

# **QUARTERLY REPORT ON THE EURO AREA**

**Volume 8 No 4 (2009)**

Highlights in this issue:

- Recent economic and financial developments
- The impact of the crisis on the labour market
- The euro during the financial crisis
- Public attitudes towards structural reform in the euro area
- Structural reforms for knowledge-based economies
- Focus: Trends in European banking
- Focus: Ensuring fiscal sustainability for a recovering euro area



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## EDITORIAL

The economic recovery in the euro area is gathering momentum, albeit at a modest pace. GDP growth turned positive in the third quarter. Latest economic confidence indicators are broadly in line with our growth forecast, which projects GDP growth to reach 0.7% in 2010 as a whole and to accelerate to 1.5% of GDP in 2011. However, let's not forget that the current recovery is underpinned by massive economic support provided by governments around the world, which will eventually have to be scaled back. Moreover, high and still rising unemployment, one of the topics addressed in this issue of Quarterly Report on the Euro Area, reminds us of the important policy agenda ahead of us.

2010 will be a challenging and decisive year for euro-area policy makers and the euro-area economy. Looking back on 2009, solid groundwork has been put in place to go ahead: first, the European Economic Recovery Plan (EERP), launched in December 2008, helped cushion the collapse of economic activity. Without the EERP, the contraction of euro-area GDP would have been deeper this year. Designed for a two-year period, it will continue to provide valuable support next year.

Second, recognising that our economies cannot rely on life support forever, the Ecofin Council in October articulated clear and transparent principles for the eventual exit from the formidable government and central bank interventions. Provided that economic circumstances do not unexpectedly deteriorate again, fiscal consolidation will start in 2011 at the latest and will include a consolidation effort of well beyond 0.5% of GDP per year. Depending on national features, some Member States will have to start consolidation earlier. It will have to be supplemented by structural reforms underpinning the long-term sustainability of public finances and minimising the negative impact of the crisis on potential growth. The pace of fiscal adjustment and the deadlines for correction of the excessive deficits have to be differentiated according to country-specific circumstances. In line with these principles, the Ecofin Council in December adopted ambitious but realistic recommendations to correct Member States' excessive deficits.

Third, Finance Ministers, the Commission and the ECB have agreed principles for the gradual

winding down of the financial sector support schemes, too. On the basis of Commission proposals and in line with European state aid rules, the phasing out will be gradual, taking into account the economic and financial stability conditions in Member States, and should start with the potentially most distorting government guarantees.

Finally, Europe is reworking its financial market supervisory architecture. Following recommendations by the de Larosière Group and detailed legislative proposals by the Commission earlier this year, the European Council in December agreed to a new supervisory framework for the European Union. To better bolster the stability of European financial markets in future, a new European Systemic Risk Board will monitor macro-prudential risks and issue warnings and recommendations for policy action if risks are judged significant. In addition, three European supervisory authorities for banks, insurance and securities markets will be created with a view to unifying supervisory practices across Member States and to be able to act efficiently in a financial emergency. The European Parliament will start debating the reform package early next year with a view to establishing the new system in the course of 2010.

Looking ahead to 2010, uncertainty remains high, and setbacks in the recovery cannot be ruled out. In such an environment, to minimise potentially negative confidence effects, the conduct of credible, time-consistent and predictable economic policies is essential.

For fiscal policy this means the need for full compliance with the recommendations for the correction of excessive deficits as agreed by the Council following proposals by the Commission. The overall fiscal stance for the euro area will remain appropriately expansive in 2010. But in some Member States, where the rise in public debt and the vulnerabilities of the economy are particularly high, the immediate implementation of consolidation is a matter of urgency. Ensuring fiscal sustainability is essential for a self-sustained and durable recovery of the euro-area economy. This is one of the aspects highlighted in the Focus section on fiscal sustainability.

As recently demonstrated by strong market reactions, fiscal sustainability needs to be

restored as soon as possible. The experience of Greece is a source of serious concern. In light of the ballooning public finance deficit, the Commission will come forward early next year with recommendations on how to correct the excessive deficit.

The year 2010 will be particularly crucial for making progress on financial sector repair as the banking sector continues to be under stress. How fragile and nervous markets still are was demonstrated last month when Dubai World's announcement that it was delaying debt service sent a shiver through global markets. It should be clear, however, that government support schemes should be kept in place only as long as necessary since they would eventually distort the industry, impede the integration of our financial market and hamper growth. We need to ensure that the banking sector ultimately becomes sufficiently capitalised to withstand future adverse shocks. It is important that the capitalisation process does not impair the provision of credit to the real economy.

The crisis has had a profound impact on the banking industry, as discussed in our Focus section. On the one hand it has fostered consolidation in the banking sector, while on the other hand it has led to increasing fragmentation along national borders. Moreover, the crisis is putting pressure on the banking sector to restructure, partly because banks face new market conditions, but also due to regulatory reform and EU state aid rules. The new (cross-border) supervision is also shaping the future trend of banking in the euro area.

Looking ahead at the challenges for growth and employment next year and beyond, it is essential for the euro area to re-energise its structural reform agenda. The challenge now is to make progress on a comprehensive growth agenda, which addresses the manifold labour market challenges, facilitates the reallocation of resources to new activities, enhances the euro area's adjustment capacity and boosts the long-run growth potential of the euro-area economy. With a view to forging a framework for strong, balanced and sustainable growth in Europe over the next decade, the new Commission at the beginning of 2010 will propose a new and comprehensive EU 2020 strategy. The timing for this looks right, not only in terms of the formidable adjustment needs, but also in terms of public attitudes towards structural reform in the euro area. This Quarterly Report on the Euro

Area argues that there is a window of opportunity that governments must embrace proactively to boost growth and jobs.

2010 will be a decisive year for the world economy as a whole. Economic policy coordination by the G20 proved instrumental in averting global economic meltdown at a critical juncture. Nourishing the recovery and delivering strong and balanced growth for the world economy over the medium term is now one of the key challenges for the G20 going forward and will be at the top of the agenda at the G20 summit in Canada in June 2010. All major economies will have to do their part to make it a success, but action has to be differentiated depending on the specific situation and outlook for the economies.

The euro area is committed to playing a constructive role at the global level by boosting structural reform and putting in place an orderly and time-consistent exit strategy. In the US, continued support seems warranted in 2010 to spur the recovery and smooth the ongoing deleveraging of private households and corporations. At the same time, in order to counter potentially destabilising sustainability concerns, it becomes increasingly important to define and articulate a credible strategy for the eventual withdrawal of the extraordinary fiscal and monetary stimulus measures. As economic growth is gathering momentum in Asia, stimulus policies should be scaled back progressively to avoid overheating. China needs to make further progress to increase domestic consumption, building on recent efforts and underpinned by a gradual appreciation of the renminbi. As argued in this Report, further progress on exchange rate adjustment would be in the interest of the Chinese economy as much as of the world economy as a whole.

Let me wish readers of the Quarterly Report on the Euro Area a calm and relaxing break and a prosperous and successful New Year.

MARCO BUTI

DIRECTOR-GENERAL

## I. Economic situation in the euro area

*The worst recession in the euro area's short history seems to have come to an end in the third quarter of 2009. The rebound in activity reflects improvements in the external environment, the unprecedented fiscal and monetary policy actions that were taken worldwide and the improvements in financial conditions. Many financial indicators are now at pre-crisis levels. However, money and credit growth to enterprises and households remains subdued on the back of low asset prices and weak demand. Moreover, while the recent stabilisation in financial markets appears to be fairly robust, the improvement in financial indicators has been rather gradual recently and financial conditions are still vulnerable. Euro-area GDP growth turned positive in the third quarter, after five consecutive negative quarters. Benefiting from the improvement in the global economy, euro-area exports were the key driver of the rebound in growth in the third quarter. Inventories also contributed positively to GDP growth, reflecting a slower pace of inventory drawdown. In contrast, household consumption contracted slightly during the third quarter, in particular as a result of the deterioration of the labour market. Investment continued to contract, although at a much slower pace. The Commission's Autumn forecasts project 0.2% q-o-q growth for the last quarter of 2009. For 2009 as a whole, GDP is still set to fall by some 4%.*

*The outlook for the euro-area economy as it emerges from recession is still uncertain. One major concern is the deterioration of labour markets. In 2009, the euro-area labour market recorded a pronounced slowdown with significant job losses occurring across many Member States and sectors. However, compared to the size of the output losses, the increase in unemployment in the euro area as a whole has been small, with the bulk of the remaining adjustment consisting of reductions in hours worked per person. Flexible working time arrangements, short-time working schemes and temporary closures have prevented more significant labour shedding so far. Against the background of a modest recovery in 2010, the unemployment rate is set to reach 10  $\frac{3}{4}$  % in 2010 and to rise further to almost 11% in 2011. As regards wages, growth in compensation per employee slowed down considerably during the first half of 2009. A VAR analysis shows that this response of wages during the current crisis has been particularly exceptional compared to past experience, when nominal wages hardly changed in response to an unexpected GDP shock. Conversely, the analysis shows that negotiated wages do not respond directly to the business cycle but do respond with a lag to a shock to compensations per employee.*

*Uncertainty about the consequences of the financial and economic crisis has resulted in highly volatile currency markets over the last quarters. The relative level of money market rates appears to have been a driving force of exchange rates during the financial crisis. In the acute phase of the crisis, the euro is found to have appreciated more against high-yielding than against low-yielding currencies, reflecting a retrenchment in risk sentiment and pointing to an important role for the unwinding of carry trade flows. The general increase in risk awareness also affected countries with low foreign exchange reserves, high current account deficits and low net external assets that saw their currencies depreciating against the euro. Since March 2009, these trends have been partly reversed. Interestingly, a more traditional determinant of exchange rate movements like inflation differentials, though important in the pre-crisis period, seems to have hardly played a role throughout the crisis.*

*Structural reforms play a critical role in the design of exit strategies in the euro area as the economy needs to cushion the negative impact of the recession on output potential and as stronger growth helps fiscal consolidation. Successful policy action will, however, depend on public support for reforms. According to the Eurobarometer survey, the current crisis has increased the perceived need for structural reform in most euro-area countries. Member States that have been hit more severely by the crisis have experienced the largest increases in the perceived need for reforms. In terms of policy implications, these results should, however, be considered with caution as the survey results also point to a persistent reluctance to accept the possible short-term costs of some reforms.*

*The report also presents some simulations with a new ECFIN model that better reflects the fact that growth in the euro area is knowledge-based. The simulations make it possible to assess the macroeconomic impact of a set of structural reforms aimed at stimulating research and innovation, competition and human capital. Results show that these policy measures all have sizeable positive effects on GDP and employment. However, the effects of the measures vary widely across countries. This highlights the importance of taking Member States' initial conditions into account when devising structural reforms. Countries where knowledge investment and competition are currently low would benefit the most from the adoption of structural reforms.*

### 1. Recent economic and financial developments <sup>(1)</sup>

Financial conditions have considerably improved since March 2009 thanks to financial sector support programmes, macroeconomic stimulus and the economic recovery. Government interventions have reduced the downside risks and contributed to higher risk appetite. Banks have also benefited from a very steep yield curve. However, money and credit growth to enterprises and households remains subdued on the back of low asset prices and weak demand. Moreover, while the recent stabilisation in financial markets appears to be fairly robust, the improvement in financial indicators has been rather gradual recently and financial conditions are still vulnerable and far from normal.

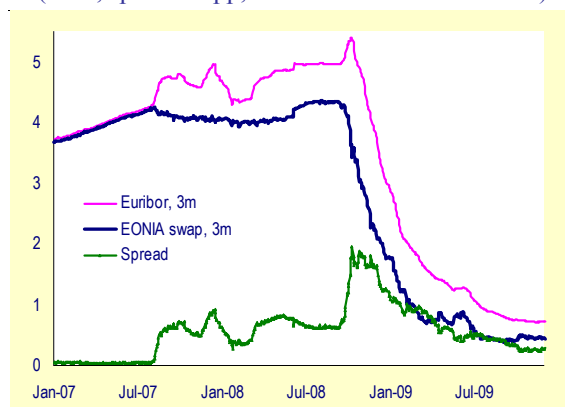
#### Money and bond markets

Conditions in euro-area money markets have continued to stabilise in recent months. The euro-area 3-month (unsecured) money market rate declined slightly to 0.72% in early December 2009 from around 0.75% at the beginning of October. In October 2008, it peaked at 5.39%. The low interest rate reflects easing global economic and financial risk perceptions as well as low policy rates and large liquidity injections by the ECB. However, the very low money market rates (currently below the ECB's 1% interest rate on the main refinancing operations) also indicate that large amounts of the central bank liquidity remain in the interbank market instead of feeding through to the broader economy. Interbank spreads, measured as the difference between unsecured money market rates and risk-free interest rates with similar maturity, have also decreased moderately during the last three months to levels around 30 basis points at the beginning of December 2009, which compares to nearly 200 basis points in mid-October 2008.

German 10-year government bond yields have remained low during the last three months, and they still appear to incorporate some doubts over the strength and extent of the economic recovery. Furthermore, an intense debate among market participants over the monetary policy exit strategy caused some fluctuations in bond yields. Finally, sustained buying of government bonds by the

banking sector and institutional investors may have supported bond prices and pushed down yields, despite strong issuance. The 10-year Bund yield stood at 3.20% in mid December 2009, compared to 3.19% on 1 October 2009.

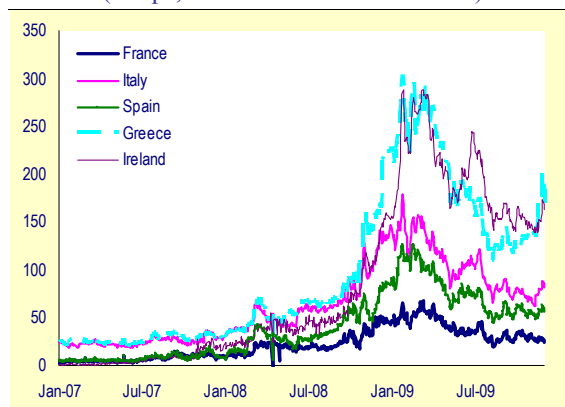
Graph I.1.1: Euro-area money market (in %, spread in pp, 1 Jan 2007 to 16 Dec 2009)



Source: EcoWin.

Yield spreads on euro-denominated sovereign bonds relative to the German Bund have stabilised for some countries but widened for others, above all in Greece, following sovereign debt downgrades and a large upward revision to the Greek public deficit in early November. Government bond prices were also affected upwards in Ireland, Spain and Italy. The renewed global risk aversion due to the debt standstill of Dubai World caused some further widening in some euro-area yield spreads. The euro-area sovereign bond spreads are highest in Greece (231 bps), Ireland (153 bps) and Italy (80 bps).

Graph I.1.2: Sovereign bond spreads, euro area (in bps, 1 Jan 2007 to 16 Dec 2009)



Source: EcoWin.

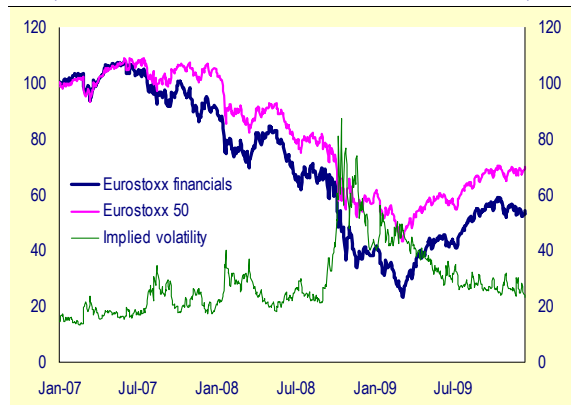
<sup>(1)</sup> The cut-off date for the statistics included in this issue was 16 December.



**The cost of finance continues to decline**

Overall external financing costs declined further in recent months, as retail lending rates followed earlier declines in market interest rates. Furthermore, more risky corporate bond yield spreads over the German Bund narrowed, with spreads on BBB corporates down by around 25 bps during the last three months, to 145 bps. Spreads on the less risky AAA corporates, however, increased slightly by 10 bps to about 60 bps. More generally, the decline in general risk aversion has reduced corporate bond spreads across risk classes since March 2009. Also, the the ECB covered bond purchase programme initiated in July 2009 adding further to the narrowing of corporate bond spreads by stimulating demand for corporate bonds.

**Graph I.1.3: Stock prices and implied volatility of stock prices**  
(2 Jan 2007=100, 1 Jan 2007 to 16 Dec 2009)



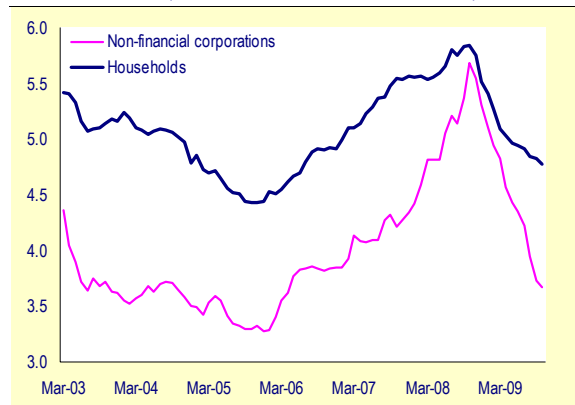
Source: EcoWin.

Although euro-area stock prices have been moving sideways in the most recent couple of months, prices have generally risen sharply since the bottom in March 2009 amidst evidence of an imminent inflexion point in the business cycle and improved earnings results. By mid December 2009, the Eurostoxx50 was 60% above its March 2009 trough. Nonetheless, volatility in equity markets remains elevated and a large degree of uncertainty persists, most recently exemplified by the debt standstill in Dubai World.

The European Commission’s Composite Nominal Financing Cost Indicators (CFCI) for non-financial euro-area corporations and households continued to decline in October 2009 and is 2.0 percentage points and 1.1 percentage points, respectively, lower than at their peak in October 2008. For non-financial corporations, the cost of shares and market debt declined, while the

average cost of bank loans was stable amid broadly unchanged market interest rates in October. For households, the development in costs across maturities and types of bank loans was mixed in October. Particularly the cost of loans for house purchases and the cost of short-term consumer credit fell, reflecting earlier declines in market interest rates.

**Graph I.1.4: Composite financial indicator, euro area (in %, Mar 2003 to Oct 2009)**



Source: EcoWin.

**Zero credit growth**

Growth rates in broad money and credit fell to around zero percent in October 2009, thus continuing the growth decline on account of the weak economic activity and the steepening of the euro-area yield curve. The steepness of the yield curve, reflecting the low ECB key interest rates, increased incentives to shift out of monetary assets. The low money growth could also indicate the start of an unwinding of the monetary imbalances accumulated in the past years. The downward movement in the M3 growth rate, which began in October 2007, accelerated in October 2009 as M3 grew only 0.3 percent y-o-y. This compares to 1.8 percent y-o-y in September 2009.

M1 growth, on the contrary, has been high in 2009, partly reflecting the continued fall in money market interest rates, which has brought the opportunity cost of holding liquid monetary assets to particularly low levels, as opposed to longer-term instruments included in M3. M1 growth decreased to 11.8 percent y-o-y in October, down from 12.8 percent in September.

The annual growth rate of loans to non-financial corporations dropped to -0.8 percent in October, down from -0.1 percent in the previous month, along the downward trend that started in March

2008. The slowdown in loans growth for corporations stems probably more from lower demand for credit due to the economic downturn and economic uncertainty than from supply constraints. Moreover, the downward path reflects the still ongoing de-leveraging process. The annual growth rate of loans to households has hovered around zero percent in recent months (-0.1 percent in October). The weakness of economic activity and house prices, as well as uncertainty concerning the medium-term outlook for global economic activity and employment, are likely to have been the main factors dampening loan growth for households. However, going forward, lending to households may improve, as banks' preference to lend typically shifts towards households at the trough of the economic cycle, as these loans are better collateralised – reducing the perceived credit risk and the capital charge.

Graph I.1.5: **Monetary aggregates**  
(in %, y-o-y, Jan 1999 to Oct 2009)



Source: EcoWin.

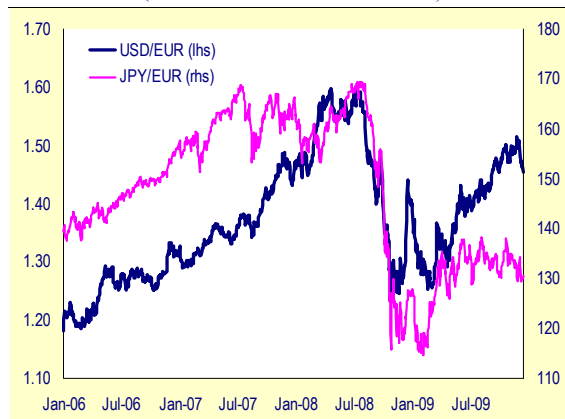
According to the ECB October 2009 Bank Lending Survey released in late October, there are still more banks reporting a tightening of credit standards applied to loans and credit lines to enterprises than those reporting an easing. Nonetheless, the net percentage of banks reporting a tightening of credit standards declined considerably.

### Exchange rate developments

Foreign exchange markets have been characterised by a strong correlation between risk sentiment and currencies over the last quarters. In general, currencies which depreciated following the initial stage of the crisis have appreciated since March 2009, as the crisis triggered a flight into the safe haven of the dollar and an unwinding

of yen-funded carry trade.<sup>(2)</sup> The reversal of capital flows to higher-yielding currencies has largely reversed the earlier weakness in major emerging market and commodity currencies.

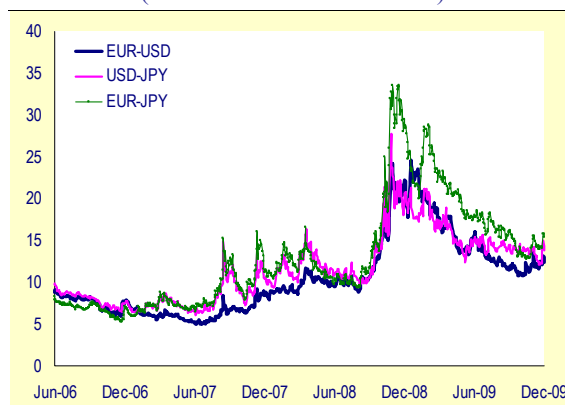
Graph I.1.6: **Euro, dollar and yen exchange rates**  
(2 Jan 2006 to 16 Dec 2009)



Source: EcoWin.

Largely in line with the shifts in risk sentiment, volatility on forex markets has decreased sharply in recent months. Since its peak at the end of 2008, volatility, as measured by implied volatility of currency options, has fallen significantly. However, it is still at an elevated level compared to the pre-crisis period. Moreover, most recently, there has been a slight increase in volatility.

Graph I.1.7: **Exchange rate volatility**  
(1 Jun 2006 to 16 Dec 2009)



Source: EcoWin.

The euro CPI-deflated real effective exchange rate (REER) appreciated in the last quarter and it is currently 6.5 percent stronger than a year ago and 2 percent stronger than its average 2008 level.

<sup>(2)</sup> For a more detailed analysis on exchange rate developments, see 'The euro during the financial crisis' in this issue.

## I. Economic situation in the euro area

Estimates of the euro equilibrium exchange rate point to a strong euro with an estimated overvaluation of the REER of around 7 to 8 percent. Further euro appreciation could be a serious concern for the more open euro-area economies.

Developments in the effective euro exchange rates mask different evolutions in bilateral exchange rates. The euro appreciated further against the US dollar until late November, reaching 1.51 on 25 November, but has depreciated since then to 1.45 in mid December on account of an improved economic outlook for the US and some concerns related to the situation in Greece. The Chinese renminbi followed a similar pattern against the euro, as the renminbi was de facto pegged to the dollar during the review period. By contrast, over the last couple of months the euro fluctuated around a horizontal line against the Japanese yen as well as the UK pound, depreciated against the Swiss Franc, and appreciated vis-à-vis the Swedish krona and some Central and Eastern European currencies (CZ, PL, HU).

### Recession is over and recovery can set in

The deepest, longest and most broad-based recession in the euro area's history seems to be over. Euro-area GDP growth turned positive in the third quarter, after five consecutive negative quarters. The euro-area economy expanded by 0.4% quarter-on-quarter, marking the end of the recession. Most countries experienced a marked rebound in GDP growth, with only Cyprus (-1.4%), Greece (-0.3%) and Spain (-0.3%) still contracting (at the cut-off date).

While the figures for the third quarter broadly confirm the recovery, it should be borne in mind that this rebound in economic activity reflects improvements in the external environment and financial conditions, as well as the unprecedented fiscal and monetary policy actions that have been taken.

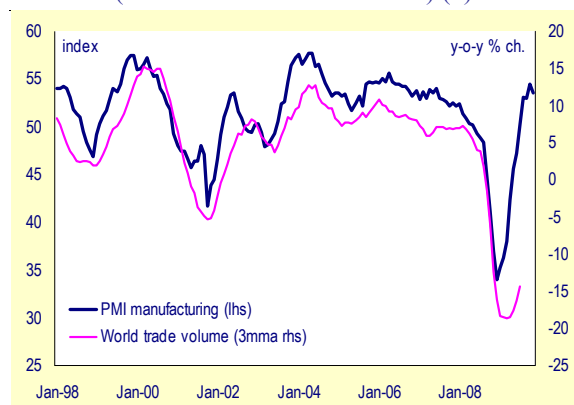
### An export-led recovery helped by unprecedented policy support

On the back of unprecedented policy support worldwide and the positive developments in financial markets just discussed, the economic situation of the world economy has substantially improved. Some economies, namely in Asia, already started to rebound in the first half of 2009.

Benefiting from the improvement in the global economy, euro-area exports were the key driver of the rebound in growth in the third quarter. Exports are typically the first component to recover when the euro-area business cycle turns around. In this context, recent developments in trade indicators are very promising. Euro-area export growth increased significantly in the third quarter (2.9% q-o-q) compared to the second quarter (-1.3%). At the same time, imports rebounded as well (2.6%). The net contribution from trade was therefore slightly positive.

This sign of improvement is backed up by encouraging developments in world trade. According to estimates by the Netherlands Bureau of Economic Analysis, average world trade in the third quarter was up by 4.3% compared to the second quarter. After the dramatic fall in global trade in 2008, this was the first positive quarterly growth since 2008Q.

Graph I.1.8: World trade and PMI (Jan 1998 to November 2009) (1)



(1) World trade cover the period up to September 2009

Source: CPB Netherlands Bureau of Economic Policy Analysis and Bloomberg.

Looking ahead, recent survey indicators of the world economy all seem to suggest a global recovery. The November reading of the Ifo quarterly World Economic Climate Indicator rose for the third consecutive time. The rise in this indicator was the result of both more favourable expectations for the coming six months and a more positive assessment of the current situation. The economic climate improved in all major economic regions, and was particularly marked in Asia. Developments in the global PMI for manufacturing give a similar picture. In November, the index remained above the neutral 50.0 points for the fifth consecutive month.

