BBVA

EuropaWatch

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Economic Research Department

The Euro Area should not escape from a slowdown due to the impact of the financial turnmoil.

While the inflation pick-up has been more persistent than expected, complicating the task of monetary policy...

...we still see lower interest rates by the end of the year.

Contents

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1. Editorial

A popular interpretation of the upbeat outlook of the Euro Area economy in recent months could be labelled as the story of “three decouplings”: Europe has decoupled from the United States thanks to exports to emerging countries, which have in turn decoupled from the US; and also thanks to the good behaviour of the German economy, which has decoupled from other countries in the periphery of the Area. Although there are partial truths in this story, the interpretation is in our view too optimistic, despite the support factors from investment and the labour market, as we think that financial market turbulences will end up having a considerable impact on real activity in the coming quarters.

In this respect, the continuation of financial strains and their impact on banks’ capacity to provide enough credit to the private sector are the key issues. Despite the notable reduction of systemic risk perceptions after the support of the US Fed to the rescue of Bear Stearns, tensions in interbank markets have continued, suggesting that the main explanations of tensions in liquidity markets was not the counterparty risk originally associated to the subprime meltdown (and to the distribution of uncertainty through complex structured-asset products). Rather, there has been a permanent shift in demand for liquidity due to the re-evaluation of liquidity risks, which in Europe has not been matched by additional liquidity supply by the ECB. Hence, tensions are likely to continue.

In this context, banks have two options to face the increased cost of funding and their write-downs. One is to raise new capital -which has its limits. The other is to de-leverage, mostly through lower credit growth.

Against this background, our models suggest a significant deceleration of GDP in the Euro Area for the coming quarters, with growth averaging 1.7% in 2008 in our baseline scenario (within a range of 1.6%-2%), but falling to around 1% in 2009 (range of 0.6%-2.1%). This should lead the European Central Bank to lower interest rates, and we are indeed projecting two 25bp cuts in December 2008 and March 2009, respectively. Our financial conditions index remains at its highest level since 1999, due to Euro appreciation and to higher real long-term interest rates.

It is obvious that the recent acceleration of inflation is going to complicate monetary policy. But the pickup has been linked almost exclusively to energy and food prices, with no evidence of second-round effects on wages. Even in an extreme scenario with oil prices stable at high levels, there would only be a change in relative prices, not a permanent shock to inflation. But it is clear that the longer the inflation shock persists, the higher is the risk of no action from the central bank, even in a context of lower growth.

2. Prospects for the Euro Area

The global economy is facing a period of financial turbulences that started during the summer of last year and has gone together with a cyclical weakening in the United States that was visible before the financial shock. The Eurozone, as well as most emerging economies, has stood up relatively well so far. In particular, growth in the first three months of this year has been strong and has demonstrated a high degree of resilience of the European economy, especially in Germany (Chart 2.1). In our June 2007 issue of *EuropaWatch* we already upgraded our estimation of potential growth for Europe, which we put around 2%. The same factors that lie behind that upgrade (higher productivity, investment and lower structural unemployment) could also partly explain this resilience.

However, and despite the goods results in the first quarter, some indicators point to a deterioration of activity. And, more importantly, we think that the strain suffered by financial institutions due to the tightening of spreads in different financial markets will end up affecting the financing available for economic agents, and therefore will have an impact on real activity.

This issue of *EuropaWatch* is organised as follows: Section 2.1 analyses the shocks that have affected the Eurozone's economy during the past six months. These shocks are, in general terms, the same ones we had already identified in the previous issue appeared last December. Section 2.2 focuses on the factors that help to explain the resilience experienced by the Euro Area so far, paying especial attention to the behaviour of exports. Next, Section 2.3 deals with the possible transmission of financial turmoil to the real economy. The projections for the main Euro Area aggregates are presented in Section 2.4 together with the risks that surround them. The outlook for inflation and monetary policy is left for Section 3 of this issue.

2.1. The challenges faced by the Eurozone economy six months ago have intensified, and more has been added.

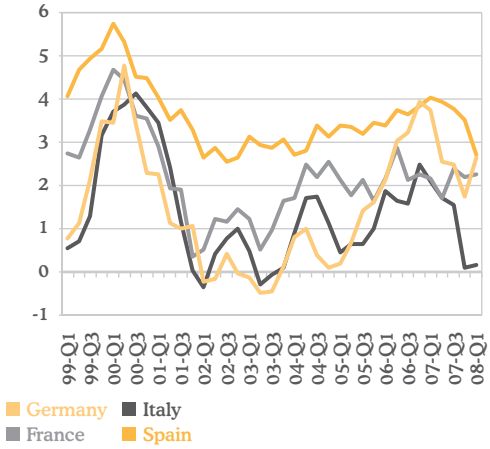
The financial turmoil that has developed since the summer of 2007 has not been the only shock that has hit advanced economies during the last year. It was accompanied by negative supply side shocks: an increase in energy and food and other commodity prices. This has gone hand in hand with a continued depreciation of the US dollar against most currencies that were not effectively pegged to it. These shocks (with the exception of that of food prices) were already present in December. They have not disappeared, and have even intensified since then. We now look at them in turn.

- **The financial turmoil has continued to develop and is likely to persist despite progress in some areas**

Regarding financial markets, the tensions that started almost a year ago have continued practically unabated. The apparent signs of improvement observed since mid-March in particular market segments are only partial: even if distortions are not as extreme as at the height of the turbulence, the functioning of key markets remains severely hampered.

No doubt, the decision by the U.S. Federal Reserve to take an active role in the rescue of Bear Stearns by JP Morgan Chase represented a turning point in terms of market expectations, but only a limited one.

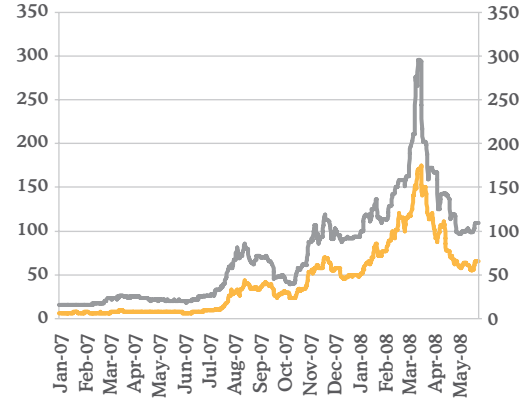
Chart 2.1.
GDP growth EMU countries
(% y/y)



Source: Eurostat and National Statistics Offices

Chart 2.2.

Banks: credit Risk Premia: CDS 5yr (bp)

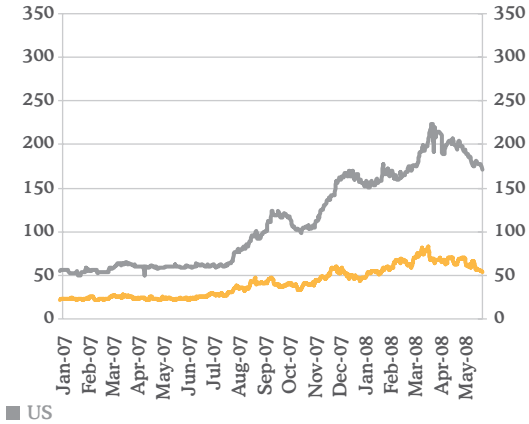


Source: Bloomberg and BBVA. Simple average of single name CDS 5yr senior debt Europe: Barclays, RBS, HSBC, Lloyds, Standard Chartered,Allied Irish Bank, BNP, Deutsche, ING, Unicredito, UBS, Credit Suisse, Credit Agricole, Intesa, BBVA and Santander.
USA: JP Morgan, Citigroup, BoA, ML, BS, MS, GS, LB, Wells Fargo and Wachovia

Chart 2.3.

Banks: Bond spreads vs. Treasury

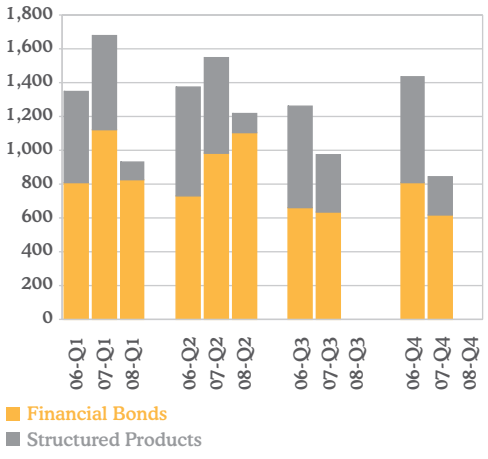
(5yr AA senior debt-bp)



Source: Bloomberg

Chart 2.4.

Global Issuance: Financial Bonds, ABS, CMBS, CMO. (bn $)



Source: Bloomberg

The Fed clearly signalled that it stands ready to take any necessary steps to prevent a systemic financial crisis and, as such, the cost of protecting against massive bank failures (as measured by the credit default swaps of financial institutions in the US or Europe) has come down from record levels (Chart 2.2). However, the recovery in other market segments which are arguably more important for banks' funding has been much more muted. In particular, tensions in interbank markets have increased even further, the reopening of debt issuance by banks is occurring at very high costs and demand for structured products is completely dry, both in Europe and in the US (Chart 2.3).

As the turbulence unfolds, it becomes increasingly clear that the financial system had become overstretched in recent years. A substantial increase in leverage was obtained mostly through the use of securitization, which allowed financial institutions to have ample flexibility in the use of their resources for lending. The availability of a strong demand for securitized assets allowed banks to extent credit readily, on the knowledge that the assets created could easily be transferred to other agents. The use of derivatives and more complex securitization structures (CDO, CDO squared, etc.) compounded the risks in this leverage. While many market participants viewed this process as a positive force for the stability of the financial system, conditions in the last quarters have demonstrated that the complex interactions in the securitization process were in fact a source of instability. In particular, the crisis has shown very clearly that to a large extent the demand for securitized assets was strongly dependent on the availability of ample liquidity.

Banks and other financial institutions took advantage of this liquidity to create off-balance sheet investment vehicles which incurred in substantial liquidity risks, as they financed long-term investments in securitized assets with short-term debt. While this maturity transformation is one of the standard functions of the financial system, the novelty was that in many cases the assets being financed were very risky, extremely opaque and complex. Not surprisingly, these features resulted in a complete withdrawal of liquidity as investors came to realize the risks involved in SIVs and similar arrangements.

When viewed in this light, the pressures on liquidity are clearly structural and go beyond a temporary lack of confidence between banks, as some claimed in the first stages of the turbulence. The withdrawal of funding for these structures resulted in an increase in banks' precautionary demand for liquidity, as many of them usually had explicit credit commitments with these vehicles, or implicit obligations arising from reputational risks, which could come in force at any time (Chart 2.4). In the Euro Area, according to the estimates of the ECB, the exposure of the largest financial institutions to these risks was around 240bn EUR, representing around 10% of their deposit base and larger than ECB net lending to financial institutions.

Despite the strains created by this potential funding need, the ECB has chosen not to increase aggregate net lending since the start of the crisis. A detailed analysis on this topic can be found in Box 2.1. This, in turn, has reinforced tensions in interbank markets, as banks most affected scrambled to cover their potential funding needs while other institutions chose to hold their liquidity surpluses –given uncertainties. It is particularly revealing that the reduction in CDS spreads in the last two months has had no parallel in interbank market spreads, confirming that counterparty risks played a comparatively minor role in the tensioning of money markets.

Box 2.1. Money Markets and the ECB

This box provides an overview of the developments in money markets since the start of the financial turmoil in August 2007, paying special attention to the response of the ECB to such a scenario.

Tensions in money markets are evident in Chart 1, which shows the significant increase in spreads occurred in the recent months. As a result of the lack of liquidity in the interbank market, financial institutions have tried to obtain resources from the ECB, which has three main instruments in this regard: open market operations, standing facilities and minimum reserve requirements.

Since the reforms introduced in 2004, the amount lent by the ECB is equal to the one forecasted, and only in exceptional circumstances, like in August 2007, the ECB lends more money than previously scheduled. Until July 2007, the average difference between the money allotted and that previously scheduled was only €1 bn, as shown in Chart 2. Since the beginning of the liquidity problems, this average has risen to €30 bn with notable deviations of €167 bn and €215 bn seen in the last two weeks of December 2007, motivated by the year end effect.

Usually, interest rates in the interbank market are very closely related to that on loans granted in main refinancing operations by the ECB. However, the situation changed dramatically in the summer 2007. Chart 3 shows the marked difference between the averages at the end of July 2007 and the beginning of the turmoil in the following month: 7 bps and 20 bps respectively.

Due to the increasing liquidity needs, additional finance was provided with supplementary longer term refinancing operations (LTRO). Table 1 shows the evolution of these provisions of funds. It is noticeable the increase in the maturity of the refinancing operations (see Chart 4). The additional 25 billion auctioned on April 2, with an unprecedented six month maturity (the usual maturity is three months) clearly illustrates this point. A second auction of these characteristics is planned for July 9th.

