has so far remained sluggish but should progressively gather momentum on the back of the recovery of private consumption.

In sum, recent economic developments are encouraging. It is now time to take advantage of improving short-term economic conditions to reinforce the economy's long-term growth potential. A well-defined strategy is in place which aims at improving the long-term capacity for sustainable non-inflationary growth. The strategy was set out in Lisbon in 2000 and is further specified in the Broad Economic Policy Guidelines. It rests on the combination of a stable macroeconomic environment and structural measures aimed at lifting potential growth. In a short-term perspective, moving ahead with the Lisbon agenda is necessary to underpin the nascent recovery and reap the full benefits of a strong euro while limiting its adverse effects on external competitiveness. In a longer-term perspective, reforms will raise living standards and help to tackle the economic and financial consequences of the ageing of the population.

As to macroeconomic stability, the recent setback with the agreed fiscal framework is worrying. The failure of the ECOFIN Council to abide by the letter and the spirit of the Treaty is deeply regrettable on several accounts. Firstly, it is essential to stress that excessive deficits do not only reflect cyclical circumstances but are also the consequence of

expansionary fiscal policies earlier in the cycle. The experience of the last few years shows that in the case of France and Germany these policies have failed to stimulate demand. On the other hand, they carry risks of higher interest rates in the longer term for the euro area as a whole and of negative repercussions on household and business expectations. Secondly, the failure to rein in public deficits in some Member States threatens the long-term sustainability of public finances in the context of an ageing population. Thirdly, excessive deficits for a prolonged period in the largest Member States will make the conduct of sound budgetary policies more difficult in other Member States and in acceding countries. Finally, only a rule-based system such as the Stability and Growth Pact can guarantee that commitments are enforced and that all Member States are treated equally.

Overall, the recent difficulties with multilateral fiscal surveillance call for stronger economic governance in the euro area.

Turning to structural reforms, it is important to underline that past efforts have paid off. Despite the economic downturn, about a million and a half jobs were created in the euro area between the end of 2000 and mid-2003, a performance which has allowed the normal cyclical rise of unemployment to be kept in check. Employment rates have continued to increase whereas the rate of long-term unemployment has been on a downward trend. This clearly shows that the rewards for reforms can be substantial.

Nevertheless, the pace of reforms must be stepped up if we are to meet the ambitious employment and growth objectives set in Lisbon. Human resources remain underutilised. Furthermore, the economy is still insufficiently resilient to shocks and has

emerged only slowly from the recent downturn. Last but not least, the euro area has posted a disappointing productivity performance in recent years even when taking into account the impact of the deterioration of cyclical conditions.

Lifting the economy's growth potential requires a two-handed approach: barriers to employment must be further removed and conditions allowing the economy to deliver faster productivity gains must be put in place. Next month, the Commission will take stock of the progress made with the implementation of the BEPGs and will present a complete assessment of what further efforts are necessary in its Spring Report.

Looking further into the disappointing productivity performance of the euro area, the analysis presented in the focus section of the present Quarterly Report shows that about a quarter of the overall slowdown in productivity growth since the mid-1990s can be attributed to a reversal of the excessive capital/labour substitution observed in the past. This effect is the flip side of the high employment content of growth observed in recent years. It will be only transitory and will disappear once the labour market has reached a new equilibrium with a higher rate of employment. Other, more important, sources of the productivity slowdown include a downward trend in investment rates and a worrying deterioration of the rate of technical progress.

Some commentators see Information and Communication Technology (ICT) as lying at the root of the productivity problem in the euro area. However, it is important to highlight that ICT has contributed positively to productivity in the euro area since the mid-1990s. This contribution has been much lower than in the USA, mainly due to slower diffusion of ICT and difficulties in exploiting its full benefits. Hence ICT can partly explain diverging productivity trends in the euro area and the USA in recent years but it cannot account for the observed deceleration of productivity growth in the euro area.

From a policy perspective, research also shows that, in order to reverse recent adverse productivity trends, forceful action is needed in four areas. Firstly, the burden of excessive regulation must be lightened to foster competition and investment. Secondly, financial markets must be further developed and integrated. Thirdly, further progress is also necessary with product market integration. Finally, conditions for a significant rise in investment in education and research and development must be put in place.

Pedro SOLBES

MEMBER OF THE EUROPEAN  
COMMISSION



## I. Economic situation in the euro area

Recent data confirm the scenario of a progressive recovery taking hold in the euro area during the second half of 2003. After a slight contraction in the second quarter, GDP resumed a growth path in the third quarter, increasing slightly faster than expected. Leading indicators have continued to improve in the past months with business confidence returning to levels last seen in summer 2001 and household sentiment showing more modest gains. This suggests that the recovery rests on firm grounds and presages a further pick-up of growth in the first quarter of 2004. The euro-area recovery has so far been export driven and external demand will continue to be buoyed by a synchronised upturn in all major parts of the world. Domestic demand should progressively gather momentum in the months to come on the back of strengthening private consumption. Inflation has recently been stickier than expected but a cyclical pick-up in productivity and a further pass-through of the euro appreciation into consumer prices will help to dampen price pressures in the coming months.

### 1. Economic situation<sup>1</sup>

#### Increasing signs of recovery in the euro area

The first national account estimates for the third quarter confirm that the recovery has been progressively taking hold in the euro area during the second half of 2003. After a modest contraction in the second quarter, GDP surprised slightly on the upside over the summer, increasing by 0.4% quarter-on-quarter. Activity was driven by a solid pick-up in exports with domestic demand remaining weak.

The steady strengthening in confidence observed in the past months suggests that the recent improvement in GDP growth rests on firm grounds. The business climate indicator registered its fourth successive increase in November, posting its highest value since June 2001. Reuters manufacturing PMI has posted a similar upturn since July and is now well above the 50 threshold that separates expansion from contraction. The improvement in sentiment in the past months has been even more pronounced in the service sector which has acted as a major driving force in the recovery. In the case of DG ECFIN surveys, the recovery of sentiment began four months earlier in the

Table 1: Euro-area growth components

	02 Q4	03 Q1	03 Q2	03 Q3	Carryover 03 Q3	Autumn 03 forecasts	
						2003	2004
<b>% change on previous quarter, volumes(1)</b>							
GDP	0.0	0.0	-0.1	0.4	0.3	0.4	1.8
Private consumption	0.3	0.5	0.1	0.0	1.1	1.3	1.6
Government consumption	0.2	0.4	0.4	0.5	1.6	1.7	1.3
Gross fixed capital formation	0.3	-1.1	-0.5	-0.5	-1.9	-1.0	2.4
Changes in inventories (% of GDP)	0.0	0.1	0.2	-0.4	0.0	-0.1	0.0
Exports of goods and services	-0.2	-1.5	-0.6	2.2	0.4	-0.1	5.1
Imports of goods and services	0.8	-0.6	-0.2	-0.4	0.8	1.6	5.2
<b>% contribution to change in GDP</b>							
Private consumption	0.2	0.3	0.0	0.0	0.6	0.8	0.9
Government consumption	0.0	0.1	0.1	0.1	0.3	0.3	0.3
Gross fixed capital formation	0.1	-0.2	-0.1	-0.1	-0.4	-0.2	0.5
Changes in inventories	0.1	0.2	0.0	-0.6	0.0	0.1	0.0
Net exports	0.2	-0.8	-0.3	0.8	-0.2	-0.6	0.1

(1) Annual change in % for carryover.

Source : Commission services.

<sup>1</sup> The cut-off date for statistics included in this issue was 12 December 2003.

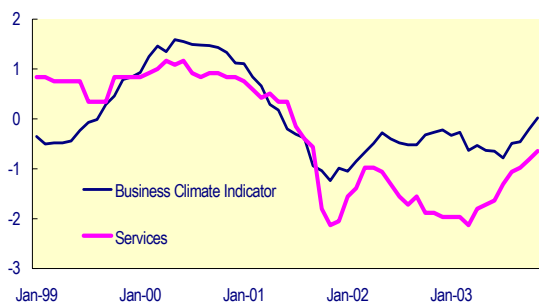
Table 2: Selected euro area and national leading indicators, 2003

	SENT. IND <sup>1)</sup>	BCI <sup>2)</sup>	OECD <sup>3)</sup>	PMI <sup>4)</sup>	Reuters Ser <sup>5)</sup>	IFO <sup>6)</sup>	NBB <sup>7)</sup>	ZEW <sup>8)</sup>
Long-term average	96.2	0.0	2.9	52.2	54.2	98.8	-13.6	43.8
Trough in latest downturn	94.6	-1.2	-3.3	42.9	46.7	89.6	-21.1	-10.4
February 2003	95.1	-0.27	0.5	50.1	48.9	98.4	-10.5	15.0
March 2003	94.6	-0.63	0.3	48.4	47.7	97.3	-17.4	17.7
April 2003	94.7	-0.53	0.1	47.8	47.7	95.1	-20.5	18.4
May 2003	94.8	-0.63	0.9	46.8	47.9	97.4	-18.3	18.7
June 2003	94.8	-0.65	1.9	46.4	48.2	98.8	-26.5	21.3
July 2003	94.7	-0.78	3.1	48.0	50.2	100.4	-19.3	41.9
August 2003	95.0	-0.49	4.2	49.1	52.0	102.3	-14.3	52.5
September 2003	95.3	-0.46	5.8	50.1	53.6	105.3	-14.5	60.9
October 2003	95.5	-0.21	6.7	51.3	56.0	107.9	-10.6	60.3
November 2003	95.9	0.02		52.2	56.5	108.7	-8.8	67.2
December 2003								73.4

1) Economic sentiment indicator, DG ECFIN. 2) Business climate indicator, DG ECFIN. 3) Composite leading indicator, six monthly change. 4) Reuters Purchasing managers index, manufacturing. 5) Reuters Services purchasing manager index. 6) Business expectations, West Germany. 7) National Bank of Belgium indicator for manufacturing. 8) Business expectations of financial market analysts, Germany.

service sector than in the manufacturing sector. Since spring, the increase in confidence – as measured in terms of the series’ standard deviation – has been broadly twice as large for services as for manufacturing. A similar difference has been observed in the case of Reuters manufacturing PMI and service indicators.

Graph 1: Business confidence (1), euro area

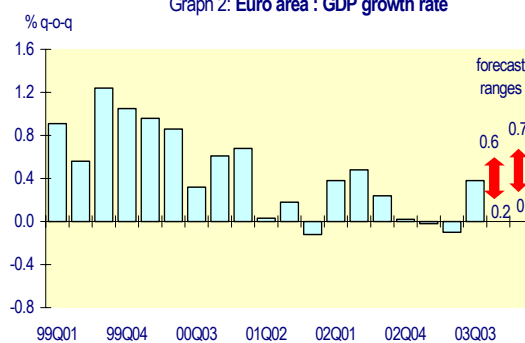


(1) Normalised series.  
Source: Commission services.

Hard data on industrial activity have so far remained somewhat disappointing. Manufacturing output contracted in August and September, with year-on-year growth remaining in negative territory. This partly reflects unfavourable calendar effects but it is also in line with the strong de-stocking reported in national accounts in the third quarter. However, October industrial production data, which are already available for a few Member States, point to a significant pick-up in industrial production in

some countries. Furthermore, industrialists have reported marked improvements in their assessment of recent production trends in business surveys and this should be reflected in production data in the last months of the year. Finally, new orders have sent out signs of a modest upturn over the summer (see Box 1).

Graph 2: Euro area : GDP growth rate



Source: Commission services.

Overall, recent developments in leading indicators are consistent with a continued recovery in the coming months. The indicator-based model for quarterly GDP growth for the euro area, developed by DG ECFIN, forecasts a range of 0.2% to 0.6% for GDP growth in the fourth quarter of 2003. For the first quarter of 2004, the model suggests a range of 0.3% to 0.7%. These short-term projections are in line with the scenario presented in the Commission’s Autumn Economic Forecasts of a return to potential growth around mid-2004.



### **A supportive international environment**

After having contracted during the first half of the year, exports rebounded strongly in the third quarter, increasing by 2.2% (non-annualised q.o.q). Against the background of competitive pressures due to the strengthening of the euro (see section on Macroeconomic policy mix), the turnaround in euro-area exports heralds a sustained recovery in world demand.

During the past two quarters, one of the major driving forces of the world economy has been a solid recovery of the US economy. The latest release of the national accounts surprised on the upside, with US GDP growth exceeding 8% in annualised terms in the third quarter. According to the latest surveys, firms expect a further acceleration of activity over the coming quarters. The US labour market finally started to record employment gains in September and October, an improvement that should underpin consumer confidence.

However, the recovery of the world economy is broad based. In Japan, significant structural imbalances remain, but the growth outlook is improving, supported by better prospects for key export markets as well as renewed strength in domestic demand. Growth expectations for the other East Asian economies have improved as well. Growth in the euro-area's neighbouring countries has also picked up. In the UK, the largest trade partner of the euro area, growth accelerated markedly in the second and the third quarters on the back of an upturn in investment. Growth in the acceding countries is also holding up relatively well.

The strengthening of world demand is also visible in the order books of euro-area companies, suggesting that the upturn in world trade has further bolstered euro-area exports in the last months of 2003. Eurostat's recently released indicator of new orders – available until September – points to a more significant recovery of order books related to the external markets than of those related to the domestic market. New orders from the external market have been on a gentle upward trend since the beginning of 2003 whereas a turnaround in domestic new orders was only registered in the third quarter of the year.