Table I.1.1: Euro-area growth components

	2008 Q3	2008 Q4	2009 Q1	2009 Q2	2009 Q3	Carryover to 2009	Autumn 2009 forecast	
							2009	2010
							change on prev. year	
Percentage change on previous period, volumes								
GDP	-0.4	-1.9	-2.4	-0.2	0.4	-4.0	-4.0	0.7
Private consumption	0.0	-0.5	-0.5	0.0	-0.2	-1.0	-1.0	0.2
Government consumption	0.5	0.6	0.6	0.6	0.5	2.3	2.0	1.1
Gross fixed capital formation	-1.4	-3.8	-4.9	-1.7	-0.4	-9.9	-10.7	-1.9
Exports of goods and services	-1.3	-7.2	-8.7	-1.3	2.9	-14.0	-14.2	2.1
Imports of goods and services	-0.1	-4.8	-7.4	-2.9	2.6	-11.8	-12.5	1.1
Percentage point contribution to change in GDP								
Private consumption	0.0	-0.3	-0.3	0.0	-0.1	-0.6	-0.6	0.1
Government consumption	0.1	0.1	0.1	0.1	0.1	0.5	0.4	0.2
Gross fixed capital formation	-0.3	-0.8	-1.0	-0.3	-0.1	-2.2	-2.3	-0.4
Changes in inventories	0.4	0.3	-0.7	-0.6	0.3	-0.6	-0.7	0.3
Net exports	-0.6	-1.2	-0.6	0.7	0.2	-1.2	-0.8	0.4

Source: Commission services.

### Investment still subdued but inventories back to more normal levels

The second GDP component to pick up in a usual euro-area recovery phase is investment. This was however not yet the case during the third quarter. Euro-area gross fixed capital formation declined by 0.4% q-o-q. Nevertheless, this represented a continuous improvement compared to the past few quarters (-4.9% in 2009Q1 and -1.7% in 2009Q2).

Some euro-area countries even experienced positive investment growth. This was the case of Germany, for instance, where growth during the third quarter was strongly supported by capital formation (1.3% q-o-q). The decline in investment in the euro area was the result of the acceleration of the contraction of construction investment. Both housing and non-housing investment declined, by -2% and -0.8% q-o-q respectively. In contrast, non-construction investment (essentially machinery and transport equipment) increased for the first time since 2008Q2, by 1.1% q-o-q in the third quarter.

The October 2009 reading of the Commission's quarterly manufacturing surveys shows that firms have started to use their capacity at a slightly higher rate. But utilisation rates are still far below their long-term average, and the sizeable spare capacity will probably slow investment growth in the medium term.

Inventories need to come down to normal levels before the recovery of exports will lead to a pick-up in investment. Signals are positive on this. In line with expectations, changes in inventories contributed positively to GDP growth (0.3%) during the third quarter. This reflects a slower

pace of inventory drawdown, signalling that the bulk of stock adjustment has already taken place.

Looking forward, inventories are expected to make a further positive contribution to growth in the last quarter of 2009. This is in line with the latest Commission survey indicators, which suggest that the level of inventories is increasingly considered normal by firms.

### Labour market conditions weighing on consumption

While household consumption had held up relatively well during the second quarter, notably thanks to sizeable stimulus measures, it contracted slightly during the third quarter (-0.2% q-o-q). The deterioration of the labour market seems to start outweighing the positive effect of the stimulus measures.

Employment in the euro area continued to contract by 0.5% q-o-q in the third quarter, after an equivalent drop in the second quarter. At the same time, unemployment increased to 9.6% in the third quarter, compared to 9.3% in the second quarter. In October, it stood at 9.8%, stable compared to September. Compared to the size of the output loss, the overall increase in unemployment in the euro area has been muted so far (notwithstanding country differences), with the bulk of the adjustment consisting of reductions in hours worked per person.<sup>(3)</sup> Data for the second quarter of 2009 show that the average hours worked per week declined by 0.8% y-o-y in the euro area. In Germany, the decline reached 1.3%

<sup>(3)</sup> For a more detailed analysis on labour markets, see 'The impact of the crisis on the labour market' in this issue.

y-o-y. Moreover, part-time in percentage of total employment increased by 0.4% y-o-y during the same period in the euro area.

Developments in the savings rate are also restraining household consumption. Uncertainty about the economic outlook and rising unemployment coupled with the need for deleveraging of households' balance sheets have led to an increase in the euro-area savings ratio of 2.6 percentage points since 2008Q1. In 2009Q2, this ratio stood at 16.5%.

Looking ahead, prospects for household consumption are mixed. On the negative side, employment developments will continue weighing negatively on consumption. Moreover, the disinflation process, which has come to an end, will no longer support consumption. On the positive side, the strong rebound in equity markets – if maintained – could translate into a fall in the savings ratio via the wealth channel. There is indeed a strong negative correlation between households' savings and financial wealth in the euro area. <sup>(4)</sup> Therefore, further strong rises in the savings ratio seem rather unlikely.

### Inflation bouncing back in November

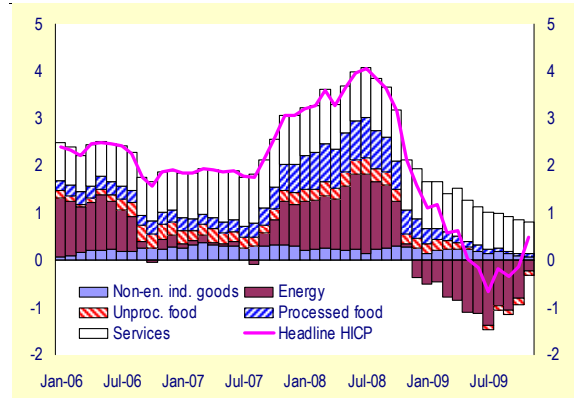
The euro area has experienced a prolonged period of disinflation over the past year, with annual HICP headline inflation falling to -0.7% in July before bouncing back to 0.5% in November.

Against the background of upward base effects now setting in, the recent pick-up in oil prices and growing signs of economic recovery, euro-area inflation turned positive in November. The increase in November HICP largely reflected base effects, resulting from the movements in commodity prices a year ago coupled with higher month-on-month price increases. Underlying inflation (excluding energy and unprocessed food) remained stable at 1% y-o-y.

HICP data for November show that annual inflation increased significantly in all euro-area countries, except for Ireland where HICP inflation remained negative at -2.8% y-o-y. Inflation was also still negative in Portugal (-0.8% y-o-y) and in Malta (-0.1% y-o-y). Among the largest euro-area countries, inflation increased to +0.8% y-o-y in

Italy, to +0.5% y-o-y in France, to +0.4% in Spain and to +0.3% y-o-y in Germany.

Graph I.1.9: Euro-area HICP inflation: composition (in %, Jan 2006 to November 2009)



Source: Commission services.

In November, services remained the main positive contributor to euro-area overall inflation (0.7 pp), while energy (-0.2 pp) and unprocessed food (-0.1 pp) contributed negatively – though to a much lesser extent than in October in the case of energy. Processed food and non-energy industrial goods jointly accounted for the remaining 0.1 pp.

Oil prices surged by about 5% in November from October, with the average price of a barrel of Brent crude oil rising from an average of EUR 49.3 (USD 73.1) to EUR 51.5 (USD 76.9). The oil price increase lifted annual energy inflation by 6pp to -2.4% in November. Future contracts suggest that oil prices will continue to rise in the coming months.

An analysis of the drivers of inflation shows that the appreciation of the euro since mid-February has had a negligible impact on headline inflation. Wage inflation has also remained tame so far. It grew at an annual rate of 1.4% in the third quarter of 2009, down from 3.6% in the same period a year ago. Euro-area unit labour costs continued, however, to rise in the third quarter of 2009 (3.5% y-o-y), though at a more moderate rate than in the second quarter (4.6% y-o-y). Since the beginning of 2009, the strong pick-up in unit labour costs, in spite of wage cuts, is the result of stumbling productivity (-3.1% y-o-y in 2009Q2 and -2.1% in 2009Q3). Sluggish workforce adjustment in the face of a sharp GDP contraction has translated into a strong fall in productivity growth.

<sup>(4)</sup> See European Commission (2009), 'The interrelations between household savings, wealth and mortgage debt', Quarterly Report on the Euro Area, Vol. 8 No 3, Directorate-General for Economic and Financial Affairs.

Table I.1.2: Selected euro-area and national leading indicators, 2008-2009

	SENT. IND <sup>1)</sup>	BCI <sup>2)</sup>	OECD <sup>3)</sup>	PMI Man. <sup>4)</sup>	PMI Ser. <sup>5)</sup>	IFO <sup>6)</sup>	NBB <sup>7)</sup>	ZEW <sup>8)</sup>
Long-term average	100.6	0.0	84.6	52.3	54.4	96.9	-8.0	22.4
November 2008	76.6	-1.6	94.0	35.6	42.5	77.7	-25.0	-53.5
December 2008	68.7	-2.5	93.1	33.9	42.1	77.0	-31.3	-45.2
January 2009	67.2	-2.6	92.6	34.4	42.2	79.6	-29.0	-31.0
February 2009	65.3	-3.1	92.7	33.5	39.2	81.0	-32.5	-5.8
March 2009	64.6	-3.3	93.2	33.9	40.9	81.8	-34.3	-3.5
April 2009	67.3	-3.1	94.2	36.8	43.8	84.1	-30.7	13.0
May 2009	70.2	-3.0	95.4	40.7	44.8	86.2	-29.8	31.1
June 2009	73.2	-2.9	96.4	42.6	44.7	89.7	-24.3	44.8
July 2009	76.0	-2.7	97.8	46.2	45.7	90.6	-21.9	39.5
August 2009	80.8	-2.2	99.2	48.2	49.9	95.1	-19.2	56.1
September 2009	82.8	-2.1	100.4	49.3	50.9	95.8	-19.8	57.7
October 2009	86.1	-1.8	101.4	50.7	52.6	96.8	-15.8	56.0
November 2009	88.8	-1.6	-	51.2	53.0	98.9	-8.6	51.1

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

Surveys continue to point to higher confidence

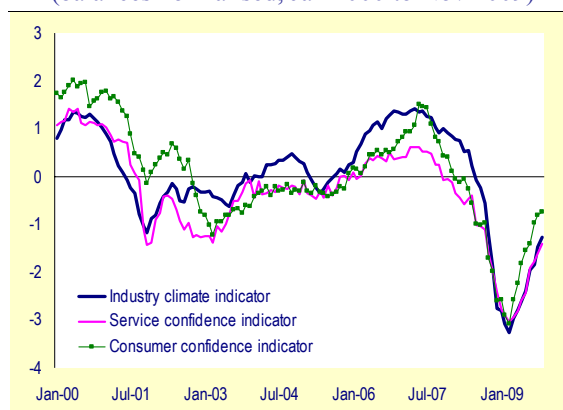
Improved short-term prospects for the euro area are reflected in overall encouraging survey indicators. In November, the Economic Sentiment Indicator (ESI) was up for the eighth consecutive month since its trough in March. However, it still remains significantly below its long-term average. Based on past experiences, the latest readings of the ESI are consistent with growth at 0.5% q-o-q in the fourth quarter of 2009. This figure should, however, be interpreted with prudence due to the gap that opened during the crisis between what confidence indicators suggested and quarterly GDP growth.

The increase in the ESI in the months of October and November compared to the third quarter were the result of a general improvement in sentiment in all sectors. Sentiment in industry was the main contributor to the overall improvement, followed by services and consumers. During that same period, all euro-area Member States, except for Cyprus, reported greater confidence.

The increase in confidence in the industry and services sectors continued to be fuelled by the rise in expectations as well as by the more encouraging recent trends observed by firms. While expectations are now very close to their long-term average, recent trends still remain well below their historical average. This is, however, not unusual for an early recovery phase. Improved prospects are also reflected in the PMI for both manufacturing and services in the euro area. In contrast with the Commission surveys,

developments of the PMI in October and November compared to the third quarter suggest greater improvement in the services than in the industry sector. In October, both PMIs stood above the 50 mark, suggesting expansion in these sectors.

Graph I.1.10: Industry, services and consumer confidence, euro area (balances normalised, Jan 2000 to Nov 2009)



Source: Commission services.

Country-level surveys broadly confirmed the positive trends. The German Ifo continued to increase in October and November. The improvements were broad-based across the different sectors, with the exception of retail trade, which fell. The breakdown of the Ifo shows that the spread between expectations and current conditions has been steadily increasing during the past three months, with the index on current conditions lagging behind. This suggests that the Ifo assessment of the current situation has lately

been less optimistic. The Belgian business confidence index (NBB) improved sharply in October and November. The index is now back to pre-crisis levels and very close to its long-term average.

While all these surveys seem to point to higher growth during the fourth quarter, the first hard data for the fourth quarter is less encouraging. Indeed, data on industrial production remains very weak. In October 2009, industrial activity contracted further by 11.1% y-o-y.

### Short-term outlook and risks

The Commission's 2009 Autumn forecasts project 0.2% q-o-q growth for the last quarter of 2009. For 2009 as a whole, GDP is still set to fall by some 4%. A gradual recovery is expected with GDP forecast to grow by ¾% in 2010 and by 1½% in 2011. The near-term rebound in activity

follows from improvements in the external environment and financial conditions, as well as from the significant fiscal and monetary policy measures put in place. Further out, a number of factors are set to restrain private demand and, thus, the strength of the recovery. In particular, labour-market conditions will remain weak.

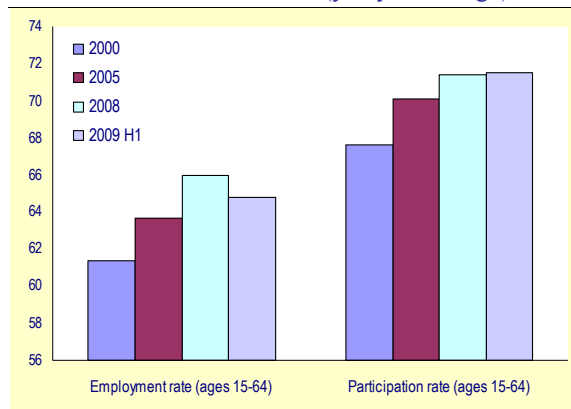
Inflation in the euro area is expected to remain subdued over the forecast horizon. HICP inflation is projected to average slightly over 1% in 2010 and at 1½% in 2011. While rising commodity prices are likely to put upward pressure on inflation, substantial slack in the economy and weak wage growth should have a dampening effect.

The outlook for the euro-area economy as it emerges from recession is still uncertain, and subject to non-negligible but broadly balanced risks.

**2. The impact of the crisis on the labour market**

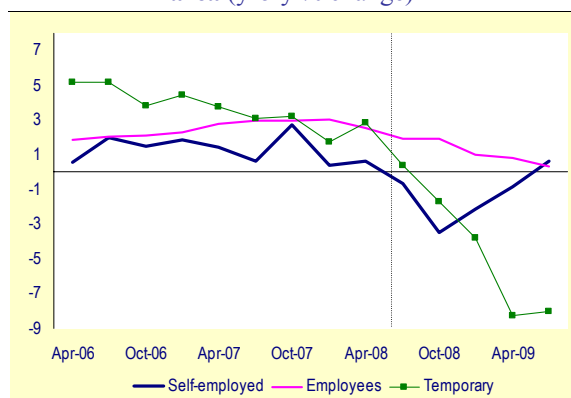
Until the financial crisis broke in the summer of 2007, euro-area labour markets had performed relatively well. The employment rate, at about 66% of the workforce, was approaching the Lisbon target, owing largely to significant increases in the employment rates of women and older workers. <sup>(5)</sup> Unemployment had declined to a rate of about 7.5%, despite a very substantial increase in the labour force. Importantly, the decline in the unemployment rate had not led to a notable acceleration in inflation, implying that the level of unemployment at which labour shortages start to emerge along with rising wage pressures (i.e. structural unemployment) had declined.

**Graph I.2.1: Employment and participation rates in the euro area (y-o-y % change)**



Source: Commission services.

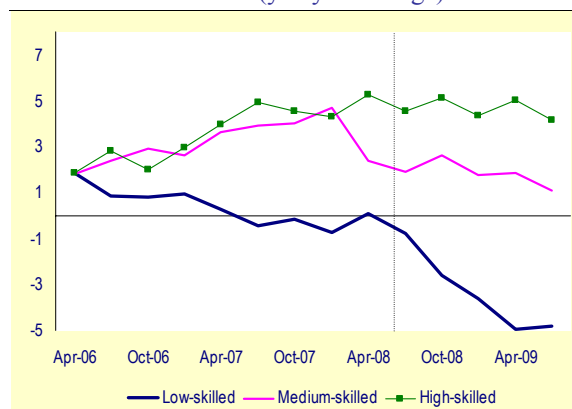
**Graph I.2.2: Employment growth in the euro area (y-o-y % change)**



Source: Commission services.

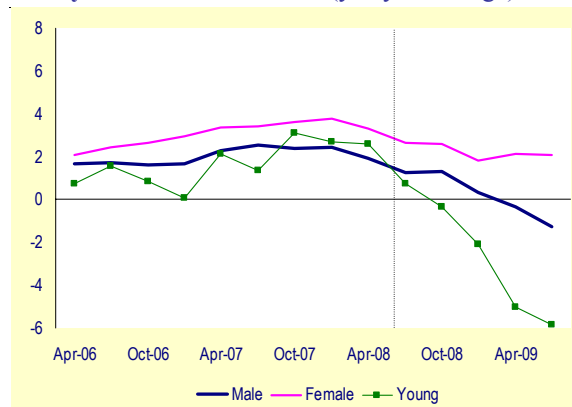
At the onset of the crisis, the bulk of job losses was concentrated in just a few Member States (Spain and Ireland), largely as a result of larger exposure to the direct consequences of the shocks. In 2009, the euro-area labour market recorded a pronounced slowdown with significant job losses occurring across many Member States and sectors. Against the background of a modest recovery in 2010, the unemployment rate is set to reach 10 3/4% by 2010 and to rise further to almost 11% in 2011. On current policies, employment in the euro area is expected to fall in 2010 and remain unchanged in 2011. <sup>(6)</sup>

**Graph I.2.3: Employment growth by skills in the euro area (y-o-y % change)**



Source: Commission services.

**Graph I.2.4: Employment growth by gender and youth in the euro area (y-o-y % change)**



Source: Commission services.

The labour market response has been quite heterogeneous across different socio-economic groups and countries (see Graphs I.2.3 and I.2.4). Workers with ‘weaker’ work contracts, less

<sup>(5)</sup> Between 2000 and 2008 the employment rates of female (between 25 and 64 years) and older workers (between 55 and 64 years) increased by about 7.1 pp and 10.1 pp, respectively.

<sup>(6)</sup> See also European Commission (2009), ‘Recent labour market developments and prospects’, European Economic Forecast - Autumn 2009, European Economy No. 10/2009, DG Economic and Financial Affairs, pp. 34-49.



qualified and less experienced workers have borne much of the brunt of the current recession. The advent of the crisis has had only minor effects on the employment of high-skilled workers, but it significantly hit the medium- and low-skilled, with annual employment growth in those groups falling to 2.2% (from 4.1% in 2007) and -1.7% (from -0.3% in 2007). At the country level, the labour market adjustment has so far been sizeable in Spain and Ireland and relatively limited in Italy, Germany, Austria, and the Netherlands. This difference is to some extent explained by the use of short-time employment schemes in the last group of countries and by a huge contraction of employment in the first due to the need for reallocating resources away from sectors with over-capacity and low productivity. So far, a reduction in the participation rate has been registered in only a few countries, namely Finland, Ireland, Italy and Portugal.

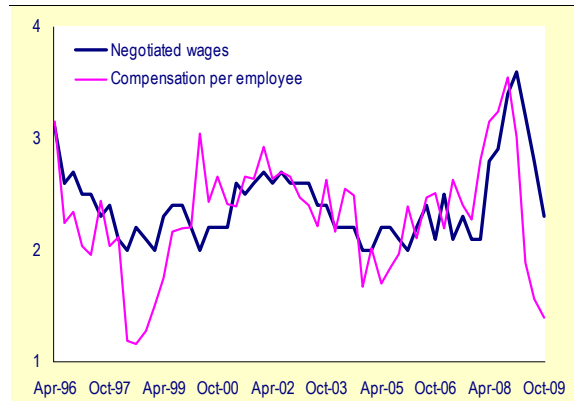
Compared to the size of the output losses, the increase in unemployment in the euro area has been small, with the bulk of the remaining adjustment consisting of reductions in hours worked per person. (See Box I.2.1) Flexible working time arrangements, short-time working schemes and temporary closures may have prevented, though perhaps only delayed, more significant labour shedding so far. When inflows to unemployment dominate outflows from unemployment, measures that reduce the risks of losing jobs minimise the increase in unemployment during downturns and the loss of job-specific skills. Working time flexibility can be a source of variation of labour input, without causing additional hiring and firing or wage renegotiation costs, while preserving firm-specific human capital. Yet, a temporary reduction of the hours worked can be an effective tool to stabilise employment only if not accompanied by full compensation of hourly wages that keeps the monthly labour income unchanged.

Some forms of temporary working time reductions are being largely supported by public funds in many euro-area countries. For example, in Italy, the number of hours of wage supplementation (CIG) was around 20 per thousand hours worked between January 2002 and July 2008. It rapidly picked up in November 2008 and in April 2009 it reached its highest ever proportion since 2000 (110 per thousand hours worked in industry); in the second quarter of 2009 about 10% of full-time equivalent workers were on wage supplementation schemes. Similarly, in Germany short-time employment reached in

March 2009 the highest level since the 1992-1993 recession.

These schemes have proved effective in containing wasteful labour shedding due to the demand shock, thus in cushioning the employment impact of the crisis in the short term. However, the major risk associated with these schemes is that of overstaffing, and hence a delayed dramatic impact on unemployment once the schemes end. In particular, the depth and nature of the crisis makes it particularly likely that restructuring will be necessary as the economy emerges from it (e.g. in the construction, financial services or automobile industries). Thus, if potential output is affected,<sup>(7)</sup> these schemes to some extent smooth out the required downward adjustment in employment levels.

Graph I.2.5: Compensation per employee and negotiated wages, euro area (y-o-y % change)



Source: Commission services.

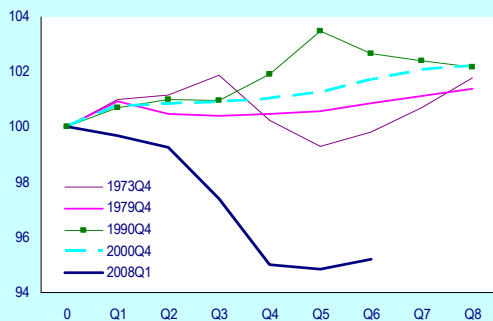
Graph I.2.5 shows the growth of compensation per employee and of negotiated wages for the euro area. After achieving a growth rate of 3.6% in 2008Q3, compensation per employee slowed down considerably in the first half of 2009. Even so, nominal unit labour costs rose significantly by 5.9% y-o-y in 2009Q1, a rate not seen for more than a decade, as labour productivity was negatively affected by labour hoarding. As suggested by the graph, the decline in compensation per employee has been almost entirely led by the fall in the variable component

(7) See for instance: European Commission (2009), 'Impact of the current economic and financial crisis on potential output', European Economy — Occasional Paper No 49, Directorate-General for Economic and Financial Affairs, June; and: European Commission (2009), 'The impact of the economic and financial crisis on potential growth', Quarterly Report on the Euro Area, Vol. 8 No 2, Directorate-General for Economic and Financial Affairs.

**Box 1.2.1: The response of the euro-area labour market: comparison with previous recessions**

Country differences notwithstanding, the overall increase in euro-area unemployment has remained fairly muted so far, given the large drop in output. This box compares the response of the euro-area labour market to the current downturn with previous ones and illustrates differences across euro-area Member States. The first graph on the left-hand side compares developments in euro-area GDP during major downturns following the cyclical peak for a period of 8 quarters. Compared with previous recessions, the current episode is characterised by a much larger output loss. The second graph on the right-hand side does the same exercise for euro-area employment (measured in 1 000 persons). Employment has so far been contracting more than in previous downturns. However, comparing the different changes in employment during past downturns with their respective output losses, the current fall in employment in the euro area appears to have been rather small compared to the significant output loss. This phenomenon can be explained by the importance of labour hoarding during the current recession, which is illustrated by the fall in the average hours worked in the euro area. A typical feature of the euro-area labour market is the protracted period of weak employment growth in the wake of a recession. Except in the early 2000s downturn, employment in the euro area did not return to its pre-recession level for several years.

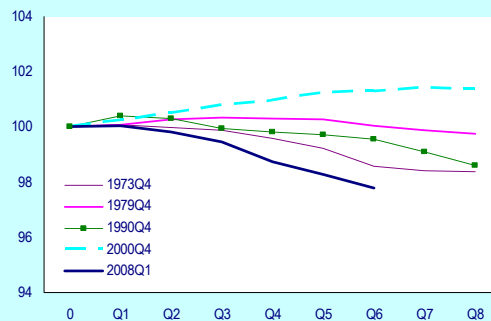
**Real GDP developments during major downturns, euro area (index 100 at cyclical peak) (1)**



(1) Five major downturns were identified with an HP filter for the 1970-2009 period. Successive cyclical peaks are 1973Q4, 1979Q4, 1990Q4, 2000Q4 and 2008Q1.

*Source:* Commission services.

**Employment developments during major downturns, euro area (index 100 at cyclical peak) (1)**

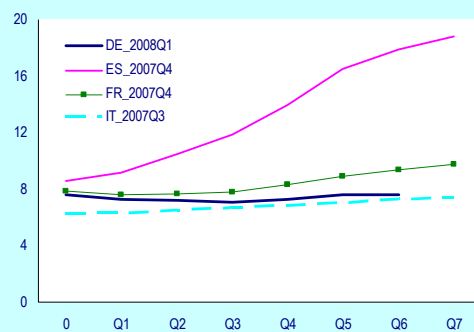


(1) Five major downturns were identified with an HP filter for the 1970-2009 period. Successive cyclical peaks are 1973Q4, 1979Q4, 1990Q4, 2000Q4 and 2008Q1.

*Source:* Commission services.

For the largest euro-area countries, the third graph compares unemployment developments since the respective latest business cycle peaks (the same method was used as above). Unemployment developments have been fairly heterogeneous across countries. Unemployment in Spain rocketed from 8.6% in 2007Q4 to 16.6% in 2009Q3. France and Italy experienced an increase of 1.9 and 1.1 percentage points respectively. In contrast, Germany's unemployment rate has remained broadly stable. A year into the current recession, the average hours worked have fallen in Italy and Germany below the business cycle peak but increased in France and Spain above the level of the beginning of the recession. Conversely, during the recession of the early 1990s for instance, average hours worked remained mainly unchanged in France, Germany and Spain and increased in Italy. They even kept rising in France and Italy when the recession was over.

**Unemployment developments after respective latest cyclical peak**



*Source:* Commission services.