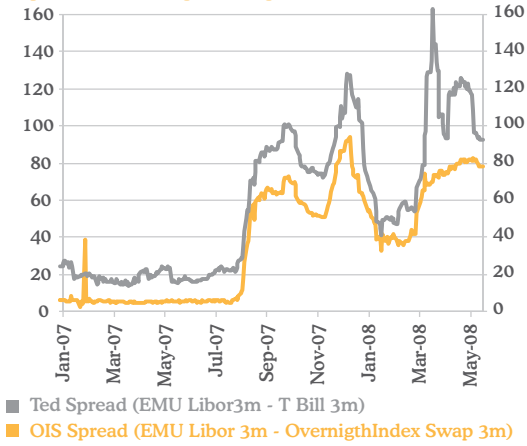
Also the ECB took the decision in late December 2007 to offer USD funding against ECB-eligible collateral for as long as it is considered necessary in the prevailing market conditions. These operations have a maturity of 28 or 35 days. USD dollars are provided by the Federal Reserve to the ECB by means of the temporary reciprocal currency arrangement (swap line).

From the previous analysis, it seems clear that the ECB has changed the composition of the funding provided to the system, mainly towards longer maturities. The question that remains is whether the ECB has increased its net lending or not. To provide light on this issue, Chart 5 shows net lending to credit institutions. It seems clear that the average lending in the period since the start of the turmoil (August 2007 – May 2008) is very similar to that in 2006.

Chart 1.

EMU: Liquidity strains

(Ted Spread & OIS Spread-bp)

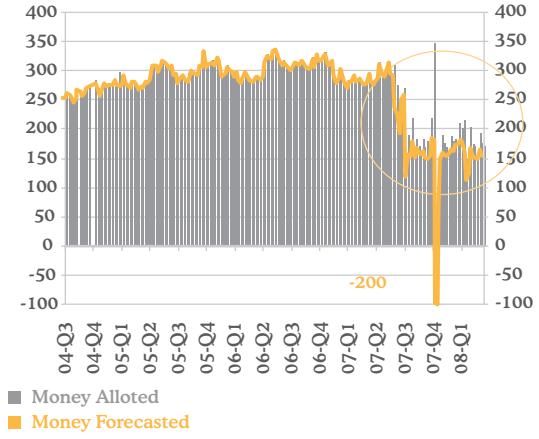


Source: Bloomberg

Chart 2.

ECB Main Refinancing Operations

Money Forecasted vs Money Alloted (bn €)

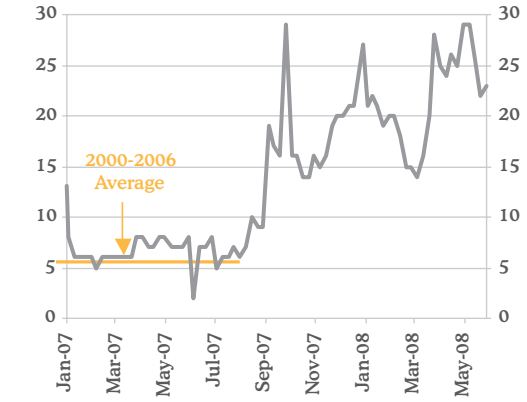


Source: Bloomberg

Chart 3.

ECB Main Refi Operations

Weighted Rate vs. Minimun Bid (bp)



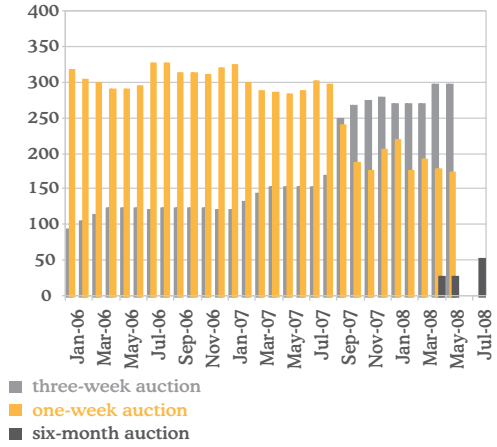
Source: Bloomberg

Table 1.
Supplementary Longer-Term Refinancing Operations since August 2007

Date	Number of bidders	Size (€ bn.)	Marginal Rate	Average Rate	Maturity	Bid-to-cover
24/8/07	146	40	4,49	4,61	3 months	3,14
13/9/07	140	75	4,35	4,52	3 months	1,85
23/11/07	130	60	4,55	4,61	3 months	2,47
12/12/07	122	60	4,81	4,88	3 months	1,75
21/2/08	105	60	4,15	4,26	3 months	1,84
13/3/08	139	60	4,25	4,40	3 months	2,21
3/4/08	177	25	4,55	4,61	6 months	4,12
22/5/08	138	50	4,5	4,68	3 months	1,73

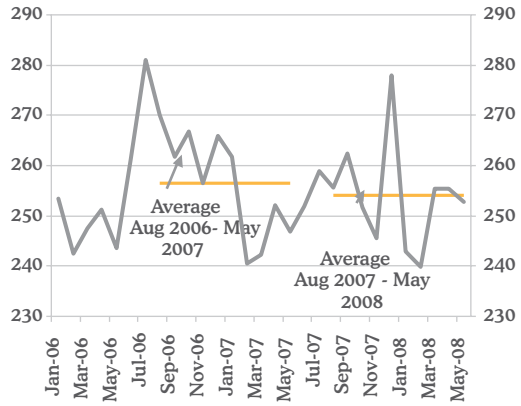
Source: ECB

Chart 4.
ECB: Refinancing Operations
(€ bn)



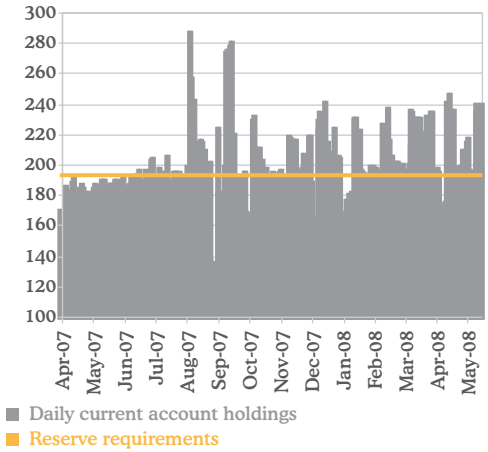
Source: ECB

Chart 5.
ECB: Net Lending to Credit Institutions
(mm.EUR)



Source: ECB

Chart 6.
Fulfilment of reserve requirements (€ bn.)



Source: ECB

Table 2.
Use of Main and Longer-Term Refinancing Operations in the Euro Zona (End - April 2008)

	Main Refinancing	Longer Term Refinancing	Total Lending	Total euro system lending to MFIs (%)
Germany	77	110	186	41%
France	14	64	77	17%
Italy	11	4	15	3%
Spain	18	29	48	10%
Ireland	8	31	39	8%
Total Euro System	166	292	458	

Source: BBVA

Looking at banks' reserves, Chart 6 shows a change of pattern after the start of the financial turmoil. Banks tended to hold reserves close to the level of the required reserves. However, during the last months, they were largely above the level of the required reserves early in the maintenance period.

In response to this change in the pattern of banks' demand for liquidity, the ECB adjusted the distribution of liquidity by increasing the supply at the beginning of the period so that the average supply of liquidity remains unchanged.

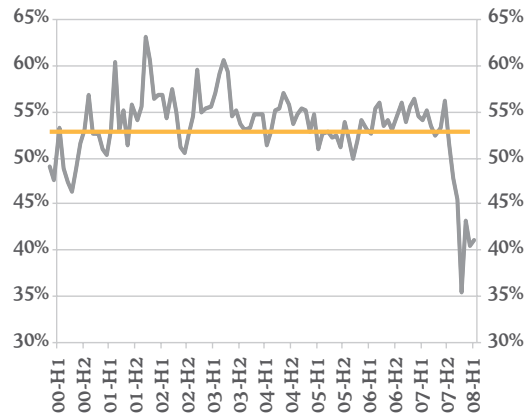
Next, looking at the composition of funding needs by country, Table 2 shows that German banks are the largest players in open market operations conducted by the ECB, far beyond their share in assets. It is interesting to note that the share has decreased in the last months: Chart 7 shows a reduction from a historical average of 51% to a current 41%). A different

situation has occurred for Spanish banks, with an increase of about 4% in the last half year, as shown in Chart 7. The recourse of Spanish banks now approaches their share in the total system's assets.

To conclude, it seems clear that the ECB has responded to the tensions in the money markets due to the recent financial turmoil. But this does not imply that the amount of (net) lending has increased, but rather the composition of the funds. This has been achieved thanks to the flexibility in the design of the instruments used for the conduct of the ECB monetary policy.

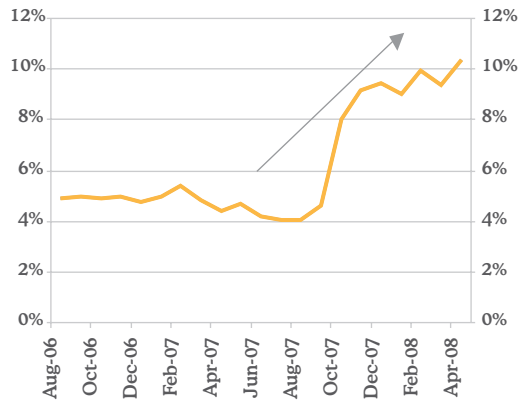
Money markets continue to be strained due to the lack of sufficient extra liquidity provision. Moreover, the volume of assets in bank's balance sheets that need to be financed (inclusion of off-balance sheet vehicles, etc.) has increased more than the sources of funding, while the finance obtained through structured products has almost disappeared.

Chart 7.
Germany: Use of Central Bank Lending
(Main and Longer-term Refinancing Operations)



Source: German Central Bank

Chart 8.
Spain: Use of Central Bank Lending
(Main and Longer-term Refinancing Operations)



Source: Spanish Central Bank

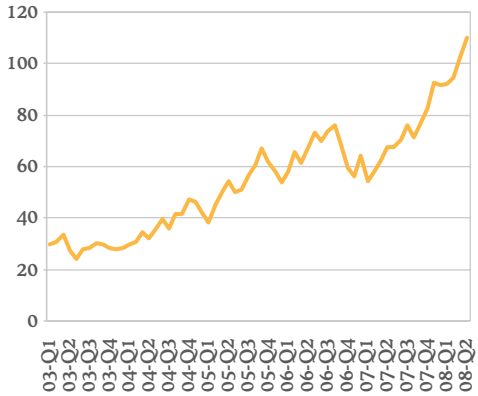
- **The Euro has appreciated further against the US dollar.**

The dollar has continued to depreciate against the Euro, due to a relative weakening of the U.S. economy, whose growth is near the lowest point of the forecast range, while the data released for the Euro Area have been much more positive. This fact, coupled with a more rigid position of the European monetary authorities to cut interest rates (see Section 3.2), has widened the expectations of short-term rates between the two areas and, thus, strengthened European currency.

Between January and December 2007 the Euro exchange rate rose from US$ 1.30 to US$ 1.45, representing an appreciation of 11.9%; between December and late May, the rate has risen to about US$ 1.55, reflecting a 7% additional appreciation in five months (most of this extra jump was concentrated in March). The Euro has been very close to US$ 1.60. The volatility rebounded in March and April, although in the past two months it has returned to levels prevalent in previous months (Chart 2.5). By the end of the projection period, December 2009, the Euro/US$ rate is projected to fall to about 1.40.

In real effective terms, the dollar depreciation has resulted in an appreciation of the Euro of about 3.9% (according to the OECD index) in the first four months of the 2008, much higher than what the U.S.

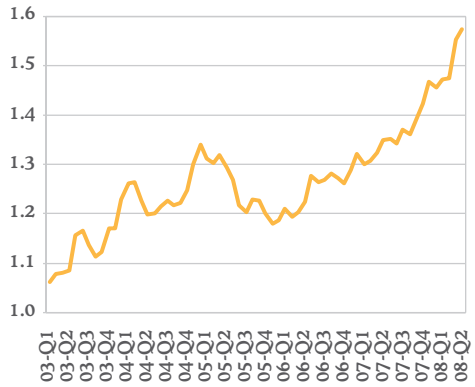
Chart 2.5.
Euro-dollar exchange rate



Source: Thomson Datastream

Chart 2.6.

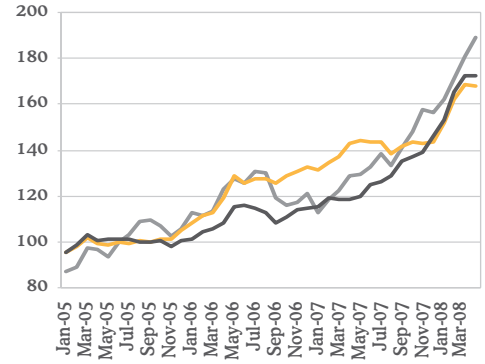
Oil prices (Brent) (US$ per Barrel)



Source: Thomson Datastream

Chart 2.7.