The simultaneous recovery in all major parts of the world will be self-reinforcing and should lead to sustained growth in the world economy in 2004. According to the Commission's Autumn Economic Forecasts, world GDP excluding the euro area will grow by 3.8% in 2003 and accelerate to 4.4% in 2004. World trade growth is projected at 5.7% this year and 8% next year.

### **A slow pick-up in domestic demand**

Domestic demand has so far remained quite sluggish. It declined in the third quarter, posting the fastest rate of contraction since the beginning of the downturn. Demand weakness partly reflects a substantial depletion of inventories. In addition, private consumption and investment have so far failed to show clear signs of recovery. However, despite disappointing recent developments, domestic demand should progressively gather momentum on the back of rising consumer spending in the months to come. The sectoral breakdown of GDP data points to a significant recovery in production in the service sector in the third quarter. Service surveys are also upbeat. As services are not very trade intensive, this suggests that there is more underlying strength in domestic demand than shown in the national account data so far.

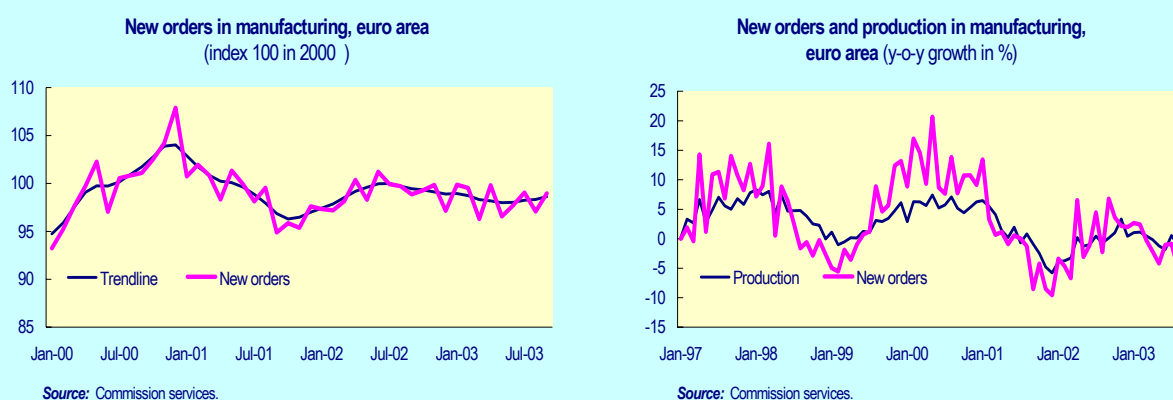
After having been the economy's main driving force during most of the downturn, private consumption has remained flat during the past two quarters. Several forces have weighed on private spending. Purchasing power has been impaired by persistent inflation pressures (see Section 2 on inflation). Employment growth has been broadly flat since the second half of 2002. Last but not least, recent setbacks with the EU's fiscal framework may have weighed on consumer confidence in some Member States.

However, determinants of consumption are progressively turning more supportive:

- inflation should resume a downward course as the strong euro feeds further into consumer prices and unit labour cost pressures ease on the back of a recovery of productivity;
- household sentiment is improving slowly on the back of receding worries on employment;

**Box 1: An indicator of new orders for the euro area**

In November, Eurostat began publishing an index of industrial new orders for the euro area. The index includes new orders for export as well as domestic markets. It covers all manufacturing industries ‘working on orders’ (i.e. textile, chemicals, basic metals and fabricated metal products, machinery and equipment, electrical and electronic equipment, transport equipment and pulp, paper and paper products). These sectors account for more than 60% of manufacturing production in the euro area. The index is available with a two month lag similar to industrial production data. Hence, the November release presents data up to September. The indicator has recently posted some signs of improvement. In September, year-on-year growth in new orders moved into positive territory for the first time since February. As is frequently the case with statistics related to new orders, the series shows substantial volatility but a moderate upturn is also noticeable when looking at the more stable quarterly averages: after 4 quarters of decline, new orders increased marginally during the three months to September. The indicator’s trendline (as calculated by Eurostat) has also shown a slight upturn since June. Overall, new orders have recently been sending out somewhat more positive signals than industrial production which kept on contracting over the summer and has not posted any change in trend so far.



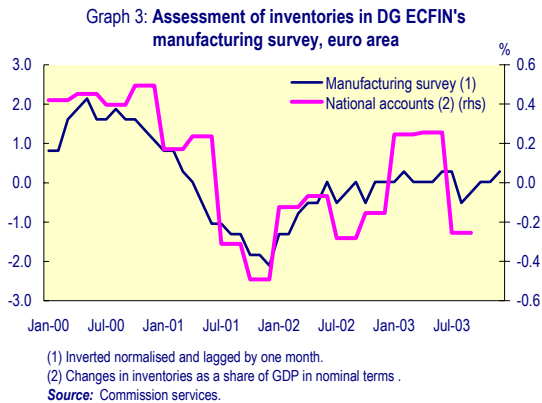
Nevertheless, some prudence is warranted when interpreting this new indicator. With data only available back to 1996, the quality of the series is difficult to assess. Over this short sample, new orders are closely correlated with industrial production (contemporaneous correlation with industrial growth is very high, at above 80%). However, they show no strong leading properties with respect to production or investment. Based on correlation analysis, new orders are more closely linked to gross fixed capital formation than to GDP. The series can be used to improve the short-term forecasting of investment but it is slightly inferior to industrial production in that respect.

- interest rates are at historically low levels;
- stock prices have been on an upward trend since April.

Corporate spending as reflected in inventories and investment has so far remained quite weak. After a moderate expansion during the first half of the year, inventories contracted again in the third quarter, curtailing GDP growth by more than half a percentage point. This negative contribution is somewhat at odds with recent developments in manufacturing surveys. The indicator measuring manufacturers’ assessment of inventories increased somewhat in July/August, suggesting that the level of stocks was then judged slightly too high, before

improving again between September and November. However, the size of the inventory draw-down in the third quarter is above what would be warranted on the basis of manufacturing surveys (see Graph 3). To a certain extent, it may reflect a correction to an excessive inventory build-up during the first half of the year. The inventory contraction was probably also partly involuntary, reflecting stronger external demand pressures than expected by manufacturers. This would be in line with the observed sluggish growth in manufacturing production in the third quarter and heralds a positive contribution of inventories to GDP growth in the fourth quarter.





Recent developments on investment are no more upbeat. Gross fixed capital formation has been contracting steadily since the beginning of the year. Investment is currently subject to conflicting forces.

On the one hand, activity is picking up, business confidence is improving, financial conditions are supportive and there are indirect signs that balance sheet pressures have eased (as reported in the previous issue of this report).

On the other hand, the level of indebtedness of the corporate sector remains high by historical standards. Even if the corresponding burden in terms of interest payment remains sustainable due to low interest rates, further sharp rises in debt appear unlikely in the short term. Furthermore, the adjustment of the corporate sector to the downturn in terms of debt and productivity has been rather slow, particularly when compared with what has been observed in the USA (see Section 3). After some improvements in 2002, productivity has remained flat in the past three quarters and modest tensions on profitability have resurfaced.

Overall, this suggests that the investment recovery will only be gradual in the euro area. It is, however, encouraging to note that new orders of capital goods, which had remained on a downward course since mid-2002, increased again during the summer.

## Short-term risks appear balanced

Risks to the short-term outlook now appear relatively balanced.

Some upside risks are attached to the ongoing world recovery. A simultaneous upturn in all major parts of the world could have self-reinforcing effects and translate into a stronger acceleration of world demand than envisaged. On the domestic side, there is some indication of pent-up demand that could lead to a strong revival of consumer spending.

Downside risks are related to both the external and the domestic sector. Although past euro-area recoveries have generally been driven by exports in their early stages, the recent renewed bout of weakness of the dollar, with the dollar-euro exchange rate climbing above 1.20, underlines the risks attached to this scenario.

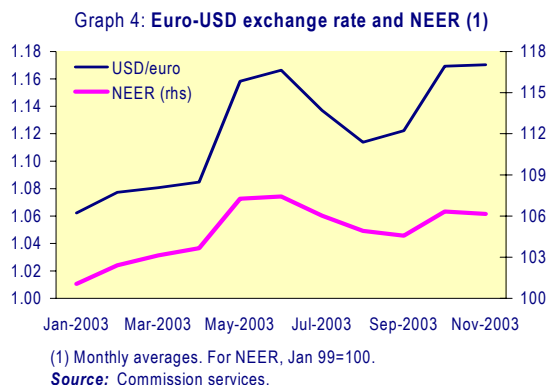
Regarding the domestic sector, the anticipated pick-up of domestic demand requires strong consumer and business confidence. In this respect, recent setbacks with the EU's fiscal framework cast a shadow on forthcoming improvements in sentiment. Failure to pursue structural reforms in order to raise employment rates and productivity could also weigh on confidence and spending.

## Macroeconomic policy mix

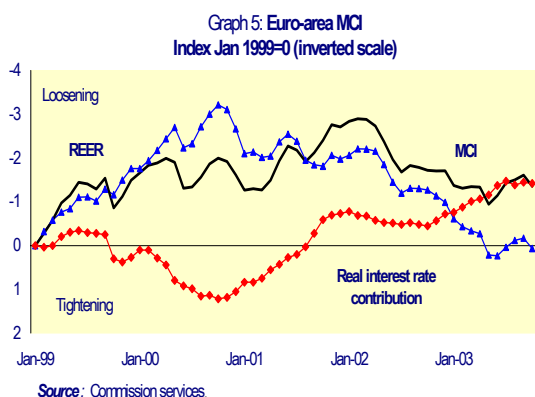
### *Monetary conditions*

After a short interruption over the summer, the euro exchange rate has continued to strengthen against the dollar. By the end of November it exceeded 1.20 for the first time in its history. Against the background of a resurgence of fears related to the twin deficits, financial markets are increasingly concerned about the continued dependence of the USA on external financing. Early December, the euro had gained 16% against the US dollar relative to the beginning of the year. However, in nominal effective terms, the appreciation was only 8%. Furthermore, the nominal effective exchange rate of the euro remained below the 2003 peak reached end of May while its real effective exchange rate was only slightly above the long-term average. Overall, while the appreciation of the euro is

having a negative impact on the price competitiveness of the euro-area export and import competing industries, it also supports domestic demand thanks to improved terms of trade and lower inflation.



Nominal short-term interest rates have been fairly stable since June. In November, the 3-month rate (nominal) was around 15 basis points higher than ECB's minimum bid rate, which has been unchanged at 2% since 6 June 2003.



Since June, short-term real interest rates have also remained fairly stable, but as a result of the real effective appreciation of the euro, monetary conditions as measured by the MCI index<sup>2</sup> became somewhat tighter in October (last available month). However, the MCI suggests that monetary conditions were not less loose in October than at the beginning of the year (see Graph 5).

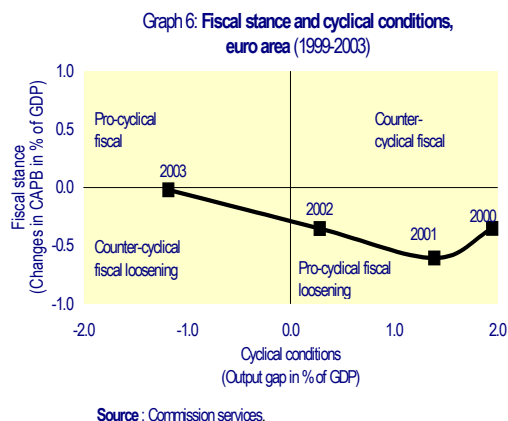
<sup>2</sup> The MCI tries to capture the combined impact on economic activity of changes in the real effective exchange rate and the real short-term interest rate.

After a strong surge since mid-June, long-term interest rates started to decrease again during September. Since then, rates have renewed their upward trend probably due to upward revisions of growth and inflation expectations for both the US and the euro area. Government bond yields have now edged up to their highest level in 2003, but seen in a historical and cyclical perspective remain quite low. Throughout 2003, spreads between government and corporate bonds continued to decline reaching pre-2000 levels by the end of November. The steady decrease in corporate spreads has partly offset the upward movement on long rates observed in the past two months.

Against the background of indications of a global economic recovery, stock markets recovered in the spring and the summer from the low level reached in March just before the outbreak of the Iraq-war. Compared to March, stock market indices for the euro area show an increase of almost 30% indicating improved financing conditions for the corporate sector.

*Budgetary developments*

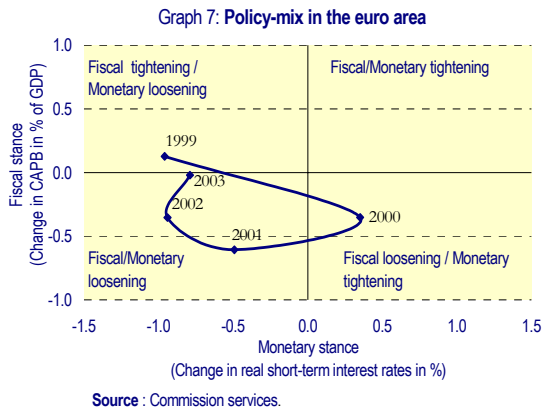
This year, the budgetary situation in the euro area has further deteriorated. According to the Commission's Autumn Economic Forecasts, the budget deficit in the euro area is expected to be 2.8% of GDP, which is 0.6% higher than in 2002. The deterioration is mainly explained by the weak economic situation and reflects the working of automatic stabilizers.