If the past is any guide, one would have expected a much higher increase in the jobless rate than that experienced so far. Even so, the labour market response has been relatively heterogeneous across countries, which, to some extent, is explained by the different incidence of labour hoarding. To minimise the risks of mass unemployment, many countries have introduced or made extensive use of government-sponsored schemes available to employers to supplement wages of workers working reduced hours. These schemes give firms the possibility of reducing their activity in case of short-term falls in industrial orders or other exceptional circumstances, while allowing employees to keep their contractual relationship.

of compensation, which has overshoot to compensate for the slower change in negotiated wages.

In fact, negotiated wages responded with a lag of one quarter, and only by the end of the year, as the weaknesses in the labour market started to become evident, did the gap between the two wages start to close. Looking forward, the growth in unit labour costs in the euro area is projected to be negative in 2010 and consistent with price stability in 2011. The relatively fast response of compensation per employee in the euro area during the current crisis compared to past crises is confirmed by an econometric analysis. Conversely, the analysis shows that negotiated wages are unreactive to the business cycle but do respond with a lag to a shock to compensations per employee (see Box I.2.2).

### Looking forward

At this juncture, the major risks concern the possibility that unemployed people become disenfranchised from the labour market and, thus, that high unemployment does not curb the growth of real wages (i.e. becomes structural unemployment). Apart from being a constraint to the recovery in the short term, a decline in the labour supply may heavily affect the potential output. However, reforms in many countries have strengthened the labour market attachment of most vulnerable groups and a large reduction in the overall activity rate is less likely now than in the past. In addition, stricter eligibility conditions, uncertain labour market prospects for the main earner and considerable wealth losses created by the burst of various bubbles lead to negative

wealth effects that induce other members of the household to put more effort into finding a job to compensate for the expected loss in household income and to smooth consumption. This ‘added’ worker effect means that, in periods of high unemployment, the labour supply of non-working spouses increases, as the consumption smoothing motive prevails over other factors, such as the low substitution of leisure time between husband and wife (for cultural reasons or lack of childcare services), that keeps women out of the labour market. There is evidence of added worker effects for the Great Depression (Eichengreen and Hatton 1987).<sup>(8)</sup>

The high degree of sectoral reallocation, due to strong structural imbalances in some sectors (i.e. construction, finance and automotive) raises concerns about the risk of hysteresis in unemployment. The time needed for reallocating workers between sectors may increase the structural rate of unemployment. Indirect evidence of the effect of sectoral reallocation on the structural unemployment rate can be gained by comparing the result of a regression of respectively the unemployment rate and the NAIRU on the measure of sectoral reallocation (Lilien index<sup>(9)</sup>). In the first case, a 1 percentage point increase in the dispersion of employment growth across sectors is accompanied by an increase in the unemployment rate of 0.6 pp. The same regression this time with the NAIRU as a measure of the structural rate of unemployment gives a response of 0.1 pp. Thus, looking ahead, the structural unemployment rate may increase in those countries faced with considerable sectoral reallocation. However, compared to the effect on the total unemployment rate, this increase is likely to be relatively small in the euro area as a whole.

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<sup>(8)</sup> Eichengreen, B. and T. Hatton (1988), ‘Interwar unemployment in international perspective’, Institute for Research on Labor and Employment, Working Paper Series 1040, Institute of Industrial Relations, UC Berkeley.

<sup>(9)</sup> The Lilien index is calculated as the weighted standard deviation of annual output growth by industry. See Lilien D. M. (1982), ‘Sectoral shifts and cyclical unemployment’, *Journal of Political Economy*, Vol. 90, pp. 777–793.

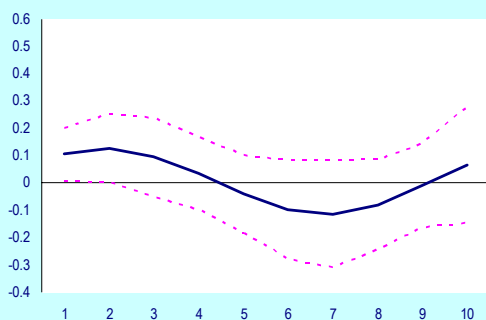
*Box 1.2.2: The response of wages to a GDP growth shock: a VAR analysis*

In order to investigate how compensation per employee and negotiated wages fluctuate in response to an unexpected shock to GDP growth, a VAR analysis was carried out. It allows the interdependencies between the variables (growth in compensation per employee, in negotiated wages and of GDP) to be taken into account. The response of wages is identified assuming a contemporaneous causal structure, which implies that an unexpected shock to GDP growth in one quarter influences only the variable component in the same quarter, while negotiated wages change only in the following quarters.

An unexpected shock to GDP growth triggers an adjustment mechanism where the variable component of wages adjusts in the same quarter, while negotiated wages respond with a lag of one quarter. These findings are based on the period 1996Q1-2009Q4. Yet if 2008 and 2009 are excluded from the sample, it turns out that nominal wages do not change in response to an unexpected GDP shock, which is consistent with the presence of nominal wage rigidities in the euro area. Thus, although there has been a response of wages during the current crisis, this has been particularly exceptional if judged with the metric of past historical experience.

Looking more closely at the results of the VAR analysis, the graphs below give, respectively, the response of compensation per employee and negotiated wages to an unexpected shock to GDP growth. The first graph indicates that the growth of compensation per employee rises by 0.1 pp in the case of an unexpected positive shock to GDP growth of one standard deviation. The maximum effect is achieved after 2 quarters and dies out by the end of the year. After 4 quarters labour costs increase by about 0.4 pp. Conversely, the second graph shows that negotiated wages are unreactive to the business cycle.

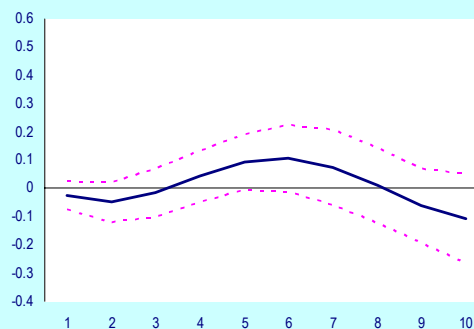
**VAR model — Response of compensation per employee to GDP growth (in pp) (1)**



(1) Identification based on Cholesky decomposition with the following order: growth in GDP, growth in comp. per employee and growth in negotiated wages; dotted lines indicate + or - 2se.

**Source:** Commission services.

**VAR model — Response of negotiated wages to GDP growth (in pp) (1)**



(1) Identification based on Cholesky decomposition with the following order: growth in GDP, growth in comp. per employee and growth in negotiated wages; dotted lines indicate + or - 2se.

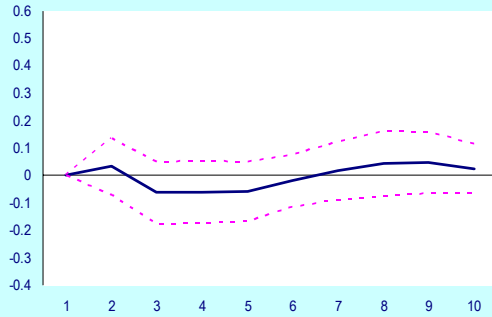
**Source:** Commission services.

On the other hand, as indicated in following graphs, negotiated wages do respond to a shock to the growth of compensations per employee. The effect reaches its maximum after 4 quarters and dies out only slowly in the following quarters. Thus, the effect on negotiated wages of a shock to the variable component of wages is quite persistent over time. After 2 years, negotiated wages are about 0.7 pp higher than before the shock. Since there is asymmetry in the response to positive and negative shocks in GDP, the same is valid for a contractionary shock. Thus, extending to the next two years the behaviour of wages during the crisis one should expect wage moderation in the near future.

*(Continued on the next page)*

Box (continued)

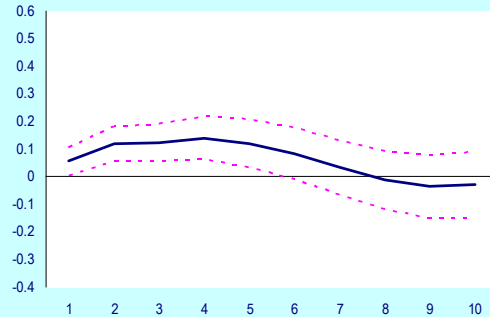
**VAR model — Response of compensation per employee to negotiated wages (in pp) (1)**



(1) Identification based on Cholesky decomposition with the following order: growth in GDP, growth in comp. per employee and growth in negotiated wages; dotted lines indicate + or - 2se.

*Source:* Commission services.

**VAR model — Response of negotiated wages to compensation per employee (in pp) (1)**



(1) Identification based on Cholesky decomposition with the following order: growth in GDP, growth in comp. per employee and growth in negotiated wages; dotted lines indicate + or - 2se.

*Source:* Commission services.

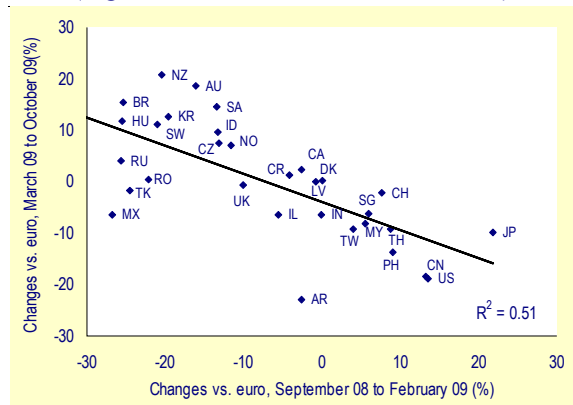
### 3. The euro during the financial crisis

#### Significant exchange rate volatility during the crisis

Uncertainty about the consequences of the financial and economic crisis has resulted in highly volatile exchange rate markets, particularly during the acute phase of the crisis before March 2009. The US dollar in particular has been affected by sudden changes in market sentiment. It appreciated strongly in the period following the intensification of the financial market turbulences in September 2008. Since March, when financial market conditions and the economic outlook started progressively to improve, the dollar fell against all major currencies (e.g. by 19% against the euro and by 9% against the Japanese yen as of 18 November). The euro has also seen some remarkable swings against its trading partners' currencies in recent quarters. In real effective terms, it fell by 7% between its 13-year peak in April 2008 and November 2008 before appreciating again by the same extent until March 2009 and stabilising thereafter.

Graph I.3.1: Bilateral euro exchange rate movements

(Sep 08-Feb 09 vs. Mar 09-Oct 09, in %)



Source: EcoWin.

Looking at bilateral exchange rate changes, it is striking that largely the same currencies that depreciated against the euro during the acute phase of the crisis, between September 2008 and February 2009, have appreciated since March 2009 (see Graph I.3.1). In particular, the Australian and New Zealand dollar as well as the Brazilian real have rebounded markedly. Recently, several emerging market countries tried to avoid the appreciating trend in their currencies by foreign exchange market interventions (Asian

economies) or the introduction of capital controls (Brazil).<sup>(10)</sup> The currency of the world's largest emerging market economy, China, remained fixed to the US dollar throughout the crisis period (see Box I.3.1), which means that it depreciated substantially against the euro.

#### Drivers of exchange rates during crisis

What have been the driving factors behind these exchange rate movements? The relationship between the exchange rate and macro fundamentals is highly unstable and foreign exchange traders often change the weight they attach to different macro-indicators.<sup>(11)</sup> In this section, an eclectic approach is used to analyse a number of potential determinants of exchange rate movements and assess their relevance during the financial crisis. The analysis includes standard macroeconomic fundamentals, such as interest rates, inflation, or the current-account-to-GDP ratio, as well as data capturing the international investment position, such as an economy's financial liabilities and foreign exchange reserves (both in relation to GDP). Data were collected for the 36 major trading partners of the euro area.<sup>(12)</sup> Following an approach proposed by Fratzscher (2009), for each of these determinants two contrasting groups are compared.<sup>(13)</sup> One group comprises countries with relatively stronger fundamentals or lower exposure relative to the average across all countries, while the comparison group's countries have weaker fundamentals or higher exposure. Countries are assigned to one of the two groups according to whether they are positioned above or below the respective averages over the period 2005-2007. Averages are unweighted to avoid the results being dominated by the largest economies.

<sup>(10)</sup> The introduction of capital controls is aimed at ensuring financial stability more generally.

<sup>(11)</sup> See e.g. Bacchetta, P. and E. van Wincoop (2009), 'On the unstable relationship between exchange rates and macroeconomic fundamentals', Paper presented at the ECB-Bank of Canada Workshop on 'Exchange rates: The global perspective', June, Frankfurt.

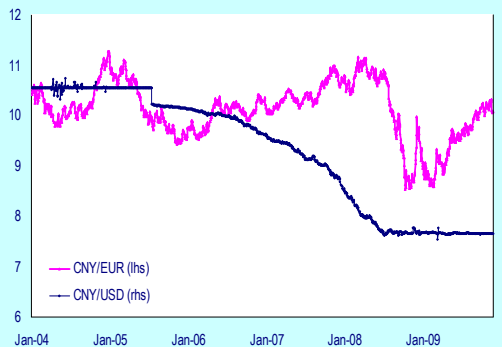
<sup>(12)</sup> The 36 countries are: Argentina, Australia, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Estonia, Hong Kong, Hungary, India, Indonesia, Israel, Japan, Latvia, Lithuania, Malaysia, Mexico, New Zealand, Norway, Philippines, Poland, Romania, Russia, Singapore, South Africa, South Korea, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom, United States.

<sup>(13)</sup> Fratzscher, M. (2009), 'What explains global exchange rate movements during the financial crisis?', ECB Working paper No 1060.

*Box I.3.1: The Chinese exchange rate policy*

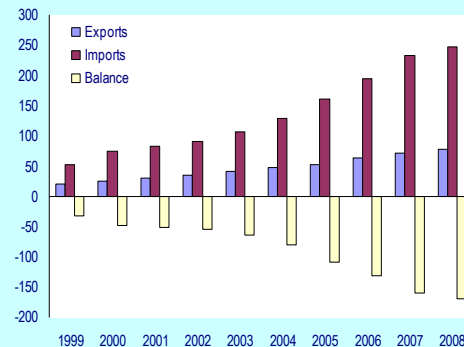
Since July 2008, the Chinese authorities have kept the currency stable against the US dollar at around 6.83 Chinese yuan to the US dollar. This followed a 21% rise against the dollar in the three years to July 2008 and an informal peg against the US dollar in the years before 2005. In order to sustain the currency peg, the Chinese authorities intervene heavily in the foreign exchange market. China's foreign exchange reserves increased to USD 2.3 trillion in September 2009, equivalent to 53% of its 2008 GDP or over two years of imports. This constitutes a rise of nearly 20% compared to the beginning of the year and a doubling compared to the beginning of 2007. With the renminbi and the US dollar moving in synchronisation, the slide of the dollar has led the renminbi to depreciate by 17% against the euro since March 2009. This stands in sharp contrast to other emerging market currencies which have appreciated against the euro since spring 2009 amid improving risk sentiment.

**Chinese renminbi against EUR and USD**  
("-" is an appreciation)



Source: EcoWin.

**EU trade balance with China**  
(in EUR 100 million)



Source: EcoWin.

China's exchange rate is particularly discussed in the context of global imbalances. China's current account surplus increased sharply after 2004, reaching 11.0% of GDP in 2007. Though the current account surplus narrowed in the course of the financial crisis, it remains substantial. The Commission services' Autumn Forecast expects a current account surplus for China of 7.3% of GDP in 2009, a decline to 6.1% in 2010 and to 5.6% in 2011. Due to the strong nominal growth rate, however, the forecast decline in the current account relative to GDP will not result in a decline in nominal terms, so China's current account surplus will remain very high. The Chinese trade surplus is also large with respect to the EU. By end-2008, the deficit of EU-China trade in goods had almost quadrupled in comparison with 2000, reaching about EUR 170 billion. (This compares to a trade deficit of the US with China of EUR 182 bn in 2008.) In 2009, the EU trade deficit with China reached EUR 63.2 billion in the first ten months of the year, with EU imports from China declining much faster (23.2%) than EU exports to China (decline by 8.8%).

The sustained large current account surplus and the accumulation of foreign exchange reserves provide evidence of a significant undervaluation of the renminbi. The fixed exchange rate policy is also contributing to loose monetary conditions in China, fuelling the risk of asset price bubbles. There have been mounting international concerns over the Chinese currency policy. A European delegation by Jean-Claude Juncker (President of the Eurogroup), ECB president Jean-Claude Trichet, and Joaquín Almunia (Commissioner for Economic and Monetary Affairs) raised the issue of the Chinese currency peg in talks with the Chinese authorities in November. Chinese Prime Minister Wen in turn described the renewed peg to the dollar during the crisis as a contribution to stability. As the Chinese and the global economies were still weak, it was too early to remove the measures taken in response to the crisis. However, the recent depreciation of the US dollar was a concern in terms of the long-term value of China's USD reserve holdings.

**The crisis impacts exchange rate determinants**

The analysis detects a sharp break in summer 2008 for many of the potential determinants of exchange rate movements. In particular, the level

of money market rates appears to have been a driving force behind the euro's exchange rate during the financial crisis. Currencies of countries with higher interest rates in the pre-crisis period depreciated, on average, by more than 17 per cent

against the euro between August 2008 and end-2008 (Graph I.3.2).<sup>(14)</sup> Since spring 2009, this trend has somewhat reversed, as currencies of high interest rate countries have appreciated against the euro on average by 5% since 10 March 2009. At the same time, low interest rate countries were subject to lower exchange rate volatility, and even appreciated slightly against the euro in autumn 2008.

**Graph I.3.2: Euro movements against countries with high and low money market rates**  
(cumulated changes in %, 1 July 2008 =0) (1)



(1) Positive values indicate euro appreciation against country group.

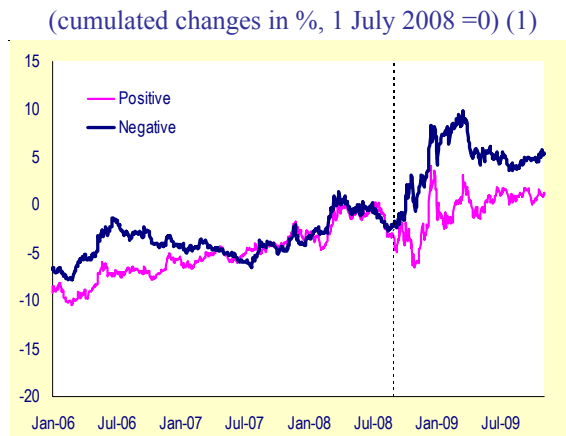
Source: EcoWin.

The different phases in the relationship between interest rates and exchange rate point to an important role for carry trade flows. Carry trades are most attractive under the market conditions which were in place until 2007, in the period of Great Moderation. Exchange rate volatility was low, allowing investors to generate profits from interest rate differentials by borrowing in low-yielding currencies (e.g. Japan and Switzerland) and investing in high-yielding currencies (e.g. the Australian dollar). In line with that, low interest rate countries depreciated more against the euro than high interest rate countries in the pre-crisis period — contrary to the prediction of uncovered interest parity. As risk aversion increased with the first wave of financial market turbulences in summer 2007, the retrenchment in sentiment and the unwinding of carry trades coincided with a sharp depreciation of high-yielding currencies.

<sup>(14)</sup> In mid-August 2008 the cumulated bilateral exchange rate changes of the euro against the high interest rate group were -5.5% compared to 1 July 2008, while the cumulated moves were 11.8% at end-2008. This results in appreciation of the euro by more than 17% against the high interest rate group over that period.

Since spring 2009, the combination of stabilising financial markets and improving prospects for the global economy has increased risk appetite, renewed interest in carry trades and led to an appreciation of high-yielding currencies, such as a number of emerging market currencies. There is also some evidence that, due to the very low interest rate environment in the US, the US dollar has taken the place of the Japanese yen as the major funding currency in these carry trades.

**Graph I.3.3: Euro movements against countries with positive and negative current account balances**  
(cumulated changes in %, 1 July 2008 =0) (1)



(1) Positive values indicate euro appreciation against country group.

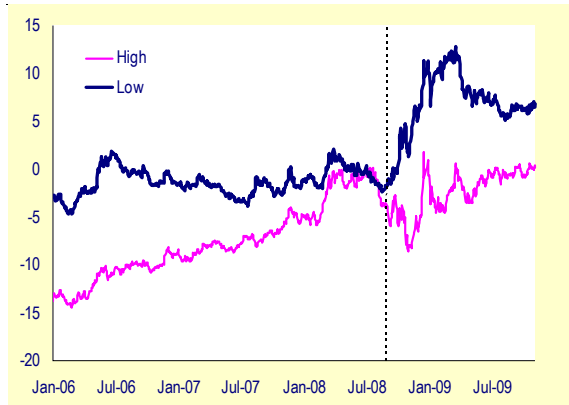
Source: EcoWin.

Currencies of countries with low foreign exchange reserves and high current account deficits were, on average, also associated with stronger depreciation against the euro (Graphs I.3.3 and I.3.4). Interestingly, both the level of foreign exchange reserves and the current account deficits only became significant during the financial crisis period when investors became more concerned about the vulnerability of a country to sudden capital flight and a currency crisis. In this period, currencies of countries with relatively low foreign exchange reserves, such as the Latin American countries Argentina, Brazil and Mexico, or currencies of countries with high current account deficits, such as the Central and Eastern European economies Hungary, Poland, Romania or the Czech Republic, depreciated strongly against the euro. Since March 2009, this trend has been reversed. Countries with a current account deficit and/or low foreign reserves in the pre-crisis period appreciated against the euro as the sudden slump in world trade and the relatively sharp decline in domestic demand led to a considerable unwinding in current account imbalances and a decrease in the external



vulnerabilities of these countries. Around half of the previous exchange rate changes between September 2008 and March 2009 have thus been reversed over recent months.

**Graph I.3.4: Euro movements against countries with high and low foreign exchange reserves**  
(cumulated changes in %, 1 July 2008 =0) (1)



(1) Positive values indicate euro appreciation against country group.

Source: EcoWin.

The evidence of a structural break in exchange rate movements in summer 2008 (summer 2007 for the case of interest rates) becomes also apparent when looking at net external assets (gross external assets minus gross external liabilities, as a share of GDP). While countries with high net external assets (e.g. Japan, China, Norway, Switzerland, Singapore) depreciated against the euro in the pre-crisis period, they kept their currencies relatively stable or even appreciated against the euro in the crisis period.

**Graph I.3.5: Euro movements against countries with high and low net external assets**  
(cumulated changes in %, 1 July 2008 =0) (1)



(1) Positive values indicate euro appreciation against country group.

Source: EcoWin.

By contrast, currencies of countries with low net external assets, among them many emerging

market economies but also the United Kingdom, came under downward pressure in the course of the financial market turbulences and depreciated, on average, by 14% against the euro between mid-September 2008 and mid-March 2009. The most likely explanation is that countries with external assets were better able to withstand the withdrawal of capital by repatriating capital from abroad and meeting foreign exchange liquidity demands. <sup>(15)</sup>

Purchasing power parity suggests a long-run relationship between inflation differentials and (nominal) exchange rate developments. Inflation differentials visibly played a role in the pre-crisis period when high-inflation countries depreciated more strongly against the euro than low-inflation countries. By contrast, they have hardly played a role since the beginning of the crisis when inflationary concerns receded (Graph I.3.6). During the crisis period, the euro appreciated against the currencies of a number of high-inflation countries, in particular Argentina, Hungary and Turkey, but it also gained significant value against the currencies of some low-inflation countries such as the United Kingdom, Poland and Sweden. Inversely, the euro depreciated against both some high-inflation countries (US, Thailand, Philippines) and a number of low-inflation countries (Japan, China, Switzerland).

**Graph I.3.6: Euro movements against countries with high and low inflation**  
(cumulated changes in %, 1 July 2008 =0) (1)



(1) Positive values indicate euro appreciation against country group.

Source: EcoWin.

<sup>(15)</sup> See for instance Fratzscher (2009) for the US dollar.

## Summary and conclusions

The graphical analysis provides some evidence that the financial crisis significantly affected the driving forces of exchange rates. In the acute phase of the crisis, the euro appreciated more against high-yielding than against low-yielding currencies, reflecting a retrenchment in risk sentiment and pointing to an important role for the unwinding of carry trade flows. The general increase in risk awareness also affected countries with low foreign exchange reserves, high current account deficits and low net external assets that saw their currencies depreciating against the euro. Since March 2009, these trends have been partly reversed. Interestingly, a more traditional determinant of exchange rate movements like inflation differentials, though important in the pre-crisis period, seems to have played a benign role throughout the crisis. <sup>(16)</sup>

Three broad conclusions emerge from the above analysis. First, interest rate differentials are likely to remain a key theme on foreign exchange markets especially once monetary exit begins. While some smaller economies have started to tighten their monetary policy, the world's major central banks are expected to keep interest rates low for an extended period of time. This suggests an ongoing supportive environment for carry trades. There is also some evidence that the major carry trade has shifted from the Japanese yen to

the US dollar which could make the potential for carry trades even bigger. Second, the current crisis could further heighten emerging market economies' incentives to self-insure via reserves accumulation. In the aftermath of the current crisis, developing and emerging market countries may well conclude that they need to further stockpile large foreign exchange reserves to safeguard against financial crises. However, such a strategy is neither helpful to facilitate global macroeconomic adjustment, nor is it in the long-term economic interest of the economies concerned. Measures at the international level therefore aim at providing insurance against sudden capital flight without implying the need to run large current account surpluses that can be destabilising by contributing to global imbalances. Most importantly, the IMF has expanded its resources available for assistance to its members and strengthened the role of the SDR (Special Drawing Rights). Third, exchange rate changes during the financial crisis period have indeed hardly been sufficient to result in a significant (further) reduction in global imbalances. Since July 2008 current account deficit countries have, on average, depreciated by 5% against the euro, compared to an average 1% depreciation for current account surplus countries. Further appreciation by surplus countries would thus help underpin a more structural reduction of global imbalances.

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<sup>(16)</sup> These results are also robust to variations in the specification with respect to the country sample and the reference period. For example, according to the de facto exchange rate regime classification by Reinhart and Rogoff, seven of the 36 countries in our sample had a fixed currency regime in the period under consideration (Bulgaria, China, Denmark, Estonia, Hong Kong, Latvia and Lithuania). Excluding these countries from the sample hardly affects the results. Similarly, adjusting the reference period for the classification of the countries in one of the two groups from 2005-2007 to 2004-2006 has no impact on the results.

### 4. *The economic crisis and public attitudes towards structural reforms in the euro area*

While the economic situation is improving, policy makers face the formidable challenge of devising and implementing exit strategies from the crisis. These will entail difficult choices and decisions on the most appropriate ways to exit from the temporary rescue measures that were put in place to limit the immediate impact of the crisis but also on longer-term policy strategies to boost potential output and ensure economic sustainability. The crisis has had a major impact on the level of potential output in the euro area and there is a risk that potential growth might also be negatively affected unless appropriate policy action is taken.<sup>(17)</sup> Such policy responses will inter alia have to build on structural reforms aimed at improving the functioning of product and labour markets and enhancing the quality and sustainability of public finances.

However, the implementation of structural reforms may meet political resistance. Structural reforms tend to carry short-run adjustment costs, which are often concentrated on certain groups in society, while benefits may take time to materialise and are generally broadly distributed. Consequently, reform-minded governments need to get involved in complex and frequently lengthy negotiations with stakeholders.