Price of Commodities (2005 = 100)

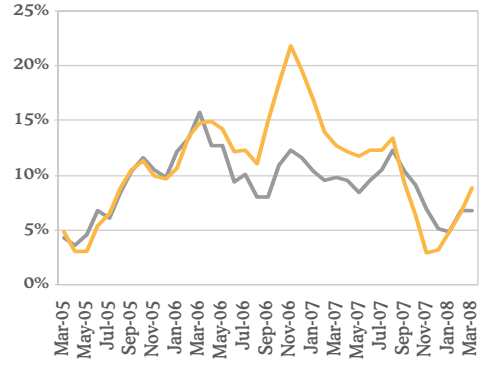


Commodities
Commodities less Fuel
Food

Source: IMF

Chart 2.8.

Exports (% Y/Y - 3 month average)

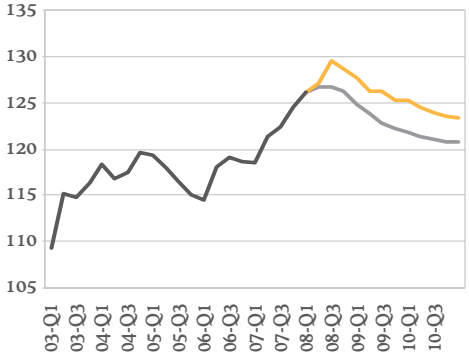


Euro Area
Germany

Source: Eurostat

Chart 2.9.

Euro Area: Real Effective Exchange Rate (2000 = 100)



Source: Eurostat

economic weight would suggest, because many currencies are actually pegged to the dollar. Throughout 2007 the increase in the real effective exchange rate stood at 3.2%.

- **Oil prices have increased further, to close to US$ 130.**

The spot price of a barrel of Brent has been progressively more expensive since at least 2002, but it has accelerated markedly since early 2007 (Chart 2.6). At the end of 2006 the price was at US$ 62, while it closed in 2007 at US$ 91.5. Afterwards, the price has picked up again to almost US$ 130 *per* barrel, closing the month of May at about US$ 125 *per* barrel, representing an increase since the start of the year 2008 of 35 % in dollars. The impact of this increase on Euro Area's trade balance, which translates into lower levels of income and expenditure capacity of economic agents also implies a direct impact on the price level.

The reasons for this increase are certainly known (increased demand from emerging countries, temporary supply constraints due to exogenous phenomena, limited excess capacity, speculative investment in raw materials following the exit of funds from other assets, etc.); however, the relative role of each of these factors is difficult to gauge, although we believe that restrictions on temporary supply and speculative factors are playing a very important role. Indeed, in our forecasting exercises we assume a relatively rapid drop in prices during 2008 and 2009, reaching US$ 90 *per* barrel at the end of that year. However, given the possibility that tensions are more durable than expected, we have carried out simulations of inflation with a barrel of oil stable at US$ 125, or even an extreme case with US$ 140 a barrel over the forecast period (see Section 3.1).

- **The shock of other commodity prices is more persistent than originally thought.**

The acceleration of prices of raw materials has not been limited to oil, but has spread to most categories, something that was not so evident six months ago. In this case, demand factors seem to be prevalent (inadequate supply can not explain the acceleration in all raw materials), but here again it is difficult to distinguish from the pressures of speculative demand linked to the consumption or use as intermediate goods (Chart 2.7).

In the case of foods, that is most relevant for its possible impact on the food component of the CPI, it could be added as an explanatory factor further displacement of subsidized demand for biofuel energy uses, which drags resources for food production. Whatever the explanation, we assume for our forecasts exercises that most of the acceleration has already occurred, and although it is not foreseeable a major reversal of prices, these are not expected to accelerate significantly in the forthcoming months. Coffee and corn prices, for example, could rise by 8% and 5% respectively until the end of 2008, but soybean prices should recede by around 18%.

2.2. However, the Eurozone economy has withstood the headwinds surprisingly well during the first months of 2008.

The year 2007 ended with a GDP growth of 0.4% in the fourth quarter (q / q), after it surprised heavily upwards in the third quarter (0.7% q / q). In the first quarter of this year, production recovered strongly (0.7% from preliminary data), especially in Germany, where GDP grew at rates of 1.5% (Table 2.1). Although this growth is largely due to temporary

causes, it also reflects a remarkable resilience of the Euro Area economy in the face of the adverse shocks cited above. As already advanced in the December issue of *EuropaWatch*, there are certain factors that explain this resistance in an economic area that has traditionally followed the cyclical swings of the U.S. economy.

- **On the external side, the demand effect from emerging countries has been more important than the price effect.**

Exports have remained relatively strong during the first quarter of this year, accelerating from those of the previous quarter in most countries of the Euro Area. Although external trade data are notoriously volatile (and in fact exports have contracted in April in nominal terms), it seems that the external sector has been a powerful element of resilience (Chart 2.8).

In this vein, our model for extra-Euro Area exports suggests that the relative weight of demand factors is much more important than the price (exchange rate) elasticity to explain export dynamics (see Box 2.2). Hence, despite the real effective exchange rate (REER) appreciation of the Euro mostly derived from the nominal dollar depreciation, demand from emerging countries (which is in turn the result of their "decoupling" from the US) has helped to explain the strength of exports in recent years and, particularly, in recent months.

Charts 2.9 to 2.12 present the results of a simulation exercise that illustrates this. The objective is to analyse the behaviour of Euro Area exports under alternative conditioning paths for both the REER and foreign demand. Chart 2.9 shows the scenarios for the REER; the first scenario assumes that during 2008, on average, the quarterly real appreciation of the Euro is 0.5% whereas it is 1% in the second scenario. In both cases, foreign GDP in 2008 is assumed to grow on average at 3%. Given these assumptions, Chart 2.10 shows the implied response of real exports. As it can be observed, exports are not very sensitive to the different paths assumed for the REER.

However, one must be cautious in interpreting these results. One possible explanation for this limited response of exports to exchange rate changes can be found in some structural factors affecting the trade linkages for the Euro Area. Specifically, the Euro appreciation might result in only a limited deterioration in the relative price competitiveness of the Euro Area. To the extent that this increase is in excess of rising costs, this implies that exporters do not pass through entirely the appreciation to lose in price competitiveness, while instead decreasing their profit margins.[1] It remains to be seen to what extent this situation is sustainable if the Euro continues to rise, and the emergence of threshold effects should not be discarded. These non-linear patterns are, nevertheless, difficult to capture empirically, but we suspect they can emerge sooner or later.[2]

Chart 2.12 shows the implied path for real exports to the two alternative scenarios of foreign demand shown in Chart 2.11. In this case, the dynamic path of exports is arguably different. In the more optimistic case, where average foreign GDP grows at of 3.8% in 2008 and 3.1% in 2009, real exports grow on average 6.8% in 2008 and 5.7% in 2009. In the less optimistic scenario, where average foreign GDP grows at of 3.2% in 2008 and 1.8 % in 2009, real exports are likely to grow on average 6% in 2008 and 4% in 2009.

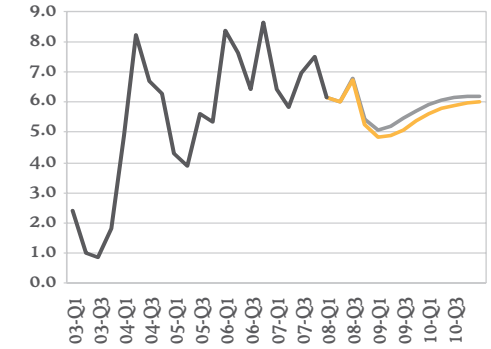
[1] Evidence of incomplete pass-through of export prices in the Euro Area is provided by Faruquee (2006) "Exchange Rate Pass-Through in the Euro Area" IMF Working Paper 57/06.
[2] A recent contribution in a related topic can be found in Campa et al (2008) "Non-linear adjustment of import prices in the European Union" Bank of England Working Paper nº 347.

Table 2.1. Euro area GDP growth (%q/q)

	2007 Q3	2007 Q4	2008 Q1
Euro area	**0.7**	**0.4**	**0.7**
Private Consumption	0.5	-0.1	0.3*
Public Consumption	0.6	-0.1	0.7*
Fixed Investment	1.1	0.8	1.3*
Net exports (contr.)	-0.1	0.4	-0.1
Germany	**0.7**	**0.3**	**1.5**
France	**0.7**	**0.3**	**0.6**
Italy	**0.2**	**-0.4**	**0.4**
Spain	**0.7**	**0.8**	**0.2**
Other	**1.3**	**0.8**	**0.3**

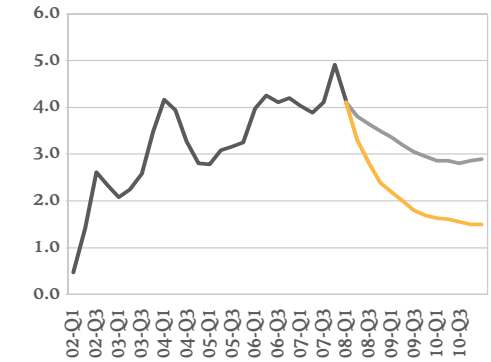
* Estimation
Source: Eurostat and BBVA

Chart 2.10.
Euro Area: Exports response to real appreciation
(% YoY)



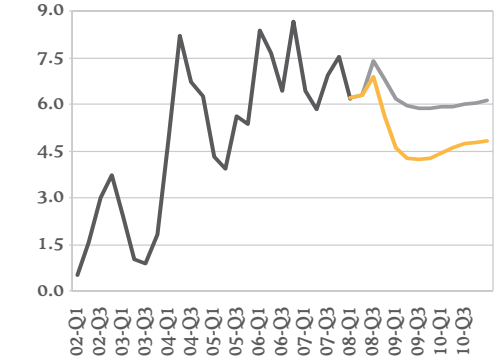
Source: BBVA

Chart 2.11.
Euro Area: World GDP scenarios
(% YoY)



Source: BBVA

Chart 2.12.
Euro Area: Real Exports response to World GDP
(% YoY)



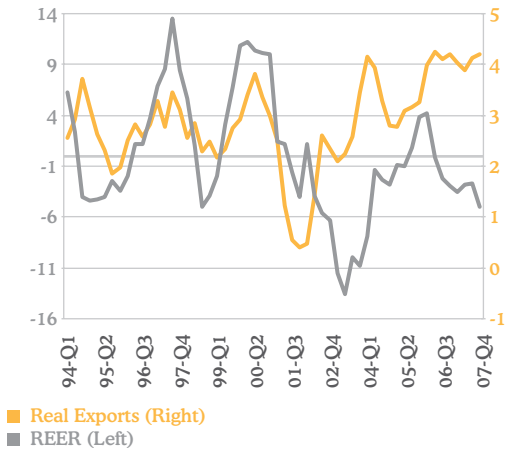
Source: BBVA

Box 2.2. Modelling Euro Area Exports

Trade is a key transmission mechanism by which developments in one country can have repercussions in others and, thus, how it is modelled is an important part of both forecasting and simulation analysis. In basic models of trade, changes in relative prices and foreign demand are the main variables that explain changes in export volumes.[1]

The real effective exchange rate (REER) is used as the measure of relative prices. This variable measures the international competitiveness of the Euro Area. Chart 1 shows a sizeable fluctuation, most notably the euro's strong depreciation between early 1999 and the end of 2000, followed by a significant appreciation, reaching record levels in 2008. Despite this appreciation, exports continued to grow at a positive pace.

Chart 1.
Euro Area Exports vs. REER (%YoY)



Source: Eurostat, AWM Database and BBVA

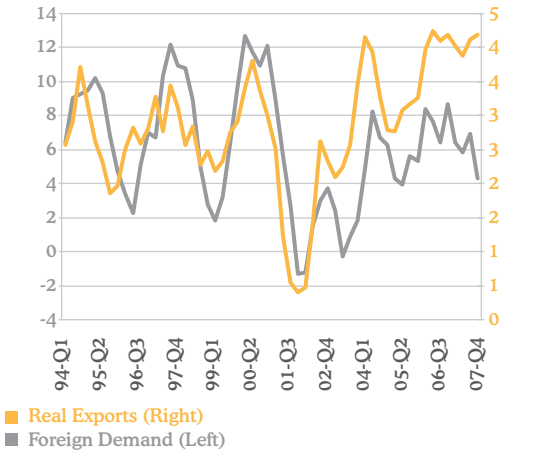
Chart 2 shows developments in foreign demand, constructed as the weighted average of the Euro Area's main trading partners GDP. The co-movement between the growth rate of export volume is very clear. The marginal decline in foreign demand in 1998, and the associated fall in extra-euro area export volumes, can mainly be explained by the Asian crisis. In 2001, foreign demand strongly declined, owing to the global downturn, before recovering in 2002 and 2003 and, combined with the impact of the euro appreciation, largely explains the weakness of exports ove r this period. In recent times, Euro Area exports have picked up strongly. This suggests that external demand for Euro Area products has remained solid despite the twin threats posed by weaker US growth and a strengthening Euro.

Given these stylised facts, an econometric estimation of euro area export equation is carried out. A (log)-linear single equation error correction approach is considered, whereby both the short-term components (expressed in differences) as well as the long term components (expressed in levels) are analysed simultaneously.

[1] See Goldstein and Khan (1985) Goldstein, M. and Khan, M. (1985), "Income and Price Effects in Foreign Trade" in Jones, R. and Kenen, P. (eds.), Handbook of International Economics, Vol. 2, Amsterdam: Elsevier, Chapter 20.

