



I. Economic situation in the euro area

Activity in the euro area has now clearly started to soften under the combined effects of surging oil prices, continued financial market turbulence and slowing global trade growth. GDP growth decelerated to 0.4% (q-o-q) in the last quarter of 2007. This deceleration owes much to a significant weakening of private consumption, mostly attributable to unfavourable developments in consumer prices. A comforting development was the continuation of strong growth in investment spending (0.8% q-o-q), explained by high capacity utilisation and the high profitability of the non-financial corporate sector. According to the Commission's Interim Forecast of February 2008, economic growth in the euro area is expected to slow down to 1.8% for 2008, a 0.4 pp downward revision compared to the 2007 Autumn Forecast.

Most OECD countries have experienced a sharp reduction in output growth volatility over the past three decades. Econometric analysis indicates that this 'Great Moderation' is not just the result of a long period of luck in the form of milder shocks. It can also partly be ascribed to improvements in economic policies, in particular more credible monetary policy and, to a lesser extent, more powerful automatic fiscal stabilisers. Policy improvements have been more substantial in countries, particularly some Southern euro-area Member States, where policy mistakes were particularly acute in the 1970s-80s. In these countries, policy changes have made a comparatively larger contribution to the drop in output volatility.

Reform data compiled in ECFIN's LABREF database suggest that labour market reforms put in place in the euro area in recent years have mainly aimed at increasing labour utilisation, especially of those groups with low participation rates (the outsiders). Reforms targeted at improving labour market flexibility also focused mainly on the outsiders, with little effort made to adapt employment regulation for insiders. Evidence shows that reforms have to some extent paid off, raising the average employment rates and enhancing the response of employment to cyclical shocks. However, the increased dualism of the euro-area labour market may require further reform measures targeted at insiders rather than outsiders.

While headline inflation in the euro area has increased significantly in recent months, inflation dispersion amongst euro-area Member States has also increased visibly since summer 2007. Although energy and food prices have accelerated in all Member States, the global shocks to oil and agricultural commodity prices have been transmitted to individual countries with varying intensity. This heterogeneity can be related to a range of factors, including country differences in the weight of food and energy in the national HICP basket, in the degree of competition in retail markets and in the cyclical position. Furthermore, the exchange rate pass-through to consumer prices has differed across euro-area Member States.

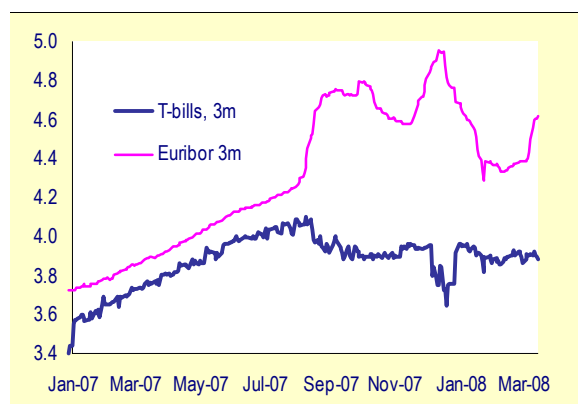
1. Recent economic developments and short-term prospects¹

The financial sector remains in a state of flux...

The global economic situation and outlook remain unusually uncertain at the beginning of 2008 mainly due to the uncertainty about the extent, duration and impact of financial turbulence. While the ECB and other major central banks have taken decisive action to stabilise money markets, the functioning of these markets has not yet returned to normal. Hence, spreads on interbank markets remain elevated when compared with previous periods, indicating continued tensions. Beginning of March, the spread between the 3-month Euribor and the 3-month treasury bills stood around 50 basis

points, compared with 100 in December 2007 (Graph 1).

Graph 1: Euro-area money market
(in % – 1 Jan 2007 to 14 Mar 2008)



Source: Ecwin.

The financial turmoil has led to a clear tightening of monetary and financial conditions in the euro

¹ The cut-off date for the statistics included in this issue was 14 March 2008.

Table 1: Euro-area growth components

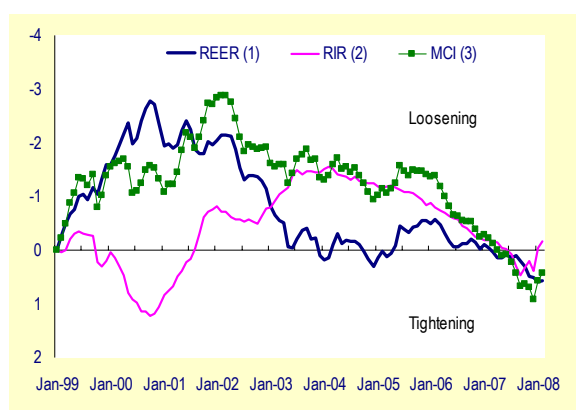
	2007	2007	2007	2007	Carryover to 2008	Forecast (1)	
	Q1	Q2	Q3	Q4		2007 (2)	2008 (2)
Percentage change on previous period, volumes							
GDP	0.8	0.3	0.7	0.4	0.7	2.6	2.2
Private consumption	0.0	0.6	0.5	-0.1	0.4	1.7	2.1
Government consumption	1.1	0.2	0.7	-0.1	0.3	2.0	2.1
Gross fixed capital formation	1.7	0.0	1.2	0.8	1.2	4.7	2.9
Exports of goods and services	0.9	0.8	2.1	0.5	1.6	5.8	5.3
Imports of goods and services	1.4	0.3	2.5	-0.4	1.0	5.3	5.5
Percentage point contribution to change in GDP							
Private consumption	0.0	0.4	0.3	0.0	0.2	1.0	1.2
Government consumption	0.2	0.0	0.1	0.0	0.1	0.4	0.4
Gross fixed capital formation	0.4	0.0	0.3	0.2	0.3	1.0	0.6
Changes in inventories	0.4	-0.3	0.2	-0.1	-0.1	0.0	0.0
Net exports	-0.2	0.2	-0.1	0.4	0.3	0.2	0.0

(1) Annual change in %. (2) European Commission Autumn 2007 Forecasts.

Source: Commission services.

area. The ECB has kept its policy rate unchanged since the summer but ECFIN's Monetary Conditions Indicator (which reflects real short-term interest rates and the real exchange rate) has showed a continued tightening until December due to both higher short-term interbank interest rates and further appreciation of the euro (Graph 2). In January and February, the MCI loosened somewhat again, mainly due to the effect of higher inflation on real interest rates but also to a moderate fall in the spreads between interbank interest rates and risk-free alternatives.

Graph 2: Euro area MCI and its contributors
(inverted scale – Jan 1999 – Feb 2008)



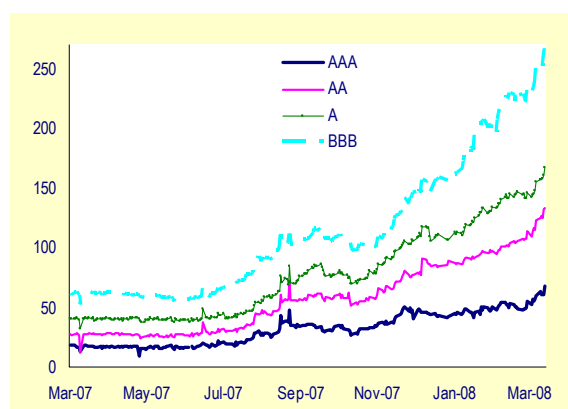
(1) Real effective exchange rate.
(2) Real interest rate.
(3) Monetary Conditions Indicator.

Source: Commission services.

Problems in credit markets have been reflected in the balance sheets of euro-area banks. Many of these banks had retained significant exposure to credit risk in securitised products via off-balance-

sheet operations. These off-balance-sheet exposures, which were originally a source of liquidity problems for banks, have now become a problem for bank capital. The need to rebuild capital and the prospect of reduced earnings have led to a generalised tightening in bank lending standards. The January 2008 ECB's bank lending survey for the euro area reported a further sharp tightening of credit standards for loans to enterprises as well as to households – although the former were more affected than the latter. The survey also suggests that the tightening phase is not over as banks expect the financial turmoil to have a greater impact on credit standards in the first quarter of 2008 than over the previous three months.

Graph 3: Corporate bond spreads, euro area
(basis points, 1 Mar 2007 – 14 Mar 2008)



Source: Commission services.

The tightening of financial conditions is not confined to bank loans. Spreads on corporate



Table 2: Selected euro-area and national leading indicators, 2007-2008

	SENT. IND ¹⁾	BCI ²⁾	OECD ³⁾	PMI Man. ⁴⁾	PMI Ser	IFO ⁶⁾	NBB ⁷⁾	ZEW ⁸⁾
Long-term average	100.0	-0.1	93.3	52.8	54.9	96.9	-6.5	21.0
Trough in latest downturn	88.6	-0.92	98.1	46.4	47.7	90.3	-26.5	-41.6
March 2007	110.6	1.47	107.8	55.4	57.4	103.2	-1.0	5.8
April 2007	110.4	1.56	107.9	55.4	57.0	104.2	2.3	16.5
May 2007	111.6	1.47	108.0	55.0	57.3	104.7	3.9	24
June 2007	111.1	1.49	108.2	55.6	58.3	102.7	6.5	20.3
July 2007	110.4	1.31	108.2	54.9	58.3	101.7	4.5	10.4
August 2007	109.4	1.35	108.0	54.3	58.0	100.4	2.8	-6.9
September 2007	106.3	1.07	107.4	53.2	54.2	98.7	1.4	-18.1
October 2007	105.4	0.87	107.1	51.5	55.8	98.5	-1.8	-18.1
November 2007	104.1	1.03	107.2	52.8	54.1	98.3	-0.5	-32.5
December 2007	103.4	0.89	107.1	52.5	53.1	98.2	-1.8	-37.2
January 2008	101.7	0.77	106.9	52.8	50.6	99.0	-0.8	-41.6
February 2008	100.1	0.72	106.9	52.3	52.3	98.2	0.5	-39.5
March 2008								-32.0

1) Economic sentiment indicator, DG ECFIN. 2) Business climate indicator, DG ECFIN. 3) Composite leading indicator. 4) Reuters Purchasing Managers Index, manufacturing. 5) Reuters Purchasing Manager Index, services. 6) Business expectations, West Germany. 7) National Bank of Belgium indicator for manufacturing. 8) ZEW Indicator of Economic Sentiment, Germany

bonds have widened to multi-year highs, mostly for lower rated bonds (Graph 3). In addition, the cost of insuring against debt default has soared to new highs. Finally, equity markets, which had shown remarkable resilience to the financial turmoil in the past months, have dropped by more than 15% since the beginning of the year.

A significant softening of household spending....

The extent to which the financial turbulence has spilled over to the real economy in the euro area is difficult to assess at this juncture. The economy has in fact been hit simultaneously by a number of shocks, including surging commodity prices and a softening of world trade, the effects of which are difficult to disentangle. In any event, activity in the euro area has now clearly softened. GDP growth in the euro area decelerated to 0.4% (q-o-q) in the last quarter of 2007, compared to 0.7% in the previous quarter, bringing y-o-y growth down to 2.2%.