After a fiscal loosening in the period 2000-2002, the aggregate fiscal stance for the euro area remained broadly neutral in 2003 (Graph 6). The



neutral fiscal stance, measured by the change in the cyclically-adjusted primary balance, implies that no further budgetary consolidation was made.



Graph 7 illustrates the overall policy mix in the euro area. While the monetary stance, approximated by the change in short-term real interest rates, has been accommodative in recent years, the fiscal stance has changed from accommodative to neutral.

Looking ahead to 2004, the Commission's Autumn 2003 Economic Forecasts anticipate a slight improvement in the average euro-area budget deficit to 2.7% of GDP. Measured by cyclically-adjusted figures, the improvement is similar with a decrease of 0.2 percentage points to 2.1% of GDP in 2004.

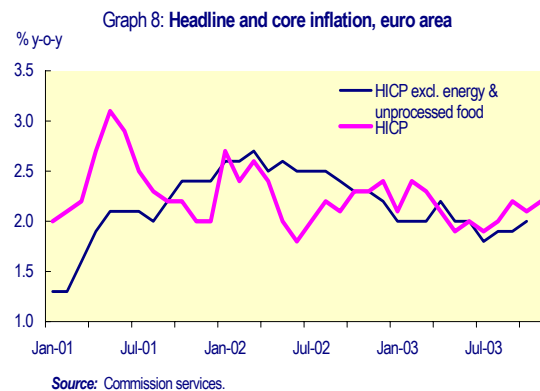
## 2. Price stickiness in the euro area

One of the main features of recent developments in euro-area inflation has been a certain stickiness in the face of sluggish economic activity and the appreciation of the euro exchange rate. While both factors should have exerted sizeable downward pressure on prices, consumer price inflation continued to hover at a level of around 2% year-on-year throughout 2003. It slowed to 1.8% in May, which was the lowest level for three years time, but has accelerated again since then. According to Eurostat's flash estimate, headline inflation stood at 2.2% (year-on-year) in November 2003.

*Temporary factors have helped to keep inflation above 2%. New rises in oil prices, weather-related increases in food prices and increases in indirect*

taxes have been important factors in explaining the resilience of inflation so far this year.

- Due to renewed increases in oil prices and a temporary weakening of the euro exchange rate, energy inflation accelerated over the summer. Since September, falling oil prices and the renewed strength of the euro have caused a marked deceleration in the contribution of this component to inflation.
- The exceptionally warm weather conditions in some Member States last summer resulted in price hikes in fruit and vegetables. There are indications that the inflationary pressures from the damage to harvests over the summer are likely to continue feeding inflation.
- Indirect tax increases in some Member States pushed up inflation. For instance, inflation in tobacco has been running at over 7.5% for most of the year. Announced measures regarding indirect taxes on tobacco by some Member States suggest further inflationary impulses from this source in the coming months.<sup>3</sup>

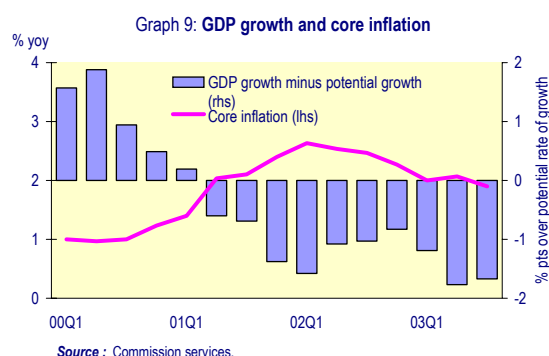


*But developments in core inflation show that more lasting factors are also to blame.* In view of the subdued demand conditions, developments in core inflation (HICP excluding energy and unprocessed food) have disappointed. Although core inflation slowed to 1.8% in July 2003, the lowest rate in close to 2½ years, it was back at 2.0% in October 2003.

<sup>3</sup> Moreover, the announced health care reform in Germany is estimated to cause a base effect in the rate of inflation of about 0.5 percentage point in Germany in 2004, which would mechanically add 0.1 to 0.2 to the euro-area rate of inflation.

- The recent stickiness of core inflation can partly be attributed to relatively high inflation in services. After the lowest rate of service inflation in over two years was recorded at 2.3% in July 2003, service inflation picked up again in September 2003 and has remained at a level of 2.5% since then.
- After a continuous decline throughout 2002, consumer price inflation in non-energy industrial goods did not ease further in 2003, but stabilised at a level of 0.8%. This is just below the five year average for this component, suggesting that inflation in non-energy industrial goods has not yet fully reacted to the impact of weak demand conditions and the appreciation of the euro.

*Inflation has shown little cyclical sensitivity in the current downturn.* All other things being equal, standard macroeconomic theory postulates that when real GDP growth falls below potential there are downward pressures on inflation in the economy. However, the recent experience suggests that consumer price inflation is relatively resistant to subdued demand. As can be seen in the next graph, core HICP inflation stabilised four quarters after real GDP growth fell for the first time below the potential rate in 2001Q2 and started slowing four quarters later.

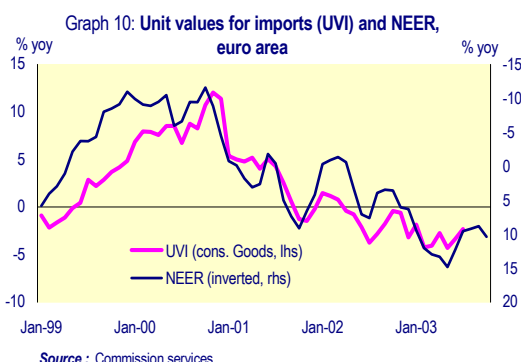


*Limited cyclical sensitivity can partly be related to labour cost developments.* Nominal growth in labour costs (including wage and non-wage labour costs) has remained in a narrow range around 2<sup>3</sup>/<sub>4</sub>% in year-on-year terms since the beginning of the downturn. As a result, fluctuations in the growth of unit labour costs in recent years have essentially mirrored changes in productivity.

With labour productivity showing a marked cyclical slowdown, nominal unit labour costs increased significantly in 2001 and at the beginning of 2002. After showing some sign of easing during the course of 2002, unit labour costs picked up again during the first half of 2003 on the back of another slowdown in productivity. In the second quarter of 2003, year-on-year growth in unit labour cost was back at 2.5%, against 1.5% at the end of 2002.

It is worth stressing that measures of total labour cost (i.e. the sum of wage and non-wage labour costs) fail to give the full picture. There is some evidence that wage moderation has been more significant in the euro area than suggested by total labour cost numbers but this wage moderation has been partially offset by policy increases in non-wage labour costs. For instance, DG ECFIN's wage indicator (mostly based on hourly earnings) suggests that wage growth has slowed somewhat in the euro area in 2003 compared to 2002. Since the first quarter of 2002, growth of hourly non-wage labour costs has consistently exceeded that of wage labour costs, with the difference averaging 0.5% points.

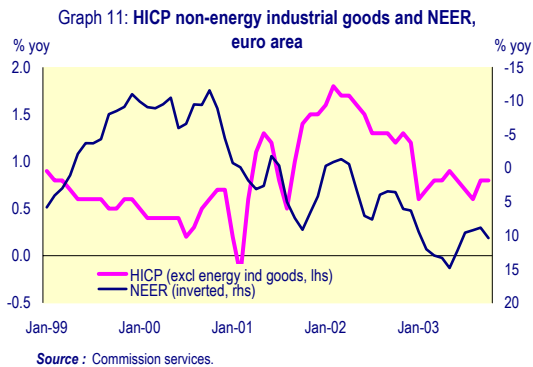
*The full pass-through of the exchange rate appreciation is still awaited.* Late November/early December, the USD/EUR exchange rate had exceeded the 1.20 level, an appreciation of about 30% relative to its average value of 0.92 for the 1999-02 period. The sharp strengthening of the euro since 2002 has fuelled expectations of downward pressures on inflation via subdued import prices.



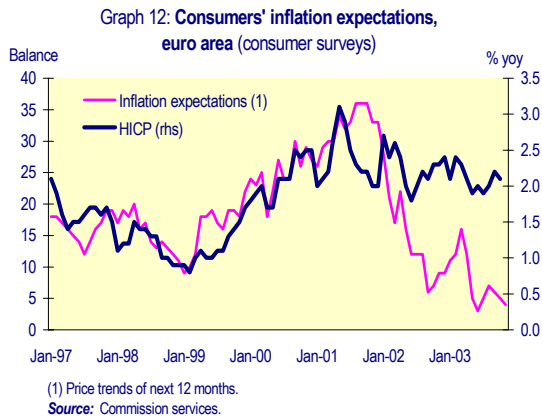
Existing empirical research shows that, while import prices are quickly affected by changes in the NEER (nominal effective exchange rate), it usually takes more time for them to feed through



to consumer and producer prices. For import prices it appears that between 20-50% of the total effect of a NEER change unfolds on impact, with the remaining percentage spread over 3-8 quarters. As far as consumer/producer prices are concerned however, the impact effect is virtually meaningless. Time lags of up to 1 1/2 to 2 years seem to be needed for the latter to effectively respond, with consumer prices taking a further quarter more.<sup>4</sup>



Comparing recent price developments with the evidence on lag structures from recent research studies, it seems that much of the effect of the earlier appreciation of the euro has already been passed on to import prices. However, it is likely that the full impact on consumer prices has not yet materialised. Accordingly, further downward pressures on prices are expected from this source in the months to come.



<sup>4</sup> For a review of recent empirical studies, see European Commission (2003) "The EU Economy 2003 Review", European Economy No 6, Chapter 1, Box 3.

*Inflation will decelerate only gradually over the coming months.* Overall, the recent stickiness of inflation reflects temporary factors but also some labour cost pressures and a slow pass-through of the euro appreciation into consumer prices. Further pass-through effects from the strong euro and a cyclical pick-up in productivity will dampen price pressures in the months to come, translating into a gradual decline of inflation. In addition, short-term inflation expectations as measured by consumer surveys have come down again since spring and are quite low by historical standards. On a more negative note, the long-term inflation expectations of financial markets as measured by index-linked bonds have shown an increase in recent months. This may be due to technical factors but warrants close monitoring. Furthermore, increases in administered prices, further rises in indirect taxes and weather-related price pressures in the food sector could slow the disinflation process in the coming months.

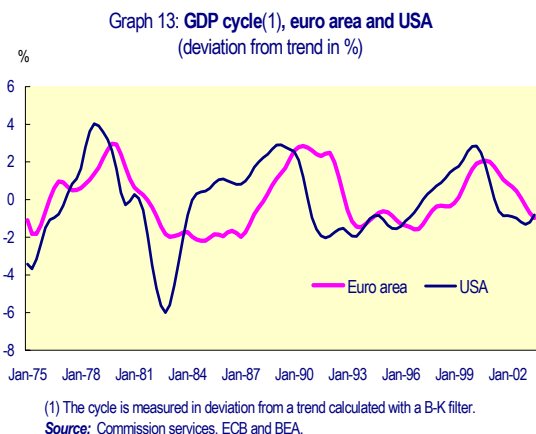
### 3. Business cycle linkages between the euro area and the USA

Against the background of improving hard and soft data in the euro area, the sharp pick-up in US growth in the past two quarters has reinforced expectations of a solid upturn in the euro area. However, the implications of the US recovery for the euro area will depend on the nature of the prevailing cyclical linkages between the two regions. This section sheds some light on these linkages. In particular, it endeavours to disentangle the respective roles of trade and financial linkages from common shocks in explaining the recent strong synchronisation of the euro-area and US business cycles.

#### A high degree of cyclical synchronisation since the late 1990s

Comparisons of cyclical fluctuations based on GDP growth are complicated by the fact that quarterly growth is relatively volatile and has been subject to changes in trends over the past decades both in the euro area and the USA. A way to avoid these shortcomings is to analyse the business cycle based on de-trended data. Graph 13 (next page) displays the output gap over 1975-03 as estimated with a Baxter-King

(BK) filter.<sup>5</sup> Over the past three decades, the two series have posted a significant degree of co-movement, with a clear lead for the US cycle.

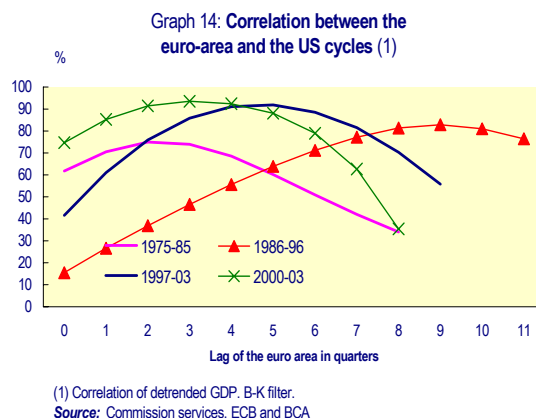


On average, the US cycle led the euro-area cycle by 4 quarters for an overall correlation of about 65% over the past three decades. However, the average picture conceals large differences depending on the sub-periods considered. Graph 14 displays the correlation between detrended GDP in the euro area and the US for three periods corresponding broadly to the last three euro-area cycles (1975-85, 1986-96 and 1997-03<sup>6</sup>). In addition, it also shows the correlation for the period since the last cyclical peak (2000-03). For all periods, the correlation is calculated for various lags of the euro-area economy.