There is no magic formula for successful reforms.<sup>(18)</sup> However, general public support certainly plays a very important role as it may provide a strong mandate to the government and increase political acceptability of reforms. In the current context, it is useful to see whether and how the economic crisis has impacted on public perceptions of the need for reform, as public opinion can change markedly under the influence of external factors. If the crisis made structural reforms more acceptable for the population at large, policy makers could find it easier to implement the necessary measures.

Indeed, it is often argued that a crisis offers a window of opportunity for reforms as it makes the

deficiencies of the status quo apparent.<sup>(19)</sup> The public at large may become increasingly aware of the general need for reform as it is exposed to the hardship aggravated by the functioning of the existing institutions. Alternatively, the crisis may erode the rents arising to specific interest groups, which could reduce their opposition to reform. This general ‘crisis effect’ may intensify the perceptions of the necessity to push forward with reforms.

On the other hand, support for reforms may not change considerably or even swing in the opposite direction. The former may happen if the crisis does not significantly affect perceptions of the need for reform because its structural causes (beyond the financial sector) are not properly perceived by the wider public. The crisis could also increase perceived uncertainty as to what should be the appropriate policy responses. Moreover, as the crisis is sometimes seen as an exemplification of a failure of market institutions, there could also be a setback and the public could turn against policy measures aimed at removing the constraints on free play of market forces. At the very least, the public may be more inclined towards strengthening labour market institutions that mitigate the short-run impact of the crisis. While such measures can indeed temporarily help cushion the implications of the downturn, they also hinder adjustment in the longer run and lead to higher structural unemployment.

To explore the issue of public attitudes towards structural reform, this analysis exploits the data from three consecutive annual Flash Eurobarometer surveys on public attitudes and perceptions in the euro area. Since 2007, these surveys contain a series of questions on structural reforms. These questions enquire inter alia about the respondents’ views on the need for economic reforms to improve the performance of the national economy and the acceptability of different ways to finance reforms. In addition, the survey collects relevant information on views concerning the EU’s involvement in reform processes and the usefulness of cross-country exchange of best practices. As the fieldwork usually takes place in September, we can thus compare the data in the pre-crisis period (September 2007) with those at the outset of the global crisis (September 2008) and during the period in which the impact of the crisis was fully felt (September 2009). This allows to assess the

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<sup>(17)</sup> See European Commission (2009) ‘Impact of the current economic and financial crisis on potential output’, European Economy. Occasional Paper No 49; and the Quarterly Report on the Euro Area, Volume 8 No 2 (2009).

<sup>(18)</sup> For an overview see OECD (2009) ‘The political economy of reform: Lessons from pensions, product markets and labour markets in ten OECD countries’, OECD, Paris.

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<sup>(19)</sup> See Rodrik, D. (1996), ‘Understanding economic policy reform’, *Journal of Economic Literature*, Vol.34, pp 9-41.

impact of the crisis on public attitudes regarding structural reforms.

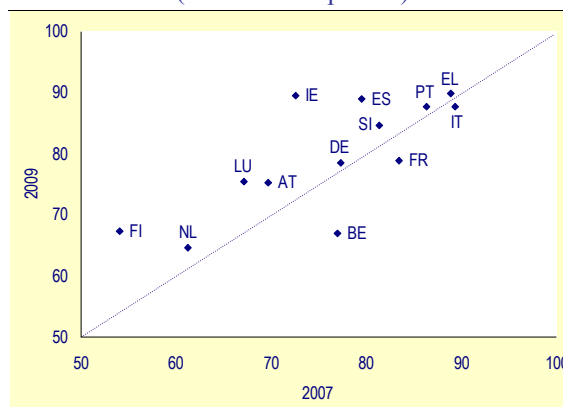
While the surveys provide unique information and, to the best of our knowledge, there is no other more appropriate source of data on public support for reform, the results should be seen as very tentative. Especially, the question on perception of the need for structural reforms to improve the functioning of the economy is worded in a rather general way, without being specific about the reform measures in question. This presents a significant shortcoming as the support for reform will probably vary considerably depending on the type of reform (e.g. measures to boost innovation are likely to be widely accepted while reforms in labour markets often raise opposition). Neither is it clear that all the respondents are fully aware of what structural reforms entail. Consequently, some may express their agreement with the need for reforms to improve the functioning of the economy even though they would disapprove of specific measures proposed by the government once they realise their full implications. Finally, the available data is too limited to verify the robustness of the findings with a more rigorous econometric analysis. Nevertheless, an analysis of the aggregate perceptions and especially their changes can still be useful in improving our understanding of how crises can affect support for reforms.

#### Perceptions of the need for structural reform have increased in most euro-area countries ...

For the euro area as a whole, public perceptions of the need for structural reforms have been stable over time. Around 4/5 of the respondents agree that ‘there is a need for significant reforms to improve the performance of our economy’. The shares of those who disagree with the need to reform and those who ‘don’t know’ have also been stable (at around 12% and 7% respectively).<sup>(20)</sup> However, this aggregate picture conceals very different developments at Member State level. Some of them have seen significant shifts towards greater awareness of the need for reforms while a few others have had the opposite experience (Graph I.4.1).

<sup>(20)</sup> As was explained above, the crisis may have had an impact on the degree of uncertainty regarding the perceived need for reform. It is, therefore, useful to analyse the developments in the share of respondents who ‘don’t know’ as it can provide some indication as to whether the crisis reduced the hesitation of some about the need to reform or whether it increased the doubts about the appropriate policies to be implemented.

Graph I.4.1: **The perceived need for structural reforms in 2007 and 2009**  
(% of total responses)



Source: Commission services.

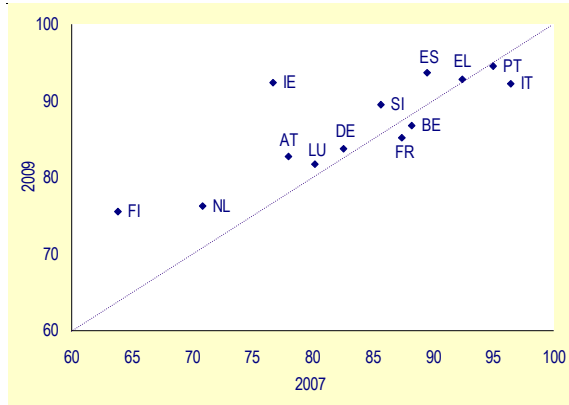
The crisis coincided with increases in perceptions that there was a need for economic reforms in the vast majority of euro-area countries. This lends some support to the assumption that economic downturns tend to boost support for reforms. In the pre-crisis period (September 2007), IT (89%), EL (89%), PT (86%), FR (84%) and SI (81%) were the countries that recorded the highest levels of awareness of the need for structural reforms, while the share of respondents who saw the need for such reforms was the lowest in FI (54%), followed at some distance by NL (61%) and LU (67%). By September 2009, the share of respondents who saw the need for significant reforms increased in almost all euro-area countries, with only a few (important) exceptions: BE (-10%), FR (-4.6%) and IT (-1.5%).

The significant drops in the affirmative answers to the question on the need for structural reforms in BE and to a lesser extent also in FR was due to the increase in the share of respondents who ‘don’t know’. If the share of only those who replied either yes or no is considered (i.e. excluding the ‘don’t knows’) the drops are considerably smaller (Graph I.4.2).<sup>(21)</sup> The highest increases were recorded in countries which were more significantly hit by the financial and economic crisis: IE (+16%), FI (+13%), ES (+9%), LU (+8%). As a result, the group of countries with the highest levels of pro-reform perceptions has expanded and includes EL (90%), IE (90%), ES (89%), IT (88%), PT (88%), SI

<sup>(21)</sup> BE (-1.4%) and FR (-2.2%). For IT the drop actually increased to -4.1%. In BE, the doubling of the share of ‘don’t knows’ is difficult to explain and it may possibly reflect a problem with the data.

(85%) and the two countries that joined them in 2008: MT (83%) and CY (81%).

Graph I.4.2: **The perceived need for structural reforms in 2007 and 2009**  
(% of responses excluding 'don't knows')



Source: Commission services

Overall, the economic crisis seems to have resolved part of the uncertainty among the population about the need for further structural reforms in a number of countries, as the shares of 'don't knows' decreased: LU (-9%), ES (-6%), FI (-4%), IT (-3%), IE (-2%), PT (-2%). These decreases can be associated with increases in support for reforms in all of these countries. <sup>(22)</sup> In contrast, the share of 'don't knows' answers increased somewhat in FR (+3%) and NL (+2%), in both cases 'transforming' into disagreement with reforms.

These developments point to two patterns that are important for policy makers:

- in 'normal times', the level of perceptions of the need for reform seems to some extent to reflect the objective need for reform. The countries that recorded the highest shares of respondents that agreed that reforms were needed in the pre-crisis period generally belonged among those that featured important structural weaknesses. <sup>(23)</sup> While this might not be a surprising finding, it is encouraging for policy makers to see that the public realises the existing shortcomings, which may be a

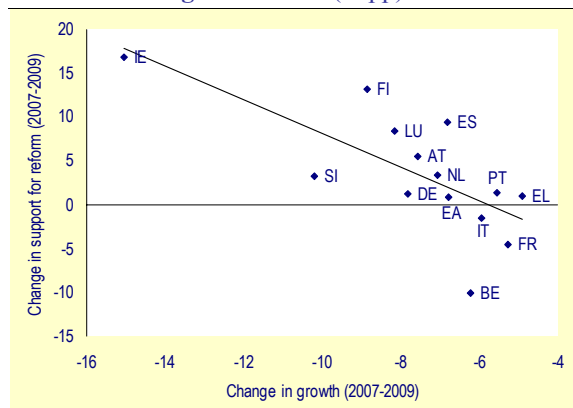
<sup>(22)</sup> In Italy, this effect was outweighed by a larger increase in the share of respondents that did not agree that reforms were needed.

<sup>(23)</sup> See for example the Commission's annual progress reports on the Lisbon strategy for growth and jobs ([www.ec.europa.eu/growthandjobs](http://www.ec.europa.eu/growthandjobs)) or the OECD Going for Growth reports.

stepping stone to implementing policies to address them; <sup>(24)</sup>

- the (significant) changes in perceptions appear to be driven by (short-run) macroeconomic developments (see Graph I.4.3). The steep drops in economic activity and the ensuing rises in unemployment appear to be closely associated with increases in the likelihood that respondents agree with the need for reform. This opens a window of opportunity for policy makers to push forward with the needed reforms. On the other hand, there is a risk that the support for reforms drops with the same speed once economic activity picks up again.

Graph I.4.3: **Changes in public perceptions of the need to reform and difference in real GDP growth rates (in pp)**



Source: Commission services.

The results of simple statistical analysis appear to be largely in line with these tentative conclusions. Table I.4.1 shows the Pearson correlation coefficients between the levels and changes in public attitudes and a number of variables which capture the macroeconomic conditions, the state of public finances and the structural characteristics of the economy. <sup>(25)</sup> <sup>(26)</sup> There

<sup>(24)</sup> Obviously, this does not provide any specific information on what policies the public would find appropriate for improving the functioning of the respective national economies. It may well be that the reform measures put forward by the government would not be considered as acceptable.

<sup>(25)</sup> The focus on macroeconomic conditions and fiscal variables is based on the findings of the empirical literature, which identified them as potentially important determinants of progress in implementing structural reforms (e.g. Høj, J., V. Galasso, G. Nicoletti and T. Dang (2006), 'The political economy of structural reform — Empirical evidence from OECD countries', OECD Working Paper ECO/WKP(2006)29; or IMF (2004), 'Fostering structural reforms in industrial countries', World Economic Outlook).

<sup>(26)</sup> The correlation coefficients reported in the table are based on contemporaneous effects as public opinions probably react with a relatively short time lag to changes in external conditions. The use of lagged values yields very similar

Table I.4.1: Correlation coefficients between level/changes of public perceptions on the need for reform and possible determinants

	2009 level	2008 level	2007 level	2008-2009 change	2007-2008 change		2008-2009 change	2007-2008 change
Macroeconomic conditions								
Unemployment rate <sup>(1)</sup>	0.48*	0.34	0.52*	0.19	-0.05	Δ unemployment rate	0.34	0.69*
Employment rate <sup>(1)</sup>	-0.422	-0.48*	-0.53*	0.23	-0.13	Δ Employment rate	-0.38	-0.37
GDP growth <sup>(1)</sup>	-0.03	-0.1	-0.34	-0.36	-0.54*	Δ GDP growth	-0.45*	-0.60*
GDP per capita <sup>(1)</sup>	-0.01	-0.15	-0.35	-0.27	-0.64*	Δ GDP per capita	-0.29	-0.56*
Output gap (% GDP) <sup>(1)</sup>	-0.09	-0.51*	-0.44	-0.23	-0.57*	Δ Output gap (% GDP)	-0.4	-0.59*
Inflation (HICP) <sup>(1)</sup>	-0.28	0.22	0.38	0.06	0.04	Δ Inflation (HICP)	0.18	-0.22
State of public finances								
Budgetary deficit (% GDP) <sup>(1)</sup>	-0.60*	-0.67*	-0.78*	-0.05	-0.23	Δ Budgetary deficit (% GDP)	-0.36	-0.54*
Public debt (% GDP) <sup>(1)</sup>	0.23	0.41	0.58*	-0.43	-0.21	Δ Public debt (% GDP)	0.24	0.54*
Structural features								
GDP per capita (in PPS) <sup>(1)</sup>	-0.3	-0.26	-0.46	-0.01	0.54*	Δ GDP per capita (in PPS)	-0.19	-0.68*
NAWRU <sup>(1)(6)</sup>	0.43*	0.35	0.55*	0.12	-0.08	Δ NAWRU	0.32	0.68*
METR <sup>(2)(7)</sup>	.	-0.76*	-0.73*	.	-0.08	Δ METR	.	-0.07
Govt revenues (% GDP) <sup>(1)</sup>	-0.58*	-0.56*	-0.32	-0.02	-0.56*	Δ Govt revenues (% GDP)	-0.06	-0.46
Tax burden (% GDP) <sup>(1)</sup>	-0.48*	-0.29	-0.08	-0.3	-0.42	Δ Tax burden (% GDP)	-0.04	-0.44
R&D expenditures (% GDP) <sup>(2)</sup>	-0.55*	-0.77*	-0.67*	0.41	-0.31	Δ R&D expenditures (% GDP)	.	.
PMR <sup>(3)</sup>	-0.2	0.47	-0.68*	-0.11	0.27	Δ PMR	0.26	0.24
Fraser index <sup>(4)</sup>	-0.28	-0.48*	-0.68*	0.42	0.22	Δ Fraser index	.	.
Fraser index – size of govern. <sup>(4)</sup>	0.73*	0.55*	0.51*	0.1	0.15	Δ Fraser index – size of govern.	.	.
Fraser index – market regulation <sup>(4)</sup>	-0.45*	-0.67*	-0.81*	0.51*	0.16	Δ Fraser index – market regulation	.	.
Start-up conditions – costs <sup>(5)</sup>	0.49*	0.56*	0.49*	-0.33	0.32	Δ Start-up conditions – costs	0.06	0.42
Enfor. of contracts – procedures <sup>(5)</sup>	0.49*	0.43	0.52*	-0.07	-0.25	Δ Enfor. of contracts – procedures	-0.60*	-0.04
Enforcement of contracts – time <sup>(5)</sup>	0.49*	0.54*	0.52*	-0.23	-0.01	Δ Enforcement of contracts – time	.	0.28

\*indicates the correlation coefficients significant at 10 % level.

Source: 1) AMECO; 2) Structural Indicators Database, Eurostat; 3) OECD — Product market regulation (PMR) index (data for 2008); 4) Fraser Institute — Fraser index of economic freedom (data for 2007); 5) World Bank — 2010 Doing Business; 6) Non-accelerating wage rate of unemployment; 7) Marginal effective tax rate (one-earner couple with two children at 33 % of the average earnings); Commission services.

appears to be a statistically significant correlation between the levels of agreement with the need for reforms and labour market variables such as the rates of unemployment and employment. This is rather intuitive as labour market performance is likely to affect public perceptions of the need for significant reforms. There is also significant statistical association with public finances variables — the levels of budgetary deficit and public debt. Finally, a number of variables capturing the structural features of the economy are correlated with public perceptions of the need for reforms. These range from labour market institutions (e.g. NAWRU and marginal effective tax rates), product market regulations (e.g. OECD PMR index, specific Fraser indexes or specific World Bank Doing Business indexes) to investment in R&D.

Changes in public attitudes are almost exclusively associated with changes in macroeconomic conditions (e.g. changes in unemployment, growth and output gap) and fiscal variables (both changes in deficits and debt). All correlation coefficients have the expected sign. The strength of these correlations has decreased during the

crisis period and it is only the change in output growth that continues to be significantly correlated with support for reforms.<sup>(27)</sup>

### ... but the willingness to accept the potential costs of reform is relatively low.

High recognition of the need for structural reforms does not necessarily translate into strong support for or acceptance of such reforms. Especially, if reform measures entail budgetary costs, there might be a need to increase tax revenues or reduce other budgetary expenditures. Consequently, support for reform may weaken considerably if the public is not prepared to bear the related costs. The questions in the survey which enquire about support for two alternative ways to generate necessary budgetary resources

results given the high degree of inertia in most of the structural variables.

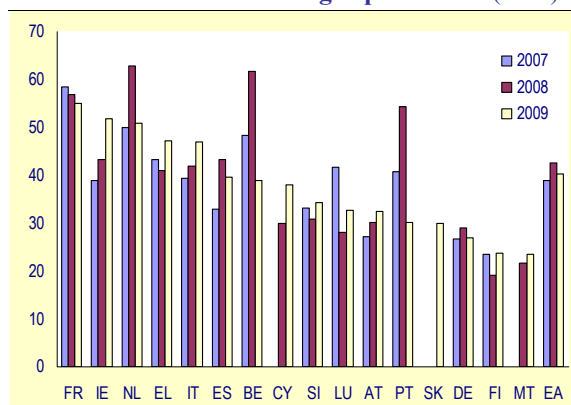
<sup>(27)</sup> These results only show a relative strength of statistical association between these variables and do not allow conclusions to be drawn on the causality. Also, there is a high degree of multicollinearity among the 'explanatory' variables, which makes it difficult to ascertain which of them are the actual drivers of the levels/changes in public attitudes. As already mentioned, the data limitations (both in terms of the low number of observations and the length of the time series) do not allow robust econometric testing of these conjectures. Nevertheless, the results of a number of simple regressions appear not to contradict the presented results.

for reform – cuts in public spending and tax increases – help to cast some light on this issue.

Indeed, the respondents are considerably more sceptical once asked about different ways to finance reforms: for the euro area as a whole, around 40% of them would agree that the potential costs of structural reforms should be financed through reductions in public expenditures, e.g. social benefits, and only 17% would accept increases in taxes. While the aggregate share of those willing to accept expenditure reductions has remained relatively stable compared to previous years (39% in 2007 and 43% in 2008), the economic crisis has had a significant impact on the share of respondents who would agree with reforms financed through higher taxes (an increase of approximately 5 pp compared to 13% in 2008 and 12% in 2007). If the ‘don’t know’ answers are excluded, the results are broadly the same: around 44% of respondents do not oppose spending cuts (a mild increase of less than 2 pp compared to 2007) and 18% agree with tax increases (an increase of almost 5 pp in comparison with 2007).

At the country level, financing reforms through the streamlining of public expenditures is supported by an absolute majority of respondents in FR (55%), IE (51%) and NL (51%) and a relative majority in IT (47%) and BE (39%)<sup>(28)</sup> (see Graph I.4.4). Respondents in MT (24%), FI (24%), DE (27%), SK (30%) and PT (30%) are the least enthusiastic in this respect.

Graph I.4.4: Acceptability of different ways to finance reforms – reducing expenditures (in %)



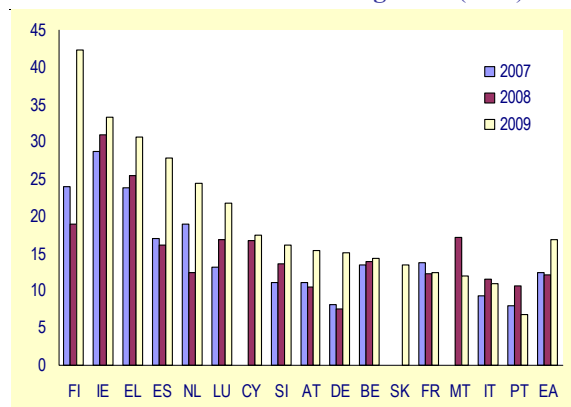
Source: Commission services.

Tax increases as a way to finance reforms are found relatively most acceptable in FI (42%, an

<sup>(28)</sup> A relative majority refers to ‘yes’ answers exceeding ‘no’ answers, i.e. excluding ‘don’t know’ answers.

18 pp increase on 2007), IE (33%), EL (31%) and ES (27%), while they find limited support in PT (7%), IT (11%), MT (12%), FR (13%) and BE (14%) (see Graph I.4.5). In contrast with the question on spending reductions, there is no absolute or relative majority of respondents favouring tax increases in any euro-area country. Overall, there appears to be a general negative relationship between agreement with increasing taxes and the actual size of the overall tax burden in the economy. There are two outliers, though: Finland (with a high overall tax burden and high willingness to accept further tax increases) and Slovakia (despite a low tax burden the respondents are not ready to accept tax hikes).

Graph I.4.5: Acceptability of different ways to finance reforms – increasing taxes (in %)



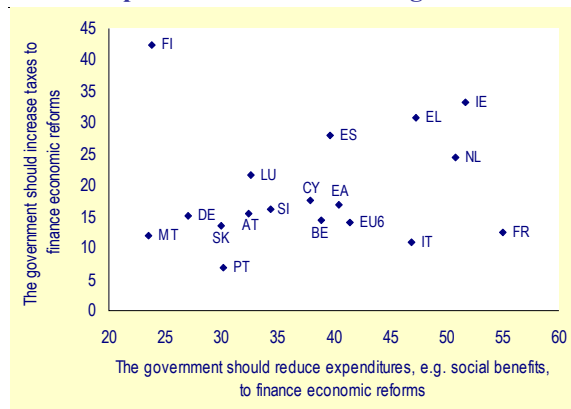
Source: Commission services

Overall, the results also point to significant differences among euro-area countries concerning public preferences on the mix of measures to secure financing for potentially costly reforms (see Graph I.4.6). Consequently, euro-area governments might need to take this constraint into account when designing the overall exit strategies from the crisis. Respondents in some countries do not find acceptable either public expenditure reductions or tax increases (e.g. MT, DE, PT, SK, AT and SI). In contrast, respondents in several countries (IE, EL, ES and NL) show relatively weaker opposition to both of these instruments, although the relative preference continues to be biased towards public expenditure cuts.<sup>(29)</sup> The Finns have a fairly clear preference for increasing taxes while the Italians and the

<sup>(29)</sup> This relative preference of the public for benefit reductions as compared to tax increases provides some support for pursuing policies aimed at increasing the quality of public finances, by inter alia changing the composition of public expenditures towards growth-enhancing items, and documents some scepticism about increasing the size of the government.

French tend to prefer reductions in public expenditures.

**Graph I.4.6: The relative preferences of respondents for the financing mixes**



Source: Commission services.

**The perceived role of the EU in the process of structural reform**

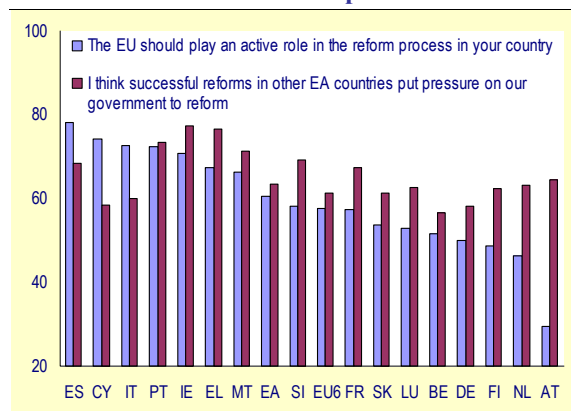
At the beginning of 2010, the European Commission will come up with proposals on the new strategy for coordinating structural reforms in the EU that will succeed the current Lisbon Strategy for Growth and Jobs. The results of the surveys provide fairly strong support for EU involvement in the national reform processes, as 60% of respondents in the euro area believe that the EU should play an active role in the domestic reform process. (30) A similar share of respondents thinks that reforms in other EU countries may induce their own government to introduce reforms. This indicates considerable scope for the exchange of best practices and peer pressure — areas where the EU can make a substantial contribution. The survey results have been fairly stable over time. It is interesting to note that the shares of ‘don’t know’ answers to these questions were somewhat higher than in the preceding questions, which may indicate that there is some scope for better communicating the EU’s potential contributions. If only the ‘yes’ and ‘no’ answers are considered, 68% of respondents are in favour of EU involvement in national reform processes and 72% think that reforms implemented abroad stimulate the domestic reform process.

As regards individual countries, the highest levels of support for active EU involvement are recorded

(30) It should also be noted that the question refers to active involvement of the EU, which may be interpreted as going beyond the current soft approach to policy coordination. Therefore, the actual support for weaker forms of EU involvement might be even higher.

in ES (78%), CY (74%), IT (73%), PT (72%), IE (71%), EL (67%) and MT (67%), and in all other euro-area countries, except from AT (30%), there is at least a relative majority in favour. As regards the effectiveness of cross-border peer pressure/exchange of best practices, the most enthusiastic respondents are found in IE (77%), EL (77%), PT (73%) and MT (71%). Relatively lower levels of agreement are recorded in BE (57%), DE (58%), CY (58%) and IT (60%). However, in these countries too there is a very high absolute majority of respondents who believe in the benefits of cross-border political economy spillovers of reforms.

**Graph I.4.7: Public attitudes towards the EU’s role in the reform processes**



Source: Commission services.

**Tentative conclusions**

The present focus represents a first attempt to exploit the annual Flash Eurobarometer surveys on public attitudes and perceptions in the euro area. The tentative conclusions of this analysis indicate that the current crisis has indeed had a significant impact on the perceived need for structural reform in euro-area countries. In most countries, the perceived need for reform has increased, which could have a positive impact on the ability of governments to proceed with needed reforms. The changes in perceptions seem to have been largely driven by recent macroeconomic developments, with the countries that were hit the most severely by the crisis experiencing the largest increases in the perceived need for reforms. This could open a window of opportunity for reform-minded governments. However, the support for reform has declined in a limited number of countries (BE, FR and IT). The survey data also show that, in normal times, the general awareness of the need for reform appears to be related to the objective need for reform as



measured by various indicators of structural weaknesses.