Before estimating the model, the stationary properties of the data are analysed. Table 1 displays the results of several unit root tests. These suggest that the variables considered are non-stationary in levels, which calls for an estimation within a co-integration framework. In this regard, the Engle-Granger test supports the existence of a stable long-run relationship between the variables in the model with test statistic = -3.75 and p-value 0.052.

Chart 2.
Euro Area Exports vs. Foreign Demand (%YoY)



Source: Eurostat, AWM Database and BBVA

Table 1.
Unit-Root tests

Levels of:	Exports	REER	Foreign Demand
ADF Test	-2.21	-2.11	-1.56
p-value	0.47	0.53	0.79

First Diff. of:	Exports	REER	Foreign Demand
ADF Test	-9.07	-7.40	-6.22
p-value	0.00	0.00	0.00

Note: Null hypothesis of a unit root. Lag length based on SIC (max lag=12).
Sample period 1984:Q1-2007:Q4.
Source: BBVA

Given the previous results, the following specification for the exports equation is considered:

$$\Delta x_t = \gamma_1 (x_{t-1} - x^*_{t-1}) + \gamma_2 \Delta reer_{t-1} + \gamma_3 \Delta ywr_{t-1} + \nu_t,$$

where x is the (log) euro area exports, *reer* represents the (log) real effective exchange rate and *ywr* is the (log) foreign demand. The symbol Δ denotes the first-difference operator and the γ_i are the short-term coefficients. Moreover, γ_1 is the so-called error correction coefficient and determines the speed of mean reversion. A significantly negative value would be evidence for a stable long-term relationship between export volumes and its determinants, which is given by

$$x^*_t = \beta_0 + \beta_1 trend + \beta_2 reer_t + \beta_3 ywr_t,$$

It is expected that a rise in foreign demand and a rise in cost and price competitiveness – the latter reflecting a depreciation

of the domestic currency in real terms – should be associated with in increase in real exports. Thus, β_2 and β_3 are expected to be positive and β_3 equal to unity as a country should have a stable export market share in the long-run.

An important issue in the specification of the long-run equation is the introduction of a deterministic time trend. Several authors have advocated this approach in order to account for changes in market shares within the sample period. These changes can be attributed to supply conditions or variations in the quality of products, which are typically more difficult to model quantitatively.[2]

Table 2 presents the results of the estimation exercise. The coefficients corresponding to the long-run equation are relatively precise and have the expected sign. Accordingly, a rise in foreign demand by 1% is likely to imply a rise in export volumes of about 0.87%. In order to test the unit-elasticity hypothesis, a Wald-test has been carried out. The unitary hypothesis cannot be rejected.

Regarding the coefficient of the REER, which reflects a competitiveness channel, an improvement (depreciation) of the REER by 1% is expected to generate a rise in export volumes of about 0.4%. Compared with the results found in the literature, this estimate lies in the lower part of the range.[3]

The estimates corresponding to the dynamics of the model are also relatively well behaved. The coefficient associated with the error correction term is negative. As mentioned above, this suggests a stable link between export volumes and its determinants in the long-run.

Table 2.
Estimation Results

Long run:	Constant	Trend	REER	Foreign Demand
Estimates:	-3.26	0.008	0.36	0.87
S.E.	0.61	0.001	0.03	0.15

Short run:	ECT	Exports	REER	Foreign Demand
Estimates:	-0.52	0.43	0.19	1.26
S.E.	0.18	0.16	0.06	0.34

Note: Sample period 1984:Q1-2007:Q4. Wald-Test on the null of long-run unity elasticity on Foreign Demand (Statistic=1.06, p-value=0.30).
Source: BBVA

[2] For a detailed discussion on this topic, see Murata et al. (2000) "Modelling Manufacturing Export Volumes Equations". OECD Economics Department Working Papers No. 235.

[3] See, for instance, Anderson et al. (2004) "Understanding the impact of the external dimension on the euro area: trade, capital flows and other international macroeconomic linkages" ECB Occasional Paper nº 12.

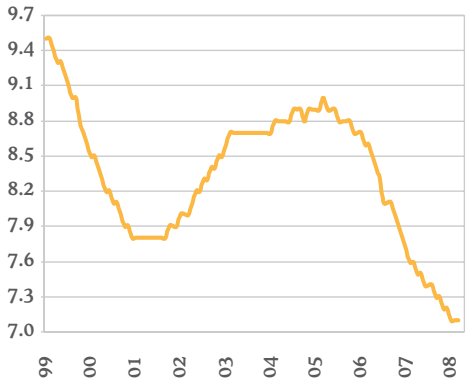
- **On the internal side, we identified in the previous issue several sources of resilience (employment reforms and growth, higher potential growth).**

Apart from the strength of the external sector, in the previous issue of *EuropaWatch* we cited other elements of resistance in the Euro Area, which have more to do with structural factors. On the one hand, recent reforms of the labour market in Germany and Italy, and greater labour market flexibility in many other countries notably due to the growing duality between permanent and temporary workers (which does not preclude also negative effects on variables such as productivity) has made the provision of labour *per* unit of product greater than in the past, both because of greater participation and by a lower rate of structural unemployment. In addition, there is the strong contribution of immigration, both in the additional flexibility of the labour market (through downward pressure on wages) and its direct impact on the workforce. The continuing fall in unemployment in recent years testifies to this, although in the most recent months the unemployment rate has remained stable (Chart 2.13).

Additionally, the financial situation of European companies is relatively robust, no doubt thanks to the moderation in real wages in recent years. This has allowed firms to fulfil the needs of investment in a context of greater financial instability, and can continue to assist in the immediate future.

These factors are reflected in the estimated potential growth which, despite being very difficult to calculate, has probably grown in recent years, and can be around 2% (see Box 2.3). In the previous issue of *EuropaWatch* we estimated by means of the production function approach a value of about 2% and growing over time. This time we have used an unobserved components method, and it is estimated at about 1.8%. In any case, reliance on these estimates of growth depends on the last observations in the sample, rendering them necessarily imprecise.).

Chart 2.13.
Euro Area: unemployment rate



Source: Eurostat

Box 2.3. Assessing the Cyclical Position of the Euro Area Economy

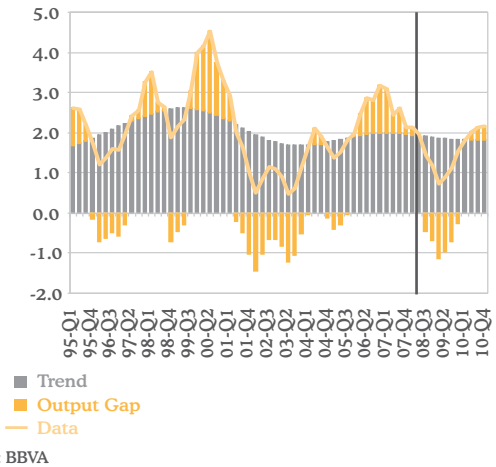
In order to analyse the cyclical position of the Euro Area economy, two methods are used to separate the trend from the cyclical component of real GDP growth. Firstly, a standard HP filter model is considered. Chart 1 shows the decomposition of the year on year GDP growth rate for the period 1995:Q1 to 2008:Q1 using this technique.[1] This exercise reveals that the expansionary period initiated in 2006 is coming to an end, even though the annual growth rate in 2008:Q1 (2.13) is marginally above the trend growth rate (1.95).

The second approach to decomposing the trend-cycle behaviour of the Euro Area GDP is based on an unobserved components model that uses information on the unemployment and investment rates.[2] Chart 2 shows the results obtained with this model. As before, the expansionary phase seems to be reaching an end. However, in this case, the cyclical component still contributes significantly to the rate of growth of GDP (0.31% in 2008:Q1 versus 0.18% in the HP model). Moreover, the deceleration is more pronounced on the trend component (1.81% versus 1.95% in the HP model). As a result, it is more difficult that the output gap becomes negative in the second model.

The unobserved components model is very useful to illustrate how the nature of the expected cycle might differ from previous ones. The model implicitly assumes that the output gap of the economy is related to the investment and the (inverted) unemployment gaps, the so called Okun's law. There are two relevant questions to consider in this regard.

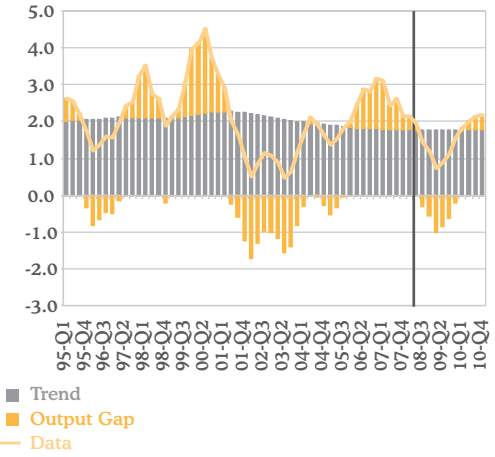
Firstly, as shown in Chart 3, the unemployment rate is below its estimated trend value (7.4 in 2008:Q1) and, more importantly, is assumed to remain very close to its trend value in the near future. Secondly, as shown in Chart 4, the investment rate is estimated to be above its trend value (0.22 % in 2008:Q1) and expected to be above its trend value until 2009:Q1. Hence, given this behaviour, the model would imply that we predict a rather moderate cycle in the coming years. Conversely, this model could be interpreted as if the magnitude of the projected

Chart 1.
Decomposing Annual GDP Growth
(HP Model - %)



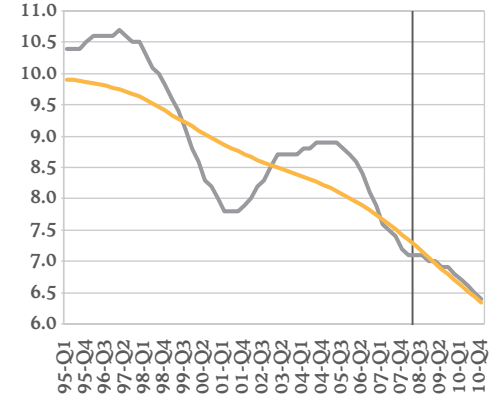
Source: BBVA

Chart 2.
Decomposing Annual GDP Growth
(Doménech-Gómez Model - %)



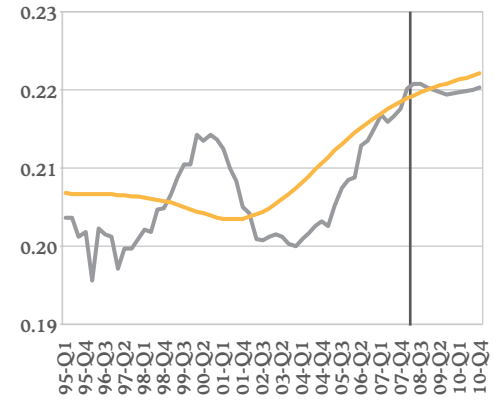
Source: BBVA

Chart 3.
Unemployment Rate
(%)



Source: BBVA

Chart 4.
Investment Rate
(%)



Source: BBVA

[1] The model takes as out-of-sample our central scenario for GDP growth.
[2] Details of the model can be found in Doménech and Gómez (2006): "Estimating Potential Output, Core Inflation and the NAIRU as Latent Variables", *Journal of Business and Economic Statistics*, 24(3), 354-65.

deceleration is in line with previous ones, but that the pattern is atypical in that it is characterised by lower consumption and higher investment than in the past, and is also less associated with the deterioration of the labour market. This later interpretation seems to be more in line with the relative strength of investment with respect to consumption in recent quarters, with a relatively stronger financial position of European firms vis-à-vis European households, and with a more robust labour market after reforms in several Euro Area countries.

Chart 5 illustrates this point. It shows the output gap implicit in our baseline projections. In this case, the gap becomes negative in 2009:Q1, and reaches its minimum value (-0.20%) in 2009:Q3. The cycle could be more pronounced if one assume the lower band of our projections, where average year on year growth rate is 1.6% in 2008 (versus 1.7% in the baseline), 0.6% in 2009 (versus 1.1%) and 1.5% (versus 2%) in 2010. In this scenario, the output gap would reach a minimum of -0.7% in 2009:Q4.

Chart 5.
Output-Gap (% Deviation From Trend)

Source: BBVA

But more recent data may be pointing already to a downturn. And signs of decoupling are evident already.

Despite the good news, signals from some indicators suggest that the slowdown process, which actually had already begun before the financial problems, continues. In addition to the latest data of foreign trade commented above, this is also shown by our indicator of activity (Chart 2.14), as well as by confidence indicators for the Euro Area (Charts 2.15 and 2.16), and that can advance what is to come.

In addition to these signals, a fact that can also be important for monetary policy (see below) is the internal decoupling of the Euro Zone, with higher stability in the central zone countries (Germany and the countries that surround it, and France), and lower growth (Italy, Portugal) or larger slowdown (Spain, Ireland) in other more peripherals countries. The national accounts data for the first quarter has evidenced this trend, and confidence indicators clearly point in this direction (Chart 2.17).