The GDP breakdown shows that the deceleration in the fourth quarter owes much to a significant weakening of private consumption. Household consumption dropped slightly (by 0.1% q-o-q) after increasing by 0.5% in the third quarter. The weakening was broad-based at the country level, though much sharper in Germany (-0.8% q-o-q). It was clearly the consequence of rising consumer prices. In nominal terms, GDP and consumption increased at broadly similar

rates both in the fourth quarter of 2007 and during the year as a whole. Consumption weakness is therefore mostly attributable to the deterioration of the terms of trade, i.e. unfavourable developments in consumer prices relative to the GDP deflator. Although the household savings ratio dropped marginally in the second and third quarters of last year, there is no sign that consumers have decided to cut their savings significantly to cushion the price shock, which is consequently fully transmitted into lower real consumption.²

The most recent data paint a mixed picture of the ongoing dynamics in consumer spending. After three consecutive months of contraction, retail sales picked up again in January. Growth in consumer credit, while significantly below its 2006 peak, also accelerated moderately in December and January. However, price pressures have not abated so far. According to Eurostat's flash estimate, annual euro-area headline inflation was running at 3.3% in February, 0.1 pp higher than in January; i.e. the highest rate of inflation since 1999. The latest detailed breakdown of the HICP showed no sign of clear deceleration in the main drivers of the inflation bulge in February: energy inflation remains very high (10.4%), though slightly lower than in January (0.2 pp) while food inflation picked up to 5.2% from 4.8% in January.

² No data on households' savings is yet available for the fourth quarter.

Table 3: **Real GDP growth**
(Interim forecast February 2008) (1)

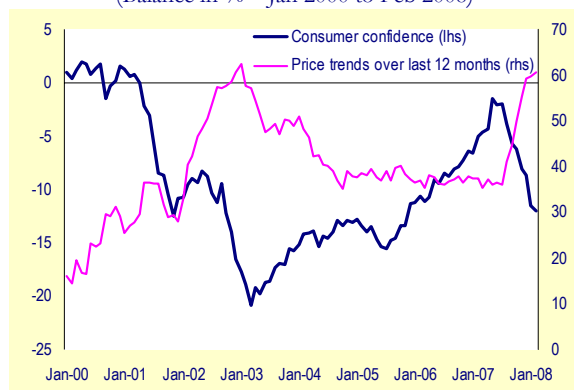
	Quarterly GDP forecast (% quarter-on-quarter)				Annual GDP forecast (% year-on-year) 2007	
	2008/1	2008/2	2008/3	2008/4	Autumn forecast Nov. 2007	Interim forecast Feb. 2008
Germany	0.1	0.3	0.4	0.4	2.1	1.6
Spain	0.6	0.6	0.5	0.5	3.0	2.7
France	0.3	0.4	0.3	0.3	2.0	1.7
Italy	0.1	0.2	0.3	0.3	1.4	0.7
Euro area	0.3	0.3	0.4	0.4	2.2	1.8

(1) Where possible, the quarterly growth rates are working-day and seasonally-adjusted, whereas the annual projections are unadjusted.

Source: Commission services.

Negative developments in purchasing power have clearly dented consumer sentiment. Consumer confidence has been gradually declining since May 2007 and now stands below its long-term average. The deterioration of sentiment has been primarily visible in rising worries about price developments and the general economic situation. Households have also reported a rise in perceived risks of unemployment but, reflecting continuous good news from the labour market, the weakening of confidence has been more modest in that area. Growth in employment remains robust and unemployment has continued its downward trajectory in recent months.

Graph 4: **Consumer confidence, euro area**
(Balance in % – Jan 2000 to Feb 2008)



Source: Commission services.

Available data points to weak momentum in the other component of household spending, namely residential construction. Depending on the indicators considered, construction activity was either sluggish or contracting at the end of 2007 and the fall in residential building permits has accelerated since the beginning of 2007. Confidence in the construction sector has been on a clear downward path since the autumn and ECB data points to a steady easing of residential property prices. These negative developments

must however be interpreted against the background of robust growth in mortgage lending. The rate of expansion of mortgage lending has come down from its peak in 2006 but continues to be strong with the latest data showing stable annual growth at 7.0% in January.

...but also of world trade

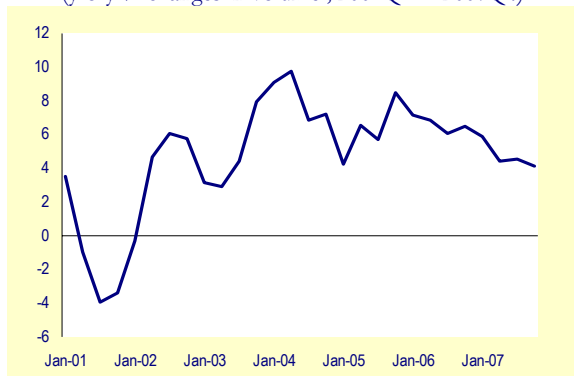
Weaker global growth, on the back of the financial market turmoil and the US slowdown, is now clearly weighing on world trade. Indeed, world trade has softened further in the last quarter of 2007. According to the CPB indicator, q-o-q world trade growth decelerated from 2.6% in 2007Q3 to 0.6% in 2007Q4. The loss in import momentum was broad-based although sharper in industrialised countries than in emerging markets.

The softening of the world trade momentum, together with the appreciation of the euro, are weighing on euro-area exports but the extent of these effects is difficult to gauge. Euro-area q-o-q export growth decelerated sharply from 2.1% in 2007Q3 to 0.5% in 2007Q4 but quarterly data tend to be volatile and the deceleration in exports was accompanied by a drop in imports (-0.4% q-o-q in 2007Q4). As a result, net exports contributed strongly to GDP growth in 2007Q4 (0.4 pp). As euro-area exports in national accounts cover both intra- and extra-area exports, it is difficult to say to what extent the slowdown in the fourth quarter reflects weakness in domestic or external demand. But manufacturing data suggests that domestic factors have dominated. First, in recent months, business confidence has weakened more markedly in services (which are less exposed to trade) than in the manufacturing sector. The January reading of industrial production was actually rather strong with y-o-y growth at 3.8%. Second, in the first 2008 issue of the European



Commission's quarterly manufacturing survey, companies reported a rebound of export expectations for the months ahead.

Graph 5: **World trade**
(y-o-y % changes in volume ; 2001Q1 – 2007Q4)



Source: Commission services

Looking ahead, surveys of the global economy point to a period of further moderation in trade growth in the coming months. The February reading of the quarterly World Economic Survey shows a further weakening of the current global economic situation but also a deterioration of its expectation component. In a similar vein, the February reading of the Global PMI indicator showed confidence in the global manufacturing sector at its lowest level since July 2003.

Capital spending, however, is holding up fairly well

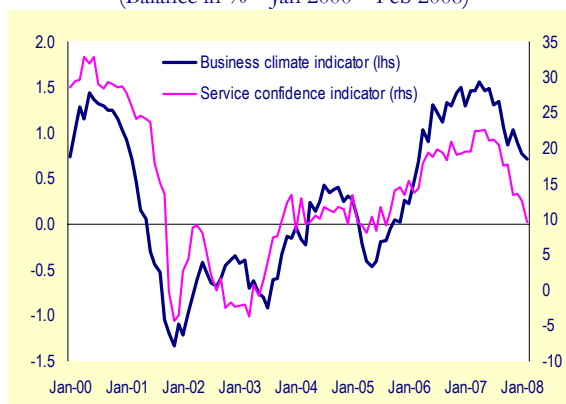
A comforting development in the latest national accounts data was the continuation of strong growth in investment spending. Gross fixed capital formation increased by 0.8% q-o-q and contributed by 0.2 pp. to GDP growth. As developments in residential construction are likely to have been sluggish at best, the strong reading of investment can be primarily ascribed to the corporate sector.

The strength of business investment is also visible in recent loan data. The annual growth rate of loans to non-financial corporations stood at 14.6% in January, up from 14.5% in December, the highest rate since 1990. Although the strong reading may partly reflect a re-intermediation process in the wake of the

financial turmoil, this effect is likely to have remained small.³

The resilience of investment can be explained by high capacity utilisation and the healthy financial position of the non-financial corporate sector. Capacity utilisation in the manufacturing sector, which has declined only slightly since the peak in the summer of 2007, remains well above its long-term average (83.9%). The profit share of non-financial corporations in the euro area has remained high (39.4% in 2007Q3).

Graph 6: **Business confidence indicators, euro area**
(Balance in % – Jan 2000 – Feb 2008)



Source: Commission services.

Another factor which has supported investment spending is the fact that confidence in the manufacturing sector has generally held up fairly well in recent months. The IFO indicator has remained broadly stable in the past four months thanks to a stable assessment of both current conditions and business expectations. The Reuters PMI index for manufacturing activity has also remained broadly stable in the past few months. That neither the IFO nor the PMI shows a downward trend in expectations despite strong headwinds (financial markets, the US slowdown, etc.) is encouraging. In contrast, however, the European Commission's manufacturing survey has recently painted a more negative picture. It has pointed to a downward trend since April 2007 and has continued to decline in the past three months. Nevertheless, the latest reading remains at a fairly high level, consistent with moderate growth in the manufacturing sector.

³ ECB (2008), Monthly Bulletin, February, p.20.

Box 1: The impact of higher oil prices – simulations with the new version of the Commission's Quest model

This box revisits the issue of the macroeconomic impact of oil prices on the basis of new model simulations. (*) The simulations were run with the latest version of ECFIN's macroeconomic QUEST model. QUEST Version III is a new multi-region model that includes an energy production sector and in which energy serves as an intermediate input in final good production. (**) The euro area and the other EU Member States, as well as the US and Asia, are modelled as net importers of oil and gas, while the rest of the world is the oil-exporting region. As European natural gas prices are de facto indexed to oil prices with a lag of up to six months, the model treats oil and gas together as one aggregate. The model treats the relative oil price as exogenously determined.

Oil price shocks affect the economy through supply and demand channels. As terms-of-trade shocks, they have an impact on the economy through their effect on production decisions and relative prices. But oil price shocks also represent a shift in purchasing power between oil-exporting countries and oil-importing countries. An increase in energy prices leads to a loss in real income in oil-importing countries and affects consumers' and firms' spending on goods and services other than energy. The demand effects through this income channel are key to explaining the potentially significant impact of oil price changes on the economy. The model captures both supply and demand channels as energy serves as an input in the production process and is consumed directly by households.

The table below presents two sets of simulations. The first one shows the impact of a gradual increase in oil prices of 100% over a period of three years. This broadly corresponds to the increase registered between mid-2004 (€29 based on quarterly averages) and end-2007 (€63 based on quarterly averages). The second scenario takes the previous simulation as a new baseline and shows the effects of a further oil price increase of 25%. It illustrates the non-linearities that characterise the growth effects of oil prices.

Table : Macroeconomic impact of gradual increase in oil prices
(change from baseline scenario)

	First scenario (1)				Second scenario (2)			
	1 st year	2 nd year	3 rd year	10 th year	1 st year	2 nd year	3 rd year	10 th year
GDP	-0.23	-0.59	-0.88	-1.11	-0.21	-0.35	-0.34	-0.65
Consumption	-0.63	-1.47	-2.25	-3.41	-0.85	-1.13	-1.16	-1.89
Investment	-0.72	-1.68	-2.50	-3.45	-0.58	-0.92	-1.02	-1.77
Exports	0.60	1.42	2.45	4.55	0.79	1.12	1.43	2.12
Imports	-0.19	-0.80	-1.74	-5.92	-0.23	-0.77	-1.24	-3.13
Real wages	-0.11	-0.34	-0.62	-1.11	-0.11	-0.20	-0.28	-0.57
Consumer price level	0.54	1.27	1.95	2.56	0.65	0.73	0.75	1.08
Energy consumption	-0.27	-0.88	-1.70	-5.85	-0.22	-0.55	-0.84	-3.25

1) the impact of a gradual increase in oil prices of 100 percent; 2) the impact of a further increase in oil prices of 25%

In the first scenario, real GDP falls by 0.9% below baseline after three years and slightly more than 1% after 10 years. The impact on consumption is much stronger, 2% lower after three years and 3% after 10 years. Investment declines by 2.5% after 3 years and 3.5% after 10 years. The increase in energy prices does not have a significant impact on energy consumption in the short run due to the small short-run elasticities of substitution, but energy consumption by households is 6% lower after ten years. The pass-through into consumer prices builds up gradually. Inflation picks up by 0.5 pp the first year and by 0.7 pp the second and third year so that consumer prices are 2% higher after three years. The current account deteriorates by up to 1.9% of GDP after three years due to the increasing deficit on the oil balance, but the non-oil balance improves due to higher exports to oil-exporting countries (recycling of oil revenues) and a depreciating exchange rate.