In the current cycle (1997-03) the highest correlation of output gaps is reached when the euro area is lagged by 4-5 quarters. This is quite short compared with the 1986-96 period during which the euro-area cycle was lagging the US cycle by more than two years. Shorter lags (2-3 quarters) were registered during the 1975-85 period but the current cycle is characterised by a combination of short lags and high correlation, which has not been matched in the past three decades.

<sup>5</sup> An advantage of the BK filter is that it filters both the trend and the fluctuations at high frequencies (1 to 6 quarters) which are unrelated to the cycle, thereby resulting in a smooth measure of the cycle.

<sup>6</sup> There is an inevitable degree of arbitrariness in the choice of the periods corresponding to the three cycles. The rule adopted here was to choose the beginning of a clear phase of recovery as the starting point of a cycle.



Two explanations may be ventured for the high degree of synchronisation between the USA and the euro area in recent years. On the one hand, synchronisation may be the consequence of increased trade and financial linkages between the two regions. Increased linkages facilitate the transmission of economic impulses across borders and the associated cyclical synchronisation should then be part of a lasting convergence pattern. On the other hand, recent cyclical synchronisation may reflect the fact that both regions have been hit by common shocks. In that case, cyclical convergence could be considered as somewhat “accidental”, leaving open the possibility of episodes of substantial cyclical disconnection between the two regions in the future. These two possible explanations, which are of course not mutually exclusive, are discussed in turn in the next two sub-sections.

**Transmission channels have become more potent in recent years**

Cyclical impulses may be transmitted from one country to another via three major and largely interrelated channels: trade linkages, financial (and corporate) linkages and confidence spillovers.<sup>7</sup>

*Trade linkages.* The USA is one of the major trading partners of the euro area. It accounts for about 17% of extra-euro-area exports in the case of goods and above 25% in the case of services. However, with exports of goods and services to

<sup>7</sup> For a comprehensive discussion of international linkages see European Commission (2001) “The EU Economy 2001 Review”, European Economy No. 73, pp 30-42.



Table 3: Main trade partners of the euro area

	Goods (2002)		Services (2001)	
	Exports	Imports	Exports	Imports
Total extra-EU12 trade in bn euro	1080	983	316	314
<b>Main partners (share in %)</b>				
EU excluding euro area	24.7	21.1	31.0	26.1
Other Europe	25.4	26.3	19.0	20.0
USA	16.9	12.8	25.8	28.9
America excl. USA	6.1	5.5	5.5	5.6
Japan	3.0	5.4	3.8	2.6
Asia excl. Japan	15.8	20.8	7.7	9.5
Africa	5.5	7.0	4.5	5.2

Source: Commission services.

the USA representing about 4% of euro-area GDP, the direct impact of fluctuations of US demand on euro-area activity is relatively small.

Direct trade linkages with the USA are, however, amplified by indirect linkages due to the fact that the US is an important destination for many trade partners of the euro area, most notably the UK but also Asia and Latin America. Indirect trade linkages are difficult to measure but, according to some estimates, they may add substantially to the effect of direct linkages. Hence, INSEE reckons that indirect trade effects may multiply the original impact of a change in US imports on euro-area exports by about 2 to 3. These effects would only come to be felt progressively and fully over a longer period of time than direct effects.<sup>8</sup>

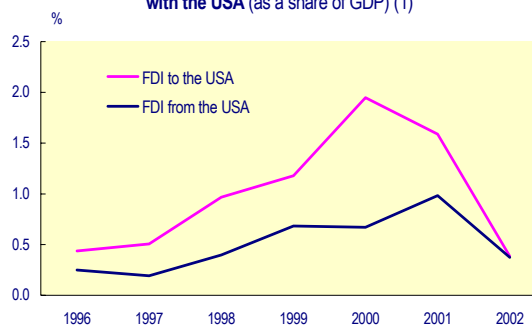
In any event, trade integration between the USA and the euro area increased rapidly over the 1990s suggesting that this transmission channel has gained in importance. Since the mid-1990s, euro-area exports of goods to the USA have increased by more than 80% in real terms and 140% in nominal terms. Over the same period, real GDP has expanded by about 15%.

*Financial and corporate linkages.* Financial integration is another important source of international transmission of economic shocks. To the extent that it encourages the cross-border diversification of portfolios and closer co-movements of the prices of financial assets,

financial integration facilitates the international synchronisation of wealth effects and private consumption. Closer co-movements of asset prices also lead to convergence in capital costs and investment. Finally, financial integration also facilitates cross-border merger and acquisition activity and thereby cross-border corporate linkages.

In recent years, the rise in financial linkages between the USA and the euro area has been particularly clear when looking at foreign direct investment (Graph 15). FDI from and, above all, to the USA surged in the late 1990s, leading to a significant intensification of corporate linkages between the two regions.

Graph 15: Euro-area foreign direct investment with the USA (as a share of GDP) (1)



(1) Preliminary data for 2002.

Source: Commission services.

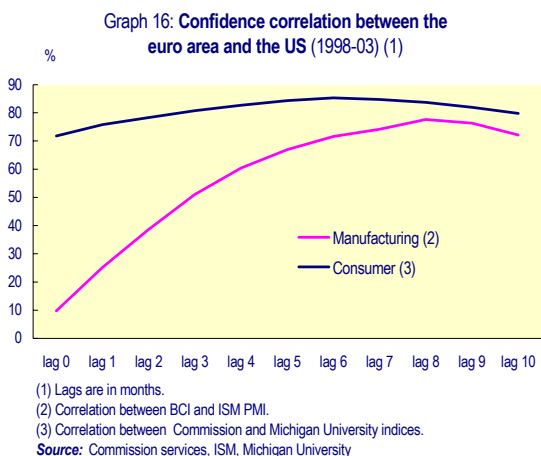
There is also evidence of a rising correlation of returns on equity assets in the USA and other developed countries.<sup>9</sup> Finally, there are signs that

<sup>8</sup> Institut national de la statistique et des études économiques (INSEE), *Conjoncture in France*, March 2001, p 7-8.

<sup>9</sup> See Brooks and Del Negro (2003), 'Firm-level evidence on international stock market comovement', IMF Working Paper WP/03/55.

corporate bond markets have been a substantial vector of contagion in the corporate sector in the current downturn. Hence, the correlation of spreads on corporate bonds between the euro area and the USA has been very high in the downturn. Based on daily data it has exceeded 96% since summer 2001 for BBB-rated bonds. The Enron and Worldcom scandals in the USA have led to sharp and simultaneous revisions of risk assessments and spreads on both sides of the Atlantic.

*Confidence spillovers.* In practice, confidence contagion effects are difficult to disentangle from trade and financial linkages. In particular, increased cross-border linkages between companies are likely to be a major source of spillovers in business confidence. In fact, the analysis of confidence indicators points to possible strong confidence contagion effects in the corporate sector. In the current cycle, the USA has been leading the euro area in terms of consumer and business sentiment by 6 and 8 months, respectively. However, correlations for the two types of confidence show very different patterns (Graph 16).



In the case of consumer sentiment, contemporaneous correlation is very high and correlation increases only moderately for lagged values of the euro-area indicator. This points to common shocks as the most likely explanation of observed co-movements in consumer confidence. Confidence spillovers are indeed likely to be transmitted with some delays and are

not, on the face of it, expected to be very strong for consumers.

In the case of business confidence, contemporaneous correlation is close to zero but correlation increases rapidly when the euro area is lagged. Such a pattern is a-priori consistent with contagion effects. This interpretation is further supported by the observation that the correlation of business confidence between the euro area and the USA has been quite stable since the mid-1990s. In contrast, the correlation of consumer confidence has been more volatile, suggesting that several common shocks have temporarily forced a higher degree of synchronisation between the euro area and the USA.

**Common shocks have also bolstered cyclical convergence since the late 1990s**

Since the late 1990s, the euro area and the USA have been hit simultaneously by large fluctuations in oil prices, the forming and the bursting of an equity bubble, sharp changes in risk premiums on lending to the corporate sector, several confidence shocks – September 11, the Iraq war – and a severe slump in world trade. These common shocks have increased the synchronisation of the business cycles of the two regions.<sup>10</sup>

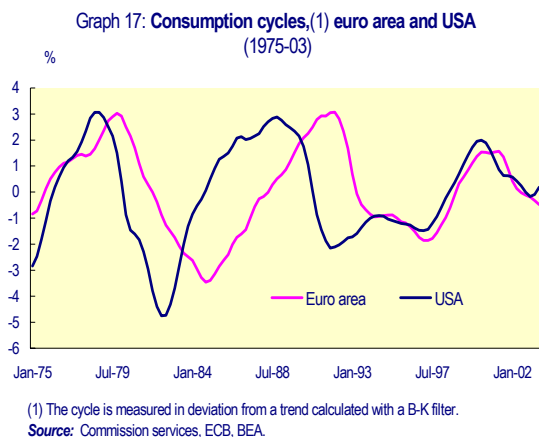
*The high degree of synchronisation of consumption cycles reflects the importance of common shocks.* A striking feature of the recent cyclical convergence between the euro area and the USA is that it has come with a high degree of synchronisation of consumption in the two regions (Graph 17 on next page). Since the late 1990s, the correlation of the consumption cycles has been about 98% for a lag of the euro area relative to the USA not exceeding 1 quarter. Hence, the correlation has been significantly higher and the lag considerably smaller than in the case of GDP. Such a degree of synchronisation of consumption is very high by historical standards and even significantly higher than what was registered in the late 1970s

<sup>10</sup> In some cases, it is difficult to make a clear distinction between a common shock and a shock hitting one country and then transmitted rapidly to another via contagion effects. Hence, September 11 is considered here as a common shock but might also be interpreted as an example of confidence contagion.





when cyclical fluctuations in the two regions were dominated by common oil shocks.



In theory, the synchronisation of consumption cycles could result from the integration of financial markets, via the international diversification of portfolios and increasing co-movements in asset prices. In practice, this is rather unlikely insofar as empirical studies continue to point to large differences in the impact of asset prices on private spending in the USA and in Europe. The observed synchronisation of consumption cycles is likely to be primarily a consequence of the succession of common shocks that have hit household spending in the euro area as well as in the USA since the late 1990s. This conclusion is substantiated by the relative instability of the correlation of consumer confidence between the two regions.

*Co-movements in investment reflect both common shocks and contagion effects.* The picture is somewhat different when looking at the investment cycle. Table 4 displays the maximum cyclical correlation between the euro area and the USA for various GDP components in the present cycle and its 1987-96 predecessor.<sup>11</sup> As shown in the table, the synchronisation of the investment cycles has increased substantially in the current cycle relative to its 1987-96 predecessor. In recent years, the correlation of the investment cycles has been very high and only slightly lower than for consumption. However, the average lag

<sup>11</sup> US data for investment and inventories are not available separately prior to 1987 so that comparisons with earlier cycles are unfortunately impossible.

of 4 quarters of the euro area relative to the USA has been significantly larger than in the case of household spending.

Table 4: Cyclical correlation (1) between the euro area and the USA (in %)

	1987-96	1997-03
Main GDP components <i>(relative to same US GDP component)</i>		
GDP	85 (8)	92 (5)
Consumption	91 (11)	98 (1)
Investment	53 (8)	96 (4)
Inventories	50 (4)	87 (1)
Extra euro-area trade <i>(relative to US imports)</i>		
Extra-EU 12 exports	71 (1)	47 (2)
Exports to the US	84 (0)	86 (2)

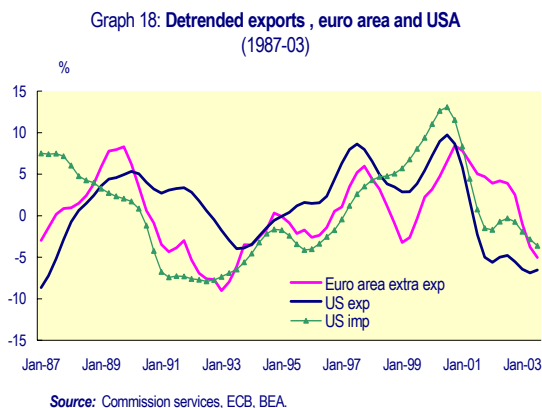
(1) Highest correlation based on a B-K filter. Numbers within brackets are the lead of the USA in quarters for which this maximum correlation is reached.

Source: Commission services.

Although common shocks, such as sharp fluctuations in equity prices and risk premiums or confidence shocks, are likely to have played an important role in the synchronisation of investment cycles, observed lags are also consistent with spillover effects linked to corporate linkages from the USA to the euro area. For instance, profit losses incurred on the US market may have induced international companies to curtail investment in the euro area as well as in the USA. This effect must have gained in importance in the past years due to the surge in FDI between the euro area and the USA (see Graph 15). Strong spillover effects in the investment cycle would also be in line with the contagion effect for business confidence mentioned before.