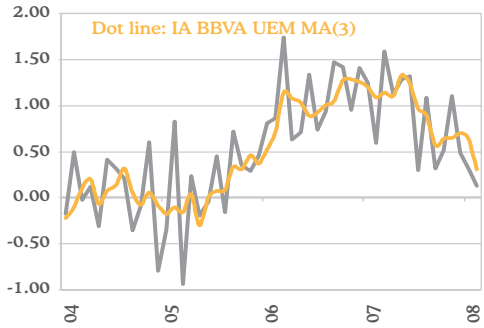
2.3. A central point in the analysis involves the extent to which financial turbulences impact on credit and therefore on activity.

As mentioned above, the financial turmoil has had a significant impact on the functioning of money markets. Relevant financial institutions are suffering the consequences of past excesses.

- **So far the impact has been muted, but we believe that the need for de-leverage of banks will end up affecting credit magnitudes and restraining GDP growth.**

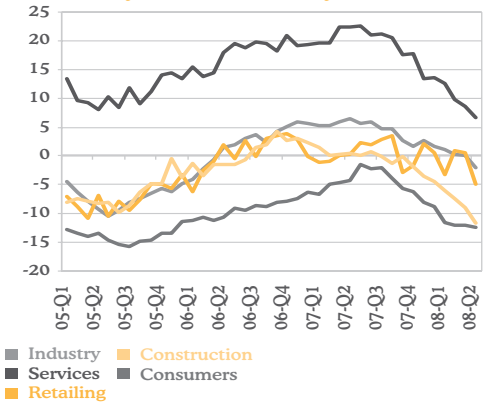
A structural force that emerges in the new context of financial instability is the need for banks to reduce their leverage. There are several factors driving the need for de-leveraging. First, banks could still experience write-downs on their holdings of securitized assets. Second, the macroeconomic setting will worsen in coming quarters, creating cyclical conditions adverse for bank profitability. Third, vanishing demand for securitized assets will put additional pressure on banks' balance sheets, as borrowers will still demand financing from banks even if the later

Chart 2.14.
Euro Area: activity indicator



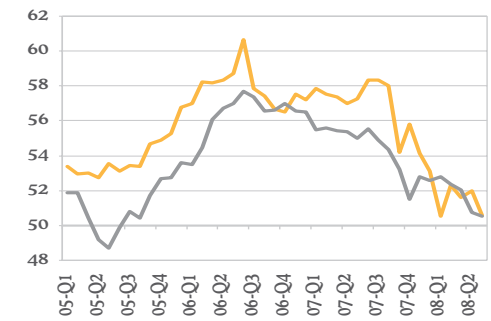
Source: BBVA

Chart 2.15.
EC Survey: confidence by sectors



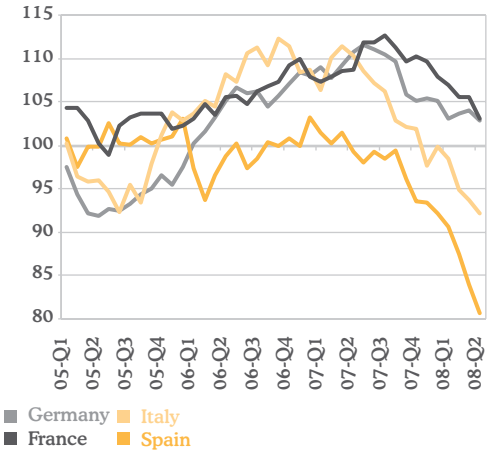
Source: European Commission

Chart 2.16.
Euro Area: PMI Index



Source: NTC Economics Ltd

Chart 2.17.
EC Survey: confidence by country



Source: European Commission

can not easily sell loans to third-party agents. Faced with these pressures, a natural consequence is that financing costs will likely increase. In fact, the recent issuance of debt by banks and non-financial corporations has occurred at very high costs. Moreover, it shows that corporations are becoming increasingly aware that this increase in funding costs will last for some time.

Contrary to some opinions, the Euro Area can not probably escape from these pressures. The excesses of financial innovation have not been confined to the United States, the use of structured products has been pervasive in the Euro Area as well. Moreover, EMU banks play a comparatively larger role in the financial system, whereas in the US the importance of market instruments is larger. Regulatory and accounting differences may smooth the impact over time, but are unlikely to stop the need for a transition in the financial system of the Euro Area.

Box 2.4. Towards a De-leverage of Banks' Balance Sheets

In the current environment of significant corrections in the prices of structured assets, banks' write-downs have increased to values of about $380 bn. As shown in Chart 1, European banks have announced $200 bn while those in the US and the rest of the world have incurred in losses amounting $150 bn and $30 bn, respectively. However, when compared with their capital strength, see Chart 2, the impact on US banks has been larger than that on their European counterparts. Within Europe, the geographical breakdown reveals also a larger impact in Switzerland (when compared to their capital base) than in the United Kingdom or the Euro Area.

In this context, an important question is whether all the potential losses have been already announced or whether there is much more to come. The consensus seems to be that mark-to-market losses on securities are close to an end. Any additional write-downs to adapt to market prices will probably affect more Euro Area and UK banks than those in Switzerland or the US, as in the latter two countries banks have taken a more conservative approach in the results published by 2008:Q1. However, a second wave of losses cannot be ruled out –for instance, those linked to the expected deterioration in consumer credit performance.

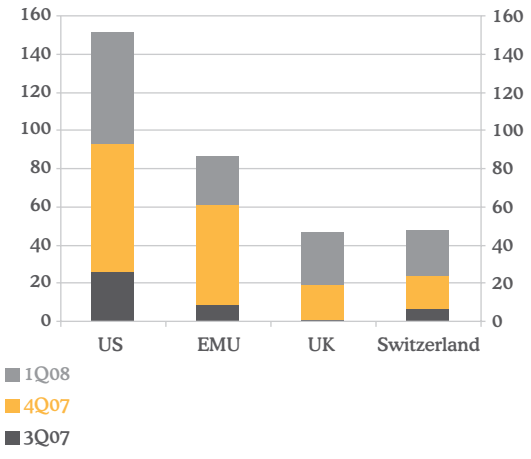
To partly compensate for these losses, and in order to avoid the non-fulfilment of legal ratios and to strengthen their currently weakened positions, banks have been actively raising capital, reaching up to 70% of the reported write-downs. Financial institutions have been able to find investors interested in participating in their re-capitalization, but at the expense of being dilutive to current shareholders. Furthermore, changes in management teams have also been necessary in some institutions. Banks in the Euro Area, nevertheless, have pursuit a less intensive capital raising activity than elsewhere, particularly when compared to their disclosed write-downs. Hence, further capital injections in the short run should not be ruled-out.

Despite banks' efforts to raise their capital, both non-recapitalized write-downs and additional necessary credit provisions will probably force the search for additional routes to strengthen their capital ratios. In this context, the alternative is de-leveraging, in line with recent examples –Citigroup, Credit Agricole.

Tensions in the interbank market have remained, mainly due to the necessity of banks to hoard liquidity to deal with the re-intermediation of off-balance sheet assets. Hence, not only the capital frame –solvency- will force banks to de-leverage, but also the liquidity frame. It remains to be seen how much de-leverage will be required to recover a sound base of capital and what the alternatives are to achieve this goal.

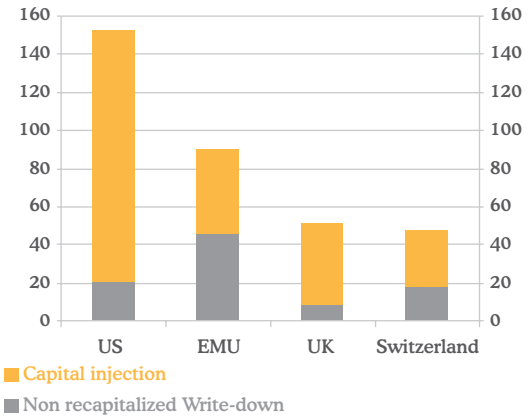
Historically, there has barely been a period of time with negative annual growth on assets. However, as shown in Chart 3, during the first half of the 90's the quarterly growth of banks' assets was a meagre 1%. Taking into account the recent expansion on structured products when compared with that period, a drop in banks' assets can not be discarded.

Chart 1.
Banks' write-downs ($bn)



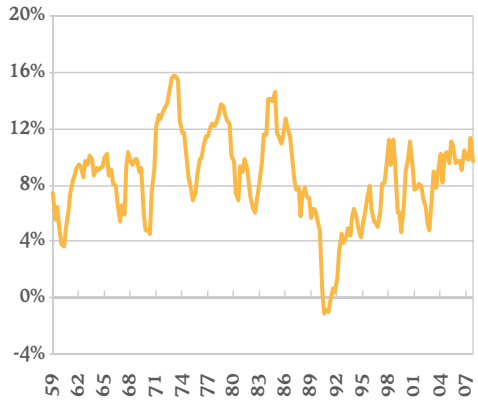
Source: Bloomberg

Chart 2.
Banks' write-downs and capital injections ($bn)



Source: Bloomberg

Chart 3.
Bank's Total Assets
(% Y/Y)



Source: BIS and BBVA

In the best of the scenarios, a long and significant period of low asset growth seems to be granted. The doubt that remains is how this process will be carried out. Some banks will opt to sell assets while others might reduce their loan supply.

The first possibility would be feasible as long as hedge funds and private equity companies find attractive asset prices. Special attention should be given to sovereign wealth funds, since these entities have been accumulating a vast amount of reserves in the last few years. Initially, sovereign funds have been investing in banks, but they have somehow retreated after several not very satisfactory investments. The second alternative to reduce asset volumes in banks balance sheets, namely a reduction in the supply of loans, would be more harmful due to its impact on the real economy.

Despite the financial turmoil, credit magnitudes have remained robust thus far, particularly consumer credit and loans to non-financial corporations (Chart 2.18), in this case due to special factors that restrain credit growth artificially high. Only mortgage credit seems to continue its decelerating trend. Nevertheless, it is expected that the turmoil will finally spill over the real sector of the economy.

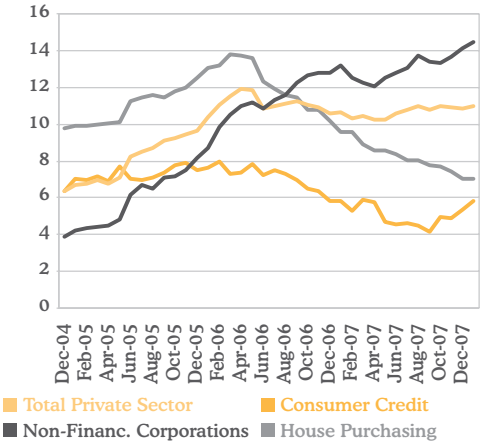
- **Our models tell us that there will be an impact of the financial crisis. This has been delayed as write-downs in Europe have been relatively small and have not been clearly passed on to credit quantities and prices, but they should eventually arrive.**

In the previous issue of *EuropaWatch*, we estimated the impact of a credit squeeze on real activity through a simulation exercise using a structural VAR model with sign restrictions. This time we go a step further, trying to simulate the impact of the persistence of a shock in the interbank spread on credit aggregates and GDP.

The empirical technique used is a Structural (Bayesian) VAR with sign restrictions on the spread of the 3-month interbank market against the 10-year German bond, GDP, inflation and credit growth, assuming that the spread does not affect contemporaneously GDP. The shock analysed assumes that the spread is maintained at its current level until the end of the year, and then fades away slowly. Its impact is measured against a baseline of a spread that rises until December and then disappears slowly. Implicitly, we are assuming that the baseline scenario would not have a sizeable impact on GDP (since it is temporary), but its persistence at high levels would be felt through less credit and activity.

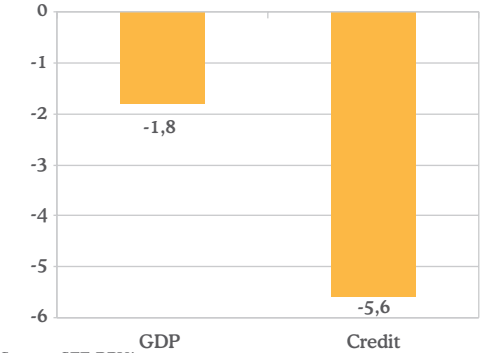
Using this framework, we obtain a cumulated impact for 2008 and 2009 of -5.6 percent points on credit, and -1.8 points on GDP (Chart 2.19). Although the results from such exercise have to be interpreted very cautiously –mostly because the data sample used for the estimation does not include episodes of financial stress of this magnitude-, it can provide a good starting point for our projections.