An important limitation of this analysis stems from the fact that the questions in the survey are specified in a general way (e.g. ‘do you think there is a need for significant structural reforms to improve the performance of the economy?’) and do not specifically address potentially sensitive areas (e.g. reforms of employment protection legislation). Therefore, the survey results need to be interpreted with considerable caution. There is a risk that support for specific reform proposals could diminish significantly if they entail some costs. Indeed, the survey results seem to confirm that financing of potentially costly reforms through cuts in public spending and particularly

tax increases would not be supported by a majority of respondents in most euro-area countries. However, crises seem to have had an impact also in this respect. The acceptance of tax increases has risen in a number of countries. However, the willingness to accept public spending cuts has not changed significantly, probably reflecting the public’s preference for governments to continue to provide support for those affected by the crisis. Finally, the results also indicate that people think that reforms in other EU countries may induce their own government to introduce reforms and believe that the EU should play an active role in the domestic reform process. This appears to provide fairly strong support for the EU’s instrumental role in the process of coordinating economic reforms.

**5. Structural reforms for knowledge-based economies: some insights from a DSGE model**

In its new EU 2020 strategy, the Commission has recently emphasised the critical role of knowledge as the engine for sustainable growth, calling for strengthened education and for more attractive framework conditions for innovation. Policies geared to sustaining potential growth also constitute an important part of the design of exit strategies.

Against this background, there is a need to better understand the effect of specific policy instruments related to the knowledge economy on medium-term growth performance. This requires methods establishing a clear link between policy instruments, innovation, goods, labour and financial markets and macroeconomic aggregates. The present section therefore proposes to assess the effects of a number of knowledge-related structural reforms using a DSGE model fully equipped to take into account the relationships between innovation and growth.

**Modelling policy measures**

Dynamic stochastic general equilibrium (DSGE) models are especially suitable for the analysis of the impact of structural reforms, as they incorporate microeconomic foundations, implying that the equations of the model are the outcome of the forward-looking, optimising decisions of individual economic agents. DSGE models also typically include imperfections in goods and labour markets.

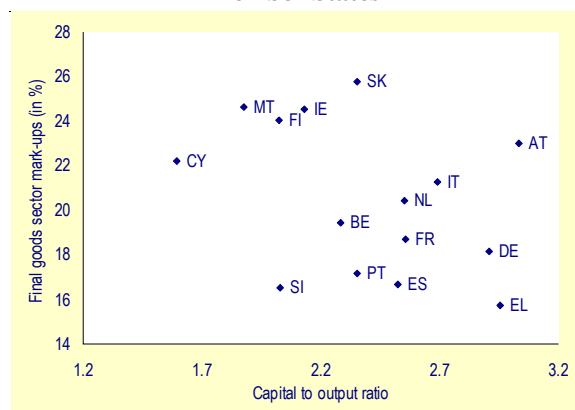
The model used for the simulations discussed below is a version of DG ECFIN’s QUEST III model, extended to include an endogenous growth mechanism.<sup>(31)</sup> The model is more detailed than standard DSGE models in order to be able to model the reforms as quantifiable policy measures, such as fiscal policy instruments and reductions in administrative costs. The production side of the economy consists of three sectors: a research sector, which produces patents, an intermediate sector, which produces intermediate goods on the basis of designs licensed by

households (who buy them from the R&D sector), and a final goods sector. Moreover, the labour force is disaggregated into three skill groups with different efficiency levels: low-skilled, medium-skilled and high-skilled workers. The model is calibrated for each of the euro-area Member States using country-specific structural information.

**Structural differences between Member States**

Euro-area Member States show important structural differences which imply that reforms will impact differently on the economies involved. Graph I.5.1 illustrates a broadly negative correlation between mark-ups in the final goods sector and the capital to output ratio across euro-area countries.

**Graph I.5.1: Final goods sector mark-ups and capital to output ratios, euro-area Member States**



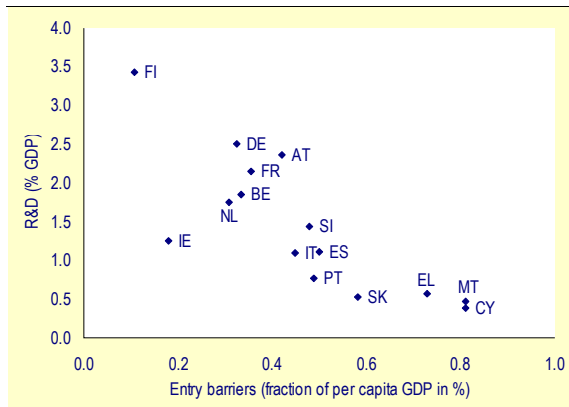
Source: EUKLEMS, Commission services’ calculations.

There is also substantial empirical evidence of high entry barriers for start-ups in the euro area compared to other OECD countries, notably the US. Graph I.5.2 plots the relation between R&D intensity, defined as total R&D expenditure as a percentage of GDP, and entry barriers, measured as the cost of procedures and time borne by start-ups before the firm can operate legally.

Entry barriers vary widely across countries, ranging from 11% of GDP per capita in Finland to 81% of GDP per capita in Cyprus and Malta. Overall, it can be observed that catching-up Member States tend to be characterised by relatively low R&D intensities and high entry barriers, while the technology leaders such as Finland and Germany display opposite features.

<sup>(31)</sup> This version of the model has been applied to the analysis of the effects of structural reforms in the EU as a whole by Roeger, Varga and in ’t Veld (2008). See Roeger W., J. Varga and J. in ’t Veld (2008), ‘Structural Reforms in the EU: A simulation-based analysis using the QUEST model with endogenous growth’, European Economy, Economic Papers. December No 351.

Graph I.5.2: R&D intensity and entry barriers, euro-area Member States



Source: R&D: Eurostat. Entry barriers: Djankov et al. (2002).

Graphs I.5.1 and I.5.2 illustrate two important stylised facts:

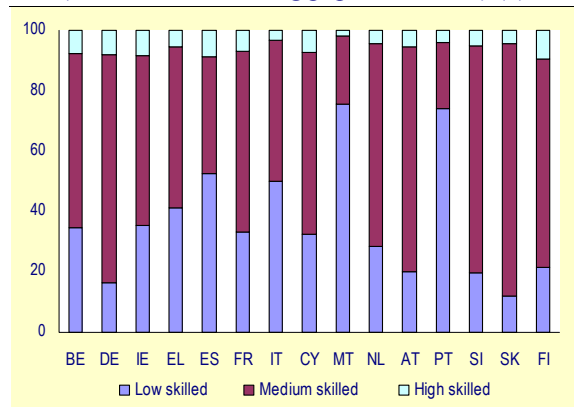
- Countries with high mark-ups tend to have lower capital to output ratios.
- Entry barriers and R&D intensity are negatively correlated.

Both facts are consistent with the predictions of the QUEST III model. In the presence of high mark-ups, demand for labour and physical capital is lower than in a more competitive environment. Since wages are more responsive to changes in demand than the rental rate of capital, high mark-ups translate into a lower capital to output ratio. High entry barriers affect R&D investment negatively, as they imply high profit requirements for potential entrants who would engage in the production of new products.

Member States also differ considerably in terms of the skill composition of the labour force. As shown in Graphs I.5.3, Malta and Portugal and, to a lesser extent, Spain and Italy have higher shares of low-skilled workers in the total labour force than other euro-area countries<sup>(32)</sup>. There is, however, a smaller cross-country variation in the share of high-skilled workers, which ranges between 9.61% in Finland and 1.87% in Malta.

<sup>(32)</sup> High-skilled workers are defined as the segment of the labour force which can potentially be employed in the R&D sector, i.e. the share of the population with tertiary education qualifications in science, mathematics, computing or engineering programmes. Low-skilled workers are defined as the portion of the labour force with ISCED (International Standard Classification of Education) levels 0-2. The rest of the labour force is categorised as medium-skilled.

Graph I.5.3: Population shares, euro area (share of total working population in %) (1)



(1) 2003-2007 averages.

Source: Eurostat.

### The effects of structural reforms — Simulation results

This section reports the effects of a set of structural reforms and describes how the impact of the measures is affected by the Member States' starting conditions. Additional reform scenarios (and further details on the calibration of the model) are discussed in D'Auria, Pagano, Ratto and Varga (2009).<sup>(33)</sup> Table I.5.1 shows the effect on GDP of each of the policies 20 years after their adoption. A longer horizon (50 years) is considered for a measure aimed at improving human capital.

**Fiscal incentives to R&D.** Much of the current policy debate focuses on various measures to increase knowledge investment and innovation in the EU. In this light, the first policy taken into consideration is a tax credit on R&D. Tax credits for R&D investment have become more popular as several EU Member States, notably Belgium, Denmark, Germany and the Netherlands, have switched from direct R&D funding towards fiscal incentives.

The measure is modelled as a 10 pp tax credit on investment in intangible capital (i.e. R&D). By decreasing the rental rate of intangibles and thus increasing demand for patents, the tax credit stimulates R&D production and therefore boosts economic activity in all countries. The GDP effect of the tax credit ranges from 0.18% in the case of

<sup>(33)</sup> D'Auria F., A. Pagano, M. Ratto and J. Varga (2009), 'A comparison of structural reform scenarios across the EU Member States — Simulation-based analysis using the QUEST model with endogenous growth', European Economy, Economic Papers. December No 392. European Commission. Brussels.

Table I.5.1: **Effect of structural reforms on GDP, euro area**  
(percentage deviation from baseline)

	Tax credit (R&D) (1)	Increasing competition in the final goods sector (1)	Reducing entry barriers (1)	Improving human capital (2)
Belgium	0.30	0.57	0.08	0.35
Germany	0.27	0.73	0.04	0.38
Ireland	0.18	0.66	0.06	0.27
Greece	0.61	0.98	0.64	0.46
Spain	0.50	0.90	0.24	0.46
France	0.27	0.69	0.05	0.42
Italy	0.36	0.80	0.18	0.66
Cyprus	0.64	0.71	0.61	0.40
Luxembourg	0.22	0.36	0.06	0.09
Malta	0.55	0.60	0.49	0.62
Netherlands	0.21	0.62	0.06	0.34
Austria	0.27	0.77	0.06	0.52
Portugal	0.38	0.72	0.26	0.90
Slovenia	0.31	0.70	0.17	0.46
Slovakia	0.37	0.86	0.39	0.53
Finland	0.23	0.70	0.01	0.30

(1) Effect of the policy after 20 years; (2) Effect of the policy after 50 years.

*Source:* D'Auria, Pagano, Ratto and Varga (2009).

Ireland to 0.64% for Cyprus. A multiple regression analysis<sup>(34)</sup> sheds some light on the factors behind the cross-country variations. A key role is played by the initial level of R&D intensity: countries where initial R&D spending is low benefit the most from the measure. Other important explanatory factors relate to the spill-over effects from the stock of domestic and foreign knowledge and the relative efficiency of high-skilled workers within a country, as they determine the magnitude of the increase in the output of the research industry and hence of the overall economy.

**Product market reforms.** Policies to ensure open and competitive markets and a dynamic business environment are also central to the EU 2020 strategy. Table I.5.1 shows the effects of two product market reforms: an increase in competition in the final goods sector and a reduction in the administrative costs faced by start-ups. The first policy is modelled as a 1 pp reduction of the output price mark-up. Lower prices and stronger demand for sectoral output translate into increased demand for all production factors. In particular, the decrease in mark-ups boosts demand for physical capital, which in turn stimulates entry of new firms and R&D activity. The output effect ranges from 0.36% in Luxembourg to 0.98% in Greece. The regression analysis reveals that the cross-country differences are mostly driven by factors related to the role of tangible capital in the economy: high capital shares in production and a high level of

investment are associated with bigger GDP effects.

The second policy is simulated as a 10% reduction in the administrative costs faced by start-ups. Administrative barriers act like a sunk cost for potential entrants. Therefore, reducing them makes projects which generate a lower present discounted value profitable, stimulating entry and the introduction of new products. After 20 years, the policy increases GDP by between 0.01% in Finland and 0.64% in Greece. The cross-country variations are partly explained by the fact that the simulated reduction in entry barriers is smaller for countries where the initial level of administrative costs is low (as in the case of Finland). However, in addition to this effect, the presence of high entry barriers keeps R&D investment low, implying a higher marginal product for intangible capital. Larger increases in GDP as a result of the policy are also experienced by Member States where knowledge production is highly efficient.

**Investment in human capital.** As discussed earlier, there are large variations in the skill composition of the labour force between Member States. Moreover, compared to the US, Europe employs a relatively high share of low-skilled workers. There are therefore potentially high benefits to be reaped from policies aimed at improving workers' skills. In the simulations reported in Table I.5.1, the improvement in human capital is modelled as a 1% increase in the share of medium-skilled workers and a corresponding decrease in the share of low-skilled workers over a 40-year period.

<sup>(34)</sup> The analysis is carried out by performing a stepwise linear regression for each scenario and time and by selecting the parameters or variables explaining most of the cross-country variations.

The additional medium-skilled workers are more efficient than the replaced low-skilled workers, thereby boosting production. In addition, the increase in the share of medium-skilled workers lowers their wage premium with respect to other skill groups. After 50 years, the impact on GDP varies between 0.09% in the case of Luxembourg and 0.9% in the case of Portugal. Unsurprisingly, the countries which benefit the most from the improvement in the skill composition of the labour force are those in which the efficiency of medium-skilled workers relative to that of the other skill groups is higher.

### Conclusions

This section analysed the macroeconomic impact on individual euro-area Member States of a series of structural reforms: policies aimed at stimulating research and innovation, product

market reforms and improvements in human capital. According to our quantitative analysis, the policies discussed all have sizeable positive effects on GDP and employment.

However, the effects of the measures vary widely across countries. Overall, the simulations highlight the importance of taking Member States' initial conditions into account when devising structural reforms. Weak structural characteristics in terms of, among other things, low R&D intensity and capital to output ratios as well as high entry barriers are associated with higher returns from the adoption of the measures. Countries where knowledge investment and competition are currently low, as is the case for catching-up Member States, would therefore benefit the most from the adoption of structural reforms.



## *Focus*

### **II. Trends in European banking**

*A financial crisis puts banking structures under adjustment pressure, partly because banks are forced to respond to the crisis and partly because of regulatory changes made to prevent similar crises in the future. While the impact of the current crisis on the structure of the euro-area banking sector may not yet be visible in statistics, this section focuses on the possible directions which the banking sector could take by assessing whether pre-crisis trends are still compatible with the pressure for adjustment caused by the crisis. The analysis suggests that trends relating to size, concentration and integration are likely to continue as before the crisis. However, banks' financing strategies are likely to shift towards having a stronger equity component, while their business models are likely to concentrate more on core markets. Overall, the euro-area financial system may ultimately be less dominated by banks relative to the activity of market financing and of other financial intermediaries.*

The global banking crisis has had a severe impact on the growth performance of the euro-area economy. Moreover, there is a broad consensus that resolution of problems in the banking sector is a precondition for a sustainable economic recovery. Extensive intervention by euro-area governments and the ECB in support of the banking sector has successfully prevented a financial meltdown. However, despite the severity of the crisis and the scale of public sector intervention, there is only limited evidence of structural change in the banking sector, fuelling popular perceptions that banks have returned to 'business as usual' as the more acute phase of the crisis has passed. Against this background, this article focuses on longer-term trends in the euro-area banking sector and how these trends are likely to be affected by the crisis.

Forecasting the future for the euro-area banking sector in mid-crisis is inevitably a speculative exercise. Fundamental factors linked to technological progress and internationalisation will continue to influence the sector alongside factors linked to the crisis, such as the viability of business models and a tightening of the regulatory framework. At this stage, it is impossible to predict with certainty how these various factors will interact.

For the purpose of this analysis, a set of indicators has been used to detect recent trends in the banking sector. However, it would be premature to assume that post-crisis changes can already be identified by reference to these indicators. Indeed, some pre-crisis trends have become evident in statistics only recently (e.g. securitisation) or are still not evident at all (e.g. the accumulation of toxic assets). A further important caveat relates to reliability of some of the indicators used, which

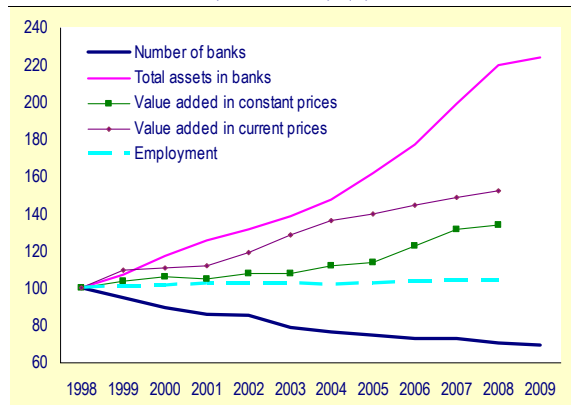
were constructed from balance sheet data for about 100 euro-area banks retrieved from Bloomberg and the Orbis data bank. For many of the indicators, the set of observations was incomplete and the possibility of selection bias cannot be ruled out, i.e. data may not be available for those institutions for which they would be most telling. Also, the indicators typically reflect data for the full sample of banks and so may suffer from aggregation bias too.

#### ***1. Concentration and integration***

##### **Banks in the euro area had become fewer, larger and more international prior to the crisis**

The structure of the euro-area banking sector has undergone a gradual but steady change, in line with trends at the broader EU level. A significant decline in the number of banks is among the most eye-catching of trends (Graph II.1). Over the past 10 years, about 30% of euro-area banks have exited the market, most of them being acquired by or merged with other banks. In contrast to the decline in number of banks, the aggregate balance sheet for the sector has expanded markedly (Graph II.1). The increase in assets held by euro-area banks has by far outpaced the contribution of the financial sector as a whole to economic growth. The total assets of euro-area banks grew by more than 100% between 1998 and 2008, while the value added of the financial sector increased by 50% in nominal terms over the same period. Employment in financial intermediation increased by 4% over the period, well below the 14% increase for the economy as a whole, resulting in a decline in the financial sector's share in total employment from 3% to 2.75%.

Graph II.1: **Change in the number and economic significance of banks, euro area (1998=100) (1)**



(1) EA-12 for number of banks and assets, EA-16 for value added and employment. Number of banks adjusted for statistical change in IE. Value added and employment figures for broadly defined financial sector.

Source: ECB, Commission services.

The decline in the number of banks has been reflected in a notable increase in market concentration. The share of the (respectively) five largest banks in total assets increased from 42% to 44% for the average of all euro-area Member States.<sup>(35)</sup> In the Netherlands, Belgium and Finland this gauge of market concentration has reached a level of above 80%.

Many of the larger euro-area banks have been actively involved in mergers and acquisitions (M&A). While M&A activity in the banking sector slowly ebbed after 2006, the value of transactions nearly doubled in the period 2006-08 relative to 2003-05, further suggesting that larger banks have become the main players in this activity. Accordingly, market concentration has also reflected strategic considerations most likely related to higher competitive pressure in an increasingly integrated banking market.

Banking industry reports typically refer to efficiency in the form of scale and scope economies as the reason for the consolidation trend.<sup>(36)</sup> On the other hand, the crisis has reinforced concern among policy makers that the strategic factors driving consolidation among banks may include an assumption that size

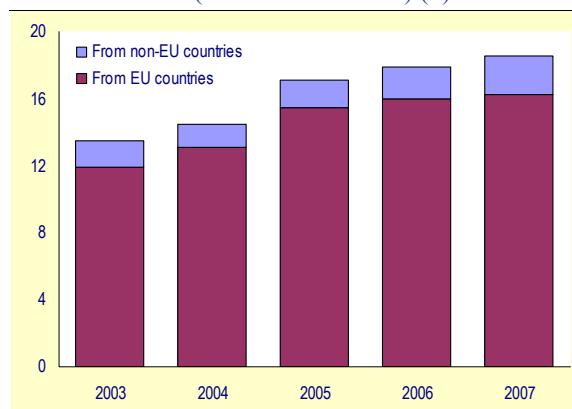
<sup>(35)</sup> Average weighted with respective total size of bank assets in the country.

<sup>(36)</sup> The dominance of fixed costs in many business areas gives room for scale economies. Hence, larger banks are more likely to benefit from cost regression through centralisation of certain activities, diversification advantages, or better accommodation of demand for large-scale transactions, for example with respect to financing customers' M&A.

increases the likelihood of receiving public support in times of crisis. This 'too big to fail' dimension will be further reviewed below.

Cross-border consolidation among banks within the euro area has been fostered by the introduction of the euro and further progress in creating an internal market in financial services.<sup>(37)</sup> However, indicators of price dispersion for bank products reveal that the effect of market integration has been greater at the wholesale level, while retail banking markets have remained largely fragmented along national boundaries.

Graph II.2: **Market share of foreign banks, euro area (in % of total assets) (1)**



(1) Assets of branches and subsidiaries of foreign credit institutions.

Source: ECB.

The share of banks owned by foreign credit institutions within the euro area has gradually increased over time, with cross-border M&A activity by banks accelerating in the period 2005-08 (Graph II.2). It has been argued that this phenomenon reflects the fact that the optimal size of some banks, especially those based in smaller Member States, may be larger than possible on the domestic market and thus the expansion into foreign markets permits further exploitation of scale economies.<sup>(38)</sup> Such an explanation is consistent with the observation that market concentration generally tends to be higher the smaller the domestic market.

<sup>(37)</sup> For a review of recent trends, see the European Commission's 'European Financial Integration Report' and the ECB's 'Financial Integration in Europe', published annually on the institutions' websites.

<sup>(38)</sup> In a survey of 34 cross-border banking groups carried out by the ECB, most banks gave limited growth potential on home markets as a reason for their expansion into foreign markets. Higher growth potential and higher profit margins in the host countries were often quoted as important reasons, while economies of scale and diversification seem to have played a minor role in banks' strategies. ECB (2008) EU Banking Structures 2008, pp. 11-12.

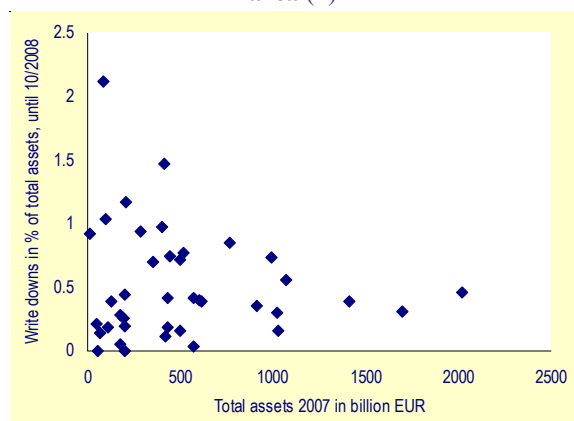


While the above-mentioned trends in the euro-area banking sector are likely to persist, it is uncertain how they will be affected by the financial crisis and the subsequent policy responses. The following sections look into this question.

**The crisis appears not yet to have impacted on structural trends**

The financial crisis originated in the US and was transmitted to the euro area via wholesale financial markets. In consequence, it might be expected that bigger banks in the euro area would be relatively more exposed to the crisis, as they are generally more active on wholesale markets and may have a larger share of their activity linked to US markets.

Graph II.3: Write-downs and bank size, euro area (1)



(1) Based on a sample of 39 euro-area banks for which Bloomberg reports data on write-downs (excluding one small German bank with very high losses).

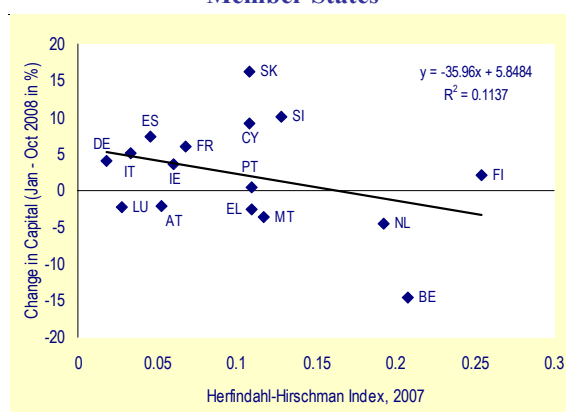
Source: Bloomberg, Commission services.

Analysis of variables indicating exposure to the financial crisis and the size of banks (measured in total assets held in 2007) provides little support for the notion that big banks were more adversely affected than smaller ones. For example, the correlation of write-downs reported by 39 euro-area banks in the period up to October 2008, i.e. when losses were mainly caused by exposure to US subprime markets and structured assets and before public capital was injected on a massive scale, and their size suggests that there could even be an inverse relationship (Graph II.3). It should, however, be noted that the likelihood of such an inverse relationship declines if write-downs until summer 2009 are included.

Similar exercises relating banks' size to (i) the decline in stock prices up to the peak of the financial crisis, (ii) CDS spreads or (iii) the

change in CDS spreads, as measures of markets' perceptions of default risk are equally inconclusive.<sup>(39)</sup> However, it should be noted that these financial indicators may already price in a premium that some banks were too-big-to-fail, which would distort the information content of these indicators in a cross-bank perspective. Moreover, there might be a selection bias towards bigger banks due to data availability, with smaller banks used in the sample analysed not being small in comparison to the whole population of banks in the euro area.

Graph II.4: Change in the banking systems' capital and market concentration, euro-area Member States



Source: ECB, Commission services.

If the financial crisis affected bigger banks more strongly than smaller banks, one would expect that more concentrated banking systems were hit harder. At the country level, there is indeed a weak (by no means statistically significant) inverse relationship between market concentration and the decline in the banking system's aggregate capital position.<sup>(40)</sup> On the one hand, several large banks in Belgium and the Netherlands, where banking markets are the most concentrated in the euro area, were prominent victims of the financial crisis. On the other hand, few problems were reported with respect to Finnish banks, which operate on a similarly concentrated home market, although their capital-to-asset ratio fell by a comparable magnitude. Although the German banking market is the least concentrated at the national level and the aggregate capital of the

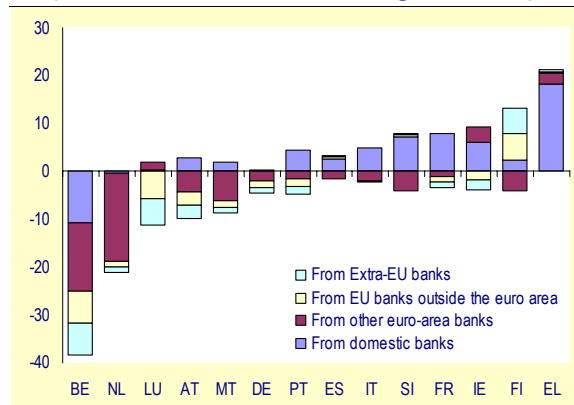
<sup>(39)</sup> At this level of aggregation, i.e. with 42 observations for stock prices and 28 CDS prices, there are no evident signs that larger banks faced a higher default risk or a stronger increase in their default risk at the peak of the financial crisis.

<sup>(40)</sup> Capital is a proxy of banks' equity position. The data is from the ECB's aggregate balance sheets, which differs from consolidated data, since it is not adjusted for cross-bank ownership relationships.

German banking system was hardly eroded during the acute phase of the crisis, several German banks have required direct intervention by the State.