*Comovements in trade have been affected by exchange rate fluctuations.* The correlation between extra euro-area exports and US imports has decreased significantly in the current cycle relative to 1987-96 and has been far lower than in the case of private consumption and investment. This essentially reflects the impact of the Asian crisis on euro-area exports and large fluctuations in exchange rates. Whereas the initial weakening of the euro has accentuated trade spillovers from the US at the peak of the cycle and in the early stages of the downturn, its appreciation last year

has probably dampened the trade transmission channel in the past quarters.



### Reverse linkages are still limited

Finally, a word should be said about reverse trade linkages, namely the impact of activity in the euro area on activity in the USA. It should be noted that the contemporaneous correlation between de-trended US exports and euro-area imports has been rather stable at about 60-70% over the past two cycles. This is consistent with a non-negligible impact of activity in the euro area on US exports. However, the correlation with US exports drops rapidly for lagged values of euro-area imports. This suggests that, contrary to the trade transmission from the USA to the euro area, indirect trade linkages from the euro area to the US may be limited.

Overall, co-movements between US GDP and lagged values of euro-area GDP are negligible, leaving little room for significant spillover effects from the euro area to the USA apart from the relatively small direct trade effect. US exports to the euro area represent only about 2% of US GDP (compared with 4% of euro-area GDP in the case of euro-area exports to the USA). This reflects the fact that the USA is a more closed economy than the euro area and that the euro area is a relatively small export market for the USA, specifically when compared to Asia and NAFTA.

### Implications for the ongoing euro-area recovery

The analysis presented here suggests that, although cyclical transmission channels between the euro area and the USA have become more potent in recent years, the very high degree of cyclical synchronisation reached in the current cycle also owes much to the fact that the two regions have been hit by a succession of common shocks. In this regard, the ongoing US recovery is a positive signal for the euro area both because it heralds increased activity via trade and corporate linkages and because it marks the progressive unwinding of forceful negative shocks.

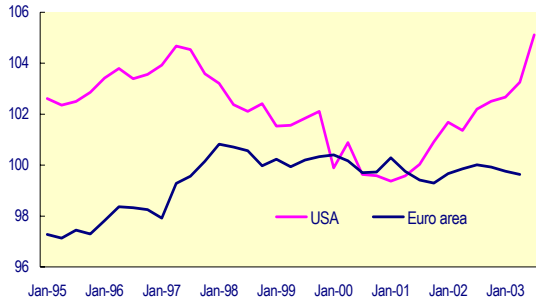
However, common shocks may have asymmetric effects and the strength of the nascent euro-area recovery will also depend on the speed with which the economy absorbs past disturbances. In this respect, a striking feature of the current cycle is that, although activity in the euro area and the USA was highly synchronised at the peak of the cycle for most GDP components (investment, which peaked two quarters earlier in the USA, is the only exception), the US economy has emerged from the downturn clearly more rapidly than the euro area. In a context of common shocks, the cyclical lag of the euro area around the upturn could be explained by lower resilience to shocks. The US economy being more flexible than its euro-area counterpart, its response to shocks is notably faster. This means a sharper and more rapid downturn and also an earlier and faster recovery. In the current downturn, annual per capita GDP growth in the USA turned negative in 2001 before picking-up again already in 2002-03. In the euro area, per capita GDP growth has decelerated much more progressively since 2000, reaching near stagnation only in 2003. Differences between the USA and the euro area in terms of response to the latest downturn are particularly striking in the corporate sector. As illustrated in the next two graphs, de-leveraging and improvements in profitability have both been more pronounced in the USA than in the euro area in the past two years. The flip-side of the stronger corporate adjustment in the USA has been sharper cuts in investment and employment during the downturn. However, there has been a clear



recovery of corporate investment in the USA since the second quarter of 2003. In contrast, signs on an upturn in investment remain limited in the euro area.

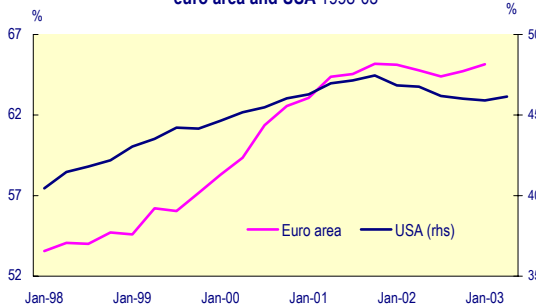
Overall, although the sharp pick-up of growth in the USA in the past two quarters is a positive signal for the euro area, its impact on the euro-area recovery should not be overestimated as the strength and the timing of the euro-area recovery will also depend on the speed with which the economy absorbs past shocks. In addition, trade spillover effects from the USA to the euro area are likely to be somewhat dampened by the euro's appreciation. Finally, it is important to stress that, if the high level of cyclical synchronisation between the euro area and the USA in the current cycle partly reflects common shocks, episodes of significant cyclical disconnection between the two regions remain a possibility in the future.

Graph 19 : Profit margins,(1) euro area and USA  
1995-03 (index 2000=100)



(1) Inverted real unit labour costs.  
Source: Commission services, BEA.

Graph 20 : Corporate debt as a share of GDP,(1)  
euro area and USA 1998-03



(1) Non-financial corporations. Data for the euro area and the USA come from different sources and are not fully harmonised.  
Source: Commission services, BEA, Federal Reserve Board.

## Focus

### II. Slow productivity growth in the euro area: causes and possible remedies

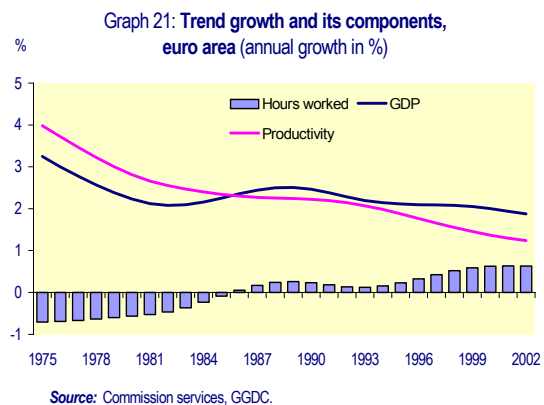
*This focus section analyses the causes of the productivity slowdown in the euro area and identifies areas for policy action. Its main conclusion is that several factors have to be taken into account to understand the disappointing productivity performance registered in recent years. ICT has contributed positively to productivity in the euro area since the mid-1990s but this contribution has been much lower than in the USA, mainly due to a slower diffusion of ICT and difficulties in exploiting its full benefits. However, if ICT can partly explain diverging trends in the euro area and the USA in recent years, it cannot account for the observed deceleration of productivity growth in the euro area. This deceleration reflects the combination of a downward trend in non-ICT investment rates and a worrying slowdown of technical progress. It can partly be attributed to the upward shift in the employment content of growth observed in recent years but this effect only accounts for a quarter of the overall productivity slowdown and will be transitory. Research suggests that five other areas are at the heart of the sluggish performance in the euro area, namely the level of regulation, the structure of financial markets, the degree of product market integration, the size of knowledge investment and the ageing of the labour force. Further and rapid progress is needed in the first four of them in the context of the Lisbon reform agenda.*

#### 1. Recent developments in growth and labour productivity<sup>12</sup>

Over the past two decades, trend GDP growth<sup>13</sup> in the euro area has fluctuated within a band of about 2-2.5%, climbing from 2.2% to 2.5% in the 1980s before falling progressively from the early 1990s onwards to reach 1.9% in 2003. These overall fluctuations conceal quite substantial changes when disentangling the respective contributions to growth of labour utilisation and labour productivity. In particular, trends for labour utilisation and productivity have both been altered dramatically over the second half of the 1990s.

- After several decades of negative or zero contribution of labour to growth, the 1990s saw a progressive increase in labour input in the euro area. The pick-up was particularly important during the second half of the 1990s and employment has proved quite resilient in the current downturn.
- Unfortunately, the strong recovery which took place in terms of the utilisation of labour was

accompanied by negative developments in terms of labour productivity.<sup>14</sup> After more than a decade of relative stability, trend labour productivity growth began to decelerate during the first half of the 1990s. In 2002, it was about 1 percentage point lower than a decade earlier.

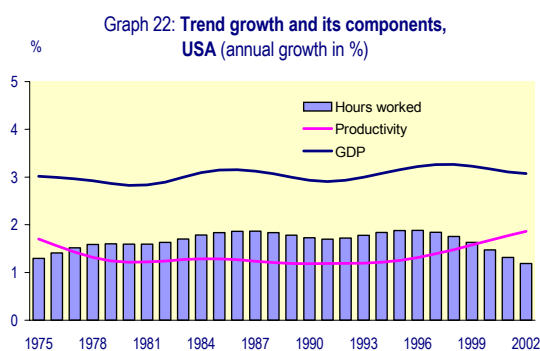


The recent productivity performance in the euro area stands in sharp contrast with developments in the USA where growth in labour productivity accelerated during the course of the 1990s. For the first time in decades, productivity growth in the euro area is now lower than in the USA.

<sup>12</sup> This focus is based on an analysis carried out in DG ECFIN and first presented in the chapter 'Drivers of productivity growth' of the 'The EU Economy: 2003 Review'.

<sup>13</sup> All trends presented in this section are calculated with a Hodrick-Prescott filter.

<sup>14</sup> Productivity estimates in this section are based on hours worked rather than the total number of jobs. For data availability reasons, annual hours worked were taken from the 'Groningen Growth and Development Centre and Conference Board Database' rather than Eurostat.



Source: Commission services, GGDC.

The slowdown in productivity in the euro area is worrying on several accounts. First, it marks a reversal of the convergence process towards US standards of living observed during most of the post World War II period. Second, the euro area was, until recently, able to maintain relatively high income growth due to its superior productivity performance. The strong employment growth registered since the mid-1990s is a consequence of the return to a healthier rate of utilisation of the labour force and is therefore bound to boost growth only temporarily. Finally, looking towards the medium term, it is only a matter of a few years before the negative effects of ageing populations really start to impact on the potential growth rates of a large number of euro-area Member States.

Turning to the broad picture at the Member States' level, 3 groups of countries can be distinguished in terms of their overall growth performance since the early 1990s. The first group, comprising two of the largest Member States, namely Germany and Italy, stands out for a persistently poor performance relative to the euro-area average throughout the 1990s. These two countries represent almost 50 per cent of total euro-area output, thus their performance constituted a significant drag on the aggregate euro-area position. A second group, made up of Belgium, France and Austria grew close to the euro-area average. The final group of mainly small countries (Greece, Spain, Ireland, the Netherlands, Portugal, and Finland) managed to grow at a significantly faster pace than the euro area as a whole, especially over the second half of the 1990s. For example, for the period 1996-2002, this latter group of euro-area countries grew on average by 3.6 per cent, compared with 3.3 for the USA and 2.2 for the euro area as a whole.

In terms of labour productivity growth, 5 of the euro-area Member States had performances which were not only well above the euro-area average but were also higher than that of the USA (Table 5). However, only 2 of the 5, namely Ireland and Finland were capable of combining both strong productivity growth and high labour utilisation rates.

Table 5: Hourly labour productivity, euro-area Member States

	1991-95	1996-2000	1996-2002
BE	1.7	2.6	1.6
DE	0.7	1.8	1.6
EL	0.6	2.8	3.1
ES	1.9	0.8	0.8
FR	1.5	1.4	1.5
IE	3.6	5.4	5.1
IT	2.3	1.0	0.7
NL	1.5	1.2	1.0
AT	3.4	2.7	2.1
PT	2.9	3.1	2.3
FI	3.0	3.1	2.6
Euro area	2.4	1.5	1.3
USA	1.1	1.6	1.7

Source: Commission services and Groningen Growth & Development Centre.

## 2. Some insights from growth accounting

Theories on the sources of economic growth have been discussed at length since the 1950s and are not without controversy. However, in recent years, the neo-classical growth model, initially proposed by R. Solow (1956) has been increasingly used in so-called growth accounting exercises which decompose real GDP growth into its main determinants. The objective is to try to measure the proportion of the overall growth rate of GDP which can be attributed to the accumulation of factors of production (i.e. to the growth of employment and fixed capital) and the part which can be attributed to independent technical progress or total factor productivity.

Table 6: Decomposition of GDP growth rates, euro area and USA  
(1980-02)

	1981-90	1991-95	1996-00	1996-02
<b>Euro area</b>				
GDP	2.4	1.6	2.6	2.2
Labour in hours worked	0.1	-0.8	1.0	0.9
Employment	0.7	-0.2	1.4	1.3
Hours worked	-0.6	-0.6	-0.4	-0.4
Hourly productivity	2.3	2.4	1.5	1.3
Capital deepening	0.8	1.1	0.4	0.4
Total factor productivity	1.5	1.3	1.1	0.9
<b>USA</b>				
GDP	3.2	2.4	4.1	3.3
Labour in hours worked	1.8	1.3	2.4	1.6
Employment	1.8	1.1	2.0	1.3
Hours worked	-0.1	0.2	0.4	0.3
Hourly productivity	1.4	1.1	1.6	1.7
Capital deepening	0.2	0.3	0.3	0.6
Total factor productivity	1.2	0.8	1.3	1.1

*Source:* Commission Services and Groningen Growth & Development Centre.