The effects on GDP are significantly milder than those estimated with previous versions of the QUEST model. This reflects several differences with previous versions of the models. (1) First, oil-producing regions are now modelled in greater detail. This allows the recycling of higher oil revenues by oil producers into the euro area to be better taken into account. (2) Second-round wage effects are less strong than in the previous model as the effect of lower consumption on labour supply is now taken into account (i.e. workers partly try to recoup purchasing power losses by raising their labour supply). (3) Oil consumption is now modelled explicitly allowing substitution between oil and other goods (although these substitution effects are assumed to be low in the short run).



In the second scenario, the negative impact on real GDP is around 0.2% in the first year, rising to 0.7% after 10 years. The shock raises inflation and consumer prices are 0.8% above base after 3 years. This is substantially higher – and proportionally so – than the impact on GDP and inflation in the first scenario, indicating that the effect of oil price shocks is non-linear, i.e. larger when the starting price level is higher. A 25% price hike when oil prices are already at €60 per barrel represents a larger shock in euros than when oil prices are at €30 per barrel. This leads to a stronger income effect and a relatively larger impact on demand.

As is the case with any simulations, the results of the simulations presented here should be interpreted with prudence as they are model-dependent and sensitive to some modelling assumptions. In that respect two sources of uncertainties should be highlighted. First, the impact of oil price shocks on the economy depends crucially on how wages respond to the worsening of the terms-of-trade. The increase in consumer prices puts upward pressure on wages, but lower economic activity reduces wage demands and counteracts this. The overall effect on wages is the net outcome from these opposing forces. In the default setting of the model, wages decline (relative to the baseline growth) in line with the fall in productivity. However, earlier experiences of large oil price shocks have shown that there can be strong resistance to such wage flexibility and wage demands could rise in response to sharp increases in energy prices. If wages were to rise, output and employment losses could be much larger. Second, the magnitude of the effects of oil price shocks on the economy also depends on the price elasticity of oil demand. If it is easier to substitute away from energy, the real impact on the economy will be smaller.

(*) For previous assessments of the impact of oil prices on the economy see:

European Commission (2004), 'How vulnerable is the euro-area economy to higher oil prices?', Quarterly Report on the Euro Area, Vol. 3 No. 2.
European Commission (2005), 'The impact of higher oil prices on inflation', Quarterly Report on the Euro Area, Vol. 4 No. 4.

(**) QUEST III belongs to the modern class of Dynamic Stochastic General Equilibrium (DSGE) models that now serve as the foundation for macroeconomic policy analysis.

Commission's Interim Forecast points to a significant deceleration of growth in 2008

According to the Commission's Interim Forecast of February 2008, economic growth in the euro area is expected to slow down to 1.8% for 2008 as a whole. This represents a 0.4 pp downward revision compared with the 2.2% projected in the 2007 Autumn Forecast. The revisions mainly reflect the impact of the ongoing financial turmoil, the sharp slowdown in the US and high commodity prices (for an assessment of the impact of high oil prices see model simulations presented in Box 1). The hard and soft data released since the publication of the latest interim forecast are consistent with these projections.

The strong increase in food and energy prices has also led to an increase in the inflation forecast for 2008 as a whole. Future markets predict that oil prices will remain high in 2008-09. If so, recent oil price developments, together with the lag structure of the oil price pass-through, imply that energy HICP inflation will remain elevated in 2008. According to the Interim Forecast, consumer prices are projected to rise by 2.6% for the year as a whole, against 2.1% in the 2007 Autumn Forecast.

2. The Great Moderation in the euro area: what role have economic policies played?

Most OECD countries have experienced a sharp reduction in both output growth volatility and inflation volatility over the past three decades. In policy terms, a key issue is whether this ‘Great Moderation’ reflects a long period of luck in the form of milder shocks and could therefore be reversed rapidly or whether it is attributable to changes in the structures and the policies of the economies concerned and could thus be of a more permanent nature. Although there is not yet any firm consensus, in the case of the US economy – on which most of the empirical research has focused so far – several prominent authors have ascribed the dominant role to the good luck hypothesis.⁴ This note builds on previous work presented in the Quarterly Report on the Euro Area and revisits, on the basis of an econometric panel analysis, the issue of what role changes in economic structures and policies have played in the great moderation.⁵

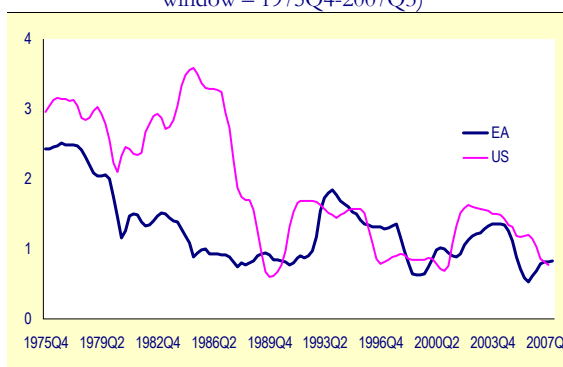
Key stylised facts

Over the past 30 years, the volatility of output has declined substantially in the euro area. When measured by the standard deviation of y-o-y GDP growth, it has dropped from over 2% in the 1970s to 1.1% in the most recent decade (1998Q1-2007Q3) (Graph 7). The decline was particularly pronounced in the late 1970s and early 1980s. It was brought to a temporary halt at the beginning of the 1990s but may have resumed its course in the 2000s.

A look at a range of GDP data for the euro area suggests some stylised facts and provides some clues as to the possible drivers of the Great Moderation in the euro area.

First, the decline in growth volatility has been broad-based, affecting to various degrees all GDP components and most industrial sectors. This seems to rule out explanations exclusively centred on one or a few segments of the economy. Nevertheless, volatility has decreased more sharply in the most volatile segments of the economy, notably inventories (when looking at the composition of demand) and manufacturing (when looking at industrial sectors).

Graph 7: The volatility of GDP growth, euro area and US (standard deviation of y-o-y growth in % - 5 year window - 1975Q4-2007Q3)



Source: Commission services.

Second, shifts in the composition of GDP have played only a modest role in the fall in growth volatility. The shares of GDP components have not changed sufficiently to affect noticeably the standard deviation of total growth. Shifts in the industrial structure, with the increasing importance of the most stable service sector, have been a more significant stabilisation force but this effect has remained rather limited.

Third, the decomposition of GDP into its productivity and employment components indicates that the rise in output stability is attributable to lower volatility in productivity but not in employment. There has also been a decrease in the correlation between employment and productivity which could be an indication that changes in the functioning of the labour markets have helped to stabilise output.

Fourth, the moderation of output growth volatility has been accompanied by a decline in the level and volatility of inflation, which suggests that changes in the conduct of monetary policy have played a critical part.

Finally, while the Great Moderation is a feature common to most industrialised countries, the

⁴ See for instance:

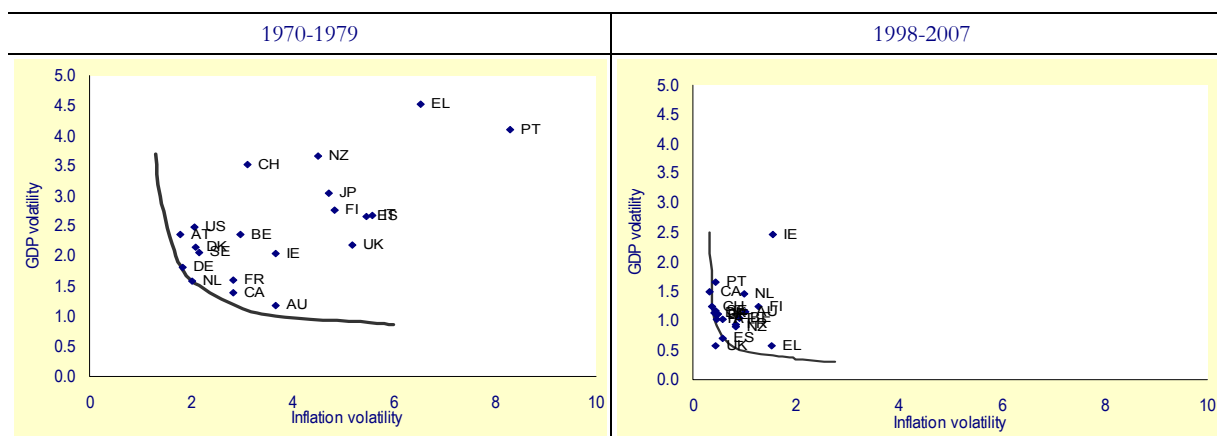
Stock, J. H., and M. W. Watson (2003), 'Has the Business Cycle Changed? Evidence and Explanations', Federal Reserve Bank of Kansas City, pp. 9-56.

Gordon, R. J. (2005), 'What Caused the Decline in U. S. Business Cycle Volatility?', NBER Working Papers 11777.

⁵ See European Commission (2007), 'The reduced volatility of output growth in the euro area', Quarterly Report On the Euro Area, Vol. 6 No. 1; and European Commission (2007), 'The decline of inflation volatility in the euro area', Quarterly Report on the Euro Area, Vol. 6 No. 4.



Graph 8: Inflation and output growth volatility
(standard deviation for the period in %)



Source: Commission services.

Source: Commission services.

magnitude and timing of the decline have differed substantially from one to another. This heterogeneity casts some doubts on explanations focusing exclusively on common shocks. Somehow, both changes in shocks and changes in economic policies and structures must have been at play.

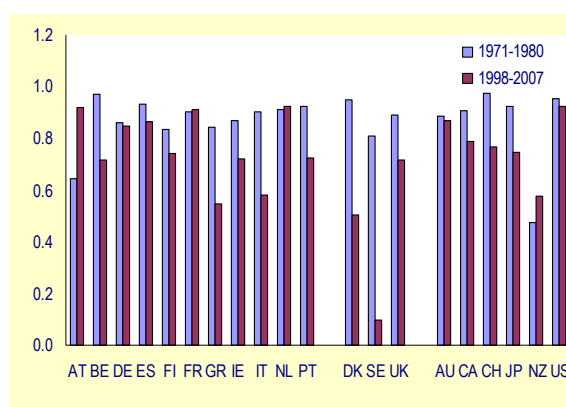
Graph 8 illustrates country differences in the magnitude of the Great Moderation. The graph displays estimates of inflation and output volatility in a number of OECD countries for the 1970s (left panel) and the last ten years (right panel). Most countries now show a relatively similar performance in terms of growth and inflation volatility. In the 1970s, however, the range of performances was considerably larger. While most OECD countries have benefited from a drop in volatility over the past three decades, the drop has been comparatively much larger in countries which had very high volatility in the 1970s (e.g. EL, IT, NZ, PT, UK) than those where volatility was comparatively lower (e.g. DE, NL, US).

Macroeconomic policies and output stability

Changes in the conduct of macroeconomic policies over the past three decades have been most visible in the area of monetary policy. The associated improvements in the efficiency of monetary policy are measurable against a broad range of indicators, including more counter-cyclical interest rates, an increased stability of inflation expectations and an improved trade-off between output and inflation volatility. Graph 9, for instance, displays the first-order autocorrelation coefficient of inflation (based on

the GDP deflator) for the 1970s and the most recent decade. The autocorrelation coefficient has dropped in most OECD countries pointing to a decrease in the persistence of inflation. Likely explanations include reduced inflation indexation and a shift from backward to forward looking inflation expectations in relation with a strengthening of the credibility of monetary policy. Interestingly, countries which have shown comparatively larger drops in the persistence of inflation have also tended to register larger falls in output volatility.