It is similarly unclear whether cross-border banks have been more adversely affected by the crisis than domestically oriented banks. However, there is evidence that the euro-area banking market has become more fragmented during the crisis. For example, the cross-country difference between retail interest rates, which is a standard measure of financial market integration, widened considerably. Even on money markets, which had been considered the markets where integration was most advanced, evidence suggests that traders preferred to undertake transactions with domestic banks. This more anecdotal evidence is supported by trends in interbank deposit growth, where domestic transactions were in most countries the only positive contributors to interbank deposit growth in Q4/2008 while deposits from other euro-area countries or from banks located outside the euro area were substantially trimmed down (Graph II.5).

**Graph II.5: Origin of intra-bank deposit growth, euro area (2008Q4, contribution to rate of growth in %)**



Source: ECB.

On the basis of these observations, there is no prima facie reason why the effects of the crisis on the euro-area banking sector should lead to less consolidation or less cross-border activity. However, it is possible that reasons for such a change in strategy could emerge from the policy response to the crisis.

**Restructuring of banks after the crisis may have longer-term effects**

The policy response to the financial crisis may impact on the concentration and integration of the

banking sector via two opposing channels. First, although state aid measures to banks had the objective of rescuing the banking system rather than individual banks, they may eventually be biased in favour of large banks on the assumption that these may be ‘too big to fail’. Such experience could provide an incentive for banks to grow in size so as to benefit from implicit government support. Conversely, the enormous budgetary outlay required in response to the crisis has highlighted the possibility that some banks risk being ‘too big to rescue’. In consequence, policy makers have a strong incentive to design financial regulation in such a way that it discourages the expansion of already large financial institutions.

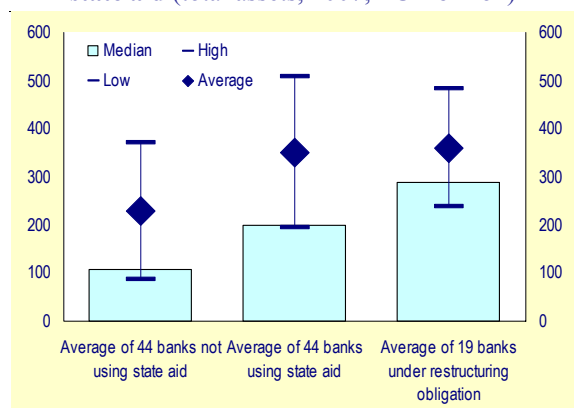
In light of the Lehman bankruptcy, bank rescue measures were designed to safeguard financial stability by preventing the failure of systemically important banks. A bank’s size is only one among several determinants of systemic relevance. Interconnectedness (i.e. cross-exposures between institutions) and substitutability (i.e. whether other market participants can provide the same services at short notice) are also factors determining systemic importance, as reflected in the fact that many smaller banks have received state aid in the current crisis. Nevertheless, interconnectedness and substitutability tend to be correlated with size, implying that bigger banks are more likely to be systemic and therefore also more likely to benefit from state aid than smaller ones. Using a panel of 88 euro-area banks, it can be shown that the average size of banks which received state aid was indeed somewhat higher than the average bank size in the panel.<sup>(41)</sup> (See first two columns in Graph II.6.) However, the variation in banks’ size in both groups is so large that the difference in the mean is not statistically significant.

Numerous banks which have received state aid are now required by EU state aid rules to restructure. It may be that these banks are bigger than those that received state aid without such conditionality attached. (See column 3 in Graph II.6.) Again, the difference is slight and not statistically significant; furthermore the result may be time-dependent, as more banks may be required to restructure as the crisis is resolved. The obligation to restructure generally results from the Commission’s state aid rules. Where financial institutions received state aid, Member States need to submit a viability plan or restructuring plan in order to confirm or re-

<sup>(41)</sup> The result is not caused by the availability of bank schemes in countries with bigger banks.

establish the institute's viability in the longer term without reliance on state aid.<sup>(42)</sup>

**Graph II.6: Average size of banks having used state aid (total assets, 2007, EUR billion)**



(1) High and low are 0.4 standard deviations above and below the average, respectively. Use of state aid involves public capital injection, issuance of guaranteed bonds or state guarantees on banks' assets or liabilities.

*Source:* Commission services.

Restructuring often results in the obligation to divest, i.e. to shrink the balance sheet, either to run down unprofitable business lines in order to restore long-term viability, or to divest in order to contribute to restructuring and to address competition distortions caused by aid.<sup>(43)</sup> Since the requirement to restructure has been imposed on banks which are on average larger than the bank average, this requirement may compensate for the fact that the larger banks — on average — benefited from state aid during the crisis. As such, the restructuring obligation may also act as a counterweight to incentives for banks to achieve 'too big to fail' status.

### Design of future cross-border supervision and crisis management will shape the prospects for banking integration

The concentration and integration of the banking sector may be more directly affected by policy measures to limit the stability risk associated with systemically important institutions. Proposals in this regard are under active consideration within

the G20 framework. Research has begun into how systemic relevance can be accurately measured, considering that size alone would probably be an insufficient criterion. While there is a broad consensus within the G20 on the principle of limiting the risks associated with systemically important institutions, there seems less agreement on the more specific details of any policy approach.

Changed incentives for banks to grow may also have a bearing on the trend towards financial integration in the euro area. In the crisis, the advantages for cross-border banks in having centralised capital and liquidity management were limited by opposing interests among authorities in home and host countries.

Policy coordination has been directed at reducing tensions from potentially opposing interests among home and host authorities in cross-border crisis management. In effect, this has meant ensuring that public funds provided by home countries to the parent bank have benefited the banking group as a whole. Meanwhile, the ring-fencing of liquidity and assets in the foreign subsidiaries of the banking group has been discouraged. The coordination effort has also included commitments by cross-border banks to maintain their exposure in host countries and be prepared to provide additional capital to their affiliates if this is deemed necessary.

In the future, policy coordination along these lines should be facilitated by the establishment of the European System of Financial Supervisors, which will include a European Banking Authority. This new architecture will be particularly relevant for international banks as they provide inter alia a mechanism for ensuring that supervisory colleges are consistent for each cross-border group. In addition, regulatory proposals to improve cross-border crisis management and resolution are under active discussion. Important issues in this regard are the availability and consistency of early intervention tools for supervisors and consistency in the framework for reorganisation and winding up of ailing banks.

### 2. Capital, leverage and financing

The financial crisis exposed banks' vulnerability to a high debt-equity position amid losses that eroded banks' capital positions and in some cases brought capital-asset ratios close to regulatory

<sup>(42)</sup> The Commission laid down conditions under which a bank may need to be subject to more substantial restructuring and when measures are needed to compensate for distortions in competition resulting from the state aid. These conditions depend broadly speaking on the seriousness of the problem in each individual bank and cover inter alia the magnitude of the state aid relative to a bank's risk-weighted assets.

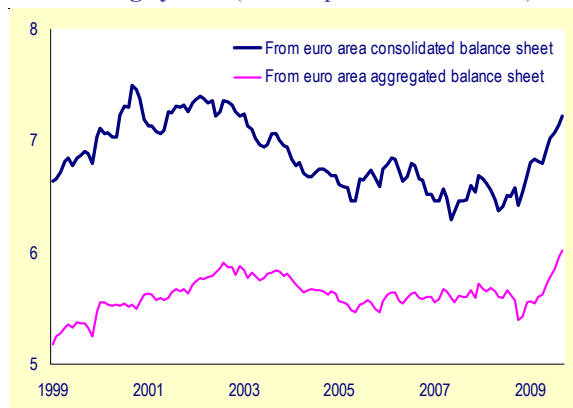
<sup>(43)</sup> In practice, banks are not required to divest immediately as the EC state aid procedures allow banks to spread divestments over several years, so as to avoid putting additional downward pressure on prices.

minima. <sup>(44)</sup> Severely hit by the associated drying-out of debt markets were those institutions that had a large share of their liabilities financed from short-term funding.

**Banks increased their risk exposure prior to the financial crisis**

The available aggregate balance sheet data for the euro-area banking system suggests that there was no dramatic increase in leverage prior to the financial crisis. The ratio of bank capital to total assets, which measures the share of the balance sheet not financed via debt, started a gentle downward trend in late 2002. Up to October 2008, it declined by about 1 percentage point to 6.4% when measured with consolidated data and by 0.6 percentage point to 5.3% with non-consolidated data (Graph II.7). <sup>(45)</sup> This trend decline basically undid the increase recorded between 1999 and 2002. <sup>(46)</sup>

Graph II.7: **Aggregate capital ratios, euro area banking system** (bank capital in % of assets)



Source: ECB.

Regulators attach more importance to alternative forms of capital ratios than to the ratio of total capital to total assets. The capital adequacy ratio relates banks' capital to their risk-weighted assets and the Basel rules oblige banks to hold a minimum of 8%. Graph II.8 shows the average

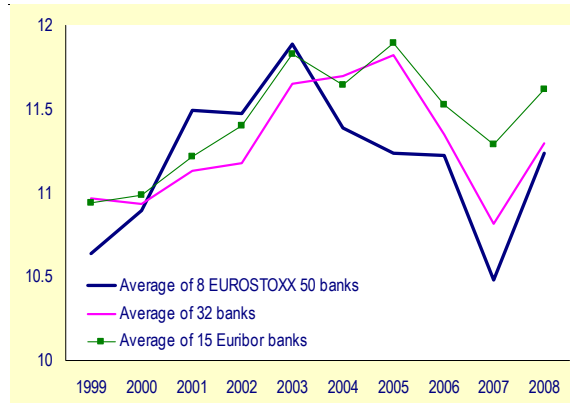
<sup>(44)</sup> Bank capital is understood here as the equity position of a bank. In a strict sense, this would be the part of the bank's balance sheet that is financed from shareholders, in contrast to the remaining part financed via debt. A number of hybrid instruments also count as capital in regulatory practice and the discussion is still ongoing on whether and how the definition of bank capital should be improved.

<sup>(45)</sup> In consolidated data, inter-bank relationships, i.e. banks' holdings of other banks' capital and debt, are netted out.

<sup>(46)</sup> However, the use of off-balance sheet operations by euro-area banks rose significantly prior to the crisis. Therefore, banks' aggregate balance sheets might not fully capture the change in aggregate exposure of banks particularly over that period.

capital adequacy ratio for a set of 32 euro-area banks, which were selected because of data availability.

Graph II.8: **Capital adequacy ratio, euro area** (bank capital in % of risk-weighted assets, year-end values) (1)



(1) Unweighted averages. ING is missing from the group of Eurostoxx banks. Missing observations for individual banks were interpolated.

Source: Commission services.

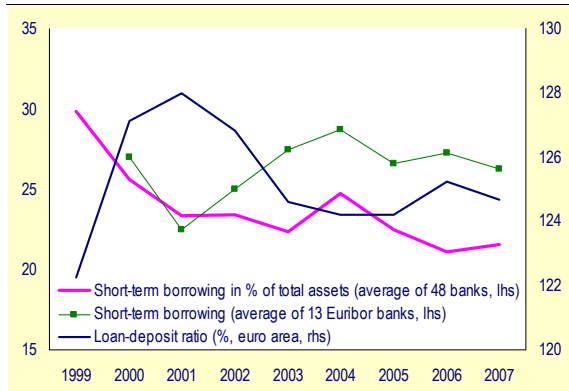
Consistent with the aggregate data in Graph II.7, a decline in the ratio is visible. It set in earlier and was more pronounced for the average of the biggest banks in the panel (average of banks in Eurostoxx 50). The relationship between the decline in the capital adequacy ratio and bank size is, however, not uniform. For example, the average capital adequacy ratio of the 15 banks that are part of the Euribor panel <sup>(47)</sup> declined by less than the average of all of the 32 banks for which data was available. It can also be noted that the average data shown in Graph II.8 hides an increasing dispersion of banks' ratios over time. During the financial crisis, some banks saw their capital ratios approaching regulatory minima.

Although the financial crisis was propagated by severe liquidity shortages in several banks, there is no evident increase over time of the euro-area banking system's exposure to short-term debt financing on the basis of aggregate and averaged data. For example, the loan-deposit ratio, which has in the absence of more accurate measures become a standard gauge for banks' liquidity risk at the macro level, shifted downwards from 2002 on in the euro area. Balance sheet data suggest that the share of short-term borrowing in total

<sup>(47)</sup> Overall 40 banks, of which 34 are located in the euro area, belong to the Euribor panel, which is used to calculate Euribor interest rates. They are on average smaller in size than the 9 banks that are part of the Eurostoxx and include some banks that are not quoted on stock markets.

assets — a further broad indicator of exposure to liquidity risk — also retreated over the last years for a sample of 48 and since 2004 for the sample of 13 of the bigger euro-area banks. This indicates that maturity mismatch between the often long-term loans and deposits, of which a large part is redeemable at short-term notice, has not increased.

Graph II.9: Liquidity exposure, euro area (1)



(1) Unweighted averages of banks for which data was available for the whole time period. Missing observations for individual banks were interpolated. Loan-deposit ratio excluding intra-bank loans/deposits for euro-area aggregate.

Source: ECB, Commission services.

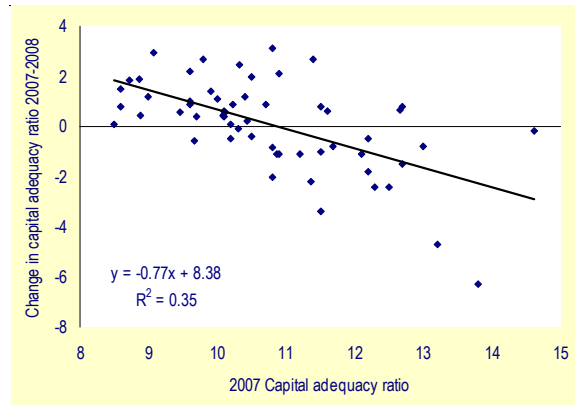
**Will banks increase their capital buffers in response to the financial crisis?**

During the financial crisis, banks’ capital positions came under pressure from two sides. First, substantial amounts of losses and write-downs eroded banks’ capital, bringing them closer to regulatory minima. Second, investors raised their demand on banks’ capital position. A high capital position and a good endowment with ‘high quality’ capital were interpreted as signs of solvency. Banks’ ability to raise new capital from private investors became an important signal of their soundness.

In the acute phase of the crisis, however, few banks were able to raise equity or issue long-term debt from private sources. Governments stepped in with public capital. Euro-area governments made available capital injections totalling EUR 240 billion or 2.7% of GDP, of which EUR 156 billion or 1.7% of GDP has so far effectively been used. Especially in autumn/winter 2008, public capital injections were the main driver of banks’ recapitalisation and are the main reason behind the pick-up in capital adequacy ratios at year-end 2008, as shown in Graphs II.7 and II.8. Since then, several banks have been able to tap private capital markets and the first ones started to redeem governments’ capital injections. The most

important source of capital increases has in the meantime become banks’ profits. The economic rebound, revenues from fees generated on recovering debt markets, trading income and in particular the steep yield curve boosted banks’ profitability and contributed to the recapitalisation of banks.

Graph II.10: Initial capital adequacy ratio and change in 2007-08, euro area (capital in % of risk-weighted assets) (1)



(1) 57 euro-area banks.

Source: Commission services.

Is this trend sustainable in the longer term? Low policy rates have led to a favourably sloped yield curve and it is clear that banks’ profits would be considerably lower with a more normal term premium. Accordingly, banks’ balance sheets may be vulnerable to a future flattening in the yield curve, perhaps linked to higher short-term interest rates as the economic recovery proceeds. Furthermore, it is unclear for how long shareholders will accept bank earnings being retained to increase capital buffers rather than distributed as dividends. These factors may not endure in the longer term, with implications for targeted leverage levels and financing maturities of banks.

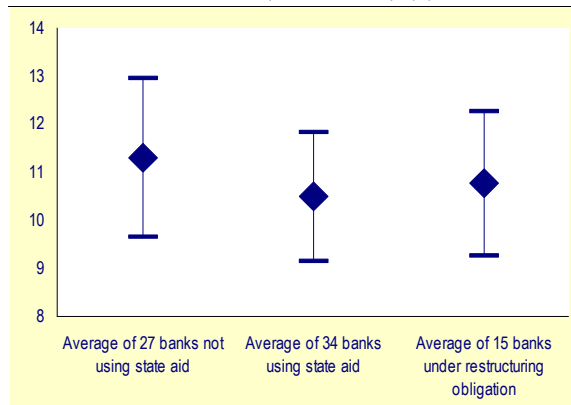
While higher capital ratios are likely to provide banks with higher buffers in times of emergency, there is so far no strong empirical evidence that banks with an initially low capital ratio were more severely exposed to the crisis. The observations in Graph II.10 suggest that the highest decline in capital ratios occurred in banks that entered the financial crisis with a relatively high ratio, whereas many banks with a low ratio were able to boost their capital.<sup>(48)</sup> An inverse relationship also appears – with a partly overlapping set of

<sup>(48)</sup> This effect could also be caused by the holding of higher initial capital buffers by banks with a higher risk profile.

banks – if these variables are plotted with quarterly observations in the period up to the third quarter 2008, i.e. before governments started to massively inject public capital. Neither is there any obvious sign that banks with a lower capital ratio experienced higher write-downs (relative to their assets). Equally, there is no apparent relationship between the share of short-term borrowing and write-downs.<sup>(49)</sup> Nevertheless, these observations put into question whether the banking sector in general will durably target higher capital or liquidity buffers.

A factor that may incentivise banks to hold less capital in the future could be the experience of receiving public support in case of need. Although the financial crisis has been a truly exceptional event, the emergency policy responses may have generated moral hazard among the beneficiaries.<sup>(50)</sup> Graph II.11 indeed suggests that pre-crisis capital ratios were slightly lower on average for banks that used state aid compared to those that did not. The variation around the mean is, however, too large to be statistically significant.

**Graph II.11: Capital adequacy ratios of banks subject to different forms of public intervention, euro area (2007 ratios) (1)**



(1) Unweighted average and standard deviation of 61 euro-area banks.

Source: Commission services.

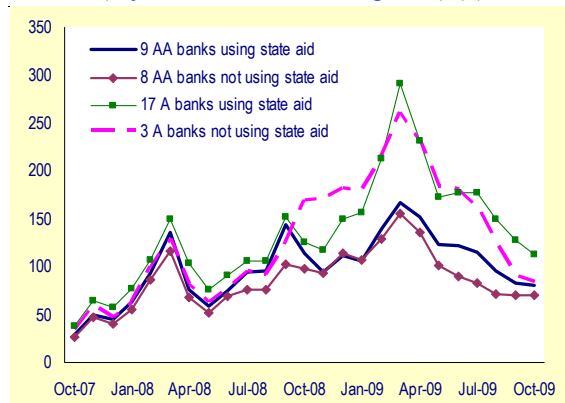
Since balance sheet indicators may not fully reveal banks' vulnerabilities, additional insights can be derived from prices of credit default swaps (CDS), which express the market sentiment on banks' default risk. Since CDS spreads are

<sup>(49)</sup> Beyond this lack of evidence at the aggregate level, it was obvious that some individual banks faced severe difficulties stemming from their reliance on short-term funding.

<sup>(50)</sup> This effect may be reinforced by the objective of public rescue schemes to support the banking system rather than ailing banks because this trigger implies that it has not necessarily paid off for a bank to hold a higher capital buffer.

available only for larger banks, the panel used in Graph II.12 was expanded to include also non-euro area and two Swiss banks.

**Graph II.12: Banks' CDS spreads differentiated by rating and use of state aid (5-year senior debt, basis points) (1)**



(1) Monthly average of daily observations, missing values estimated.

Source: Commission services.

Comparing the development of CDS spreads of banks that used state aid (dotted lines) with those that did not (straight lines) yields interesting observations on the effectiveness of public support measures (see also Box II.1 for quantitative evidence):

- In the period up to September 2008, CDS spreads became increasingly higher for those banks that later used public support. This supports the hypothesis that the public support was effectively targeted at banks that needed it most. Or, the other way round, banks that did without state aid were in a more comfortable position and could afford to abstain, at least in relative terms.
- From October 2008 to February 2009, supported banks with an A rating had a lower CDS spread than the non-supported banks. This suggests that the public support effectively reduced their default risk. The advantage of state support is also visible for the AA-rated CDS, but only in relative terms as CDS spreads of supported banks remained slightly higher than those of non-supported banks. The wedge, however, narrowed in the period October to December 2008.
- Since March 2009 the CDS spreads of non-supported banks improved more pronouncedly than that of the supported banks. This could be indicative of these banks now capitalising on

**Box II.1: The effectiveness of banking support measures: evidence from CDS spreads**

This box provides empirical support for the hypothesis that banks' default risk as measured by CDS spreads declined after bank rescue schemes had been implemented. This is an encouraging sign since policy makers have been under considerable pressure to justify the large amounts of public money spent on bank rescue measures. Recent studies by BIS and IMF researchers have shown that CDS spreads fell in the days around the announcement of public support measures. <sup>(1)</sup>

The estimates in this box reinforce their findings by using a different empirical methodology. Whereas the IMF and BIS event studies focus on short-term effects by using daily observations, this box employs a longer-term perspective that covers the period from October 2007 to August 2009 with monthly observations of the CDS spreads of 35 European banks. This approach is likely to identify effects beyond the short time windows used in the event studies. The period was chosen to obtain a balanced panel of banks for the longest time span possible. It has the advantage that the time period encompasses the Bear Stearns episode in March 2008, i.e. a crisis event that happened before public rescue schemes were announced. For the time after the announcement of policy support measures in October 2008, it includes banks that received government support and some that did not.

The estimated model includes cross-bank and time-fixed effects, which control for factors that are specific to the individual bank, but do not change over time, and for factors that are common to all banks in each period, respectively. For bank *i* at time *t*, we have the following semi-log formulation:

$$\ln(\text{CDS}_{t,i}) = C + \text{FE}_t + \text{FE}_i + \alpha_1 \ln(\text{CDS}_{t-1,i}) + \alpha_2 Z_{t,i} + \varepsilon_{t,i}$$

with *C* = constant, *FE* = fixed effects (dummies), *Z* a vector of the policy variable and  $\varepsilon_{t,i}$  the error term.

**Estimation results with fixed time and cross-section constants,**  
Dependent variable: LN(CDS), significant results at 5% level shown in bold,  
period starting November 2007, 35 banks

		T1 11/2007-12/2008		T2 11/2007-03/2009		T3 11/2007-08/2009	
		$\alpha_2$	s.e.	$\alpha_2$	s.e.	$\alpha_2$	s.e.
<b>Country-specific variables</b>							
Programme – dummy (lag 1)	PRGM	0.0364	0.03269	0.01295	0.0247	0.0079	0.0190
Recapitalisation with lag 1							
– dummy	RECAP	-0.0404	0.0374	-0.0310	0.0231	-0.0132	0.0169
– announced measure in EUR	RECAP_EUR	-0.0009	0.0005	<b>-0.0014</b>	<b>0.0003</b>	<b>-0.0006</b>	<b>0.0002</b>
– in % of GDP	RECAP_GDP	<b>-0.0094</b>	<b>0.0041</b>	-0.0046	0.0029	-0.0030	0.0022
– in % of country's bank assets	RECAP_AS	<b>-0.0037</b>	<b>0.0015</b>	<b>-0.0029</b>	<b>0.0011</b>	<b>-0.0022</b>	<b>0.0009</b>
Guarantee on liabilities – dummy	DEBT	-0.0232	0.0279	-0.0168	0.0224	-0.0003	0.0173
<b>Bank-specific policy variables</b>							
Aid to bank – dummy	AID_TO_BANK	<b>-0.0964</b>	<b>0.0223</b>	<b>-0.0629</b>	<b>0.0211</b>	-0.0184	0.0166
Recapitalisation in EUR	BANKRECAP	<b>-0.0122</b>	<b>0.0030</b>	<b>-0.0064</b>	<b>0.0017</b>	-0.0014	0.0012
Recapitalisation in % of bank's assets	BANKRECAP_AS	<b>-0.1269</b>	<b>0.0303</b>	<b>-0.0311</b>	<b>0.0141</b>	0.0126	0.0088
Issuance of state-guaranteed securities – dummy	SEC_I	-0.0492	0.0494	0.0253	0.0253	<b>0.0350</b>	<b>0.0174</b>

**Note:**  $\alpha_2$  relates to the coefficient in formula (1), s.e. is the standard error.

Various policy variables were constructed at the bank and the country level. Country-specific policy variables relate to the existence and size of public rescue programmes. Bank-specific policy variables cover whether and to what extent banks made use of these programmes. Since the banks' CDS spreads are highly auto-correlated, it appeared necessary to add a lagged dependent variable to the set of

<sup>(1)</sup> Panetta, F. et al. (2009), 'An assessment of financial sector rescue packages', BIS paper No 48; IMF (2009), 'Global Financial Stability Report', October 2009; Ait-Sahalia, Y. et al. (2009), 'How to stop a herd of running bears? Market response to policy initiatives during the global financial crisis', IMF Working Paper 09/24.

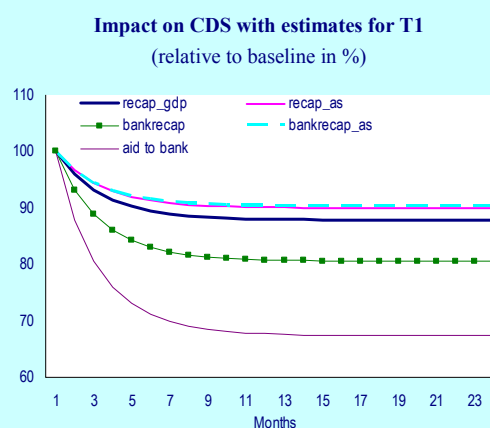
(Continued on the next page)

Box (continued)

explanatory variables. The inclusion of the lagged dependent variable has the undesired consequence of reducing the probability that a significant coefficient for the policy variable can be detected. The reason is that the policy variables used involve a one-time shift and over time part of the impact will be reflected in the lagged variable. Since the share of the impact that becomes visible in the lagged variable increases over time, one would expect the policy variable to become insignificant the longer the policy is enacted. Because of this effect, the estimates are run with a varying time frame. In addition to the full period November 2007 to August 2009, shorter samples were estimated with the period ending in (T1) December 2008 and (T2) March 2009.

When looking at the results for the individual variables, one first finds that the existence of a public rescue scheme is not significantly correlated with CDS spreads. Policy variables related to recapitalisation have more often the expected negative sign and are significant. A further observation relates to the different formulations of the recapitalisation variable. When specified as a dummy, coefficients were hardly significant. However, the estimations often yielded a significant coefficient if the policy variable was defined in terms of the size of the measure. This suggests that the more sizeable the recapitalisation measure, the more likely it reduced the CDS spread.

The estimates show that most of the effect of a policy measure on CDS spreads has materialised after 6 months. The graph plots how CDS prices have developed in response to the policy measure undertaken, using the average change in the policy variable since October 2008 as the impulse. The response is stronger for policy variables that target the bank than for country-specific variables. This would suggest that the establishment of a recapitalisation scheme has a smaller effect than the fact that an individual bank makes use of the scheme. Concerning the immediate impact, it varied between 4% and 10% in the first month after the policy measure. The parameters suggest that most of the adjustment takes place in the first 6 months and that after a year CDS spreads would be between 90% and 70% of their starting level.



Source: Commission services.