Table 6 presents the results of such a growth accounting analysis for the euro area and for the USA. Looking into the components of labour productivity, significant changes took place in the 1990s in terms of both capital deepening and total factor productivity.

*Capital deepening:* Growth in industrialised countries is characterised by a process of continuous capital-labour substitution, which is crucial for productivity and, consequently, income growth. The rate of capital deepening has decelerated sharply since the mid-1990s in the euro area but has increased in the USA. As a result, whereas the growth rate of the capital/labour ratio had traditionally been significantly faster in the euro area than in the USA, a growing gap has emerged over the second half of the 1990s in favour of the USA.

This gap mirrors developments in investment in the two regions. While the investment performance in the USA in the late 1990s had some bubble features and has not proven to be sustainable, the comparatively lacklustre euro-area performance over that period is puzzling in the light of rising profitability and declining costs of capital. The significant fall in capital deepening in the euro area since the mid-1990s marks a halt to unfavourable capital-for-labour substitution and

may partly be interpreted as a consequence of better functioning labour markets. However, other factors have also been at play. Some of them, such as deteriorated corporate balance sheets and excessive debt, are temporary and have shown signs of improvement in recent months. However, there is some evidence that structural factors have also contributed to dampening investment spending in the euro area and have weighed on the attractiveness of the euro area relative to other investment locations. These factors include adverse demographic trends, insufficient flexibility in product and labour markets as well as insufficient development of financial markets.<sup>15</sup>

*Total factor productivity:* Potentially the most worrying aspect of the analysis presented in Table 6 is the evolution of TFP. For the first time in a generation, the USA has a trend rate of TFP growth which is now higher than the euro area's. This significant turning point results from a combination of a sharp downturn in the euro-area trend and a pick-up in the USA.

<sup>15</sup> For a discussion of the determinants of investment see European Commission (2001), 'The EU Economy: 2001 Review', European Economy No. 73, pp 87-121.

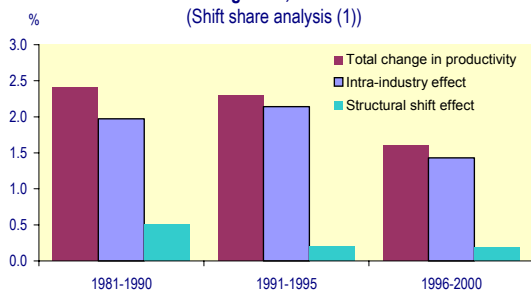


### 3. A first view of industrial sectors

Aggregate productivity is calculated as a weighted average of underlying industry productivity, with the weights being determined by each industry's share in overall employment. Consequently, the change in an economy's productivity growth rate over a specific period of time is determined not only by the productivity growth rate of the individual industries but also by changes in the industry composition of employment. Aggregate changes in productivity can be due to the former, within industry, effect or they can reflect the latter phenomenon of structural shifts in resources between low productivity and high productivity industries.

Shift-share analysis is the most commonly used algebraic method for calculating the industry effects embedded in total productivity data. It breaks down aggregate productivity growth into 3 effects: an intra-industry, a structural shift and an interaction effect. The first one measures the productivity growth that would have prevailed in the absence of changes in the relative importance of individual industries. The second captures the contribution to overall productivity growth of a shift of employment resources from low to high productivity industries. The last effect is a residual and is generally comparatively small.

Graph 23: Decomposition of annual hourly productivity growth, EU  
(Shift share analysis (1))



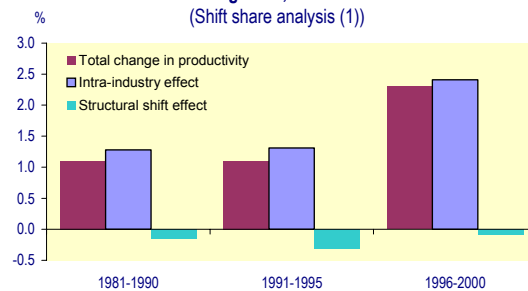
(1) Due to its very small size, the interaction effect is not shown.  
Source: Commission services, GGDC.

Graph 23 displays estimates of the two most important effects in the EU<sup>16</sup> since 1980. The analysis shows that the intra-industry effect dominates. Depending on the periods considered,

<sup>16</sup> The shift-share analysis has only been performed for the EU as a whole but the picture is likely to be the same for the euro area.

it accounts for between 80 and 95% of total growth in productivity. In addition, European productivity has been, and still is, benefiting from a shift of employment from low to high productivity industries. However, the contribution from this mechanism to overall productivity growth has been declining over time, falling from 1/2 a percentage point in the 1980s to less than a 1/4 of a percentage point in the 1990s.

Graph 24: Decomposition of annual hourly productivity growth, USA  
(Shift share analysis (1))



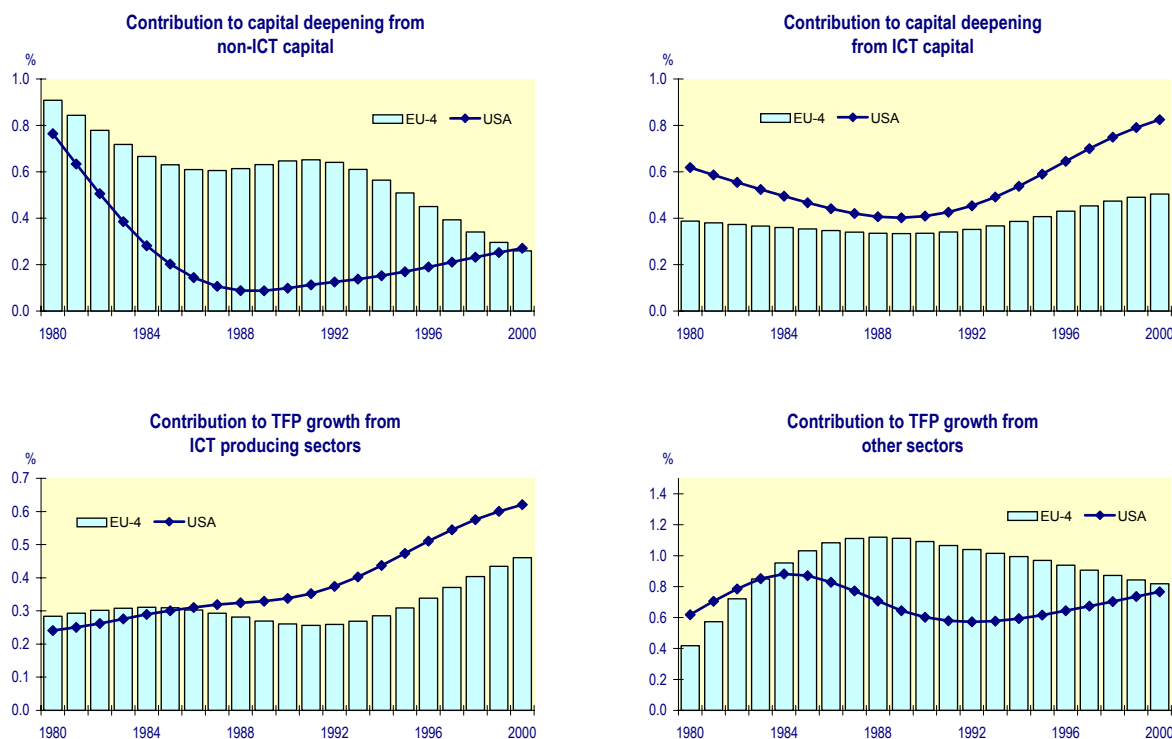
(1) Due to its very small size, the interaction effect is not shown.  
Source: Commission services, GGDC.

In contrast, the structural shift effect has been clearly negative in the USA in the past two decades (Graph 24). In this country, overall productivity growth has been entirely explained by within industry productivity gains which have more than offset the depressing impact on productivity of a shift from the high productivity manufacturing sector to lower productivity service sectors. It is likely that the EU and the euro area are following a similar route, leaving intra-industry gains in productivity as the only solution to raising overall productivity growth.

### 4. The specific role of ICT: the broad picture

The rapid growth of production in the information and communication technology sector and the widespread adoption of new information and communication technologies by other sectors are likely to have been a major driving force of productivity developments since the late 1990s. ICT can contribute to overall growth via several channels: 1) Rapid technical progress in the ICT sector translates into faster growth in total factor productivity in that sector thereby lifting the growth rate of TFP in the economy. 2) Investment in ICT raises the capital

Graph 25: Contributions of ICT to capital deepening and TFP, EU-4(1) and USA



(1) Germany, France, United Kingdom and Netherlands.  
 Source: Commission services and Groningen Growth & Development Centre.

stock and therefore total potential output via a capital deepening effect. 3) Finally, the use of ICT investment may be associated with increased productive efficiency or externalities that may further boost TFP growth.

Graphs 25 presents an assessment of the contribution of ICT to labour productivity in a growth accounting framework. Analysing the contribution of ICT to growth requires reliable and internationally comparable data on ICT capital and ICT production. The graph is based on data gathered by the Groningen Growth and Development Centre (GGDC). Three caveats are necessary. First, although these data allow a meaningful comparison between Europe and the USA, it is important to stress that they cover 4 EU countries (Germany, France and the United Kingdom and the Netherlands) and not the euro area per se. Second, the data set is based on industry data and is not fully comparable with the national account data provided in Table 6. Finally, the contribution of ICT includes the first two channels listed above, but no estimate is yet available on the size of ICT spillover effects (i.e.

the third channel). Bearing this in mind, 4 conclusions emerge from the data:

- Whilst investment in ICT equipment contributed positively to labour productivity growth in the EU-4 in the 1990s, the contribution was substantially lower than that in the USA.
- Non-ICT capital deepening fell significantly in the EU-4 over the 1996-2000 period, with only part of the relatively poor investment performance due to the higher labour content of growth. Over the same period the USA has experienced a small acceleration in its trend rate of non-ICT capital spending.
- In terms of TFP, the contribution of technical progress in ICT-producing industries such as semiconductors and telecommunications equipment has been consistently higher in the USA since the early 1990s but, thanks to the good performance of the EU-4 in the telecommunications industry, the difference with the EU-4 is not as marked as in the case of ICT investment.





Table 7: Productivity – a sectoral view, euro area and USA  
Contributions to average growth in labour productivity in the business sector (1991-00)

	Euro area		USA	
	1991-95	1996-00	1991-95	1996-00
Total business sector (2)	2.2	1.7	1.7	3.1
Manufacturing	1.1	0.7	0.9	1.2
Sectors producing ICT	0.2	0.2	0.6	0.9
Sectors using ICT intensively	0.2	0.2	0.0	0.1
Sectors using ICT less intensively	0.7	0.3	0.4	0.1
Private services	1.1	0.9	0.8	2.0
Sectors producing ICT	0.2	0.3	0.1	0.0
Sectors using ICT intensively	0.4	0.5	0.5	1.8
Sectors using ICT less intensively	0.5	0.1	0.1	0.1
Residual term (1)	0.0	0.1	0.0	-0.1

(1) Shift and interaction effects

(2) Data on aggregate labour productivity differ from those presented in Table 6 because they are restricted to the business sector and because they come from an industry dataset rather than from national accounts.

Source: Commission Services and Groningen Growth & Development Centre.

- Finally, the contribution to TFP from the non-ICT-producing industries has shown a slight downward trend since the late 1980s in the EU-4. In the USA a deceleration of TFP after the mid-1980s was followed by a clear upturn during the second half of the 1990s. This upward pattern may be suggestive of some positive growth spillovers from ICT investment (third channel).

Summing up the contributions of ICT capital and TFP in ICT-producing sectors, ICT was accounting for roughly 60 per cent of US labour productivity growth at the end of the 1990s compared with around 40 per cent in the case of the EU-4. These calculations exclude spillover effects for which no estimates are available.

### 5. The specific role of ICT: the industry picture

The general picture for ICT can be further refined by looking again at individual industrial sectors. Table 7 displays the contribution to the total change in labour productivity of individual industries, breaking down the manufacturing and the service sectors into 3 ICT-related sub-sectors (sectors producing ICT, sectors using ICT intensively and sectors using ICT less intensively). The table shows that the USA has pulled ahead of the euro area in recent years in terms of labour productivity growth due its superior performance

in industries producing ICT and using ICT intensively.

*Manufacturing.* In manufacturing, the differences in the contribution to productivity growth essentially stem from the ICT-producing sector and, to a lesser degree, from the sectors using ICT intensively. Euro-area productivity growth rates in ICT-producing industries are not dramatically different from those in the USA and picked up markedly in the second half of the 1990s as in the USA. However, the size of the euro-area ICT-producing sector is much smaller than the equivalent sector in the USA, and the contribution to overall productivity growth is correspondingly smaller. In the manufacturing sectors using ICT intensively, where the euro area has traditionally posted faster productivity gains, the positive gap in favour of the euro area has narrowed during the second half of the 1990s.