Graph 9: Autocorrelation of inflation
(first-order autocorrelation coefficient in %) (1)



(1) Inflation is calculated on the basis of the GDP deflator.

Source: Commission services

Evidence of the contribution of fiscal policy to the Great Moderation appears a priori more mixed. On the one hand, although the propensity to 'stop and go' has been considerably reduced, there are indications that discretionary fiscal policy retains pro-cyclical features in many OECD countries. On the other hand, empirical evidence points to a positive effect on output

stability of the rise in government size observed in many OECD countries in the 1970s and 1980s, which could be an evidence of an increase in the smoothing power of automatic stabilisers.⁶

Structural policies and output volatility

Economic theory does not provide clear guidance as to the effects of **product or labour market** rigidities on output stability. Some forms of rigidities may dampen the initial impact of a shock but lengthen the ensuing adjustment phase with the net effect on output volatility remaining theoretically undetermined. The empirical literature on this subject is very limited, consisting – to the best of our knowledge – of a single study reporting a negative link between regulation and volatility.⁷

Trade integration can affect output volatility via several, sometimes conflicting, channels. Increased trade integration means that a larger part of country-specific shocks are smoothed by being transferred to trading partners. However, trade integration may also foster production specialisation and therefore the occurrence of country-specific shocks. Empirical evidence for industrialised countries is relatively sparse and has so far failed to establish a significant link.⁸

By improving opportunities to diversify and share risks, **financial liberalisation** allows better consumption smoothing and should thereby help curb output volatility. Nevertheless, financial liberalisation may also facilitate production specialisation and therefore increase the risk of sectoral shocks. Furthermore, historical evidence also shows that phases of financial liberalisation may be associated with temporary spells of

increased volatility as economic agents take time to come to grips with the full implications of the new financial environment. The few studies which have explored the question empirically have generally reported a positive link between financial developments and output stability.⁹

Results of a panel analysis

This section provides some quantitative substance to the discussion of the previous section by summarising the results of an econometric analysis of the determinants of output, consumption and investment volatility in a panel of 20 OECD countries. The econometric work is presented in more detail in Box 2.

One of the most critical findings of the regression work is that it brings support to the idea of a significant impact of macroeconomic policies on output volatility. Both monetary policy and fiscal policy – the latter via automatic stabilisers rather than discretionary policy – can help explain country differences in volatility developments over the past three decades.

The regression results suggest that changes in **monetary policy** have contributed to the Great Moderation process in OECD countries. The estimated contribution is particularly large in some euro-area Member States (e.g. EL, ES, IT, PT, FI) where monetary policy mismanagement was particularly acute in the 1970s. In these countries monetary policy could account for as much as 25 to 40% of the drop in output volatility. In contrast, the contribution of monetary policy is found to be small in the US – in line with past research on that country – as well as in Germany.

As regards **budgetary policy**, output growth volatility is found to be negatively correlated with the ratio of government expenditure to GDP, in line with results reported in Fatas and Mihov (2001). Provided that the size of government and the smoothing power of automatic stabilisers go hand in hand, this can be interpreted as evidence of a role of automatic stabilisers in the Great Moderation process. However, the relationship between government size and output stability

⁶ Fatás, A. and I. Mihov (2001), 'Government size and automatic stabilizers: international and intranational evidence', *Journal of International Economics*, Elsevier, vol. 55(1), pages 3-28, October.

⁷ Kent, C., K. Smith and J. Holloway (2005), 'Declining output volatility: What role for structural change?', RBA Research Discussion Papers, 2005-08.

⁸ See Cecchetti, S. G., A. Flores-Lagunes and S. Krause (2006), 'Assessing the sources of changes in the volatility of real growth', NBER Working Papers 11946, National Bureau of Economic Research;

Kent et al. (2005), op. cit.;

Buch, C., J. Döpke and C. Pierdzioch (2002), 'Financial openness and business cycle volatility', Kiel Working Papers 1121, Kiel Institute for the World Economy.

⁹ See for instance Cecchetti et al. (2006) and Buch, et al. (2002), op.cit.



appears to be non-linear. According to point estimates, the effect of government size on stability is positive up to a ratio of government expenditure to GDP of 50% and turns negative above this level.¹⁰ Overall, the contribution of government expenditure/automatic stabilisers to the drop in GDP volatility over the past three decades is found to be large only in few countries, mostly located in the euro area (e.g. EL, ES and PT). Finally, tests with a range of alternative public finance variables, including measures of the counter-cyclicality of discretionary fiscal policy, were unsuccessful. Hence, possible changes in the conduct of discretionary fiscal policy do not seem to have contributed sizeably to the rise in output stability.

By providing a framework geared at macroeconomic stability, **EMU** has helped to stabilise growth in euro-area Member States. In the regressions, this EMU effect is mostly captured by the monetary policy variable and can be related to the comparatively large role played by changes in monetary policy in some Member States. The regressions provide only mixed evidence of a specific role of EMU in addition to what is already encapsulated in the monetary policy variable. Tests with various dummies for participation in EMU and/or ERM generally indicate a positive but non-significant additional effect of monetary integration on the stability of GDP growth. In contrast, there is some indication that participation in ERM and EMU is associated with reduced consumption and investment volatility although further work would be needed to reconcile these results with the lack of impact of the variable in the case of GDP volatility.

The **shift of production to services** comes out as a significant regressor but the contribution of the variable to the fall in output volatility since the 1970s does not exceed 10-15% in those

countries where the shift has been the most pronounced (e.g. EL, FR, NL, UK and AU). The only exception is Germany, where the contribution reaches 30%. In contrast with most of the literature on this subject, **openness to trade** is found to be positively correlated with output volatility. But the effect is very small.

Whereas conventional wisdom tends to give a prominent role **to oil shocks** in explanations of the high macroeconomic volatility of the 1970s and early 1980s, the hypothesis finds only mixed support in the panel regressions. Its effect is not statistically significant in the case of GDP volatility but it emerges as an important explanatory variable for the volatility of consumption growth. Thus, swings in oil prices could be a key source of consumption volatility while their impact on GDP volatility is limited as it depends on a range of other factors such as the credibility of monetary policy.

More stringent **product market regulations** are associated with lower output growth volatility. The result should however be considered with prudence as it appears statistically less robust than that for the macroeconomic policy variables. In addition the indicator of product market regulation used in the regression covers only some service sectors.

Likewise, results on **financial liberalisation** are mixed. The variable is not a statistically significant explanatory variable of GDP or consumption volatility but stands as a meaningful regressor in the case of investment. This could be an indication that financial liberalisation has so far contributed more to smooth investment than consumption or GDP. Nevertheless, caution is warranted as the proxy used for financial liberalisation is not very satisfying although widely used in the empirical literature.

Overall, the variables included in the regressions explain about 50% of the decline in output volatility since the 1970s, the rest being accounted for by time-fixed effects.¹¹ Most of the share is attributable to macroeconomic policy variables with monetary policy playing a leading role. The explanatory power of the model is somewhat higher for the euro area – particularly

¹⁰ Such a non-linear relation was first estimated empirically in Debrun, X., J. Pisani-Ferry and A. Sapir (2007), 'Government size and output volatility: Should we forsake automatic stabilization?', Paper presented at the workshop 'EMU@10: Achievements and challenges', DG ECFIN, November 2007.

For a theoretical explanation of this non-linearity, see Buti, M., C. Martinez-Mongay, K. Sekkat and P. van den Noord (2003), 'Automatic fiscal stabilisers in EMU: a conflict between efficiency and stabilisation?', CESifo Economic Studies, Vol. 49, 1.

¹¹ In panel regression, fixed time effects capture effects which are common to all countries and are not captured by the explanatory variables.

Box 2: Quantifying the sources of the decline in output growth volatility

This box presents the results of a panel data exercise aimed at quantifying the possible contributions of a number of determinants to the decline in output volatility in OECD countries. Output growth volatility is regressed on a range of variables, including both structural and economic policy indicators. As regards structural changes, the main variables tested are: (i) the sectoral shift in production towards services (measured by the share of value added in the service sector in total value added); (ii) the degree of openness to international trade and (iii) changes in the exposure to oil prices. Economic policy variables include measures of changes in macroeconomic policies, both (iii) monetary policy and (iv) fiscal policy, as well as indicators aimed at capturing changes in structural policies in terms of (v) financial markets and (vi) regulation in the product markets.

The regression is estimated on a panel of 20 countries (the former EU15 Member States – except LU – US, JP, CA, AU, CH and NZ) with time- and country-fixed effects added when statistically appropriate. The analysis is carried out for the period 1973-2007 broken down into 7 sub-periods of 5 years each (1973Q1-1977Q4, 1978Q1-1982Q4, etc.). Volatility is measured as the standard deviation of year-on-year quarterly changes in the variable considered. Regression results are presented in the table below. The endogenous variable is the volatility of, respectively, GDP growth (Col. 1 and 2), consumption growth (Col. 3) and investment growth (Col. 4). All equations are estimated with time effects but country-fixed effects are found to be jointly non-significant in the case of the main specification (Col. 1), which is therefore estimated without them. Nevertheless, given that the test of statistical significance of the country-fixed effects does not point to a strong rejection of these effects, the equation obtained with country-fixed effects is also shown (Column 2) to allow to check the sensitivity of the results to the inclusion of country effects.

The sources of growth volatility – Results of a panel regression

Endogenous variable:	GDP volatility (no country FE) (1)	GDP volatility (with country FE) (2)	Consumption volatility (3)	Investment volatility (4)
Monetary policy variable	0.008 ***	0.007 ***	0.009 **	
Gov. expenditures	-0.200 ***	-0.138 **		
(Gov. expenditures) ^2	0.002 ***	0.001 *		
Share of services in VA	-0.025 **	-0.046 *		
World trade volatility x trade openness	0.040 **			
Participation in ERM / EMU			-0.630 *	-1.901 *
Ratio of private sector credit to GDP				-0.022 *
Index of product market regulation		-0.341 ***		
Energy intensity x oil price volatility			8.511 **	
Country fixed effects	No	Yes	Yes	Yes
Period fixed effects	Yes	Yes	Yes	Yes
Number of observations.	125	125	113	121

Notes – Estimation method: panel OLS regressions. ***, **, * denote, respectively, statistical significance at 1, 5, and 10% level (based on White robust estimates of standard deviations).

The regressions include two dummies to cater for, respectively, the high level of growth volatility generally registered in Greece (only Col. 1) and the extreme volatility brought by the recession of the early 1990s in Finland (Col. (1) to (4)).

The **monetary policy variable** is calculated as the distance between the real interest rate gap (i.e. the actual real short-term interest rate minus the equilibrium real interest rate) and a weighted sum of deviations of inflation and GDP from their respective trends. A high level of the variable suggests that the level of the real rate is not in line with developments in inflation and the output gap. Regression results show a positive and significant effect of the variable on volatility, i.e. inadequate interest rates are associated with higher output volatility. The contribution of the monetary policy variable to growth volatility was particularly high in the 1970s and early 1980s in some countries (EL, ES, IT, PT, FI) pointing to inadequate monetary policies in those countries for that period. Tests with various dummies for **participation in EMU and/or ERM** generally indicate a positive but non-significant effect of monetary integration on the stability of GDP growth (this is in addition to the EMU effect already captured in the monetary policy variable). In contrast, participation in ERM and EMU – as captured by a dummy variable with a value of 1 in case of participation in either ERM or EMU – is associated with reduced consumption and investment volatility and the size of the estimated effect is far from negligible. However, even in the case of consumption and investment, there is no evidence that EMU has played a stronger role than ERM.