Chart 2.18.
Loans to the Private Sector
(% YoY, Outstanding amounts at the end of the period)



Source: ECB and BBVA

Chart 2.19.
Cumulated impact of financial crisis in 2008 and 2009 in the Euro Area

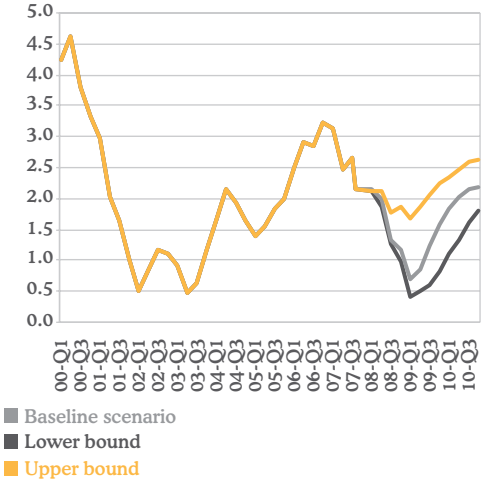


Source: SEE-BBVA

Chart 2.20.
EMU: GDP Forecasts
(% y/y)

Source: Eurostat and BBVA

Chart 2.21.
EMU - GDP forecast range and baseline scenario
(% y/y)



Source: Eurostat and BBVA

2.4. Projections and risks:

Activity in the Euro Area is already decelerating. We project growth to be around 1.7% this year, but to decline to around 1.1% in 2009.

The evidence we have is that short-term indicators of activity for the Euro Area are mixed, but on average point to a deceleration of activity. In addition, our standard instruments to make projections in the medium term (a BVAR model that includes GDP, inflation, interest rates, nominal effective exchange rate, M3 and a stock-market index; and a dynamic general equilibrium model described in our February 2007 issue[3]) suggest a deceleration of GDP to between 1%-1.5% at the trough of this cycle (Chart 2.20). These models implicitly incorporate part of the financial crisis embedded in the dynamics of included variables, although probably not completely, given the scarcity of episodes to this one in the estimation period. On top of that, the estimation presented above provides us with a benchmark impact of the persistency of the financial turmoil of around 0.9% *per* year, assuming that the baseline of the simulations of a temporary shock in money market spreads would only have a muted impact on GDP.

Overall, we project that the slowdown will start in the forthcoming quarters, and will reach a trough for annual growth in the first quarter of 2009 of around 0.7% (see Chart 2.21). This is relatively mild growth crisis in historical perspective, given the structural strengths acquired by the area economies during recent years. The recovery will probably not be fast, although it is likely to be faster than in the past because those factors that explain resilience might play also in favour of rapid growth, and because the benchmark of past crises in Europe is of slow recoveries. The average growth rate for 2008 could be within a range of 1.6%-2%, with a baseline scenario at 1.7%. For 2009 the range widens to 0.6%-2.1%, with a preferred forecast of 1.1%.

These projections assume that most emerging countries will hold up relatively well the financial crisis, and also incorporate our central hypothesis of oil prices going back to under US$ 80 *per* barrel at the end of the projection period, and of the euro/dollar exchange rate reverting slowly towards its equilibrium level.

Uncertainty is unusually high

The level of uncertainty attached to these projections is unusually high, given the uncertainty associated to most of the assumptions it is based on (external environment, commodity prices and impact of the financial shock). We think that most risks are biased to the downside for 2009, even if the upward risk mentioned below (a minor impact of financial troubles) make us widen the growth range in 2008 to a level in line with potential GDP. The list of risks is long:

- Global growth could turn out to be lower than projected if emerging markets are hit by the deceleration in the United States or by the financial turmoil.
- The Euro might start hitting exports sooner or later. This has a high probability, but in principle would not necessarily have a very large impact on GDP if demand from Asia remains robust.
- Commodity prices could stay high for a prolonged period of time, reducing incomes and demand.
- Financial troubles could complicate even more than projected, having a larger than expected impact on growth. This is an event difficult to value given the scarcity of episodes of severe credit squeeze in the Euro Area in the past, although in principle has a low probability.
- On the positive side, financial headwinds could disappear progressively and not be transmitted to the real sector, resulting in growth just under potential. This seems to be the scenario discounted by many participants in financial markets and by some analysts.

[3] Álvarez-Lois, P.: "Prospects for the Euro-Area economy through the lens of a DSGE model", *Europa Watch*, BBVA, February 2007, Madrid.

3. How serious are challenges for monetary policy? Higher inflation, lower growth and internal decoupling

3.1. High temporary inflation poses risks for monetary policy

Inflation has been surprising upwardly over recent months. It is mostly of temporary nature: commodity prices cannot rise indefinitely. Core inflation has also accelerated, but most of it is due to processed food.

The continuous rise of oil prices during most of the 2000s has resulted in inflation being above 2% for most of this period. This has not translated into core inflation, which has remained in general below the 2% benchmark (Chart 3.1). Higher energy prices have been generally perceived as temporary, and even if they have not been reversed and the price level remains stable at higher levels, its rate of change eventually settles down and inflation returns to its normal trend. Agents take these higher levels as an external shock that has to be absorbed as a shock income, and do not translate it to other (core) components of inflation.

The shock to energy prices in recent months has been very large, and inflation has increased to above 3.5% as a result. Core inflation has reached levels of around 2.5%, but this is mostly the result of accelerating processed food prices following the boom in world food inflation (Table 3.1). (Incidentally, the impact of higher world food prices on processed rather than unprocessed food prices suggests that there is a significant degree of market power in food industries). Inflation of industrial goods remains very low.

Given the common (external) origin of the inflation shock, the pick-up of inflation has been present in all EMU countries (Chart 3.2). Among major countries, inflation is higher in Spain than elsewhere, but so it was before the shock.

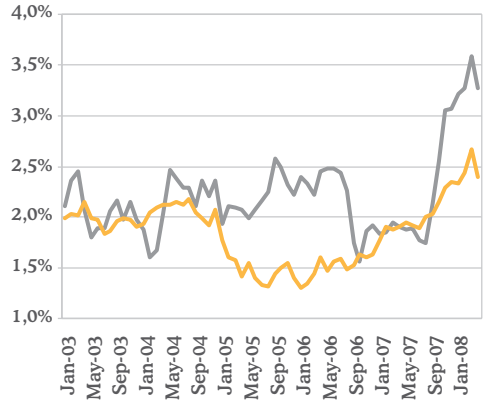
Up in the production chain, industrial prices have also accelerated (Chart 3.3). By components, higher energy prices and intermediate goods' prices (which usually have wide fluctuations and low frequencies) explain most of the rise, although consumer good prices have also accelerated. Import prices, however, have slowed down to almost zero, reflecting the compensating effect of the exchange rate (Chart 3.4).

Inflation is projected to decelerate as from August, and to be below 2% in early 2009. But if oil and commodity prices remain at their present levels the slowdown will be delayed a few months.

Our baseline projection for HICP inflation assumes our main scenario for oil prices, which would slowly decrease to a level under US$ 80 by the end of 2009, while the euro/dollar exchange rate would revert also slowly to long-term equilibrium, reaching US$ 1.40 about the same date.

Under those assumptions, inflation should go back rapidly towards 2% as from the third quarter of 2008, once the base effects from higher energy prices disappear. We also project inflation in two alternative scenarios for inflation: one with Brent oil prices stable at US$ 125 *per* barrel as from May 2008 and another with oil prices stable at US$ 140 *per* barrel. In both cases, the slowdown of inflation is delayed (see Chart 3.9), but in both of them inflation goes back to 2% by the end of the projection period. In all three scenarios world food prices are not

Chart 3.1.
Euro Area: HIPC (% y/y)



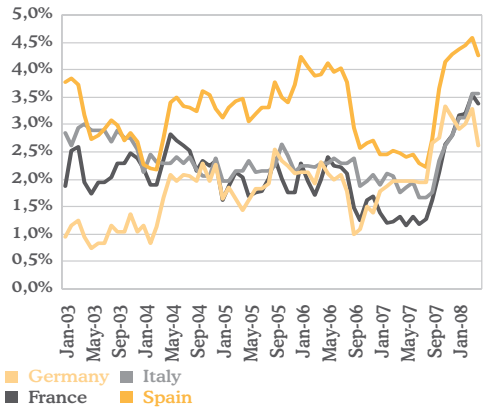
Note: core excludes fresh food and energy; non-seasonally adjusted
Source: Eurostat

Table 3.1. Euro Area HICP

	y/y	
	April 08 %	December 07 %
HICP	3.3	3.1
Energy	10.8	9.2
Fresh Food	3.1	3.1
Core (excluding Fresh Food and Energy)	2.4	2.3
Services	2.3	2.5
Non-Energy Industrial Goods	0.8	1.0
Processed Food	7.0	5.1

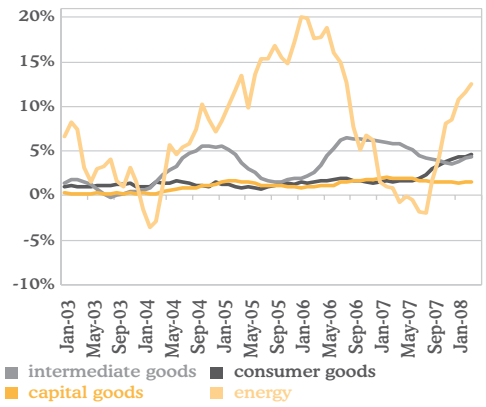
Source: Eurostat

Chart 3.2.
Inflation: HIPC by country



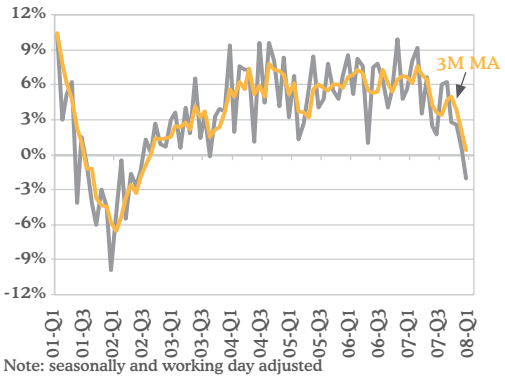
Note: non-seasonally adjusted
Source: Eurostat

Chart 3.3.
Euro Area: industrial prices by components (% y/y)



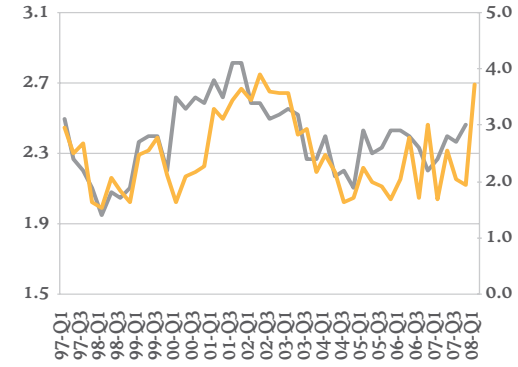
Note: non-seasonally adjusted
Source: Eurostat

Chart 3.4.
Euro Area: import prices (% y/y)



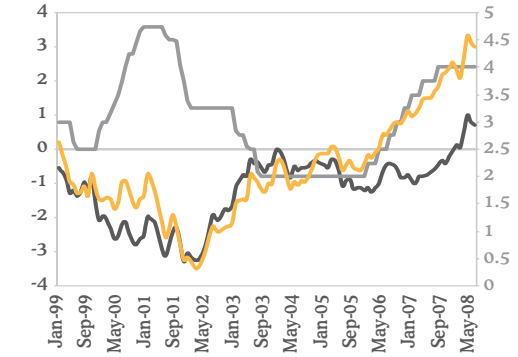
Note: seasonally and working day adjusted
Source: Eurostat

Chart 3.5.
Euro Area Wages (% y/y)



Negotiated Wages
Hourly Labour Costs (Nominal)
Source: Eurostat

Chart 3.6.
Euro Area's Financial and Monetary Condition Index and Monetary Condition Index * vs ECB Main Refi Rate



ECB Main Rate
Monetary Condition Index
Financial and Monetary Condition Index
* With Core CPI.
Source: BBVA and Datastream

assumed to accelerate further, but in all three the processed food component remains above 4% throughout the projection period, while it was below 2% before the recent shock.

The strong Euro has put a break to higher inflation and second round effects have been absent so far, but the longer the period of high inflation the higher the possibility of contagion to wages.

One factor that will provide a moderating impact to inflation is the exchange rate, which has helped to reduce inflation for imported goods (as shown above) and has helped to cushion somewhat the impact of oil prices.

However, the outlook for inflation resented above is surrounded by risks. Although persistently high oil prices can only delay the deceleration of annual inflation, the absence of second-round effects on wages so far (Chart 3.5) is more at risk if these "temporary" shocks last too long. Moreover, so far, imported inflation has been understood as a negative shock that had to be shared by all agents. However, this understanding could disappear in front of a slowing economy.

3.2. In the face of a damaging combination of high inflation and lower growth, the ECB faces a difficult balancing act.

In order to shed more light on this delicate issue, we first analyse the current stance of monetary policy using simple monetary conditions indexes. Then, we use our models to investigate the most likely path of monetary policy.

Chart 3.6 shows an Index of Monetary Conditions (IMC). This measure has deteriorated since the first quarter of 2007, reaching levels never seen before in the Euro Area. The main drivers behind this further tightening are the appreciation of the Euro and the behaviour of in interest rates as a result of the turmoil in financial markets.

A further inspection on this respect can be obtained with the help of an Index of Monetary and Financial Conditions (IMCF). Chart 3.6 also contains the estimated path of this indicator. As before, conditions have tightened, but more acutely in this case.