*Services sectors.* Services are the biggest contributors to overall productivity growth. They are also the main source of the US productivity advantage over the euro area. The US economy appears to have benefited enormously from substantial investments in the service industries using ICT intensively. Interestingly, the bulk of the contribution to productivity growth from ICT-intensive services in the USA is concentrated in three sectors, wholesale trade, retail trade, and financial services. These three sectors account for about three quarters of the acceleration in

productivity observed in the USA during the second half of the 1990s. Except to some extent for financial services, the euro area has clearly failed to raise productivity growth in the sectors using ICT intensively. The picture is quite different for ICT-producing services (i.e. mainly telecommunications) where the euro area is largely outperforming the USA in terms of productivity gains and has even increased its advantage in recent years. However, due to their smaller weight in total employment, the contribution of these sectors to total productivity growth remains small relative to ICT-using services.

Finally, regarding the non-ICT part of the economy, the slowdown of the euro-area's productivity growth rate in the manufacturing and service sectors using ICT less intensively (for instance textiles, hotels and restaurants) has been quite pronounced in recent years. These industries collectively still represent about 40 per cent of euro-area GDP and account for most of the overall slowdown in productivity in the euro area in the second half of the 1990s. The USA has also experienced a slowdown in productivity growth in the less high-tech manufacturing industries, whilst showing marginal improvement in the less high-tech service sectors.

Overall, an important conclusion emerges from the industry data: if ICT can largely explain the pick-up in productivity in the USA and can partly explain recent divergences in productivity performance between the euro area and the USA, it cannot account for the slowdown in productivity growth in the euro area as the latter essentially took place in non-ICT sectors.

## ***6. Structural drivers of productivity growth***

Whereas growth accounting exercises and the analysis of industry patterns has helped to identify the main features of the growth slowdown in the euro area, further work is needed to understand the fundamental determinants of growth and thus identify policy levers to improve standards of living.

To shed further light on the fundamental determinants of productivity, a productivity

model has been estimated. The model, which allows lessons to be drawn from the growth experiences of OECD member states over the last 2½ decades, attempts to integrate recent developments in endogenous growth theory into the neo-classical growth model. The standard neo-classical growth model treats technical progress (i.e. growth in total factor productivity) as exogenous. The endogenous growth literature endeavours to explain technical progress as the result of human capital formation both undertaken at the household and the firm level in the form of education, training and research and development spending. This literature regards the level of technology as being, at least partly, created by a knowledge production function.

The estimated productivity model includes three stages.<sup>17</sup> First, the relation between investment spending on physical capital and on R&D and a set of possible determinants was estimated. Determinants tested included the degree of deregulation, the characteristics of financial markets, market size and the education level. Second, a knowledge production function relating total factor productivity to measures of knowledge investment (R&D expenditure and education level) was estimated. The impact on the rate of technical progress of some institutional features, such as the degree of deregulation or the size of markets, was also tested. Finally, the results of the first two stages were used to estimate a productivity function, relating labour productivity to physical capital and the creation of knowledge. The contribution to overall labour productivity of two other important determinants, namely the labour supply and the potential for catching up, was also estimated.

These sets of regressions offer some interesting insights into the determinants of investment and technical progress.

*Physical investment* Amongst all the various determinants tested, regulation appears to be the most important driver of investment rates. The degree of regulation plays an especially important role for foreign direct investment (FDI) but it is also a crucial determinant of ICT investment.

<sup>17</sup> For a complete description of the model see the 'The EU Economy: 2003 Review', Chapter 3, "Drivers of productivity growth", Annex 1.



Table 8: Long run effects of the major determinants of labour productivity, OECD countries

	Impact on annual growth in labour productivity in %
Physical investment <i>(permanent 1 pp rise in the share of investment in GDP)</i>	0.05
R&D spending <i>(permanent increase in the share of R&amp;D in GDP of 1 pp)</i>	0.60
Regulation <i>(moving to US levels of regulation)</i>	0.15
Education <i>(permanent increase of 1 year in the average education level)</i>	0.45
Ageing <i>(permanent 10 pp decline in the youth dependency ratio)</i>	0.25
Openness and market size <i>(permanent 10% rise in intra-euro-area trade)</i>	0.10
Hours worked <i>(permanent 1 pp increase)</i>	-0.25

Source: Commission Services.

There is also some evidence that equity-based financial systems are more favourable to physical investment. Finally, a high level of education appears to be an important factor for foreign direct investment.

*R&D investment.* The determinants of knowledge investment are rather different from those of physical investment. R&D is less affected by the regulatory environment whereas market size as measured by openness and population size is an important determinant. These results suggest the existence of important sunk costs and scale economies in the R&D process. As in the case of physical investment, the importance of equity markets and education are positively correlated with R&D spending.

*Technical progress.* Unsurprisingly, the estimates show that both R&D spending and education are significant drivers of total factor productivity. In contrast, deregulation seems to play only a limited role in boosting technical progress. As a similar result was obtained for R&D investment, this empirical research suggests that the level of regulation only seems to affect productivity by stimulating the accumulation of physical capital.<sup>18</sup> Finally, the age of the labour force turns out to be a key determinant of TFP.

<sup>18</sup> The empirical literature has produced conflicting evidence on this issue. Some studies find a positive impact of deregulation on TFP and others a negative one.

Another interesting conclusion is that, although trade openness/market size appears to be especially important for productivity, this particular determinant only affects TFP growth via its impact on the level of R&D investment. This suggests that country size/scale effects bestow no particular efficiency gains in terms of other aspects of productivity growth.

To give an idea of the relative importance of the various drivers of productivity, Table 8 displays the long-run impact on the annual growth in labour productivity of changes in some key determinants. Several interesting features of these results must be underlined.

- The results confirm the strongly positive effects of education on productivity growth.
- R&D investment has a much bigger impact on productivity than physical investment. According to the estimates in the table, a 1 percentage point increase in the ratio of physical investment to GDP lifts productivity growth by only 0.05 percentage points over a 30-year period whereas a similar increase in the ratio of R&D investment to GDP raises productivity growth by 0.6 percentage points.
- Regulation and openness to trade are also important determinants of productivity. In the latter case it is interesting to note that recent studies have identified a large impact of EMU on trade, with some estimates of the potential

increase of intra-euro-area trade as high as 40%.<sup>19</sup> Associated gains in productivity could be substantial in the long run.

- In contrast, an increase in employment may bear non-negligible negative consequences in terms of productivity.
- Finally, the estimations point to a significant negative effect of ageing on productivity, thereby confirming a widespread suspicion that an older labour force will be less adept in creating and adopting new technologies. The estimated impact would represent a decline in the growth rate of labour productivity of 0.3% per annum for the last 15 years.

The model can also be used to explore further the relation between ICT and the euro-area's productivity performance in recent years. The model actually fails to fully explain country differences in TFP growth since the mid-1990s, suggesting that recent years have been characterised by an atypical pattern of technological progress. In fact, industry specialisation in ICT production as well as the degree of regulation and the age of the labour force seem to have played a particularly important role in productivity gains in recent years. The last two factors suggest that favourable conditions in terms of technology adoption were especially prominent for TFP in the late 1990s. This is in line with the findings in terms of ICT-using sectors. Trade and financial services are two sectors where regulatory and institutional factors play an important role and they account for much of the overall increase in productivity in those countries where there has been successful diffusion of ICT.

## 7. Policy implications

*Labour market reforms may have a temporary negative impact on productivity but this effect only represents a quarter of the overall deceleration in productivity.* Since the mid-1990s the euro area has been experiencing a trend change in labour input. While in the 1980s and early 1990s the growth of labour input was at best flat, a positive labour input growth of 0.9 per cent per year was observed over 1996-2002. According to the

estimates presented above, this increase in employment growth has slowed down euro-area labour productivity growth by about a ¼ of a percentage point per annum over the period in question. Hence, labour market reforms only account for a relatively small share of the deceleration of productivity in the euro area. Furthermore, it is important to stress that the increase in labour input observed in recent years marks a return of the economy to more healthy employment rates. It is therefore a once-off development that will bear only temporary consequences for productivity. Overall, there is no policy trade-off as labour market reforms boosting employment rates only lead to a temporary reduction in measured productivity growth, with no effect on the long-run productivity growth.

*While critical, deregulation is not enough to overcome the euro-area's productivity gap.* The level of regulation has been identified as a major driving force of efficiency gains and investment in several studies.<sup>20</sup> This may be a particularly important issue for the euro area which tends to post a relatively weak performance on a range of different measures of regulation. However, simulations carried out with the productivity model described in the previous section show that deregulation, while crucial for investment, would be insufficient on its own to close the efficiency gap with the USA – presently of about 10% – within a relatively short time span and meet the ambitious objective set in Lisbon of making the EU the most competitive knowledge-based economy by 2010. A major reason for this stems from the limited dynamic efficiency gains of deregulation. Deregulation essentially affects physical investment and must be accompanied by measures which increase knowledge production.

*Action is needed to boost investment in the knowledge economy.* This means essentially higher spending on third level education, on ICT and on R&D.

Although ICT has played an important role in explaining productivity differences across countries in recent years, the comparatively low contribution of ICT in the euro area has more to do with a slower ICT diffusion and difficulties in

<sup>19</sup> See Quarterly Report on the Euro Area, No. III 2003.

<sup>20</sup> See for instance OECD (2003), 'The sources of economic growth in OECD countries'.



exploiting the full benefits of ICT, than with the industrial specialisation and the comparatively small share of ICT-producing industries in the euro area. This means that efforts are needed to boost ICT investment and put in place the conditions that allow companies to reap the full benefits of ICT capital. Important areas for progress in this respect include financial market efficiency, education, labour market flexibility and deregulation.

With respect to R&D, the focus should be on creating the conditions which will promote an endogenous increase in research spending. The empirical analysis has identified three main channels through which this could be achieved, namely higher product market integration, education and more efficient financial markets. Market size seems to be a crucial determinant for R&D, since the development of new products typically involves large sunk costs. Since research activities are human capital-intensive, education is an essential requirement for any R&D activity.

More equity-based financial structures seem to have promoted the “riskier” forms of investment, such as R&D, more strongly than bank-based systems.

*Finally, ageing may be a serious source of concern for the long-term productivity performance of the euro area. In addition to the well-documented impact of ageing on labour supply and the rate of capital accumulation,<sup>21</sup> the progressive ageing of the population may have a significant bearing on the rate of technical progress in the euro area.*

Overall the results presented here vindicate the policy framework established by the Lisbon strategy. However, adverse demographic developments and further increases in the employment rate will weigh on euro-area productivity performance in the coming years. To bear fruit, the Lisbon strategy will therefore need to be backed up by a commitment to, and the rapid and comprehensive implementation of, agreed reform measures.

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<sup>21</sup> The European Commission, EU Economy: 2002 Review’, Chapter 4, ‘Economic and financial market consequences of ageing populations’.

### III. References to further work

#### 1. Policy documents

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EUROPEAN ECONOMY. No. 5. 2003.

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**The EU Economy. 2003 Review**

[http://europa.eu.int/comm/economy\\_finance/publications/the\\_eu\\_economy\\_review\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/the_eu_economy_review_en.htm)

EUROPEAN ECONOMY. ENLARGEMENT PAPERS. No. 17. September 2003

**Main results of the April 2003 fiscal notifications presented by the candidate countries**

[http://europa.eu.int/comm/economy\\_finance/publications/enlargement\\_papers/elp17\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/enlargement_papers/elp17_en.htm)

EUROPEAN ECONOMY. ENLARGEMENT PAPERS. No. 18. September 2003

**The Financial sector in Bulgaria**

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EUROPEAN ECONOMY. ENLARGEMENT PAPERS. No. 19. November 2003

**Progress towards meeting economic criteria for accession: the assessment from the 2003 comprehensive monitoring reports and regular report**

[http://europa.eu.int/comm/economy\\_finance/publications/enlargement\\_papers/elp19\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/enlargement_papers/elp19_en.htm)

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**2003 pre-accession economic programmes of acceding and other candidate countries: overview and assessment**

[http://europa.eu.int/comm/economy\\_finance/publications/enlargement\\_papers/elp20\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/enlargement_papers/elp20_en.htm)

EUROPEAN ECONOMY. SPECIAL REPORT No 2 2002

**European integration and the functioning of product markets**

[http://europa.eu.int/comm/economy\\_finance/publications/european\\_economy/eespecialreport0202\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/european_economy/eespecialreport0202_en.htm)

#### 2. Analytical documents

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 190.

Ludger Wößmann (CESifo Munich)

**European education production functions: what makes a difference for student achievement in Europe?**

This paper estimates the effects of family background, resources, and institutions on student performance in 17 Western European school systems.

[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/economicpapers190\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers190_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 191.

Zenon Kontolemis

**Exchange rates are a matter of common concern: policies in the run-up to the euro?**

This paper discusses the reasoning behind the exchange rate policies set out in the Maastricht Treaty of the European Union. The question of the appropriate exchange rate policies for new member states of the EU should be seen from the wider perspective of Economic and Monetary Union, and the creation of a single market.

[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/economicpapers191\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers191_en.htm)



EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 192.

Jacques-Bernard Sauner-Leroy

**The impact of the implementation of the Single Market Programme on productive efficiency and on mark-ups in the European Union manufacturing industry**

This paper analyses the evolution of mark-up levels in the European Union (EU) manufacturing industry over the period 1987-2000 and links this evolution with price and cost developments. It provides an assessment of the impact of the completion of the Single Market Programme (SMP) on the productive efficiency and the market power of manufacturing firms and on prices of manufactured products.