Turning to **fiscal policy**, the indicator measuring the degree of fiscal activism (i.e. the correlation of the CAPB with the output gap) comes out as non-significant. In contrast, an increase in the size of government expenditure is



significantly associated with lower output volatility, suggesting a positive relationship between government size and the smoothing power of automatic stabilisers. The relationship appears, however, to be strongly non-linear. A test with a quadratic term points to a threshold for the share of government expenditure in GDP of about 50% (with a likely range of about 46% to 54% given estimated standard deviations). Above this threshold, an increase in government size is associated with an increase in GDP growth volatility. The threshold is slightly lower in the second specification in Column (2) (at 47%).

Looking at the coefficients of the variables capturing structural changes, the **services indicator** comes out significant and negative. However, the effect remains small: point estimates suggest that a 10% increase in the share of services in GDP results in a 0.3 percentage point decline in output growth volatility. **Trade openness** displays a positive but small sign. A country with a higher degree of openness faces higher output volatility but the effect is marginal. The coefficient on the **oil intensity** variable has the expected sign (i.e. an increase in oil intensity leads to higher output volatility in periods of swings in oil prices) but is not statistically significant in the case of GDP volatility. It only becomes meaningful in the consumption equation.

Finally, the two variables aimed at capturing changes in structural policies, i.e. the ratio of private-sector credit to GDP and the indicator of product market regulations, are both found to be statistically insignificant in the main regression (Column 1). There is, however, some evidence that increased **financial developments** have played a role in the reduction of investment growth volatility but the investment regression is not very robust statistically and the result should be viewed with caution. The index of **product market regulation** (PMR) is found to be negatively associated with GDP volatility (i.e. more regulations reduce volatility) but only in the specification which includes country-fixed effects. Furthermore, the PMR index (compiled by the OECD) only covers services. Again the result should be considered with considerable prudence and deserves further exploration.

southern Member States – than for the rest of the OECD, and is rather weak for the US.

Finally, it is worth stressing that estimation results suggest that it is difficult to interpret time effects purely in terms of shocks (good luck hypothesis). The estimated time effects show a clear and steady downward trend which suggests that they capture both common shocks and some missing explanatory variable. An obvious potential candidate for the latter would be the improvement in the management of inventories. There is indeed some correlation between the estimated time effects and the reduction of the contribution of inventories to GDP volatility as computed on the basis of the GDP accounting identity. Another potential candidate is financial market development which, due to lack of proper data, has only been crudely captured in the estimations.

Conclusion

Expanding on past Commission work on this issue, this section has looked into several drivers of the Great Moderation in OECD countries. Panel econometric analysis points to a significant role for changes in macroeconomic policies, particularly through more credible monetary policy but also possibly through an increasing smoothing power of automatic stabilisers. It also

indicates that changes in economic structures such as the rising weight of services in production, increased trade openness and reduced oil exposure have made little or no contribution.

An attempt to quantify the possible impact of the liberalisation of financial and product markets leads to mixed results. There is some evidence that product market liberalisation is associated with lower output stability while financial liberalisation helps enhance investment stability. These two results seem, however, somewhat less statistically robust than those listed above, something which may be explained by the low quality of the indicators used.

For the sample of OECD countries considered, the explanatory variables used in the study can account for about 50% (or slightly more in the case of the euro area) of the drop in output growth volatility since the 1970s, the rest being broadly captured by a fixed time effect. This means that at least 50% of the drop in volatility is rooted in structural and policy changes and therefore unlikely to be unwound quickly. The share is actually an underestimation as the steady pattern of the time effects suggests that some explanatory variables are either missing – e.g. better inventory management – or poorly captured by the indicators used.

3. Recent labour market reforms in the euro area: characteristics and estimated impact

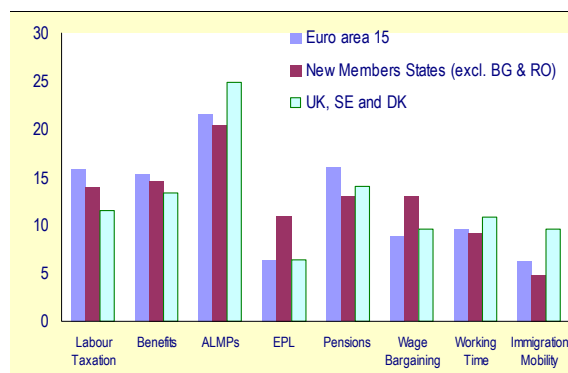
The recorded pace of structural reforms since the introduction of the euro has been somewhat mixed.¹² The advent of the third stage of EMU did not coincide with an acceleration of labour market reforms but with a continuation of reform strategy characterised by incremental reforms (i.e. a sequence of small changes), broadly heading towards better labour market adjustment capacity. A more in-depth analysis of labour market reforms enacted under the euro can be conducted using the LABREF database.¹³ This section describes the reforms enacted in the euro area in various areas. Based on the chronology of reforms, it explores the effect of certain policy measures taken for groups with low labour market attachment on the average employment and participation rates and their response over the cycle.

Labour market reforms enacted in the euro area

The structure of LABREF can be used to analyse the distribution of measures enacted between 2000 and 2006 by areas of policy intervention (Graph 10) and design characteristics (Graph 11). For the euro area as a whole, the majority of measures have been in the area of active labour market policies, taxation, unemployment and welfare-related benefits and pensions (Graph 10). Compared to the recently-acceded Member States, relatively few initiatives have been taken in the euro area in the area of employment protection legislation. About 15% of all reforms enacted in the euro area were in the area of pensions. As shown in Graph 11, a large number

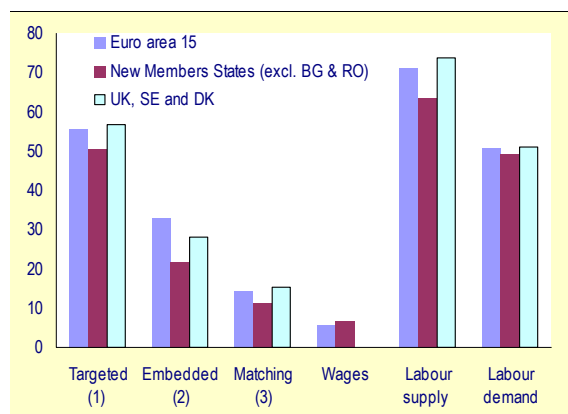
of policy measures targeted specific groups, with no major differences between euro-area and non-euro-area countries. Finally, labour supply has been the main focus of policy intervention in a large number of countries. This reflects the prevalence of measures in the field of welfare benefits and pensions.

Graph 10: Distribution of labour market reforms by reform area
(in % of total reforms – 2000-2006)



Source: LABREF

Graph 11: Distribution of labour market reforms by reform characteristics
(in % of total reforms – 2000-2006)



- (1) Reforms targeting specific socio-economic groups.
- (2) Reforms embedded in a formal long-term policy programme.
- (3) Reforms aimed at a better match of the unemployed and vacancies.

Source: LABREF

¹² A review of different arguments in support of (or against) a change in the pace of structural reforms after the euro and some recent evidence can be found in QREA 2007 (Vol. 6 No 4).

¹³ LABREF is an inventory of labour market reforms jointly managed by DG ECFIN and the Economic Policy Committee. It is a tool that provides a comprehensive description of qualitative features of the reform process, including the design of enacted reforms, their scope and durability. To date, the database covers the years 2000-2006 for the EU-27. Information for the year 2007 will be made available to the public in April 2008. The database can be freely accessed at: http://ec.europa.eu/economy_finance/db_indicators/db_indicators8638_en.htm.

For a description of LABREF, see *European Economy Research Letter* Vol. 1, Issue 3, November 2007.

Table 4 provides a synopsis of policy measures in different areas, based on the information available from the LABREF database for the years 2000 to 2006. Overall, there is a certain convergence between the measures enacted in the euro area. Several countries have eased the access to part-time and temporary forms of work. More flexible employment contracts may



Table 4: Structural reforms in euro-area labour markets, 2006-2007

Policy area	Main developments in the euro area as a whole
Active labour market policies	<ul style="list-style-type: none"> • Gradual shift from passive to active policies • Shift towards more effective job search and early activation • More focus on target groups • Improved governance of public employment services (PES) and closer complementarities/streamlining of PES activities with welfare benefit providers
Welfare benefits	<ul style="list-style-type: none"> • Reducing the generosity and duration of unemployment benefits • Tightening eligibility and availability to work criteria and reinforcing sanction mechanisms • Increased use of in-work benefits to improve the work attachment of marginal workers • Increased attention to family-related policies, including child-care support
EPL	<ul style="list-style-type: none"> • Mainly increasing flexibility at the margin of the labour market with potentially detrimental segmentation effects
Taxation	<ul style="list-style-type: none"> • Cuts in labour taxes targeting low-income levels to reduce inactivity and unemployment traps for low-income earners • Reductions in social security contributions to boost labour demand, often targeting difficult to employ groups and older workers
Pensions	<ul style="list-style-type: none"> • Little focus on reforms of early retirement, sickness and disability • Some parametric reforms of pension systems and very few structural reforms, but substantial reform programmes (sometimes with gradual and long phasing-in) have been adopted in a number of Member States in previous years
Wage bargaining	<ul style="list-style-type: none"> • Few efforts, mainly in Belgium, Germany and Spain, to make wages more responsive to sectoral and local cyclical conditions
Working time	<ul style="list-style-type: none"> • Introduction of innovative working time arrangements, both to reconcile work and family life and to promote more flexible organisation of work at company level
Immigration and mobility	<ul style="list-style-type: none"> • Some measures to improve the integration of third-country nationals, to simplify the procedures for entry and regularisation or to develop a flexible employment permit system focusing on the economy's skills and labour needs.

Source: Commission services – Labour Market Reform database (LABREF)

have made a positive contribution to the increase in labour utilisation, especially among groups with low participation rates, and enhanced the reallocation of labour.

Wage moderation has been observed since the launch of EMU. While this may have contributed to the improvements in the labour market trends registered so far, less clear is whether it has also made for a better response to country- and sector-specific shocks. In some countries, wage moderation has resulted from collectively agreed derogations to national contracts rather than from centrally-agreed income policies. This is particularly the case of Germany, where industry-level and company-level collective agreements negotiated in the early 2000s paved the way for the introduction of long-term working time accounts and for a wide range of opening clauses, which allowed companies to deviate from collectively agreed standards. Similar agreements, leading to *de facto* decentralisation of wage bargaining, have also been registered to various degrees in Austria, the Netherlands, Spain and France.

Conversely, proper reforms of **bargaining structures** to make wage settlements respond

more to productivity gains at local and company level have been rare. More precise criteria to determine the general validity of collective agreements have been defined in Finland and France. In the latter country, the possibility was introduced at company level of departing from sector-level agreements. Changes in the collective bargaining procedure were also introduced in Portugal (2003), to enhance the responsiveness of wage settings to productivity and skill differentials across sectors. Some elements of flexibility have been introduced in the central income agreements in Spain and Slovenia to take account of productivity gains and local conditions on top of inflation.

Higher flexibility of **working time organisation**, either to reconcile work and family life or to adjust employees' working patterns more to the company's changing needs, has been observed in most euro-area countries. Measures in this field were either in support of labour supply – e.g. working parents (ES, AT), older workers (BE, DE, FR and AT) – or were intended to inject greater margins of flexibility into overtime schemes (EL, FR) and into working time arrangements (AT).

Reforms of the tax and benefit systems allow time to be reallocated between market and non-market activities and labour supply to be sustained. Intervention in the **benefit systems** was inspired by the principle that the threat of losing benefits if a job offer is not accepted increases the incentive to search for a job. Thus, they have combined a lower level and shorter duration of benefits with tight availability-for-work criteria and more systematic controls and effective application of sanctions for refusal of suitable job offers. These measures were often supported by tax cuts, mainly targeting low incomes, and by more rigorous activation policies. Reforms have entailed, for instance, a sharp cut in the unemployment benefit maximum duration (NL) or substantial cuts in benefits (DE).