Chart 3.7 shows the contributions of each component of the IMCF to its quarterly rate of change. The exchange rate has contributed to the tightening of the IMCF, particularly in 2007:Q4 and 2008:1. The stock exchange has also been a factor contributing to the tightening in 2008:Q1, mainly due to fall in stock prices. However, this has almost been compensated by the negative contribution of interest rates, since despite the increase of spreads, the expectations of interest rate increases evaporated. In the most recent period, the contribution of the exchange rate and interest rates changed their sign.

Altogether, we have seen a deterioration of the monetary and financial conditions in the Euro Area. The question that remains is whether the ECB will loose its policy stance of keep with its strong anti-inflationary policy.

In order to provide a further analysis on the likely future path of the ECB's monetary policy, we use an estimated monetary policy rule. As shown in the seminal work of Taylor (1993), estimated rules capture the systematic relationship between interest rates and macroeconomic variables and, as such, they can be viewed as approximations to central

bank decisions.[4] Chart 3.8 shows that the estimated monetary policy equation tracks the short-term nominal interest rate relatively well.

The estimated monetary policy rule is used to shed some light on the most likely path for interest rates in the Euro Area. To perform this exercise, we consider our baseline scenarios for inflation and GDP, as well as two alternative scenarios for inflation. These scenarios depend on the assumptions made for the price of oil. The first one assumes that oil averages US$ 125 and in the second it averages US$ 140in the following couple of years.

Given the conditioning scenarios, shown in Charts 3.9 and 3.10, the implied short-term nominal interest rate according to the estimated Taylor rule is presented in Chart 3.11. In this case, policy needs to be tightened further, almost 50 basis points, in order to achieve the targets of the ECB. The main driver behind this result is the substantial deviation of inflation from its objective of being below but close to 2%. This feature more than compensates the fact that GDP might grow below its potential after 2008:Q4.

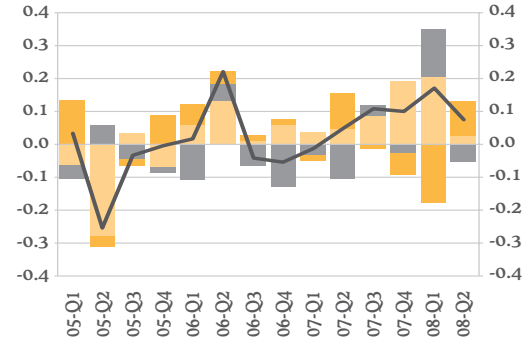
The previous exercise provides a first insight on the likely behaviour of the ECB. However, several questions remain open. Firstly, how forward looking is the ECB? This is relevant due to the uncertainties surrounding the persistence of the deviation of inflation observed so far. Secondly, if the deceleration in activity turns out to be severe, it might be possible that the ECB changes the weights assigned to the inflation and growth objectives. Thus, correct understanding of the variables that are of main concern for monetary policy is certainly relevant, since knowing the alternative monetary policy targets, and their relative importance with respect to each other, will help to asses the stance on monetary policy and, hence, will provide useful information on the likely future path of interest rates.

While estimated policy rules can usefully summarize fluctuations in interest rates, their main drawback is that they are unable to address questions about the policy formulation process. This drawback is evident in the fact that the feedback coefficients in estimated rules do not have a structural interpretation and that they do not identify key policy parameters.

Alternatively, several studies have recently focused attention on the estimation or calibration of preferences of optimising monetary policy authorities, which is analogous to estimating the weights assigned to the target variables in the inter-temporal optimization problem of the central bank. There are several advantages to being able to describe monetary policy behaviour at the level of policy objectives and not just at the level of policy rules. One advantage is that it facilitates formal tests of whether the objective function has changed over time and that it allows key parameters, such as the implicit inflation target, to be estimated.

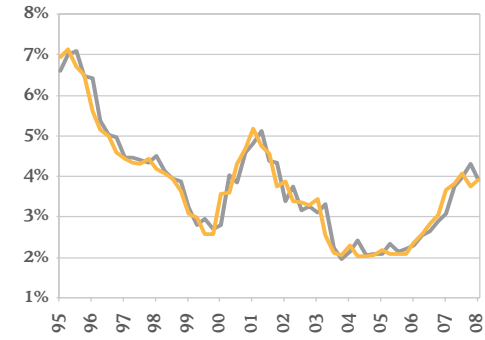
We have carried out such an exercise.[5] Essentially, we have estimated the weights assigned by the ECB to the targets in its objective function. The ECB chooses each period the interest rate in order to minimise the deviation of inflation from its target and of output for its trend. We call this resulting interest rate an optimal policy. Chart 3.12 shows the estimated optimal policy rate for the ECB, as well as the Overnight

Chart 3.7.
Canges in Financial and Monetary Conditions
(Quarterly Contribution by Instrument)



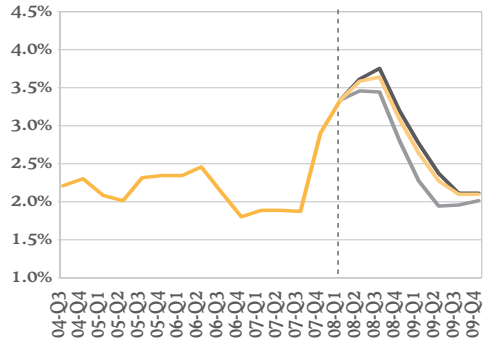
Financial and Monetary Condition Index
Stock Exchange
Interest rates
Effective exchange rate
Source: BBVA

Chart 3.8.
Interest Rates in the Euro Area
(Estimates in Taylor Rule based on Overnight rates)



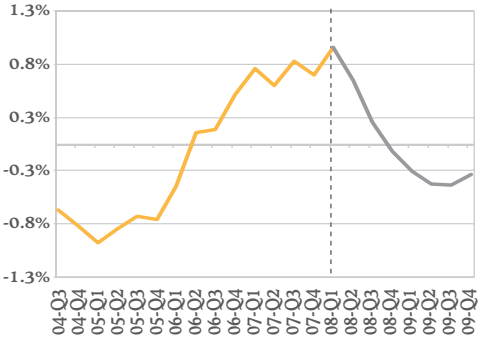
Observed
Estimated
Source: BBVA

Chart 3.9.
HICP Inflation Rates (% Y/Y)



Observed
Oil at 125 US$
Baseline
Oil at 140 US$
Source: BBVA

Chart 3.10.
Output Gap (% Deviation from Trend)



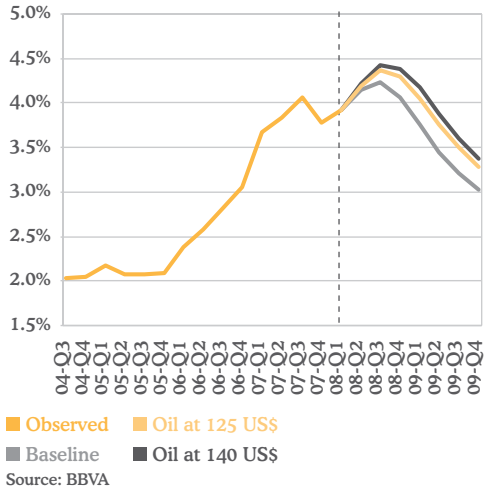
Observed
Baseline
Source: BBVA

[4] The particular specification of the Taylor rule used in the analysis is the following:

$i_t = \rho i_{t-1} + (1-\rho)\left[\alpha + \beta\left(\pi_{t+1} - \pi^*_{t+1}\right) + \gamma\left(y_{t+1} - y^*_{t+1}\right)\right]$, where the inertia parameter ρ is estimated to be 0.8; the parameter β, that represents the sensitivity of interest rates to deviations of inflation from its target value, is estimated to be about 1.65; finally, the parameter, γ,that captures the response of deviations of GDP from its trend value is estimated to be 0.5.

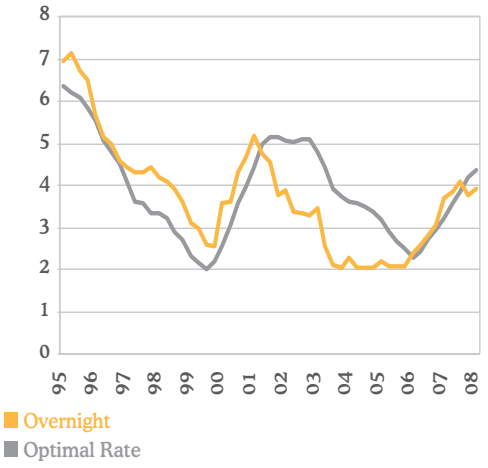
[5] The interested reader is referred to Box 3.1, where more details on the formulation of the model and the results of the econometric estimation can be found.

Chart 3.11.
Nominal Short-term Interest Rates
(Estimates in Taylor Rule based on overnight rates)



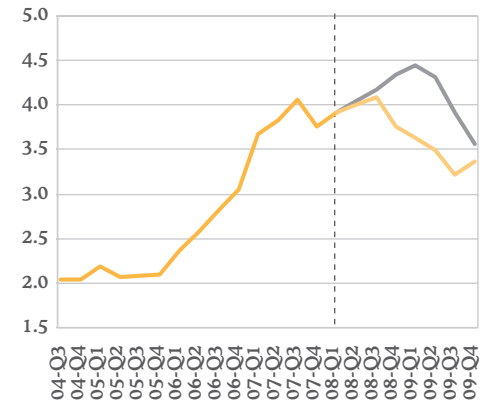
Source: BBVA

Chart 3.12.
Interest Rates in the Euro Area



Source: BBVA

Chart 3.13.
Monetary Policy in the Euro Area
(Estimates Based on Optimal Policy Model)



Source: BBVA

rate. Overall, optimal policy rate was close to the one observed in the data, except during the first years of EMU, where policy was relatively tight and between the years 2001-2005, when policy seems to have been relatively loose.

Chart 3.13 shows the implied optimal interest rate that would be consistent with the estimated preferences of the ECB and with our baseline projections of growth and inflation. As with the case of the Taylor rule, the model prescribes a rise in interest rates of almost 50 basis points in the period to 2009:Q1. This is due to the high weight assigned to the inflation stabilisation objective relative to the output stabilisation objective (a ratio of about 0.20).

Given the uncertainties surrounding the persistence of the inflation and the impact of the financial turmoil on the Euro Area's growth, it would be interesting to know the implied path of interest rates if the ECB were to behave as the U.S. Federal Reserve. In this case, the Fed assigns a relatively high weight to the output stabilisation objective than the ECB (a ratio of about 0.6). Hence, we performed a counterfactual exercise and computed the optimal ECB interest rate assuming the estimated Federal Reserve's preferences. Chart 3.13 shows that in this case, interest rate would fall after 2008:Q3, with a cumulated fall of about 75 basis points.

To sum up, the ECB is likely to face a difficult balancing act. On the one hand, its strong anti-inflationary policy would lead to increases in interest rates, particularly to avoid de-anchoring inflationary expectations and to maintaining the credibility of the ECB on this regard. However, on the other hand, there are potential downside risks on growth. Some of these risks, such as the financial shock, have not materialised yet. However, if the gloomy scenario finally occurs, then the ECB might need to act promptly and decisively.

A final complicating matter is the possibility of a decoupling within the Euro Area countries. So far, we have not considered this possibility in our baseline scenario, but it cannot be ruled out, creating the first serious test for ECM monetary policy in the face of asymmetric growth in a downturn context.

Overall, the most likely outcome is that the ECB keeps rates unchanged until the last quarter of 2008. Hence, we expect a 25 basis points cut in December 2008 and a similar cut in March 2009.

Box 3.1. Estimating the Policy Preferences of the ECB and the U.S. Federal Reserve

This box contains the details behind the characterisation of optimal monetary policy discussed in the main text. The starting point is assumption that the central bank sets its instrument, the short-term nominal interest rate, in order to achieve some objective. In this case, there are three main objectives. The first one is to bring inflation as close as possible to its target by minimising the expected value of deviations of the inflation gap, denoted by $(\pi_t - \pi_t^*)$; the second objective is to rendering output as close as possible to its trend level, that is, to close the output gap, denoted as $(y_t - y_t^*)$; finally, it is considered that central banks dislike large movements in interest rates, hence they try to smooth out interest rate changes, $(i_t - i_{t-1})$.

Every period, the central bank chooses, in a discretionary manner, the short-term nominal interest rate in order to minimise the (social) loss generated when the inflation and output gaps are different from zero. Formally, the loss is defines as

$$Loss_t \equiv (\pi_t - \pi_t^*)^2 + \lambda_y (y_t - y_t^*)^2 + \lambda_i (i_t - i_{t-1})^2.$$

In the equation above, λ_y and λ_i represent the weights that characterise the preferences of the central bank (normalised with respect to inflation gap).