[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/economicpapers192\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers192_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 193.

Aino Salomäki (ed.)

**Remain in or withdraw from the labour market? A comparative study on incentives**

This study aims at examining transitions in and out of labour market as well as transitions from one benefit to another. More specifically, it analyses incentive structures embedded in benefit and tax systems which may affect transitions.

[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/economicpapers193\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers193_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 194.

Martin Larch and Matteo Salto

**Fiscal rules, inertia and discretionary fiscal policy**

In current practice, changes in the cyclically-adjusted budget balance (CAB) are generally interpreted as reflecting the effort of discretionary fiscal policy. This paper shows that such an interpretation is not a sufficiently accurate description of the behaviour of fiscal policy, and, in some cases, it may even conceal an important deficit bias.

[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/economicpapers194\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers194_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. No. 195.

Gabriele Giudice, Alessandro Turrini and Jan in 't Veld

**Can fiscal consolidations be expansionary in the EU? Ex-post evidence and ex-ante analysis**

This paper analyses non-Keynesian effects in fiscal consolidations in the EU.

[http://europa.eu.int/comm/economy\\_finance/publications/economic\\_papers/economicpapers195\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/economic_papers/economicpapers195_en.htm)

### ***3. Regular publications***

**Euro area GDP indicator** (Indicator-based forecast of quarterly GDP growth in the euro area)

[http://europa.eu.int/comm/economy\\_finance/indicators/euroareagdp\\_en.htm](http://europa.eu.int/comm/economy_finance/indicators/euroareagdp_en.htm)

**Business and Consumer Surveys** (harmonised surveys for different sectors of the economies in the European Union (EU) and the applicant countries)

[http://europa.eu.int/comm/economy\\_finance/indicators/businessandconsumersurveys\\_en.htm](http://europa.eu.int/comm/economy_finance/indicators/businessandconsumersurveys_en.htm)

**Business Climate Indicator for the euro area** (monthly indicator designed to deliver a clear and early assessment of the cyclical situation)

[http://europa.eu.int/comm/economy\\_finance/indicators/businessclimate\\_en.htm](http://europa.eu.int/comm/economy_finance/indicators/businessclimate_en.htm)

**Key indicators for the euro area** (presents the most relevant economic statistics concerning the euro area)

[http://europa.eu.int/comm/economy\\_finance/indicators/key\\_euro\\_area/keyeuroarea\\_en.htm](http://europa.eu.int/comm/economy_finance/indicators/key_euro_area/keyeuroarea_en.htm)

**Monthly and quarterly notes on the euro-denominated bond markets** (looks at the volumes of debt issued, the maturity structures, and the conditions in the market)

[http://europa.eu.int/comm/economy\\_finance/publications/bondmarkets\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/bondmarkets_en.htm)

**Price and Cost Competitiveness**

[http://europa.eu.int/comm/economy\\_finance/publications/priceandcostcompetitiveness\\_en.htm](http://europa.eu.int/comm/economy_finance/publications/priceandcostcompetitiveness_en.htm)

## IV. Key indicators for the euro area

<b>1 Output</b>		2001	2002	2003*	Jan-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Industrial confidence <sup>1.1</sup>	Balance	-9.8	-11.6		-12.0	-14.0	-11.0	-9.0	-8.0	-7.0
Industrial production <sup>1.2</sup>	mom % ch	0.2	-0.9		0.0	1.0	-0.7	-0.6		
		2001	2002	2003*	02Q3	02Q4	03Q1	03Q2	03Q3	03Q4
Gross domestic product <sup>1.3</sup>	Ann. % ch	1.5	0.8	1.8	1.0	1.1	0.7	0.1	0.3	
Gross domestic product <sup>1.3</sup>	Qtr. % ch				0.2	0.0	0.0	-0.1	0.4	
<b>2 Private consumption</b>		2001	2002	2003*	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Consumer confidence <sup>2.1</sup>	Balance	-6.1	-10.6		-19.0	-18.0	-17.0	-17.0	-17.0	-16.0
Retail sales <sup>2.2</sup>	mom % ch	1.3	1.3		-0.2	0.3	-0.1	0.0		
		2001	2002	2003*	02Q3	02Q4	03Q1	03Q2	03Q3	03Q4
Private consumption <sup>2.3</sup>	qoq %ch.	1.8	0.6	1.7	0.3	0.3	0.5	0.1	0.0	
<b>3 Investment</b>		2001	2002	2003*	02Q3	02Q4	03Q1	03Q2	03Q3	03Q4
Capacity utilization <sup>3.1</sup>	%	83.5	81.2		81.0	81.5	81.1	80.8	80.7	81.2
Gross fixed capital formation <sup>3.2</sup>	Qtr. % ch	-0.3	-1.9	2.0	0.0	0.3	-1.1	-0.5	-0.5	
Change in stocks <sup>3.3</sup>	% of GDP	-0.2	-0.1	0.1	-0.4	0.0	0.1	0.2	-0.4	
<b>4 Labour market</b>		2001	2002	2003*	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Unemployment <sup>4.1</sup>	%	8.0	8.2	8.3	8.9	8.8	8.8	8.8	8.8	
		2001	2002	2003*	02Q3	02Q4	03Q1	03Q2	03Q3	03Q4
Employment <sup>4.2</sup>	Ann. % ch	1.4	0.4	0.4	0.0	0.0	0.0	0.0		
Shortage of labour <sup>4.3</sup>	%	7.8	3.8		3.0	3.0	3.0	3.0	2.0	
Wages <sup>4.4</sup>	Ann. % ch	2.8	2.9	2.8	3.0	3.0	2.9	2.4		
<b>5 International transactions</b>		2001	2002	2003*	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Export order books <sup>5.1</sup>	Balance	-14.3	-22.0		-29.0	-28.0	-26.0	-25.0	-24.0	-19.0
World trade <sup>5.2</sup>	Bn. EUR	6454.1	6309.2		490.0	500.8	497.8	507.6		
Exports of goods <sup>5.3</sup>	Bn. EUR	767.4	776.9	823.4	85.9	92.7	76.5	90.1		
Imports of goods <sup>5.4</sup>	Bn. EUR	802.2	781.6	828.1	79.2	79.3	69.0	81.6		
Trade balance <sup>5.5</sup>	Bn. EUR	-34.8	-4.7	-4.7	6.7	13.3	7.5	8.5		
		2001	2002	2003*	02Q3	02Q4	03Q1	03Q2	03Q3	03Q4
Exports of goods and services <sup>5.6</sup>	Qtr. % ch	4.3	0.7	6.1	1.5	-0.2	-1.5	-0.6	2.2	
Imports of goods and services <sup>5.7</sup>	Qtr. % ch	2.1	-1.6	6.2	1.3	0.8	-0.6	-0.2	-0.4	
		2001	2002	2003*	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Current account balance <sup>5.8</sup>	Bn. EUR	-12.3	9.6	11.0	2.5	0.0	2.7	7.7		
Direct investment (net) <sup>5.9</sup>	Bn. EUR	-104.6	-90.4		23.7	-3.2	-1.7	-9.6		
Portfolio investment (net) <sup>5.10</sup>	Bn. EUR	36.5	38.0		12.9	-35.6	-37.9	8.3		
<b>6 Prices</b>		2001	2002	2003*	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
HICP <sup>6.1</sup>	Ann. % ch	2.5	2.2	2.0	2.0	1.9	2.1	2.2	2.0	2.2
Core HICP <sup>6.2</sup>	Ann. % ch	2.0	2.0		2.0	1.8	1.9	1.9	2.0	
Producer prices <sup>6.3</sup>	Ann. % ch	2.2	1.7		1.4	1.3	1.4	1.1	0.9	
Import prices <sup>6.4</sup>	Ann. % ch	0.4	-1.4	0.3						
<b>7 Monetary and financial indicators</b>		2001	2002	2003*	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03
Interest rate (3 months) <sup>7.1</sup>	% p.a.	4.27	3.30		2.15	2.13	2.14	2.15	2.14	2.16
Bond yield (10 years) <sup>7.2</sup>	% p.a.	5.00	4.80		3.64	3.95	4.15	4.20	4.25	4.38
ECB repo rate <sup>7.3</sup>	% p.a.	3.25	2.75		2.00	2.00	2.00	2.00	2.00	2.00
Stock markets <sup>7.4</sup>	Index	4047	3053		2443	2460	2524	2553	2515	2618
M3 <sup>7.5</sup>	Ann. % ch	5.3	5.6		8.5	8.4	8.1	7.9		
Credit to private sector (loans) <sup>7.6</sup>	Ann. % ch	7.9	7.7		4.5	4.9	5.0	5.0	5.1	
Exchange rate USD/EUR <sup>7.7</sup>	Value	0.90	0.94	0.98	1.17	1.14	1.11	1.12	1.17	1.17
Nominal effective exchange rate <sup>7.8</sup>	Index	80.1	82.2	83.7	108.7	107.3	106.2	105.8	107.6	107.4
* ECFIN Autumn 2003 forecasts ( <i>European Economy</i> , No 5/2003 -October 2003)										





Number	Indicator	Note	Source
<b>1</b>	<b>Output</b>		
1.1	Industrial confidence indicator	Industry survey, average of balances to replies on production expectations, order books, and stocks (the latter with inverted sign)	ECFIN
1.2	Industrial production	Volume, excluding construction, wda	Eurostat
1.3	Gross domestic product	Volume (1995), seasonally adjusted	Eurostat
<b>2</b>	<b>Private consumption</b>		
2.1	Consumer confidence indicator	Consumer survey, average of balances to replies on four questions (financial and economic situation, unemployment, savings over next 12 months)	ECFIN
2.2	Retail sales	Volume, excluding motor vehicles, wda	Eurostat
2.3	Private consumption	Volume (1995 prices), seasonally adjusted	Eurostat
<b>3</b>	<b>Investment</b>		
3.1	Capacity utilisation	In percent of full capacity, manufacturing, seasonally adjusted, survey data (collected in each January, April, July and October).	ECFIN
3.2	Gross fixed capital formation	Volume (1995 prices), seasonally adjusted	Eurostat
3.3	Change in stocks	In percent of GDP, volume (1995 prices), seasonally adjusted	Eurostat
<b>4</b>	<b>Labour market</b>		
4.1	Unemployment	In percent of total workforce, ILO definition, seasonally adjusted	Eurostat
4.2	Employment	Number of employees, partially estimated, seasonally adjusted	ECB/ Eurostat
4.3	Shortage of labour	Percent of firms in the manufacturing sector reporting a shortage of labour (unfilled job openings) as a constraint to production, seasonally adjusted	ECFIN
4.4	Wages	Not fully harmonised concept, but representative for each Member State (mostly hourly earnings)	ECFIN
<b>5</b>	<b>International transactions</b>		
5.1	Export order books	Industry survey; balance of positive and negative replies, seasonally adjusted	ECFIN
5.2	World trade	Bn; EUR, current prices, seasonally adjusted	ECFIN
5.3	Exports of goods	Bn. EUR, excluding intra euro area trade, fob	Eurostat
5.4	Imports of goods	Bn. EUR, excluding intra euro area trade, cif	Eurostat
5.5	Trade balance	Bn. EUR, excluding intra euro area trade, fob-cif	Eurostat
5.6	Exports of goods and services	Volume (1995 prices), including intra euro area trade, seasonally adjusted	Eurostat
5.7	Imports of goods and services	Volume (1995 prices), including intra euro area trade, seasonally adjusted	Eurostat
5.8	Current account balance	Bn. EUR, excluding intra euro area transactions; before 1997 partly estimated	ECB
5.9	Direct investment	(net) Bn. EUR, excluding intra euro area transactions	ECB
5.10	Portfolio investment	(net) Bn. EUR, excluding intra euro area transactions	ECB
<b>6</b>	<b>Prices</b>		
6.1	HICP	Harmonised index of consumer prices	Eurostat
6.2	Core HICP	Harmonised index of consumer prices, excluding energy and unprocessed food	Eurostat
6.3	Producer prices	Without construction	Eurostat
6.4	Import prices	Import unit values for goods	Eurostat
<b>7</b>	<b>Monetary and financial indicators</b>		
7.1	Interest rate	Percent p.a., 3-month interbank money market rate, period averages	Datastream
7.2	ECB repo rate	Percent p.a., minimum bid rate of the ECB, end of period	Datastream
7.3	Bond yield	Percent p.a., 10-year government bond yields, lowest level prevailing in the euro area, period averages	Datastream
7.4	Stock markets	DJ Euro STOXX50 index, period averages	Datastream

7.5	M3	Annual percentage growth rate of seasonally adjusted flows, moving average (3 last months): from 1997 onwards corrected for holdings by non-residents	ECB
7.6	Credit to private sector (loans)	Annual percentage change, MFI loans to euro area residents excluding MFIs and general government, monthly values: month end values, annual values: annual averages	ECB
7.7	Exchange rate USD/EUR	Period averages, until December 1998: USD/ECU rates	ECB
7.8	Nominal effective exchange rate	Against 13 other industrialised countries, double export weighted, 1995 = 100, increase (decrease): appreciation (depreciation)	ECFIN

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Comments on the report would be gratefully received and should be sent to:

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