The finding of a significantly negative relationship between CDS spread and various measures of policy activity is robust to a number of changes to the specification of the estimate. For this exercise, various specifications were run with or without fixed effects and by adding further potential explanatory variables such as confidence indicators, ratings, mergers, other CDS prices. The addition of other variables has little impact on the significance of the policy variable. In only a few estimates did the policy variable become insignificant and these were all estimates with no control for either time-fixed effects or the cross-over variable. It could mean that policy interventions do not have an effect on the bank's absolute CDS spread, but only on the CDS spread relative to the market benchmark. In turn this would imply that the policy measures had little effect on the overall level of CDS spreads in the banking system.

Although the estimates suggest that there is an inverse correlation between on the one hand the existence and generosity of public rescue schemes and on the other hand the CDS spread as a market assessment of the banks' default risk, the empirical tool does not allow the direction of causality to be stated. There are reasons to believe that the result was not driven by selection bias as Graph 14 in the main text suggests that banks using state aid had a higher rather than a lower CDS spread prior to the crisis. However, it appears important to continue monitoring this issue and to look for alternative methodologies that could further underpin the results found in this box.

their own strategy in order to steer through the crisis without public support.

**Towards new regulation on capital and liquidity**

In view of the financial crisis, a consensus has emerged among policy makers that capital requirements will need to be tightened. For instance, in Pittsburgh in September 2009, the

G20 committed inter alia to 'developing by end-2010 internationally agreed rules to improve both the quantity and quality of bank capital and to discourage excessive leverage'. The Basel Committee on Banking Supervision has initiated a work programme to strengthen the regulatory capital framework. In view of the need to embed new standards into law, the EU adopted changes to the Capital Requirements Directive whereas further Commission proposals on this Directive



are currently under discussion in the Council and additional proposals are planned for 2010.

The dominant course of possible changes has given less attention to imposing across-the-board higher capital ratios, and more to adjusting several of their parameters. Under discussion are numerous proposals covering:

- the definition of eligible capital (when is a liability sufficiently loss-taking to count as capital),
- the risk-weighting of banks' assets (the valuation of assets: mark-to-market versus to mark-to-models versus historical costs),
- the build-up of reserves in 'good times' (provisioning to reduce pro-cyclicality and other risks),
- the role of stress tests (second pillar) and information disclosure requirements (third pillar).

A fair assumption is that under modified capital requirement rules banks will have to hold higher capital buffers and capital with higher loss absorption capacity. But given their need to restore their capital basis even under current rules, there is likely to be an adequately long transition period.

The supervision of banks' liquidity is also under discussion. The 2008 modifications to the Capital Requirements Directive introduced some qualitative standards for good management of liquidity and the Basel Committee announced that it would put in place a global standard for liquidity requirements. Such standards could form the basis for quantitative ratios in future European legislation.

### 3. Changes to banks' business models

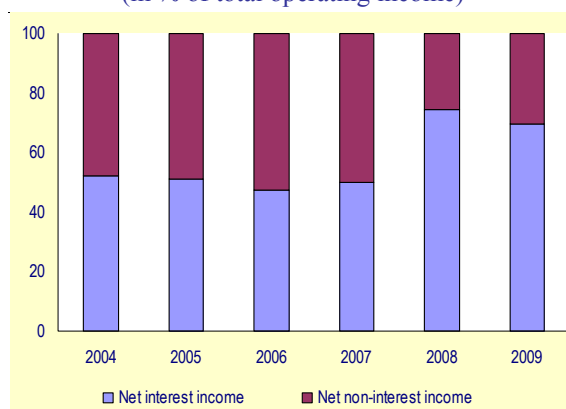
The global financial crisis will have a lasting impact on euro-area banks, and will bring about significant changes to banks' operating framework and their business models. This transformation is influenced by shifting preferences of investors and a changing macroeconomic environment. Regulation will also expand as governments seek to establish rules that will make the financial system more resilient and less prone to cause future crises. Banks will have to adapt their business models to this new situation, and the question is what the future of banking will look like. In this sub-section, answering this question involves identifying past

trends in bank income and analysing the impact of the crisis on these trends in bank funding, as well as discussing the future source for growth.

### Trend towards non-interest income in bank revenues

The importance of net non-interest income as a source of bank revenues increased during the period building up to the financial crisis. The change has been slow but persistent. During the three years prior to the beginning of the financial crisis in 2007, net interest income declined from a share of 52% of total income to about 47% (Graph II.13). Conversely, revenues from non-interest paying sources have become more important for banks' profitability. The main contributions to non-interest business are trading income and fees and commissions, which have served as a means to diversify overall income.

Graph II.13: Net interest and net non-interest income, euro area  
(in % of total operating income)



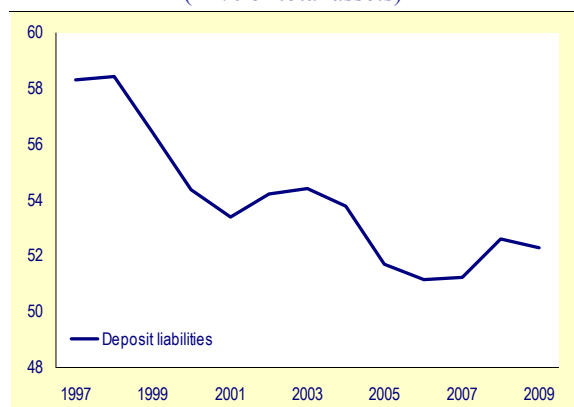
Source: ECB, Commission services.

During the crisis years, the general trend of shifting from interest income to non-interest income has been reversed. First, the gradually increasing importance of trading income came to an abrupt end with the onset of the crisis, and in 2008 trading income even turned into a net loss. Second, net interest income has been boosted by a loosening of the monetary stance in response to the financial crisis. Lower policy interest rates have made the yield curve steeper, which has allowed banks to increase their margins between short-term funding and long-term lending. Furthermore, banks tend to benefit from falling interest rates as the pass-through of lower interest rates to customers is not immediate. Overall, this has allowed most banks to remain profitable throughout the crisis.

**The funding of banks' business models has shifted from retail deposits to market-based funding**

The importance of deposits as a source of bank funding has been trending downward for many years. During the ten years preceding the current crisis, deposit liabilities dropped from 58% of total liabilities to 51% (Graph II.14). The traditional funding model, relying on retail deposits, has slowly shifted towards a funding model that is more market-based. Examples of such funding instruments include mortgage-backed securities, collateralised debt obligations and other forms of securitised products, which have made the banking sector more dependent on wholesale capital markets. Although these developments have enabled banks to achieve higher returns on equity than otherwise possible, replacing the more stable retail deposits with wholesale funding may have made banks more vulnerable and exposed to market conditions and perceptions.

**Graph II.14: Deposits liabilities, euro area (in % of total assets)**



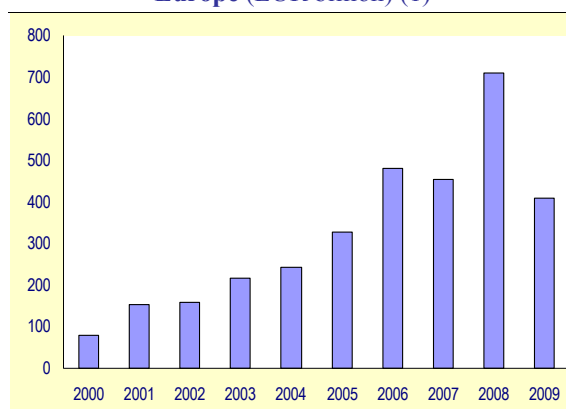
Source: ECB, Commission services.

Securitisation activity — i.e. the transformation of loans into tradable securities — increased substantially in the years prior to the crisis. It even continued at a healthy pace in the midst of the crisis in 2008. The investment vehicles surrounding securitisation facilitated the changes in the financial structure of banks, and changed their business models from holding assets and transforming them in terms of denomination and maturity, to repackaging and selling complex financial products. The increased complexity of securitised products made it difficult to price them and assess their risks. As a result, investors were not fully aware of the underlying risks, and the mispricing that followed eventually led to rising uncertainty, and the outbreak of the crisis. In the

last year, the volume of securitised issuance seems to have fallen dramatically, on the back of the high uncertainty regarding the quality and the underlying risks embedded in securitised products.

Currently banks are actively trying to secure their retail deposit basis as a response to weaker wholesale markets. For some banks it is even a necessity as often one of the conditions in the restructuring plans imposed in order to receive state aid is for the bank to maintain a sound deposit-to-loan ratio. In general, however, the deposit-to-loan ratio has been relatively stable over time, implying that securitisation has been a means of increasing leverage through off-balance sheet activity.

**Graph II.15: Volume of securitisation issuance in Europe (EUR billion) (1)**



(1) The figure for 2009 only includes data for the first half of 2009. The issuance volume is annualised by assuming the same issuance volume for the second half of the year.

Source: European Securitisation Forum.

**Possible changes to banks' income sources**

The near-term outlook for the profitability of euro-area banks is rather difficult. Several of the forces behind past income growth in the banking sector have come to an end, such as structurally declining interest rates, rapid lending growth, and low credit losses. There may well be very little support for growth in the banking sector for some time:

- Net interest income is likely to be hurt by lower lending growth as demand fades with a weak real economy. Households will have to save more to bring debt levels into line with disposable income, which can also lead to lower spending for quite some time. Furthermore, a normalisation of the yield curve, i.e. a rise of short-term rates relative to these for longer maturities, is likely.

- Trading income, which was a driver of net income growth, is not likely to continue that role to the same extent. Banks seem to have cut back on resources devoted to trading, which reduces the base for generating revenues. Furthermore, the change in ownership structure, with higher government involvement, and increased supervision might affect banks' risk profiles, shifting them towards less involvement in capital market activities.
- Fees and commissions are likely to remain under pressure. As the crisis has evolved and assets managed by banks have declined in value, confidence in the banking sector has been severely hurt. As a consequence, and also in line with general market developments, customers seem to have withdrawn from complex investment strategies and shifted their assets to more simple, standardised, and liquid products. These products usually face higher competition and exhibit lower margins.

### What are the prospects for cross-border banking in the euro area?

Although any assessment of the impact of the financial crisis on the profitability of cross-border banking is speculative, it is likely that domestic markets will become more important as a result of the deleveraging process and government measures to stabilise markets. In order to become viable, banks are probably focusing on their core markets, which are most often domestic. In these markets they have their stable core client base, better knowledge and a good relationship with policy makers. Finally, public support measures are national, which may provide incentives for banks to concentrate on their home market.

Over the medium term, financial integration in the EU, and beyond, is likely to proceed as the underlying economic driving forces behind this trend remain intact: diversification is in general beneficial for reducing overall risk, and as such support financial stability even in a synchronised downturn like the present one. In an international setting, banks can balance their earnings from stable mature markets with those from emerging, often more dynamic, markets. Given that valuations are still low, those banks that stand strong after the crisis might also face opportunities to strengthen their growth potential through mergers and acquisitions abroad, also in view of the fact that divestments from banks subject to restructuring under state aid rules will be offered to the market. Restructuring could even

strengthen the integration of banking markets as cross-border banking groups may try to penetrate new markets by acquiring divested entities in target markets. Also, the removal of obstacles continues to feature prominently on the EU policy agenda.

### 4. Conclusions

The financial crisis has put pressure on the banking sector to restructure, partly because banks face new market conditions, but also due to regulatory reform and as a consequence, under the EU state aid rules, of the receipt of large amounts of state aid. This focus section reviews past trends in the banking system and contemplates in which direction the banking sector is heading. The findings show that banks in the euro area have become fewer, larger and more international. And this trend is likely to persist. Banks also increased their risk exposures in the build-up to the crisis, but in the future they are expected to target higher capital or liquidity buffers. In terms of their business models, banks increasingly began to rely more on non-deposit liabilities and non-interest income, which made them more dependent on market conditions and perceptions. This trend has reversed, but the near-term prospect for a revival of income growth is uncertain.

The process of restructuring and the return to viability will take time. First, it is important to note that the crisis is not over yet. More losses are expected to emerge in the course of 2010, which will continue to put pressure on the banking system to adjust its operations. Furthermore, a reinforcement of the negative feedback loop from the real economy cannot be ruled out. Second, the implementation of the reform agenda has just taken off. Policy design will be crucial in determining the future of banking, but it is up to banks to make the appropriate changes.

One purpose of financial market regulation is to preserve financial stability and avoid systemic risk. In this respect, regulation can foster growth by helping to avoid the daunting losses implied by systemic disruption. Yet, creating a sounder financial system often entails imposing a higher regulatory burden on market participants. If regulation is taken too far, there is a risk that this increased burden could have negative implications for the growth potential of the euro-area economy. It is important to find the appropriate balance and to ensure that, in the long run, improvements in the arrangements for financial stability translate into stronger and more sustainable economic growth.



## Focus

### III. Ensuring fiscal sustainability for a recovering euro area

*The crisis-related fiscal expansions and the ageing population raise questions about the sustainability of public finances in the euro area as well as in the rest of the EU. As the share of working-age people in the population falls and the share of the old increases, economies are faced with lower economic growth and higher costs associated with providing services for the ageing population. This results in pressure on public finances. Therefore, ensuring fiscal sustainability in the euro area requires time-consistent policies with a broad approach, consisting of fiscal consolidation, efforts to increase employment and enhance productivity, and structural reforms that prepare the euro area's social security systems to face the future challenges.*

*Fiscal measures to increase confidence and support demand are only successful if they are perceived by the markets and public opinion as temporary and consistent with long-term sustainability. Otherwise, if economic agents expect a durable widening of debt, fiscal support will lose its effectiveness and can become counterproductive, in particular when the crisis climax has been overcome and recovery is imminent.*

#### 1. The long-term fiscal sustainability challenge in the euro area <sup>(51)</sup>

The population of the euro area is ageing, through both increased life expectancy and falling fertility rates, and this process is projected to continue over the next 50 years. The economic and budgetary consequences of this expected change in population structure stem mainly from a reduction in the working-age population and an increase in the number of elderly people requiring support. A lower number of economically active people leads to lower economic growth and tax revenues, while a higher number of retired people entails additional public provision of expensive age-related transfers and services.

#### The concept of fiscal sustainability

The concept of the sustainability of public finances concerns the ability of a government to finance its current debt and expected expenditure. There is no single clear-cut definition of a sustainable fiscal position but rather a number of alternative theoretical and practical approaches. In general, it can be stated that, at first instance, a sustainable position involves a debt level that does not entail interest payments so large that they cannot be paid. Thus, the sustainability of public finances considers the ability of a government to service the costs of its debt through future revenues. Sustainability of public finances is

therefore a long-term concept and differs from liquidity, which is concerned with the immediate (short-run) ability of a country to raise debt to finance its expenditure.

A first way of formulating the widest definition of sustainability is to look at the solvency condition for general government through the government's intertemporal budget constraint.<sup>(52)</sup> This considers the ability of the government to meet the costs of its debt through future revenues. The intertemporal budget constraint is satisfied if the projected outflows of the government (current public debt and the discounted value of all future expenditure, including the projected increase in age-related expenditure) are covered by the discounted value of all future government revenue. This is equivalent to saying that the government must run sufficiently large primary surpluses (receipts minus spending excluding interest payments) going forward to cover the cost of servicing its debt.

Depending on the time horizon considered – finite or infinite – two sustainability gap indicators can be derived, showing the size of the permanent budget adjustment required to ensure that the intertemporal budget constraint is met.

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<sup>(51)</sup> This focus section draws upon the detailed analysis in European Commission (2009), 'Sustainability Report 2009', European Economy 9/2009 and the Commission Communication 'Long-term sustainability of public finances for a recovering economy', COM(2009) 545 final, 14.10.2009.

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$$^{(52)} D_{t_0} - \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = 0$$

where  $D_{t_0}$  is gross debt as a share of GDP in the year before the long-term projections,  $PB_t$  is the structural primary balance (receipts minus spending excluding interest payments), adjusted for cyclical movements and excluding one-off transactions at time  $t$  and  $r$  is the differential between the nominal interest rate and the nominal GDP growth rate.

Table III.1: Summarising the sustainability indicators

	Required adjustment given the initial budgetary position (IBP)		Required adjustment to reach debt to GDP ratio of 60% in 2060 (DR)		Required adjustment due to long-term changes in the primary balance (LTC)
S1=	Gap to the debt-stabilising primary balance	+	Additional adjustment required to reach a debt target of 60% of GDP in 2060	+	Additional adjustment required to finance the increase in public expenditure due to ageing up to 2060
S2=	Gap to the debt-stabilising primary balance	+	0	+	Additional adjustment required to finance the increase in public expenditure due to ageing over an infinite horizon

Source: Commission services.

- The S1 indicator shows the durable adjustment to the structural primary balance (i.e. an increase in taxes or cuts in expenditure) required to reach a target debt of 60% of GDP in 2060, including paying for any additional expenditure from now to the target date, arising from an ageing population. The choice of the debt target for the S1 indicator is in line with the debt threshold in the Treaty. The timescale has been chosen to be long enough to allow the impact of ageing to be analysed in a meaningful way, while still remaining within the sights of current taxpayers and policy makers. The timescale also corresponds to the available long-term demographic and economic projections.
- The S2 indicator shows the adjustment to the structural primary balance required to fulfil the infinite horizon intertemporal budget constraint, including paying for any additional expenditure arising from an ageing population.

Table III.1 breaks the two indicators down into the three factors that the gap depends on, and the three corresponding components of the indicators. It shows that the initial budgetary position and the long-term costs of ageing affect both indicators directly, while the S1 indicator is also directly affected by the starting level of debt relative to the 60% target for 2060. In the results shown below, the contribution of the components of the sustainability gaps is considered in detail.

### Required adjustment given the initial budgetary position

Irrespective of the increase in government expenditure due to projected demographic developments, the public finances of a given country may be unsustainable if the initial structural primary balance, the projected interest payments and economic growth imply an ever-increasing debt ratio. Thus, the first component of the S1 and S2 indicators corresponds to the gap

between the initial structural primary balance and the debt-stabilising primary surplus. This component is referred to as the required adjustment given the initial budgetary position, or simply IBP. <sup>(53)</sup>

### The debt requirement by 2060

In the case of the S1 indicator, the size of the adjustment required directly depends on the debt requirement set at the end of the time period (60% of GDP in 2060). For countries with starting government gross debt above 60% of GDP, the required adjustment to reach the target debt by 2060 (DR) term will increase the size of the indicator as the effort of debt reduction by 2060 needs to be considered.

### The required adjustment given the increase in age-related costs

Finally, both S1 and S2 include a component which corresponds to the required adjustment due to the long-term changes in government expenditure (or simply, LTC). This component of both indicators is the additional adjustment required as a result of these expenses either to 2060 or over an infinite horizon. The magnitude of the LTC component depends on both the demographic outlook for countries and their social protection arrangements. The LTC component represents either the change required to pay for the additional expenses (i.e. a durable increase in taxes or a cut in expenditure other than those related to demography) or the size of structural

<sup>(53)</sup> As the size of this component depends on expected growth and interest rates, it is not necessarily the case that the gaps to the debt-stabilising primary balance will have the same magnitude in the S1 and S2 indicators, as expected growth and interest rates might vary over time. However, in practice IBP (S1) and IBP (S2) are quite close to each other. Moreover, also because of the expected movements in growth and interest rates, including those of a cyclical nature, the concept of 'debt stabilisation' should be understood in a long-term perspective and not year by year.

Table III.2: Changes in age-related expenditure (2010-2060, percentage points of GDP)

	Pensions	Health care	Long-term care	Unemployment	Education	Total
BE	4.5	1.1	1.3	-0.4	0.1	6.6
DE	2.5	1.6	1.4	-0.2	-0.2	5.1
IE	5.9	1.7	1.3	0.0	-0.2	8.7
EL	12.5	1.3	2.1	-0.1	0.2	16.0
ES	6.2	1.6	0.7	-0.4	0.2	8.3
FR	0.6	1.1	0.7	-0.3	0.0	2.2
IT	-0.4	1.0	1.2	0.0	-0.2	1.6
CY	10.8	0.6	0.0	0.0	-0.6	10.7
LU	15.3	1.1	2.0	0.0	-0.3	18.2
MT	5.1	3.1	1.6	0.0	-0.6	9.2
NL	4.0	0.9	4.6	0.0	-0.1	9.4
AT	1.0	1.4	1.2	0.0	-0.2	3.3
PT	1.5	1.8	0.1	-0.3	-0.2	2.9
SI	8.5	1.7	1.7	0.0	0.7	12.7
SK	3.6	2.1	0.4	-0.1	-0.5	5.5
FI	2.6	0.8	2.5	0.0	0.0	5.9
EA	2.7	1.3	1.3	-0.2	0.0	5.1

Source: Commission services and EPC.

reform to social protection schemes needed to avoid the increase in government expenditure.

The size of this component is likely to vary between the S1 and S2 indicators. The larger the part of the expected ageing of the population that is to occur in the short- rather than medium-term future, the larger the impact on the S1 indicator relative to the S2 indicator. Conversely, if the costs of ageing are mainly borne closer to 2060 (and beyond) than now, the relative impact of ageing on the S2 indicator will be larger.

### Policy options

The breakdown of the indicators allows an analysis of the driving forces behind the results summarised by the indicators and helps in identifying the required policy responses. The same overall sustainability gap may be the result of the current fiscal position (see IBP), the level of debt (see DR) or the expected increase in ageing-related expenditure (see LTC). Moreover, comparing LTC components in S1 and S2 (i.e. the finite- and infinite-horizon versions of the sustainability indicators) also allows the degree of urgency in addressing the demographic-related sustainability issues to be identified.

### Underlying projections of age-related expenditure

An ageing population puts pressure on a country's public finances primarily through its effects on the labour market and hence economic growth as well as age-related expenditure. With fewer people of

working age, the potential growth rate of the economy is reduced. Changes in the estimated rate of economic growth affect each of the components of the S1 and S2 indicators. In addition, ageing involves increases in age-related expenditure, the fiscal impact of which is presented in the 2009 Ageing Report (see Table III.2).<sup>(54)</sup> As the aim is to provide an estimate of the long-term effect of ageing on sustainability, the analysis takes the figures for age-related costs starting in 2010. The projections are made on the basis of a no-policy change assumption where it is assumed that current tax and spending arrangements continue in the future. They are based on five expenditure categories. According to the projections, euro-area public finances would face spending increases of 5.1 pp of GDP on average by 2060.

### 2. Main results

This section presents the sustainability gap indicators and their breakdown into the IBP and LTC components for the euro area and its members. Table III.3 presents the results of the S2 sustainability gap indicator, which have been calculated on the basis of the structural budgetary

<sup>(54)</sup> '2009 Ageing Report', joint report of the European Commission and the EPC, European Economy 2/2009, and Commission Communication 'Dealing with the Impact of an Ageing Population in the EU,' COM(2009) 180 final, 21.4.2009.

position in 2009 and the projected change in age-related expenditure in the period to 2060. <sup>(55)</sup>

**Table III.3: Results of the sustainability gap (S2) calculations in the baseline scenario (% of GDP)**

	S2		
	Total	IBP(1)	LTC(2)
BE	5.3	0.6	4.8
DE	4.2	0.9	3.3
IE	15.0	8.3	6.7
EL	14.1	2.6	11.5
ES	11.8	6.1	5.7
FR	5.6	3.8	1.8
IT	1.4	-0.1	1.5
CY	8.8	0.5	8.3
LU	12.5	-0.4	12.9
MT	7.0	1.4	5.7
NL	6.9	1.9	5.0
AT	4.7	1.6	3.1
PT	5.5	3.7	1.9
SI	12.2	3.9	8.3
SK	7.4	4.5	2.9
FI	4.0	-0.5	4.5
EA	5.8	2.3	3.5

(1) IBP is the required adjustment given the initial budgetary position; (2) LTC is the required adjustment given the long-term change in the primary balance due demographic ageing.

*Source:* Commission services.

In the euro area as a whole, the sustainability gap is 5.8% of GDP according to the S2 indicator. This means that to return to a sustainable path the euro-area countries as a whole would need to increase the tax burden or decrease expenditure now and in a durable manner by 5.8% of GDP, or to adapt structural reforms that increase potential growth and reduce the dynamics of age-related expenditure. The sustainability gap is due to both the initial budgetary position and the long-term budgetary impact of ageing. The euro-area average, however, masks considerable variety between the Member States. Overall, all euro-area members have sustainability gaps. Nine Member States show a high sustainability gap of over 6% of GDP, while six Member States have a significant sustainability gap of between 4% and 6% of GDP. Only Italy — albeit one of the most indebted countries in the euro area — shows a small sustainability gap of less than 2% of GDP thanks to a series of pension reforms in the last decades.

The sustainability gap indicators show the size of the permanent adjustment that is required to keep public finances sustainable. Not making this adjustment would have the short- to medium-term

effect of increasing debt, before serious sustainability and solvency concerns start affecting countries' abilities to raise debt as the perceived long-term risks increase.

### The initial budgetary position

According to the IBP component of the S2 indicator, only three euro-area Member States (Finland, Luxembourg and Italy) have an initial fiscal position which would be sustainable if long-term costs were left aside. Seven Member States (Cyprus, Belgium, Germany, Malta, Austria, the Netherlands and Greece) require an adjustment of up to around 3% of GDP to the structural public balance to place their public finances on a sustainable path, even before considering the long-term budgetary impact of an ageing population. The remaining six Member States (Portugal, France, Slovenia, Slovakia, Spain and Ireland) have an initial structural fiscal position that would require an even greater adjustment.

The IBPs are calculated using the budgetary position of 2009 as assessed in May 2009 <sup>(56)</sup> as the starting point. The structural primary balance is used in the calculation of the sustainability gap indicators. This removes the estimated effect of the economic cycle from the primary balance and also removes the effect of one-off measures. Some of the automatic effect of the economic crisis on budgets is therefore stripped out of the data. However, estimates of structural primary balances should be considered with caution given the difficulties in disentangling cyclical from structural effects at times of severe recessions.

### The long-term budgetary cost of ageing

The LTC component shows significant differences between Member States in terms of the budgetary impact of ageing. It ranges from a required adjustment of 1.5% of GDP in Italy to 12.9% in Luxembourg.

The LTC component of the sustainability gap lies under 2% of GDP for three euro-area Member States (Italy, France and Portugal). Five Member States face a budgetary impact of between 2% and 5% of GDP (Slovakia, Austria, Germany, Finland and Belgium). The remaining countries (the Netherlands, Malta, Spain, Ireland, Cyprus, Slovenia, Greece and Luxembourg) have an LTC

<sup>(55)</sup> Only the results for the more stringent S2 indicator are presented here as it is the main indicator used in the overall risk classification below.

<sup>(56)</sup> European Economy 3/2009. Using most recent data would lead to changes in the indicators; these changes would, however, not alter the overall message the indicators convey.



### III. Ensuring fiscal sustainability for a recovering euro area

of 5% of GDP or above, with the costs incumbent on Greece and Luxembourg representing 11.5% and 12.9% of GDP, respectively.