Some reforms of the **tax systems** were based on the idea that higher taxes and the withdrawal of means-tested benefits when income rises can be detrimental as to the decision to work longer hours and shift from part-time to full-time. Reductions in the marginal effective tax rate, at least for some family types at low to medium wage levels, have been obtained in Spain, France, Ireland, the Netherlands, Austria and Portugal. Reductions in the tax wedge have been adopted in Germany, Portugal, Austria and Ireland. In addition, cutting the tax wedge on labour has been a frequently used instrument to stimulate labour demand in the euro area. Targeted cuts in employers' social security contributions have been introduced, usually on a short-term basis, to create incentives to hire those with the lowest probability of joining the labour market. Non-targeted reductions of employers' social security contributions were extensively used in Italy (to foster employment in regions with high unemployment rates) and in Spain (in case of conversion of fixed-term contracts into permanent ones). Substantial simplifications of the rebates of employers' social security contributions in favour of the lowest wage levels have been introduced in France and in Belgium.

In contrast, reforms of **job protection legislation** have been limited and piecemeal, mainly targeting flexibility for new entrants and marginal workers, while leaving the legislation on permanent employment unchanged. Finding a viable balance between flexibility and security

also proved to be difficult on account of the complex interactions between institutions and the political sensitivity of the subject. As a significant exception to this general trend, important changes to job protection regulation were introduced in Slovenia in 2007. The lack of action observed in the field of employment protection legislation (EPL) seemed also to go together with substantial inactivity in the area of unemployment insurance in euro-area countries - such as Greece, Italy and Portugal - which have the most rigid EPL for open-ended contracts and the lowest level of protection in the market.¹⁴

Table 5: **Contribution of temporary and permanent employment to total average annual employment growth (1)**

	1991-1998	1999-2006
Temporary employment (in pp)		
Euro area	4.1	3.3
UK, SE and DK	2.9	-0.4
Permanent employment (in pp)		
Euro area	4.7	7.2
UK, SE and DK	10.8	5.4

(1) The sum of the contributions of temporary and permanent employment for each group of countries gives the cumulated average employment growth over each sub-period based on the LFS. This can differ from the growth rate based on National Accounts.

Source: Commission services – Labour Force Survey.

As shown in Table 5, euro-area countries experienced a sizeable increase in employment after 1998, which took the form of both permanent and temporary work positions. Conversely, non-euro-area countries experienced an increase in employment only thanks to the increase in permanent employment. This different pattern is likely to have resulted from the ease of employment protection legislation for workers with a temporary contract and may be held responsible for an increasing labour market

¹⁴ From the point of view of risk-averse individuals, job security provided by employment protection is functionally equivalent to a system of unemployment benefits, which explains why countries with strict employment protection legislation have relatively low unemployment benefits and vice versa. However, an efficient system of unemployment benefits stabilises the expected incomes of risk-averse individuals, and may also induce workers to accept more employment flexibility. A better reallocation of labour could be achieved through reforms of the labour market and the welfare state that, in line with the flexicurity approach, shift the focus from protection of workers in the same job for their entire lifetime to protection of workers in the market.



dualism in some euro-area countries. Reducing this dualism is one of the priorities of the policy agenda. In France, a new type of open-ended employment contract was introduced in 2005 for new recruits in firms of up to 20 employees, making for a longer probation period. Efforts to narrow the gap between standard and flexible employment contracts have also been made in Spain and Finland.

Under the pressure of ageing and persistently low participation rates of older workers, many countries have implemented **pension reforms**. More often than not, these reforms established a stronger actuarial link between contributions and benefits and increased incentives for workers to retire later. In a large number of countries (e.g. DE, ES, CY, PT and FI), reforms usually involved the introduction of changes in the eligibility conditions for first pillar old-age benefits, either by increasing the statutory retirement age, or by introducing stricter eligibility conditions other than age, or both. Other measures included changes in the contribution rates and shares among employers and employees, in the tax regime of contributions and pension benefits, and in pension coverage, and setting up and developing mandatory and/or voluntary second- and third-tier pension schemes. Efforts to increase the flexibility in their pension systems have been made in Spain and Finland.

Incentives to **early retirement** have been reduced. Conditions for eligibility for early retirement and disability have been tightened. In many Member States, early retirement schemes have been abolished altogether. The possibility and incentives to work beyond the normal retirement age or to combine state/occupational pensions with pension contributions completed after entitlement have been introduced or expanded in most countries (notably, BE, ES, FR and IT).

Many of the measures enacted in recent years have been geared to activating socio-economic groups with low labour market attachment, namely low-skilled, women and older workers. This focus is captured by the high proportion of reforms targeting specific socio-economic groups (Graph 11). Thus, the policy emphasis on these groups may have contributed to the increase in

the participation and employment rates of the recent years, a hypothesis that is confirmed in the next section.

Effect of reforms targeting marginally attached groups on employment rates

Box 3 presents an econometric analysis of the impact of reforms targeting marginally attached socio-economic groups (i.e. low-skilled, women and older workers) on the overall employment and participation rates. The reforms covered in this econometric exercise include measures involving: a change in the regulatory framework or fiscal incentives for temporary and part-time work; tax cuts for low-skilled/low-income workers; the use of employment subsidies and direct job creation schemes; and the introduction of in-work benefits. Overall, the econometric results show that these measures have paid off.

Estimation results indicate that the response of the employment rate to cyclical fluctuations in GDP, especially for men, is higher for countries outside the euro area than for those inside. The difference seems to relate primarily to employment demand rather than to employment supply and is consistent with euro-area countries being relatively more rigid in terms of employment.

Results also show that countries that have made an effort to activate groups at the margin of the labour market have enjoyed stronger gains in terms of employment rates. Euro-area Member States seem to 'gain' about twice as much from reforms as countries in the non-euro-area group. This result holds predominantly, but not exclusively, for men. It confirms that reforms targeting marginally attached groups have been more firmly geared to raising their employment rates in the euro area than in the rest of the EU.

The estimations also provide some indication that reforms that have improved the level of employment have also promoted adjustment to shocks in the form of a stronger response of the employment rate to cyclical fluctuations in activity. This effect, however, only seems to be in evidence in the euro area and for female workers.

The same econometric approach has also been used to assess whether reforms for groups at the

Box 3 : Estimating the impact of reforms targeting marginally attached workers

The chronology of reforms provided in LABREF is used to assess the quantitative effect of reforms targeting marginally attached workers on the total employment (or participation) rates. To this end, developments in the total employment (or participation) rates in those countries that have put in place reforms are compared with developments in employment (or participation) rates in non-reforming countries. Only reforms targeting marginally attached workers are considered (i.e. at women, older workers and low-skilled workers).

The following equation is estimated:

$$\Delta n_{i,t} = \alpha_i + \beta \text{reforms}_{i,t-1} + \mu \Delta \text{gdp}_{i,t-1} + \delta \Delta \text{gdp}_{i,t-1} * \text{reforms}_{i,t-2} + \varepsilon_{i,t}$$

where:

$n_{i,t}$ employment rate;

$\text{gdp}_{i,t}$ gross domestic product;

α_i country-specific fixed effect;

$\text{reforms}_{i,t} = 1$ if a reform targeting marginally attached workers is occurring in country i at time t and 0 otherwise.

This formulation allows to test whether employment and its cyclical response change after the reforms. The coefficients β and δ capture the differential effects of reforms on the employment rate and its cyclical response respectively. If $\beta \neq 0$, reforms influence the average employment rate. If $\delta \neq 0$, reforms also affect its response over the cycle. To capture the lagged effect of reforms, the reform dummy is introduced with a 2-year lag.

This equation is estimated for total, female and male employment rates respectively, both for euro-area countries and for the rest of the EU-25 over the period 2001-2006 (see first table below). The equation is also estimated for total, female and male participation rates for the same groups of countries and time periods (see second table below).

Effect of reforms on total, female and male employment rates, euro area and rest of EU-25						
<i>Dependent variable: change in employment rate</i>						
	Total		Female		Male	
	Euro-area countries	Rest of EU-25	Euro-area countries	Rest of EU-25	Euro-area countries	Rest of EU-25
Reforms dummy (-1)	0.64*** (2.66)	0.24*** (7.27)	0.46*** (2.04)	0.23*** (3.86)	0.77*** (2.62)	0.12 (0.72)
GDP growth (-1)	0.11** (1.96)	0.15*** (4.30)	0.07 (1.50)	0.12*** (2.98)	0.10*** (2.07)	0.29*** (7.56)
GDP growth (-1)*Reforms dummy (-2)	0.06 (1.20)	0.009 (0.56)	0.11** (2.18)	0.025 (1.28)	0.001 (0.02)	0.02 (0.02)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72	78	72	78	72	78
R-squared (adjusted)	0.33	0.48	0.40	0.27	0.21	0.36

OLS regression controlling for country-specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. Estimation period: 2001-2006.

Effect of reforms on total, female and male participation rates, euro area and rest of EU-25						
<i>Dependent variable: change in participation rate</i>						
	Total		Female		Male	
	Euro-area countries	Rest of EU-25	Euro-area countries	Rest of EU-25	Euro-area countries	Rest of EU-25
Reforms dummy (-1)	0.41*** (5.01)	0.014 (0.12)	0.29*** (4.41)	-0.06 (-0.61)	-0.13 (-0.99)	-0.0013 (-0.03)
GDP growth (-1)	-0.02 (-0.74)	0.13*** (4.72)	-0.03 (-1.10)	0.06 (1.33)	-0.02 (-0.66)	-0.06*** (-4.05)
GDP growth (-1)*Reforms dummy (-2)	0.10** (2.12)	-0.007 (-0.40)	0.16** (2.93)	0.02 (1.04)	-0.02 (-0.40)	0.024 (1.11)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	
Observations	72	78	72	78	72	78
R-squared (adjusted)	0.19	0.29	0.19	0.27	0.02	0.12

OLS regression controlling for country-specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. Estimation period: 2001-2006.



margin of the labour market have effectively had the effect of changing the pattern of participation rates. Various specifications for the participation rate equation for euro area and non-euro-area countries suggest that these reforms have been paying off more in the euro area than in non-euro-area countries.

Conclusions

The information available from the LABREF database suggests that the reforms put in place in the euro area have mainly been targeted at increasing labour utilisation, especially among groups with low participation rates (the outsiders). In addition, the reforms enacted to improve labour market flexibility focused mainly on the same outsiders, while only minor policy intervention was geared to the needs of adapting employment regulation for insiders.

Econometric analysis indicates that this configuration of reforms has paid off in terms of increasing employment rates and participation rates in the euro area. It has also entailed a strengthening of the response of employment to cyclical fluctuations. However, data also point to the increasingly dual nature of euro-area labour markets, with reforms targeting the margins of the labour market rather than standard labour contracts. As advocated in the Commission Communication on Flexicurity,¹⁵ this increased dualism may require further measures, with revision both of the labour regulation for standard contracts and of unemployment benefits and activation systems.

¹⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "Towards common principles of flexicurity: More and better jobs through flexibility and security", SEC 2007(861) (862) 27/06/2007.

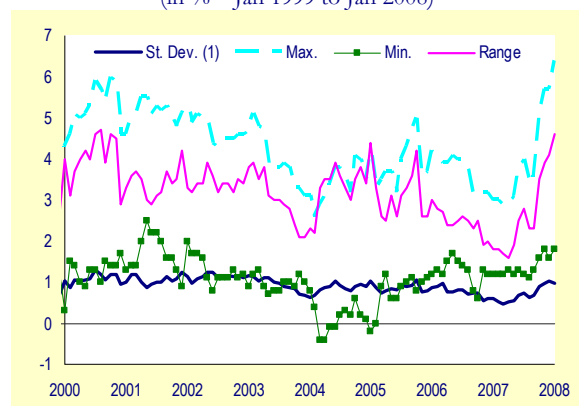
4. Member States' differences in the transmission of recent inflation shocks

Headline inflation in the euro area picked up significantly in the course of 2007, and inflation tensions are persisting at the beginning of this year. Higher energy and food prices have been important drivers in that respect, whereas the appreciation of the euro has worked in the opposite direction. This section looks into recent inflation developments in euro-area Member States and reviews country differences in the transmission of recent inflation shocks.

