**BBVA**

# EuropaWatch

November 2005

Economic Research Department

Growth, this time is for real
Inflation, less of a threat
ECB rate hike, not tightening cycle
IA–BBVA UEM, a synthetic indicator of economic activity

# Contents

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# 1. Editorial

Activity in the Euro area seems to be, finally, picking up. The prospects for growth in the coming quarters appear quite favourable, in a context of a dynamic external environment. This newfound strength of the Euro economy is not, however, of a structural nature but simply the result of cyclical forces. In essence, the recovery will only bring activity back to its trend, slowly closing the negative output gap in the next couple of years. Hence, after growing 1.4% in 2005, the economy will expand at a 2% pace in 2006 and 2.4% in 2007. This cyclical expansion will be sustained on the strength of the global environment, on the one hand, and on the newfound dynamism of domestic demand, on the other.

Despite the uncertainty generated by the behaviour of oil prices, the world economy continues to grow apace, drawing a favourable environment for the sustained expansion of activity in EMU. The gains associated with technological innovation and increasing globalization, which is putting downward pressure on costs and widening investment/ financing possibilities, are generating a positive environment for world growth, supported further by the "macro" strength of emerging economies and the "micro" strength of the corporate sector. Additionally, in a context of anchored inflation expectations, the return of monetary policy towards a more neutral stance will be gradual and long-term interest rates will only register moderate increases. The main risk to this scenario is that the moderate slowdown of the U.S. economy expected for 2006 would develop into a full-fledged deceleration, extending into 2007, which would permeate to other economies, slowing down world growth to a significant extent. Although we are already seeing some signs of growth moderation in the U.S. at present, this slowdown should be transitory as the forces outlined above kick-in once again.

In this favourable environment, confidence on the evolution of the activity on the part of EMU economic agents will turn increasingly optimistic, giving rise to the pick-up of domestic demand. Firms, which have endured a deep process of restructuring, are facing quite encouraging financial conditions, with ample liquidity, low interest rates (particularly in the long end) and relatively easy credit conditions. Until recently, investment decisions were postponed because of weak expected demand. The turnaround of domestic demand in the coming quarters should help sustain the recent push in investment and favour a stronger dynamism in the labour market. Employment creation, combined with the positive evolution of the financial wealth and easy financial conditions should finally lead to the pickup of consumption, the last stumbling block in the expansion of economic activity in EMU.

Inflationary pressures, in this context, will remain quite moderate, with inflation falling below 2% in 2007. The output gap will remain negative until 2007 and the pressure derived from oil prices will turn negative, as this will remit from their 2005 highs. In the absence of medium-term inflationary pressures, financial and monetary conditions will continue being particularly lax, with interest rates that will rise moderately in 2006 and 2007.

## Table 2.1. GDP growth forecasts

| | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|
| OECD | 3.3 | 2.6 | 2.6 | 2.7 |
| U.S. | 4.2 | 3.6 | 2.8 | 3.0 |
| EMU | 1.8 | 1.4 | 2.0 | 2.4 |
| Japan | 2.7 | 2.0 | 2.5 | 2.0 |
| Non-OECD countries | 7.2 | 6.3 | 5.9 | 5.4 |
| Latin America | 5.9 | 4.4 | 3.6 | 3.0 |
| MUNDIAL | 5.1 | 4.2 | 4.0 | 3.9 |

Source: BBVA

## Chart 2.1.
### U.S.: Inflation rate and its volatility
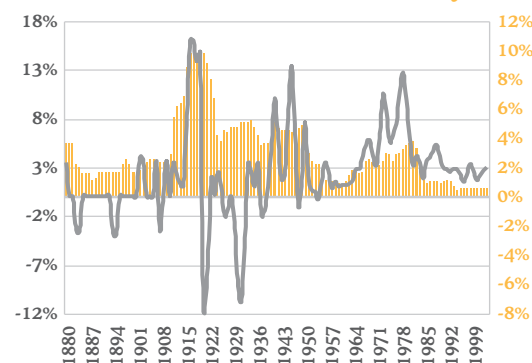


- Volatility (right)
- Inflation

Source: BLS, NBER and BBVA

## Chart 2.2.
### U.S.: Real disposable personal income and productivity
(Real ann. % chge. 4Q moving avge., non agric. sector)



- Income (right)
- Productivity

Source: BEA, BLS and BBVA

# 2. Europe

## Favourable world environment…

Despite the uncertainty generated by the behaviour of oil prices, the world economy continues to grow apace and the outlook for 2006 – 2007 remains favourable. The gains associated with technological innovation and increasing globalization, which is putting downward pressure on costs and widening investment/financing possibilities, are generating a positive environment for world growth. This is further supported by the "macro" strength of emerging countries, and the "micro" strength of the corporate sector. In a context of anchored inflation expectations, monetary policy will move gradually towards more neutral stances and long-term interest rates will only register moderate increases, since they will be additionally limited by the growing financial globalization, the increase in world savings and the reduction of term risk premiums, as a result of less volatile inflation.