Next, given that the central bank cares not only for today's losses but also for future losses, it minimises the expected discounted value of those future losses, that is,

$$E_t \sum_{j=0}^{\infty} \beta^j Loss_{t+j},$$

where β represents an inter-temporal discount factor and E_t is the expectation conditional on information available at the time policy is set. The central bank solves the minimisation problem each period, that is, policy is discretionary, subject to the expected behaviour of the private agents. In this regard, a standard sticky-price New-Keynesian model is considered. The demand or IS equation results from the optimisation behaviour of households and is given by:

$$y_t = \delta y_{t-1} + (1-\delta) E_t y_{t+1} - \theta (i_t - E_t \pi_{t+1}) + \varepsilon_{y,t}.$$

The supply side is modelled by a Phillips curve, which results from firms' optimal price-setting:

$$\pi_t = \alpha \pi_{t-1} + (1-\alpha) E_t \pi_{t+1} + \kappa y_t + \varepsilon_{\pi,t}.$$

In the equations above, $\varepsilon_{y,t}$ and $\varepsilon_{\pi,t}$ are disturbances that can loosely being regarded as demand and supply shocks. This formulation of the economy is able to endogenously replicate some of the features present in many aggregate time series. Coupled with their simplicity and clear intuition, this model's ability to replicate the dynamics of the economy gives empirical credibility, lending weight to their description of how the economy responds to shocks and to their implications for how monetary policy should be formulated.

The model's structural parameters, together with those representing the policy preferences of the central bank are estimated simultaneously. For the US, quarterly data covers the period 1987:Q1-2008:Q1, which corresponds to the Greenspan and Bernanke chairmanships. Inflation is measured by the quarterly change of the private consumption expenditure price index. The output-gap is computed by applying a standard HP filter to real GDP.

Table 1 shows the parameter estimates corresponding to model for the US economy. These are by and large consistent with previous findings in the literature. In the Philips Curve equation, the persistence parameter α is significantly greater than 0.5, implying that agents place a larger weight on expected inflation than on past inflation. The slope of the Philips Curve, given by the parameter κ, has the right sign, but it is no very significant.[1]

Table 1.
Estimates US Optimal Policy Model

Parameter		Estimate	S.E.
Persistence in IS Eq.	(δ)	0.51	0.11
Elasticity Rate in IS Eq.	(θ)	0.24	0.04
Persist. Phillips Curve	(α)	0.65	0.01
Slope Phillips Curve	(κ)	0.02	0.009
Weight Output Gap	(λ_y)	0.54	0.19
Weight Interest Smoothing	(λ_i)	1.05	0.28
Implicit Inflation Target	(π_t^*)	2.43	0.54

Source: BBVA

Regarding the IS equation, the persistence parameter, δ, is statistically indistinguishable from 0.5, implying that agents place similar weights on expected and past output gap. The estimates of the coefficient on the real interest rate in the IS equation, θ, is around 0.01. This value is relatively small, but similar to the ones found in the literature on the estimation of linearised Euler equations.

Turning to the policy regime parameters, the estimate of the implicit inflation target turned out to be 2.43 percent. This estimate is in the range of the values obtained by Dennis (2006), who estimate π_t^* to vary between 2.30 percent and 2.72 percent, depending on how the output gap is measured.

Regarding the relative weight policymakers place on stabilizing the output gap, λ_y, the results of the estimation exercise yield a value of 0.54, which is relatively higher than those obtained in the literature. In fact, some authors have found this parameter to be statistically insignificant. Next, the interest rate smoothing parameter, λ_i, was found to be 1.05 and statistically significant.[2]

[1] This is a somehow typical result in the estimation of this kind of equations. The results critically depend on the particular measure chosen for the output gap, as well as the estimation method. See, for instance, Galí and Gertler (1999):"Inflation dynamics: a structural econometric analysis", Journal of Monetary Economics.

[2] This value is below the estimates obtained by Dennis (2006): "The policy preferences of the US Federal Reserve" Journal of Applied Econometrics, which are between 1.87 and 2.86.

Moving to the ECB, the sample covers the period 1995:Q1-2008:Q1.[3] Inflation is measured by quarterly change of the HICP. The output-gap is also computed using a standard HP filter. A monetary aggregate (M3) is also considered in the estimation of the preferences of the ECB, in order to assess the role money plays in the conduct of monetary policy by the ECB. Accordingly, a money demand equation is included in the model:

$$m_t = \gamma_1 m_{t-1} + (1-\gamma_1) E_t m_{t+1} + \gamma_2 y_t - \gamma_3 i_t + \varepsilon_{m,t}$$

Notice that money is not introduced as a target in the objective function of the ECB. Rather, money plays a role as an information variable that conveys clues on the prospects for inflation and output growth.

The estimated parameters are shown in Table 2. Overall, the results are within the range of values obtained in the literature.[4] The estimates of the structural parameters reveal that the Euro Area is slightly more rigid than the US. Specifically, the elasticity of the output gap to the real interest rate is lower in the Euro area: 0.12 versus 0.24. Albeit not very significant, the slope of the New Keynesian Phillips curve is relatively low in the Euro area (0.01 versus 0.02). This suggests that the degree of price stickiness is higher than in the United States.[5]

This result might imply that the ECB a less aggressive in its response to price (cost-push) shocks. The reason is that with a high degree of price stickiness, a given change in the nominal interest rate will result in a larger change in the real rate and will therefore have a larger effect on output. Accordingly, the policy preferences differ in the US and the ECB. The weight assigned to the output gap, λ_y, is smaller: 0.19 versus 0.54. Interest rate smoothing seems, however to be of more concern at the ECB (1.86) than at the U.S. Federal Reserve (1.05). This may explain the apparent reluctance of the ECB to move interest rates more frequently.

Table 2.
Estimates ECB Optimal Policy Model

Parameter		Estimate	S.E.
Persistence in IS Eq.	(δ)	0.69	0.04
Elasticity Rate in IS Eq.	(θ)	0.12	0.05
Persist. Phillips Curve	(α)	0.56	0.01
Slope Phillips Curve	(κ)	0.01	0.009
Persistence Money Eq.	(γ_1)	0.75	0.23
Output in Money Eq.	(γ_2)	0.15	0.03
Interest in Money Eq.	(γ_3)	0.03	0.004
Weight Output Gap	(λ_y)	0.19	0.08
Weight Interest Smoothing	(λ_i)	1.86	0.58
Inflation Target	(π^*_t)	2.00	

Source: BBVA

[3] The estimation period includes pre-EMU years, and thus, it may be argued that the estimated optimal reaction function is not representative of the ECB's behaviour as the ECB only started operations in 1999. Similar results were obtained using a shorter sample.
[4] See for instance, Sahuc, J. and F. Smets (2007): "Differences in Interest Rate Policy at the ECB and the Fed: An Investigation with a Medium-Scale DSGE" Journal of Money, Credit and Banking.
[5] This is consistent with the micro level evidence obtained, for instance, from the Eurosystem's Inflation Persistence Network.

4. Summary of Forecasts

Germany: GDP growth and inflation forecasts

YoY rate	2005	2006	2007	2008	2009
Private consumption	0.1	1.1	-0.5	0.3	1.1
Public expenditure	0.5	0.9	2.1	1.2	1.3
Gross Fixed Capital Formation	1.3	7.0	5.1	4.7	-0.2
Inventories (*)	-0.4	-0.2	-0.2	0.5	0.0
Domestic Demand (*)	**0.5**	**2.0**	**0.9**	**1.8**	**0.8**
Export	7.4	12.9	8.0	6.5	4.5
Import	6.9	11.5	5.0	6.6	4.7
Net export (*)	**0.5**	**1.1**	**1.7**	**0.4**	**0.3**
GDP	**1.0**	**3.1**	**2.6**	**2.2**	**1.1**
Inflation	**1.6**	**1.6**	**2.3**	**2.9**	**2.0**

(*) Contribution to growth
Source: BBVA

France: GDP growth and inflation forecasts

YoY rate	2005	2006	2007	2008	2009
Private consumption	2.5	2.5	2.5	1.8	1.1
Public expenditure	1.3	1.4	1.3	1.6	2.0
Gross Fixed Capital Formation	4.5	5.0	4.9	3.1	0.2
Inventories (*)	0.0	-0.3	0.0	0.1	0.0
Domestic Demand (*)	**2.6**	**2.7**	**3.0**	**1.5**	**1.1**
Export	3.6	5.6	3.2	5.6	4.5
Import	6.0	6.5	5.9	4.4	4.9
Net export (*)	**-0.7**	**-0.3**	**-0.9**	**0.2**	**-0.2**
GDP	**1.9**	**2.4**	**2.1**	**1.7**	**0.9**
Inflation	**1.7**	**1.7**	**1.5**	**2.9**	**2.0**

(*) Contribution to growth
Source: BBVA

Italy: GDP growth and inflation forecasts

YoY rate	2005	2006	2007	2008	2009
Private consumption	0.9	1.1	1.5	0.5	1.0
Public expenditure	1.9	0.9	1.3	1.1	1.3
Gross Fixed Capital Formation	1.2	2.7	0.8	0.3	0.1
Inventories (*)	-0.2	0.4	0.0	-0.1	0.0
Domestic Demand (*)	**1.0**	**1.8**	**1.3**	**0.5**	**0.8**
Export	1.8	6.5	4.5	2.0	4.5
Import	2.7	6.1	4.0	2.5	4.5
Net export (*)	**-0.3**	**0.1**	**0.1**	**-0.2**	**0.0**
GDP	**0.7**	**1.9**	**1.4**	**0.3**	**0.8**
Inflation	**2.0**	**2.1**	**1.8**	**3.2**	**2.1**

(*) Contribution to growth
Source: BBVA

Spain: GDP growth and inflation forecasts

YoY rate	2005	2006	2007	2008	2009
Private consumption	4.2	3.8	3.1	1.8	1.4
Public expenditure	5.5	4.8	5.1	5.4	5.2
Gross Fixed Capital Formation	7.0	7.0	6.3	0.1	-2.2
Equipment	9.2	10.4	11.6	2.5	-1.9
Construction	6.1	6.0	4.0	-2.2	-3.8
Other products	6.4	4.6	4.2	3.5	2.0
Inventories (*)	-0.1	0.1	0.0	0.0	0.0
Domestic Demand (*)	**5.4**	**5.3**	**4.8**	**2.1**	**1.2**
Export	2.5	5.2	5.4	2.3	2.0
Import	7.7	8.2	6.6	2.1	0.8
Net export (*)	**-2.0**	**-1.6**	**-1.0**	**-0.1**	**0.3**
GDP	**3.4**	**3.7**	**3.8**	**1.9**	**1.4**
Inflation	**3.4**	**3.5**	**2.8**	**3.8**	**2.7**

(*) Contribution to growth
Source: BBVA

Euro area (YoY)

	2003	2004	2005	2006	2007	2008	2009
GDP at constant prices	**0.8**	**1.8**	**1.7**	**2.9**	**2.6**	**1.7**	**1.1**
Private consumption	1.2	1.5	1.6	1.8	1.5	0.9	1.1
Public consumption	1.7	1.4	1.4	2.0	2.2	1.3	1.7
Gross Fixed Capital Formation	1.3	2.0	3.1	5.3	4.1	2.9	0.7
Inventories (*)	0.2	0.1	0.1	0.1	0.0	0.1	0.0
Domestic Demand (*)	**1.5**	**1.7**	**2.0**	**2.7**	**2.2**	**1.6**	**1.2**
Exports (goods and services)	1.2	6.7	4.9	8.1	6.0	5.2	4.1
Imports (goods and services)	3.3	6.5	5.7	7.8	5.1	5.0	4.4
External Demand (*)	**-0.7**	**0.1**	**-0.3**	**0.2**	**0.4**	**0.1**	**-0.1**
Prices and Costs							
CPI	2.1	2.1	2.2	2.2	2.1	3.3	2.1
CPI Core	2.0	2.1	1.5	1.5	2.0	2.4	2.0
Labour Market							
Employment	0.6	0.8	0.8	1.5	2.0	1.2	1.0
Unemployment rate (% of labour force)	8.6	8.7	8.8	8.2	7.4	7.1	6.9
Public Sector							
Surplus (+) / Deficit (-) (% GDP)	0.4	0.6	-0.3	-1.5	-0.8	-0.8	-1.0
External Sector							
Current Account Balance (% GDP)	0.4	1.0	0.1	-0.2	0.0	-0.2	-0.1

* Contribution to growth

International environment (YoY)

	Real GDP growth (%)				Inflation (%)**			
	2006	2007	2008	2009	2006	2007	2008	2009
US	2.9	2.2	1.0	1.6	2.5	4.1	2.8	2.7
UK	2.9	3.0	1.5	1.8	2.3	2.3	3.1	2.1
Japan	2.4	2.0	1.3	1.7	0.2	0.0	0.7	0.5
Latam***	5.3	5.5	4.4	4.0	5.0	6.1	6.5	6.2

** Inflation forecast: end of period
*** Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela. Inflation forecast: end of period

Financial variables (end of period)

	Official rate (%)				10 year interest rate (%)			
	05/30/08	Sep-08	Dec-08	Jun-09	05/30/08	Sep-08	Dec-08	Jun-09
Euro zone****	4.00	4.00	3.75	3.50	4.15	4.05	4.00	3.95
US	2.00	2.00	2.00	2.25	3.80	3.80	3.85	4.00

	Exchange rate (vs euro)					Brent		
	05/30/08	Jun-08	Dec-08	Jun-09		05/30/08	Dec-08	Dec-09
US	1.56	1.56	1.49	1.44	$/b	125.8	86.2	76.0

**** 10 year interest rate refers to German bonds

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