Inflation developments in euro-area Member States

Over the last six months, i.e. in the period between July 2007 and January 2008, annual HICP inflation increased by 1.4 pp in the euro area. In nine euro-area Member States (Austria, Belgium, Cyprus, Finland, France, Greece, Italy, Luxembourg, Malta, Slovenia and Spain), it increased by more than 1 pp, whereas upward movements in other countries were more muted. In January 2008, the highest inflation rates were observed in Slovenia (6.4%), Spain (4.4%), Luxembourg (4.2%) and Greece (3.9%).

Graph 12: Headline inflation dispersion in the euro area
(in % – Jan 1999 to Jan 2008)



(1) Monthly unweighted standard deviation across the euro area
Source: Commission services.

Inflation dispersion, measured by either the standard deviation or the range between the lowest and the highest inflation rates across euro-area Member States, fell slightly between late 2005 and early 2007, before rebounding towards spring 2007. For example, the range has more than doubled recently, increasing from a low of

Table 6: Sectoral contribution to inflation in euro-area Member States in 2007
(annual change in % – period averages)

	Non-energy industrial goods		Energy		Unprocessed food		Processed food		Services		All-items HICP		
	2007		2007		2007		2007		2007		2007		2008
	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	Jan-08
Belgium	0.3	0.3	-0.1	0.8	0.4	0.2	0.4	0.8	0.8	0.6	1.8	2.7	3.5
Germany	0.4	0.4	0.3	1.0	0.2	0.1	0.3	0.5	0.8	1.0	1.9	3.0	2.9
Ireland	-0.3	-0.4	0.3	0.8	0.2	0.1	0.4	0.9	2.3	1.8	2.8	3.2	3.1
Greece	0.8	0.5	-0.2	1.0	0.1	0.2	0.7	0.5	1.6	1.4	2.9	3.6	3.9
Spain	0.3	0.1	-0.1	0.9	0.5	0.5	0.4	1.0	1.4	1.4	2.5	4.0	4.4
France	0.1	0.2	0.0	0.8	0.1	0.2	0.0	0.3	1.0	1.0	1.3	2.5	3.2
Italy	0.5	0.5	0.2	0.4	0.3	0.3	0.3	0.5	0.8	0.8	2.0	2.6	3.1
Cyprus	-0.5	-0.1	-0.3	1.4	0.8	0.0	0.3	0.5	1.1	1.4	1.3	3.2	4.1
Luxembourg	0.5	0.5	0.0	1.4	0.2	0.1	0.7	1.1	0.9	0.9	2.2	4.0	4.2
Malta	0.1	0.6	-0.3	0.1	0.1	0.6	0.3	0.6	0.7	0.6	0.8	2.5	3.8
Netherlands	0.2	0.0	0.3	0.6	0.2	0.0	0.1	0.4	0.7	0.6	1.5	1.7	1.8
Austria	0.1	0.6	0.1	0.9	0.2	0.2	0.2	0.6	1.1	0.7	1.8	3.2	3.1
Portugal	0.6	0.2	0.2	0.8	0.7	0.0	0.0	0.6	1.0	1.1	2.4	2.7	2.9
Slovenia	0.0	0.3	0.1	1.1	0.4	0.8	0.5	1.5	1.6	1.8	2.6	5.5	6.4
Finland	-0.2	-0.3	0.0	0.6	0.3	0.3	0.1	0.2	1.2	1.2	1.4	2.0	3.5
Euro area	0.3	0.3	0.1	0.8	0.2	0.2	0.2	0.5	0.9	1.0	1.8	2.9	3.2

Source: Commission services.

1.6 pp in April 2007 to 4.6 pp in January 2008 (see Graph 12). This can to a large extent be attributed to a significant increase in inflation in Slovenia (to 6.4% in January 2008). Excluding Slovenia, the range increased more moderately, from a low of 1.5 pp in May 2007 to 2.6 pp in January 2008.

Table 6 shows the contributions to headline inflation in 2007 of the five main HICP consumption segments, both at aggregate euro-area and at Member State level. The acceleration of headline HICP inflation between the first and the fourth quarter of the year generally reflected increased contributions from energy and processed food. However, the extent to which the global price shocks were transmitted to individual euro-area Member States varied significantly.

Energy inflation and oil prices

One of the main factors affecting recent euro-area inflation developments has been the large rise in energy inflation, mainly caused by an increase in oil prices over the last year. Euro-denominated oil prices have increased by around 54% over the past twelve months, reaching 63 euros per barrel in January 2008 (in dollar terms the increase was 72%). Amongst euro-area

Member States, the highest contribution of energy inflation to the increase in headline HICP in 2007 was recorded in Germany, Ireland, the Netherlands and Slovenia. The impact was null in Belgium and even negative in Malta.

One reason for these differences is the unequal energy weights in HICP baskets, particularly in Slovenia (3.2 pp higher than the euro-area average) and Germany (1.6 pp), where energy weights in the HICP baskets are higher than the euro-area average (see Table 7). In Malta, Greece and Finland, on the other hand, energy weights in the HICP baskets are much lower than the average. These differences imply that a given rise in energy prices will have a different impact on headline inflation in different countries. For instance, an increase of energy prices of 10% in Slovenia and Greece will entail a pick-up of headline inflation that will be 0.6 pp higher in the former country.

Another reason for the differentiated impact of oil prices on energy inflation is developments in administered prices. In Germany and Slovenia, for instance, administered prices on electricity and liquid fuels increased in 2007. In most other Member States, administered prices decreased.



Box 4: The direct effect of changes in oil prices on euro-area HICP inflation

Changes in oil prices impact on inflation through a number of channels. Firstly, inflation is directly affected by the impact on the HICP energy component. Secondly, there is an indirect effect on inflation as energy price changes are passed on to other sectors of the economy, such as the transport sector. Finally, inflation can be affected if these direct and indirect impacts then lead to second-round effects, i.e. if wages increase in response to higher inflation, in turn putting upward pressure on inflation.

This box analyses the size and the speed of oil price pass-through via the first of these channels in the euro area and in Germany, Spain, France and Italy. Q-o-q percentage changes of the HICP energy category are regressed on level changes in the euro-denominated Brent oil price and a number of its lags. The results of these estimations are reported in the table below.

	Estimated pass-through of oil prices into the HICP									
	<i>Energy HICP</i>					<i>Gas HICP</i>				
	Euro area	Germany	Spain	France	Italy	Euro area	Germany	Spain	France	Italy
Constant	0.47 (2.68)	0.66 (2.68)	0.26 (1.04)	0.13 (0.56)	0.15 (0.86)	0.53 (2.65)	0.69 (1.83)		0.34 (0.96)	0.21 (1.01)
Oil price	0.50 (12.60)	0.50 (8.94)	0.66 (11.5)	0.52 (9.59)	0.32 (8.35)					
Oil price Q-1				0.13 (2.28)	0.18 (4.53)	0.09 (1.85)			0.26 (3.11)	0.11 (2.34)
Oil price Q-2					0.09 (2.19)	0.37 (7.86)	0.50 (5.53)			0.37 (7.56)
Oil price Q-3	0.12 (2.81)	0.18 (2.95)	0.11 (1.81)	0.10 (1.82)	0.08 (2.06)	0.29 (5.84)	0.37 (4.01)		0.43 (5.06)	0.13 (2.49)
Oil price Q-4	0.08 (2.00)	0.10 (1.75)			0.11 (2.83)	0.17 (3.60)	0.26 (2.84)			0.14 (2.86)
Oil price Q-5									0.21 (2.38)	
R ²	0.85	0.75	0.81	0.77	0.80	0.80	0.65		0.54	0.73
RESET test (p-value)	0.61	0.83	0.48	0.98	0.52	0.56	0.11		0.06	0.18

Note: Data are quarterly and cover the period from Q-1 1999 to Q-4 2007. Energy and gas HICP inflation reflects quarter-on-quarter percentage changes in the price level. Oil prices are quarterly changes in levels, since the overall properties of the regressions are better than when percentage changes in the oil price are used. Lags of the order of 1-6 (Q-1 to Q-6) in the oil price were included in the original regressions and insignificant regressors were removed subsequently. Numbers in parenthesis refer to t-values.
RESET test is a statistical test for functional form. In general, other diagnostic tests do not show signs of misspecification.

The results for the euro area as a whole show that changes in oil prices start to pass through to *average euro-area energy inflation* immediately: a 1 euro increase in the oil price translates into a 0.5 pp increase in the q-o-q change in the HICP energy component in the current quarter. Changes in the oil price do not appear to have a significant effect on energy HICP over the subsequent 2 quarters, whereas the results show that there are significant lagged effects for 3 and 4 quarters after the oil price change. The y-o-y energy inflation will increase by around 0.75 pp within the first year and the effect disappears after 7-8 quarters.

The lag structure of the oil price impact could indicate the importance of oil contracts and futures, setting the oil price for companies for up to 6 months. Furthermore, the existence of relatively long lags probably reflects the development in the gas component, which is *de facto* indexed to oil prices. The results for the sub-component 'gas' show that the oil price pass-through to gas prices is slow, with basically no immediate impact and the main impact occurring between 2 and 3 quarters after the oil price change.

The impact of a 1 euro increase in the oil price on y-o-y energy inflation is similar in Germany, Spain, France and Italy and is in the range of 0.70-0.75 pp during the first year, before fading out. The dynamic impact, however, is rather diverse in the four euro-area Member States. In Germany, the immediate impact on energy HICP inflation is similar to that of the euro-area average. The size of the impact in Germany after 3-4 quarters is, however, slightly larger. Furthermore, the constant term is larger. The latter could indicate historically significant increases in administered energy prices in Germany.

In Spain, the immediate oil price impact is very large, 0.66 pp, whereas the lagged effects are smaller than in the euro-area average. In France, the speed of the oil price pass-through is slightly lower than in Spain but higher than in Germany. Italy stands out, in that the dynamic impact from changed oil prices are spread out, quite evenly, over the four quarters following the oil price change.

The four countries' HICP energy weights (average 2007) in the HICP index range from 8.6% in Italy to 11.2% in Germany. Based on these data, a 1 euro increase in the oil price implies a direct contribution to headline HICP inflation (y-o-y) during the first year of: 0.058 pp in Italy, 0.066 pp in France, 0.075 pp in Spain and 0.078 pp in Germany.

Furthermore, the relatively low competition in the energy market in Belgium might be one of the causes of the current sharp price increases for gas and electricity in that country. The incumbents' market power in Belgium remains high and their presence in transmission and distribution network operators is significant. The liberalisation of the residential users market in 2007 has been only a partial success, with particularly slow progress in Brussels.

Table 7: Euro-area Member States' weights of HICP categories compared to euro-area average (in pp – 2007)

	Non-ener. ind. goods	Energy	Unproc. food	Proc. food	Services
BE	1.8	0.7	0.7	0.0	-3.2
DE	-1.4	1.6	-2.6	-0.3	2.6
IE	-4.1	-0.9	-1.5	1.8	4.7
EL	-1.2	-2.5	0.7	1.4	1.6
ES	-1.5	0.1	4.8	0.5	-3.8
FR	1.4	-0.8	0.7	-0.3	-1.0
IT	1.4	-1.0	0.7	0.3	-1.4
CY	-0.4	1.8	0.8	0.9	0.4
LU	2.6	1.7	-3.3	9.0	-10.0
MT	2.1	-4.0	0.2	2.4	-0.7
NL	0.8	0.6	-2.3	-0.4	1.3
AT	-1.1	-1.5	-2.3	-1.8	6.6
PT	1.1	-0.4	3.7	-1.3	-3.1
SI	1.1	3.2	-0.3	2.8	-6.8
FI	0.2	-2.4	-1.2	2.9	0.4
EA	30.0	9.6	7.6	11.9	40.8

Source: Commission services.