#### 3. The potential impact of the current economic crisis and sensitivity analysis

The assessment of the sustainability conditions in each of the euro-area Member States requires very long-term projections for demographic developments, interest rates, the labour market and the macroeconomic and fiscal situation. Given the relatively large margins of error surrounding each of those projections, it is useful to consider a series of sensitivity analyses, notably alternative growth scenarios. <sup>(57)</sup>

##### Crisis related scenarios

The baseline scenario shows a gradual reduction in potential growth due to population ageing. This scenario assumes that the loss in output in 2008–10 is of a cyclical nature without a durable impact on current and projected potential. This scenario is basically the same as what one could have prior to the emergence of the crisis. Though it is labelled ‘baseline’ and most indicators in this report are based on that scenario, it appears at this stage an optimistic scenario.

The ‘lost decade’ scenario shows potential growth taking ten years to return to its pre-crisis level; both labour productivity and labour input are assumed to reach the baseline growth rate in 2020. Thereafter it follows the same path as in the absence of the crisis, but the output lost during the crisis years is not recovered.

The most pessimistic scenario is the ‘permanent shock’ scenario, where there is a permanent hit to potential growth going forward of 1% per year compared to the baseline. In this case, labour productivity growth and labour input are assumed to be permanently lower due to the crisis. This appears to be an over-pessimistic scenario.

The S2 indicators for the crisis-related scenarios are shown in Table III.4. In the lost decade scenario, the sustainability gap as measured by S2 rises by 1.2% of GDP to 7.0% of GDP for the euro area. The increase is essentially driven by an increase in the relative long-term cost of ageing, as an unchanged assumption about inflation and

therefore the up-rating of pensions leads to higher spending as a share of (lower) GDP.

Table III.4: Sustainability gaps (S2) in the crisis-related scenarios

	Baseline	Lost decade	Permanent shock
BE	5.3	7.0	8.1
DE	4.2	5.8	5.8
IE	15.0	20.6	20.4
EL	14.1	13.3	14.6
ES	11.9	14.8	15.6
FR	5.6	6.6	7.6
IT	1.4	1.8	2.6
CY	8.8	8.7	9.1
LU	12.5	13.2	12.6
MT	7.0	11.1	11.5
NL	7.0	7.5	7.8
AT	4.7	6.1	7.2
PT	5.6	6.8	7.6
SI	12.3	15.1	14.6
SK	7.4	7.4	7.4
FI	4.1	4.5	5.0
EA	5.8	7.0	7.6

Source: Commission services.

In the case of the permanent shock, the effect of the crisis on long-term sustainability is more marked. Both the productivity and GDP growth are assumed to be on a lower trajectory, leading to an ever-growing difference in output levels and an increase in the sustainability gap of 1.8% of GDP to 7.6% of GDP. Again, this is primarily due to higher relative long-term costs of ageing, but the initial budgetary position also contributes more to the gap due to the lower GDP growth.

##### Medium-term debt projections under alternative consolidation scenarios

Rising government deficits and low growth, as well as financial support to the banking sector, are leaving a legacy of fast-growing government debt ratios in the euro area. Reflecting concerns arising from durably high deficits, this section presents projections of the gross debt-to-GDP ratio of the EU Member States for the next 20 years or so, under three stylised scenarios.

These projections are based on the Commission services’ autumn 2009 forecasts till 2011, which are then extended into the future taking into account the ‘lost decade’ macroeconomic scenario. Beyond 2020, the scenarios assume a return of growth to the long-term trend. <sup>(58)</sup>

<sup>(57)</sup> The Sustainability Report presents also alternative scenarios relating to demographic projections, productivity growth, unemployment and interest rates.

<sup>(58)</sup> These additional assumptions are also considered: the increase in age-related expenditure is consistent with the

Graph III.1 depicts the projected evolution for the government gross debt ratio in the euro area. The solid thick line shows the outcome for this stylised scenario under the assumption of no fiscal consolidation measures (Scenario 1). The gross debt-to-GDP ratio would rise steadily over the projection period. By 2015, the average debt ratio would be at around 100% of GDP in the euro area. It would continue increasing to over 120% of GDP in 2020, albeit with large differences across countries. The highest increases in the debt ratio would take place in Ireland. Cyprus, Luxembourg and Finland would be the only euro-area Member States with debt ratios below 60% of GDP in 2020.

The graph also shows the results of two further scenarios. In Scenario 2, from 2012 on, all euro-area Member States would implement fiscal consolidation efforts (measured in terms of structural primary balance) of 0.5% of GDP per year until they reach their medium-term objectives (MTOs).<sup>(59)</sup> The graph clearly illustrates that this consolidation rhythm — which is the benchmark consolidation effort in the SGP — would not be enough to stabilise, let alone reduce, the debt ratio by 2030.

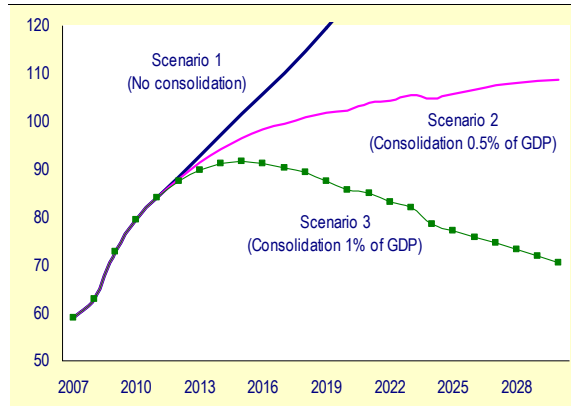
A consolidation effort of 1% of GDP per year (Scenario 3) until the MTOs of each Member State are reached would stabilise the government debt ratio in the euro area in 2016. The debt ratio would, however, still be larger than in the pre-crisis years, and significantly above the Maastricht reference value.

Although these scenarios are based on a number of simplifying assumptions, they show that fast debt reduction requires serious consolidation efforts. Structural measures that contribute to avoiding a ‘lost decade’ of slow GDP growth would also decisively contribute to early stabilisation, and then fast reduction, of the government debt ratio.

macroeconomic scenario; the tax-to-GDP ratios are projected to converge to their pre-2007 level for countries with 2010 tax burdens below their 2007 level. For countries with 2010 tax-to-GDP ratio above the pre-crisis level, it is assumed that the tax ratio remains constant; the implicit interest rate on government debt converges to 3% in real terms in 2020 and remains constant thereafter, for all countries; specific stimulus measures projected for 2011 are withdrawn in 2012; there is zero stock-flow adjustment.

<sup>(59)</sup> The medium-term objectives (MTOs) used here are those that were in place at the time of the 2008/09 round of stability and convergence programmes.

Graph III.1: **Medium-term debt projections under alternative assumptions, euro area** (% of GDP)



Source: Commission services.

**Scenario on postponing retirement**

This section presents a scenario where effective retirement ages in all euro-area Member States are increased in a uniform manner. The aim is to illustrate the impact of reforms aimed at increasing the retirement age on the sustainability of public finances. Ages of labour-market exit vary, however, significantly between countries, which are thus in differing positions to address their sustainability challenges through reforms that would defer retirement.

In the absence of policy measures aimed at postponing effective retirement ages there will be a very slow increase in the exit ages (see Graph III.2, baseline). This increase is related to the fact that different age cohorts have different participation rates. It should be noted that, according to the demographic projections, remaining life expectancy at 62 is expected to increase by 6 years.

The postponed retirement scenario is based on the assumption that exit ages for each Member State increase by two years — on top of the baseline — from 2010 to 2020 in a linear fashion. After 2020, the exit ages keep rising by two thirds of the increase in remaining life expectancy. Graph III.2 shows the trajectories of average exit ages in the baseline scenario and the postponed retirement scenario for the euro area as a whole. The projected evolution in remaining life expectancy at 62 is also shown. As the graph shows, the scenario is such that the length of retirement remains broadly constant from 2008 until 2060.

The main implications of the increase in exit ages are related to the increase in labour supply and the

### III. Ensuring fiscal sustainability for a recovering euro area

cut in overall pension expenditure as compared with the baseline. Given the increase in labour supply, GDP growth rises on average 0.14% per year: by 2060 the GDP level is around 7½% larger than in the baseline. The ratio to GDP of pension expenditure in the euro area as a whole falls by 1.8 pp of GDP; the average pension increases in line with GDP, but the number of pensions paid is lower than in the baseline.

The postponed retirement scenario yields a sustainability gap (S2) of 4.2% of GDP for the euro area as a whole, which is 1.6 pp lower than in the baseline scenario. Therefore, a substantial gap would remain.

The intuition behind these results is as follows: postponing exit ages, as described, practically eliminates the increase in pension expenditure as a share of GDP, although there is an increase in the average pension. The projected increase in pension expenditure in the baseline scenario is, however, only half of the overall long-term increase in age-related expenditure (healthcare spending and long-term care remain unchanged). Moreover, for the euro area, the LTC (the required adjustment given the long-term change in expenditure) is around half of the sustainability gap (S2) identified in the baseline scenario. Therefore, the reduction in the sustainability imbalance is only around one fourth of S2 in the baseline scenario.

in the sustainability indicators (S2), but are nonetheless important in assessing the overall sustainability of a country's public finances.

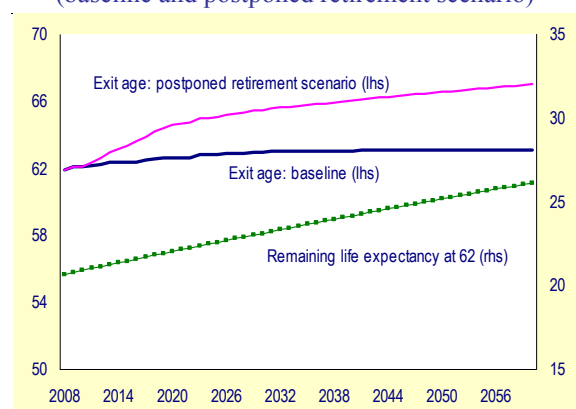
#### Level of debt

The level of government debt enters the sustainability indicators directly and affects sustainability through the need to service the debt. However, beyond this direct effect, the level of debt can have further consequences on both the real and the political side of the economy. A high level of debt can reduce a country's ability to deal with even a temporary shock to its interest rate or growth rate. With the costs of servicing the debt being more significant the higher the level of debt, a shock to the cost of servicing has the potential to be markedly more significant than for countries with a lower stock of debt to re-finance. Moreover, a high level of debt can also affect the interest rate paid on it, with threshold effects being a possibility. These occur when debt reaches a certain level beyond which interest rates are pushed up. The high levels of debt in some of the euro-area Member States are therefore considered as an additional risk factor over and above their contribution to the sustainability gaps (See Box III.1).

#### Pension expenditure projections and social and political risks

There is a possibility that the assumptions about pension expenditure underlying the Member States' pension expenditure projections may be difficult to implement socially and politically. While pension reform is important for many countries, it is also important that the expected levels of average pension are realistic. Countries forecasting a strong fall in the relative generosity of their pensions in relation to the average wage may find that they are unable to deliver this for social reasons. Such countries may consequently face a higher sustainability challenge than is apparent by looking just at the indicators, although the extent to which this occurs will depend on private pension provision and whether individuals anticipate the decline in the state pension and make alternative arrangements for their retirement. Moreover, private pensions themselves are not without risk. Insofar as they depend on the vagaries of financial markets, a shortfall in their performance can result in pressure on the government to step in.

Graph III.2: Exit ages in the euro area (baseline and postponed retirement scenario)



Source: Commission services.

#### 4. Other factors relevant for assessing fiscal sustainability

This section expands on the discussion of uncertainty by looking at a range of factors that cannot be reflected or are not sufficiently reflected

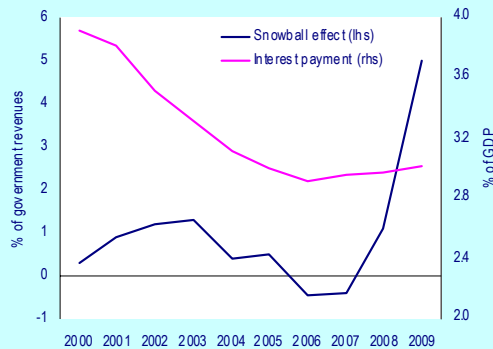
*Box III.1: The effect of debt on interest rates*

Interest paid on government debt is determined by a number of factors. The main ones are the perceived credit risk of this debt, the liquidity restrictions in place in the country issuing the debt, the level of risk aversion of investors and the microstructure of the bond market. The level of debt in place may also be affected by these determinants as the cost of debt will be a factor in a government’s willingness to issue bonds and therefore borrow money, adding to the stock of debt. For example, a Member State with low liquidity restrictions may find it easier to sell debt at a lower interest rate. This will make it more likely to have higher levels of debt as it is able to finance its deficits at lower cost. However, the liquidity of the market might in itself be a function of the level of debt – a country that traditionally has significant government debt might have well developed credit markets making the buying and selling of its bonds commonplace and therefore easy. This illustrates the fact that the relationship between the level of debt and the interest rate faced by governments is not a simple one. <sup>(1)</sup>

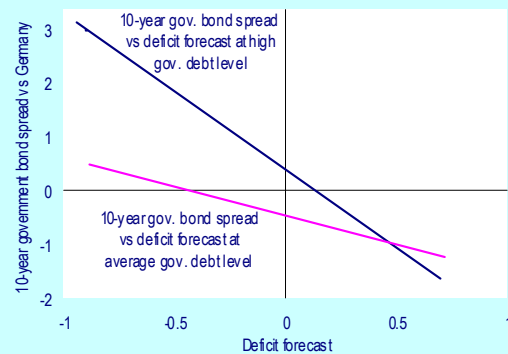
Empirical evidence suggests that perceived credit risk plays an important role in determining the interest a government must pay on its debt. In particular, while a deteriorating domestic outlook for fiscal deficits and debt are associated with higher interest rates, there is also evidence of the importance of the interaction of higher deficits and debt. This is particularly the case for Member States with levels of debt close to or above 100% of GDP, which appear more likely to experience increases in their interest rates if debt increases further.

Countries with high levels of debt face the possibility of an ever-increasing debt burden due to either higher interest rates or low GDP growth rates or both. For example, even a small increase in interest rates can have effects on the budgetary balance that can lead to ever-spiralling debt if a government does not act quickly to contain the extra borrowing through other measures. This is called the snowball effect. Data from early on in the financial and economic crisis show that despite a period of lower interest payments in recent years, the snowball effect has increased dramatically since 2007, from around or below 1% of GDP to 5% in 2009. The first graph shows that the foreseen deterioration in public finances and subdued low growth rate may play an increasingly important role to explain the possible future evolution of government bond interest rates.

**Interest payment on public debt & snowball effect in the euro area (1)**



**Impact of budgetary balance on 10-year government bond spread at high and average debt levels**



(1) Snowball effect =  $\frac{D_{t-1} * i_t - y_t}{Y_{t-1} * (1 + y_t)}$ , where D is the stock of

government debt, y is the level of GDP, both measured in year t-1, i represents the average interest payment on debt and y is the nominal GDP growth rate.

Source: Commission services.

Source: Commission services.

Moreover, econometric analysis of the size and change of government borrowing adds weight to the importance of the interaction of debt and deficits in determining government bond yields (the interest rate paid by governments on the bonds they issue to enable them to borrow). In particular, the impact of deteriorated fiscal balances on government bond yields appears significantly higher for high debt countries than for countries with average debt levels.

<sup>(1)</sup> This box draws heavily on Barrios, Iversen, Lewandowska and Setzer (2009), ‘Determinants of intra-euro area government bond spreads during the financial crisis’ European Economy, Economic Papers 388, November 2009.

*(Continued on the next page)*

*Box (continued)*

The second graph plots the estimated linear relationship between spreads and deficit for a given level of initial debt while controlling for a number of other determinants of interest rate spreads vs. Germany (such as liquidity conditions, and global risk aversion). It shows that the impact of higher deficit (i.e. for negative values of the deficit forecast variables) on the yield spread tends to increase rather significantly with a higher initial level of debt. Combined with the snowball effect, it points to significant risks of further rises in interest payment being associated with higher debt levels, in the event of adverse shocks in financial markets.

Contingent liabilities are those which the government only needs to assume if particular situations arise. These may be implicit — such as dealing with natural disasters — or explicit, such as loan guarantees. In the light of the economic and financial crisis, many Member States have taken on explicit contingent liabilities to aid the functioning of the financial sector and other industries. Depending on whether or not these are called in, the public finances of the Member States may find themselves with additional spending that is currently not being budgeted for.

#### **Tax ratio**

Another factor that is considered is the apparent scope which Member States' governments have to address the sustainability problems. In theory, a sustainability gap can be filled by increasing tax revenues or reducing spending. Reducing spending means either reducing spending on non-age-related expenditure or reforming the social security system so that the costs of ageing can be contained. For countries with current very high levels of tax, the options may be more limited as it may be difficult and economically costly for them to increase tax further.

#### **5. Overall assessment of the risks to long-term sustainability of public finances**

The quantitative sustainability indicators, the sensitivity analysis and the analysis of additional factors allow an overall assessment to be made of the long-term risks to public finance sustainability faced by euro-area Member States.

In order to indicate the relative importance of the risks, a three-level categorisation has been used for several years in a number of Council documents (e.g. the Council opinion and respective Commission recommendations concerning Member States' stability programmes). While this categorisation gives a clear indication of the relative degree of long-term risk different countries are facing, the overall

assessment also provides an indication of where the long-term risks stem from.

In the euro area, Finland is the only country that is rated as a low long-term risk country. In spite of a recent widening of government deficits and an increase in government debt, Finland still enjoys a relatively strong initial budgetary position. Although Finland has an above-average projected increase in age-related expenditure over the long term, the large stock of public financial assets provides a buffer against the negative budgetary impacts of the crisis.

The intermediate group of countries (Belgium, Germany, France, Italy, Luxembourg, Austria and Portugal) consists of Member States with very different characteristics, but three distinct categories can be distinguished. Belgium, Germany and Austria are countries with a significant cost of ageing but which currently have relatively strong structural budgetary positions (assuming that the negative implications of the crisis do not become entrenched). For these countries, reforms to address the rising cost of ageing are a priority and these can be undertaken without waiting for the end of the financial crisis, insofar as the reforms do not adversely affect the recovery. This is also the case for Luxembourg, which faces the highest increase in age-related expenditure of all euro-area countries, but which is included in the medium long-term risk category due to its low level of debt and high stock of assets. For Belgium, the strong budgetary position in recent years is counterweighted by very high levels of debt-to-GDP ratio. Nevertheless, Belgium is assessed as presenting medium long-term risk because of its track record of running consistently high primary surpluses over time and reducing its debt when the economy is not in crisis.

France and Portugal are countries that need to consolidate, though to different degrees, their public finances over the medium term but for which the costs of ageing are relatively less of a

concern, usually as a result of reforms made to their pension systems. For Italy neither the budgetary position nor the long-term cost of ageing are particularly high. However, the initial levels of debt give cause for concern. In Italy, rapid budgetary consolidation is required to ensure a steady reduction of the currently very high level of debt, although it will need to be undertaken at a time when it does not adversely affect the recovery from the economic and financial crisis.

The third category of countries (Ireland, Greece, Spain, Cyprus, Malta, the Netherlands, Slovenia and Slovakia) are characterised by a very significant rise in age-related expenditure over the long term, and measures aimed at curbing them will be necessary. For Greece and Slovenia (as well as Luxembourg) the increase in these expenditures is over 10 pp of GDP. For most of the Member States in this high long-term risk category it will be necessary to address both the long-term costs of ageing through reforms to pension systems and the weakness of the budgetary positions. Reforms to the pension and healthcare system which will not adversely affect the recovery of the Member States' economies should be approached with urgency.

## ***6. Policy implications and conclusion***

The crisis-related deterioration in public finances and the projected increase in expenditure due to demographic change both constitute major policy challenges. Given the current budgetary situation, the projected changes in population structure and the long-term scenarios for economic growth, the government debts of many countries in the euro area will experience significant increases. Although interest rates are currently low, soaring government bond issuance will put upward pressure on rates as the economies emerge from crisis and crowd out investment.

Public finances, including social protection systems, have cushioned the economic and social

impact of the crisis. Successful fiscal expansion to counter recession and ensuring longer-term fiscal sustainability are not incompatible. Fiscal measures to increase confidence and support demand are only successful if they are perceived by the markets and public opinion as temporary and consistent with long-term sustainability.

The strategy to prepare for the economic implications of demographic changes has been in place since the Stockholm European Council in 2001. This strategy includes (i) deficit and debt reduction; (ii) increases in employment rates; and (iii) reforms of social protection systems. It has shown its validity and remains applicable. Yet, the macroeconomic situation created by the crisis has changed the context, the way such a strategy may be applied, the relative weight of its components and the urgency of its implementation. Whereas, prior to the crisis, the three prongs of the strategy were options from which countries could choose, each of these pillars is now indispensable for most EU countries.

Increases in the effective retirement age that reflect gains in longevity are being contemplated in several Member States and merit wider consideration. On top of savings to government expenditure in a medium- to long-term horizon, an increase in effective retirement ages contributes to increasing the working population and stemming the deceleration in potential output. Moreover, the extension in working life and the respective accumulation of pension rights will have a favourable impact on pensioners' income.

In the EMU, the issue of safeguarding long-term fiscal sustainability is at the core of the fiscal framework. It is in this context and to support the nascent recovery that the Commission has recommended the correction of imbalances in those countries that are currently in a situation of excessive deficit. It is also in this perspective that euro-area Member States are expected to give specific attention to sustainability-oriented strategies in their stability programmes.

## IV. Recent DG ECFIN publications

### 1. Policy documents

EUROPEAN ECONOMY. 6. October 2009.  
Annual Report on the euro area 2009

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15928\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15928_en.htm)

EUROPEAN ECONOMY. 7. September 2009.  
Economic Crisis in Europe: Causes, Consequences and Responses

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15885\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15885_en.htm)

EUROPEAN ECONOMY. 8. October 2009.  
Labour market and wage developments in 2008

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16046\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16046_en.htm)

EUROPEAN ECONOMY. 9. November 2009.  
Sustainability Report 2009

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16273\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16273_en.htm)

EUROPEAN ECONOMY. 10. November 2009.  
European Economic Forecast - autumn 2009

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16053\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16053_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 48. June 2009.  
The Impact of the Global Crisis on Neighbouring Countries of the EU

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15400\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15400_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 49. June 2009.  
Impact of the current economic and financial crisis on potential output

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15477\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15477_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 50. July 2009.  
What drives inflation in the EU Members States? Proceedings of the workshop on 22 October 2008

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15564\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15564_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 51. July 2009  
The EU's response to support the real economy during the economic crisis: an overview of Member States' recovery measures

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15670\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15670_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 52. July 2009  
2009 Economic and Fiscal Programmes of potential candidate countries: EU Commission's assessment

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15762\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15762_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 53. September 2009  
Economic performance and competition in services in the euro area: Policy lessons in times of crisis

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15839\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15839_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 54. September 2009  
An analysis of the efficiency of public spending and national policies in the area of R&D

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15845\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15845_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 55. October 2009.  
2009 Pre-Accession Economic Programmes of candidate countries: EU Commission's assessments

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15989\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15989_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 56. October 2009.  
Pension schemes and pension projections in the EU-27 Member States — 2008-2060  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16032\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16032_en.htm)

EUROPEAN ECONOMY. OCCASIONAL PAPERS. 57. November 2009.  
Progress towards meeting the economic criteria for accession: the assessments of the 2009 Progress Reports  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16140\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16140_en.htm)

## *2. Analytical documents*

EUROPEAN ECONOMY. ECONOMIC PAPERS. 385. September 2009.  
Alfonso Arpaia, Kamil Dybczak, Fabiana Pierini (European Commission)  
Assessing the short-term impact of pension reforms on older workers' participation rates in the EU: a diff-in-diff approach  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary15867\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary15867_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 386. October 2009.  
Mihai Macovei (European Commission)  
Growth and economic crises in Turkey: leaving behind a turbulent past?  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16002\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16002_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 387. October 2009.  
Janos Varga and Jan in 't Veld (European Commission)  
A Model-based Analysis of the Impact of Cohesion Policy Expenditure 2000-06: Simulations with the QUEST III endogenous R&D model  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16014\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16014_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 388. November 2009.  
Salvador Barrios, Per Iversen, Magdalena Lewandowska and Ralph Setzer (European Commission)  
Determinants of intra-euro area government bond spreads during the financial crisis  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16253\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16253_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 389. November 2009.  
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[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16263\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16263_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 390. November 2009.  
Miguel St. Aubyn, Álvaro Pina, Filomena Garcia and Joana Pais (ISEG – Technical University of Lisbon)  
Study on the efficiency and effectiveness of public spending on tertiary education  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16265\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16265_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 391. November 2009.  
Alfonso Arpaia and Gilles Mourre (European Commission), IZA, Solvay Brussels School of Economics and Management, Université Libre de Bruxelles (ULB)  
Institutions and Performance in European Labour Markets: taking a fresh look at evidence  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16275\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16275_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 392. December 2009.  
Francesca D'Auria, Andrea Pagano, Marco Ratto, Janos Varga (European Commission)  
A comparison of structural reform scenarios across the EU member states - Simulation-based analysis using the QUEST model with endogenous growth  
[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16459\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16459_en.htm)



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EUROPEAN ECONOMY. ECONOMIC PAPERS. 394. December 2009.

CASE - Centre for Social and Economic Research

Quality of Public Finances in Support of Growth in the Mediterranean Partner Countries of the EU

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16474\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16474_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 395. December 2009.

Lars Jonung (European Commission) and Eoin Drea (Tom Philips and Associates Dublin)

The euro: It can't happen, It's a bad idea, It won't last. US economists on the EMU, 1989-2002

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16343\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16343_en.htm)

EUROPEAN ECONOMY. ECONOMIC PAPERS. 396. December 2009.

Matthias Hartmann and Helmut Herwartz (Christian-Albrechts-University Kiel)

Did the introduction of the euro impact on inflation uncertainty? An empirical assessment

[http://ec.europa.eu/economy\\_finance/publications/publication\\_summary16491\\_en.htm](http://ec.europa.eu/economy_finance/publications/publication_summary16491_en.htm)

### *3. Regular publications*

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

[http://ec.europa.eu/economy\\_finance/db\\_indicators/db\\_indicators8650\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/db_indicators8650_en.htm)

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

[http://ec.europa.eu/economy\\_finance/indicators/business\\_consumer\\_surveys/2009/bci\\_2009\\_11\\_en.pdf](http://ec.europa.eu/economy_finance/indicators/business_consumer_surveys/2009/bci_2009_11_en.pdf)

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

[http://ec.europa.eu/economy\\_finance/publications/publication12486\\_en.pdf](http://ec.europa.eu/economy_finance/publications/publication12486_en.pdf)

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

[http://ec.europa.eu/economy\\_finance/publications/publ\\_list2609.htm](http://ec.europa.eu/economy_finance/publications/publ_list2609.htm)

Price and Cost Competitiveness

[http://ec.europa.eu/economy\\_finance/db\\_indicators/db\\_indicators8642\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/db_indicators8642_en.htm)

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