Box 5 presents estimates of the direct effect of changes in oil prices on inflation in the euro area as a whole, Germany, Spain, France and Italy. The estimations suggest that the pass-through of oil price changes into inflation is strong: a 1 euro increase in oil prices raises the energy component of the HICP by about 0.75 pp and headline HICP by about 0.05 pp during the first year

following the shock. While most of the oil price impact on inflation occurs within the first year in all four euro-area Member States, the speed of the pass-through varies somewhat across countries. In Spain and France, the impact occurs mainly in the current or current and next quarter, whereas in Italy the impact is spread out over the first 4-5 quarters. In general, the lag structure indicates the importance of oil contracts and futures, setting the oil price for companies for up to 6 months, and also the lagged development in gas prices.

In addition to direct effects, oil price changes can also affect inflation both indirectly and via second-round effects. Previous research has shown that indirect effects can be substantial, with a 1 euro rise in Brent prices contributing between 0.02-0.03 pp to core inflation, but that these effects occur with a substantial delay of between one and three years.¹⁶ Overall, the total effect of an oil price rise on euro-area HICP inflation can be considerable and long-lasting.

Food inflation and developments in agricultural prices

The average contribution of the food component to headline inflation increased markedly across euro-area Member States in 2007 compared to the period 2000-2006 (Table 8). The total contribution of unprocessed and processed food prices to headline HICP inflation across euro-area Member States ranged between 0.3 and 1.0 pp in 2007, with the exception of Slovenia, where it added about 1½ pp to the annual increase in headline inflation. This compares to a long-term average contribution of the food component to euro-area headline inflation of 0.5 pp. In 2007,

¹⁶ See, for example, European Commission (2005), 'The impact of higher oil prices on inflation', Quarterly Report on the Euro Area, Volume 4, No 4, pp. 28-39.



the food component contributed more than 100 per cent to the overall increase in headline inflation in Malta and around 40-45% in Belgium, Slovenia and Luxembourg, whereas the contribution was less than 20% in Netherlands and France.

Unequal food weights in the HICP baskets can explain some of the differences in food price contribution to headline inflation. While food weights in the HICP baskets are higher in Luxembourg, Spain, Slovenia and Malta than the euro-area average, the weights are lower in Austria, Netherlands and Germany.

Table 8: Contribution of food prices to headline inflation in the Member States
(in % – 2000-2007)

	Contribution of food prices in % of total headline inflation		Weight of food in HICP	Food inflation (y-o-y)
	2000-2006	2007	2007	2007
BE	21.7	44.9	20.2	4.0
DE	20.2	21.7	16.7	3.0
IE	21.9	25.8	19.9	3.7
EL	26.2	22.4	21.7	3.1
ES	30.9	36.3	24.8	4.1
FR	28.5	18.7	19.9	1.5
IT	21.5	30.7	20.5	3.0
CY	41.2	41.6	21.3	4.3
LU	31.8	37.5	25.3	4.0
MT	23.6	101.2	22.1	3.2
NL	14.1	16.8	16.8	1.6
AT	17.2	26.7	15.5	3.8
PT	19.0	25.6	21.9	2.8
SI	20.4	41.2	22.1	7.1
FI	14.6	25.3	21.3	1.9
EA	23.5	26.1	19.6	2.8

Source: Commission services.

Other factors, such as the relative cyclical position of euro-area Member States and differences in retail market structures, also contributed to the cross-country differences in food inflation. Malta, for instance, imports almost all of its food supplies. Consequently, fluctuations in global food prices have a significant impact on inflation developments. In addition, due to its small size a few food importers dominate the market, thereby hindering effective competition. In Slovenia, the large increases in food prices point to insufficient

competition in the food retail sector. In France, on the other hand, the recent increase in food prices has been relatively benign on account of measures taken by the French government in 2004 and in 2007 to enhance competition in the retail sector.¹⁷

Table 9: Unprocessed and processed food HICP in euro-area Member States
(annual change in % – 2005-2007)

	Unprocessed food			Processed food (1)		
	2005	2006	2007	2005	2006	2007
BE	1.7	3.3	3	2.0	2.1	4.7
DE	0.8	3.2	2.4	3.6	2.1	3.2
IE	-1.6	2.2	2.8	0.4	0.9	4.1
EL	-1.5	1.9	2.2	2.8	5.2	3.7
ES	3.3	3.9	4.3	3.5	3.9	3.9
FR	1.0	2.6	2.2	-0.4	0.6	1.0
IT	-0.7	1.6	3.2	2.2	2.7	2.8
CY	2.7	8.0	6.1	1.6	2.8	2.9
LU	1.3	2.7	3.7	5.1	3.0	4.0
MT	2.2	2.2	4.7	1.5	1.6	2.4
NL	-0.2	3.4	1.5	-0.3	0.6	1.6
AT	1.1	1.2	3.9	2.6	1.3	3.8
PT	-0.5	3.2	3.0	0.8	4.1	2.6
SI	-0.8	3.1	8.7	0.6	2.5	6.3
FI	0.0	2.0	4.0	-0.4	1.3	1.0
EA	0.8	2.8	3.0	2.0	2.1	2.8

(1) Including alcohol and tobacco.

Source: Commission services.

A large increase in international agricultural commodity prices has been a major factor behind the recent increase in euro-area inflation. Since January 2006, agricultural commodity price indices have increased by about 50%, with half of this increase occurring between summer 2007 and January 2008. During the first half of 2007, the price increase accelerated in particular for cereals and dairy products. Prices for skimmed milk powder in Europe rose by about 80%, butter prices by almost 50% and poultry prices

¹⁷ The December 2007 reform proposals on the relation between suppliers and large retailers were converted into a law 'Loi pour le développement de la concurrence au service des consommateurs' (law to develop competition in favour of consumers) adopted on 3 January 2008. According to the French Ministry of Finance estimates, the measures envisaged by the law should lead to a substantial cut in prices (in particular in national brand retail prices), leading to a progressive consumer price decline of up to 1.4 pp.

by 30% between summer 2006 and summer 2007. Since then, prices have declined somewhat, particularly on dairy products and poultry. The price increase on wheat continued throughout the course of 2007 and by January 2008 it was around 90% higher than a year earlier.

The driving forces behind the recent price increases in agricultural commodities are partly temporary and partly structural in nature. Firstly, there have been weather-related shortfalls in a number of important producing countries. Secondly, agricultural world markets are becoming tighter due to swelling demand for higher-quality food and also on account of booming demand in emerging countries. Thirdly, rising demand for bio-fuels compounds the tight supply situation, particularly in the US, where the production of bio-ethanol is estimated to absorb around 25% of US maize production. Fourthly, the supply response to the growing demand seems to be hampered by relatively slower productivity growth in agriculture in emerging countries and also by limited availability of additional fertile farmland. Finally, the surge in agricultural commodity prices has been supported by a historically low level of international stocks. EU intervention stocks have been almost completely depleted.

The pricing of futures markets indicates that, although agricultural commodity prices will remain at elevated levels, they will decline over the next 12 months. This implies that food price inflation should decrease in the course of 2008.

Exchange rates

The euro has appreciated by more than 6% in effective terms over the last twelve months, reflecting a broad-based strengthening against most major currencies. The appreciation of the euro has put downward pressure on inflation, helping in particular to mitigate the inflationary pressures emanating from international commodity markets.

Available estimates show that the pass-through of exchange rate changes to import prices is strong in the euro area (about 75%), and rapid, with most of the effect occurring in the same

month.¹⁸ The pass-through is largest in Spain, Italy and Portugal and smallest in Ireland, Greece and Austria. The impact from exchange rates on producer and consumer prices is, however, smaller and significantly slower. Empirical estimates suggest a long-run rate of pass-through in the euro area of 23% and 19% for producer and consumer prices, respectively.¹⁹ Based on these estimates, the 36% appreciation of the euro since year-end 2000 would have contributed to increased household purchasing power of about 7%, with some of these gains still to come.

Table 10: Nominal effective exchange rate and import prices
(annual change in % – 2003-2007) (1)

	NEER		Unit value indices, consumption goods	
	average 2003-06	2007	average 2003-06	2007 (2)
BE	1.4	1.2	-0.9	-5.3
DE	1.9	1.7	1.1	0.8
IE	2.5	2.6	1.4	1.8
EL	1.5	0.8	1.6	1.8
ES	1.4	1.2	0.9	0.7
FR	1.7	1.6	-0.2	-1.3
IT	1.8	1.6	1.9	2.0
CY	-3.5	-0.3	0.6	1.4
LU	1.4	1.2	-0.6	1.4
ML	1.3	2.9	1.5	-2.3
NL	1.2	1.0	-1.2	5.9
AT	1.1	0.9	0.2	4.1
PT	1.1	1.1	0.9	-0.1
SI	-0.7	0.3	-0.3	3.2
FI	1.8	1.5	-0.3	0.1
EA	3.7	3.3	0.5	0.9

(1) The unit value index is for imported goods from outside the euro area.

(2) The increase in the unit value index in 2007 is for the period November 2006 to November 2007, on account of the available data.

Source: Commission services.

Although the pass-through from import prices to consumer prices is not mechanical, developments in import prices (based on unit value indices)

¹⁸ Campa, J.M., L.S. Golberg and J.M. Gonzalez (2005), 'Exchange-rate pass-through to import prices in the euro area', Documentos de Trabajo No. 0538, Banco De España.

¹⁹ European Commission (2007), 'The impact of the euro appreciation on domestic prices and the trade performance', Quarterly Report on the Euro Area, Vol. 6 No 2.



across euro-area Member States can give a useful indication of the impact of exchange rate fluctuations on imported inflation (see Table 10).

The dynamics of import prices in the Netherlands, Austria and Slovenia were particularly strong in 2007.²⁰ This coincides with a modest appreciation of the effective exchange rate in these Member States last year. In Malta and France, on the other hand, import prices fell last year, whereas the exchange rate increase was significant.

The linkage between changes in exchange rates and import prices is not however clear in all Member States, e.g. Belgium, where a modest appreciation of the exchange rate in 2007 coincided with a substantial decline in import prices. The extent to which movements in the euro exchange rate affect domestic inflation rates varies across Member States, depending on factors such as the pattern of international trade, cyclical conditions, pricing strategies of foreign exporters and the behaviour of domestic retailers (related to the degree of competition in domestic retail markets).

Conclusion

While headline inflation in the euro area has been high in recent months, inflation dispersion amongst euro-area Member States has increased significantly since summer 2007. Although energy and food prices have accelerated in all Member States and contributed substantially to the increase in inflation, the global shocks to oil and agricultural commodity prices have been transmitted to individual countries with varying intensity, depending on the weight of food and energy in national HICP, as well as on idiosyncratic factors such as the degree of competition in retail markets and the extent of domestic demand pressures. Furthermore, the exchange rate pass-through on consumer prices has differed across euro-area Member States. Looking forward, earlier increases in energy and food prices will continue to affect euro-area inflation in 2008 through base effects and possible second-round effects. While the impact will gradually disappear in most euro-area Member States, earlier experience suggests that it will be different across Member States.

²⁰ Data on unit value indices for imports suffer from a number of shortcomings, which tend to make them less reliable than import deflators in national accounts. The latter, however, do not distinguish between intra- and extra-area origins.