On the downside, the phenomenon of globalization and the high liquidity in the system are increasing the imbalances between countries and generating risks of some assets overvaluation. However, the above factors suggest that, in the most likely scenario, the adjustment of these imbalances will be gradual. Consequently, in the next two years, the countries which have made the smallest contribution to world growth in the recent past, such as Japan and EMU, can be expected to contribute a little more, as a result of its cyclical recovery, and thus partially offsetting the moderate slowdown foreseen in the more dynamic economies, such as the U.S. All in all, the U.S. economy will continue to grow faster than EMU and Japan.
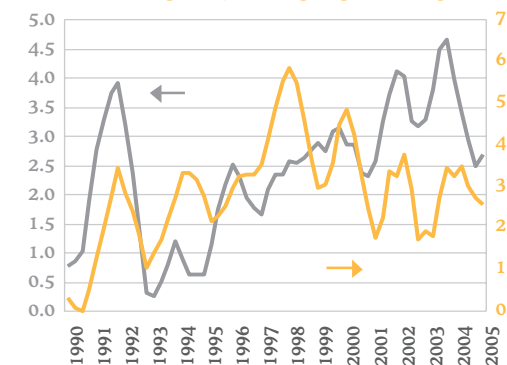
## …..with gradual slowing in the U.S.

The buoyancy the U.S. economy registered in recent years was sustained by supply and demand shocks. These were, on the one hand, structural productivity gains, and on the other, extraordinarily loose monetary and fiscal policies. The economic expansion has been supported by the strength of the business sector and the surge in private consumption, that was additionally backed by the increase in real estate wealth. However, in a context of higher interest rates, weaker fiscal boost, higher oil prices and some signs of cyclical slowing in productivity, we are witnessing a slight moderation in private consumption, in non-residential investment and in import demand. Nevertheless, growth remains very dynamic. At the same time, in a framework of a high degree of resources utilization and accelerating inflation due to the pressure stemming from energy prices, an increase in agents' inflation expectations is becoming noticeable, and thus it

## Table 2.2. EMU: GDP growth and inflation forecasts

| YoY rates | 1 Q.05 | 2Q.05 | 3 Q.05 | 4 Q.05 | 1 Q.06 | 2 Q.06 | 3 Q.06 | 4 Q.06 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Private consumption | 1.3 | 1.3 | 1.3 | 1.2 | 1.5 | 1.8 | 2.0 | 1.9 | 1.1 | 1.4 | 1.3 | 1.8 | 2.4 |
| Public consumption | 0.9 | 1.0 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.5 | 1.1 | 1.2 | 1.6 | 2.0 |
| Gross Fixed Capital Formation | 0.7 | 1.1 | 1.6 | 2.3 | 3.2 | 3.6 | 3.6 | 3.8 | 0.7 | 1.4 | 1.4 | 3.6 | 4.0 |
| Stockbuilding (*) | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 |
| Domestic demand(*) | 1.6 | 1.7 | 1.4 | 1.5 | 1.9 | 2.1 | 2.3 | 2.2 | 1.4 | 1.7 | 1.5 | 2.1 | 2.6 |
| Exports (goods and services) | 3.8 | 3.1 | 5.9 | 5.4 | 5.2 | 6.2 | 5.8 | 5.5 | 0.7 | 6.0 | 4.6 | 5.7 | 5.5 |
| Imports (goods and services) | 4.9 | 4.6 | 6.1 | 5.0 | 5.5 | 6.8 | 6.8 | 6.2 | 2.7 | 6.1 | 5.2 | 6.3 | 6.3 |
| Foreign Balance(*) | -0.3 | -0.5 | 0.1 | 0.3 | 0.0 | -0.1 | -0.3 | -0.2 | -0.7 | 0.1 | -0.1 | -0.1 | -0.2 |
| GDP | 1.3 | 1.1 | 1.5 | 1.8 | 1.8 | 2.0 | 1.9 | 2.0 | 0.7 | 1.8 | 1.4 | 2.0 | 2.4 |
| Inflation | 2.0 | 2.0 | 2.3 | 2.4 | 2.4 | 2.1 | 1.7 | 1.6 | 2.1 | 2.1 | 2.2 | 2.0 | 1.9 |

(*) Contribution to growth
Source: Eurostat and BBVA

will lead the Federal Reserve to continue on its path of gradual rate hikes, putting the *fed funds* at *4.75%* in the first quarter of 2006.

In the medium term, the combination of higher rates, a moderate increase in employment and the moderation of productivity to its medium-term growth rate (estimated at around 2-2.5%) will lead to slower growth in private consumption. Likewise will happen for private investment, as the adjustment in household spending and the less buoyant corporate profits reveal. As a result, after growing 3.6%[1] in 2005, the U.S. economy is expected to decelerate towards 2.8% in 2006 and 3.0% in 2007.

## Long rates show resistance to rise

In such scenario, U.S. long term rates have a limited upward potential. Different factors that helped keep yields down may persist in the short term. The process of financial globalization and the increase in world savings, along with a reduction in investors' home bias, have led to a large increase in world capital flows moving towards industrialized and emerging countries. Demand for bonds has grown considerably, further boosted by emerging countries' Governments intervention in the markets in order to prevent the appreciation of their currencies. All this, combined with overall low and stable inflation expectations, is contributing to keep yields at a low level, not only in the U.S., but worldwide.

Both, the U.S. long rate spread with EMU and their productivity differentials will continue to benefit the dollar. Thus, the dollar exchange rate against the euro, expected to range between 1.17-1.25, will once again offset fundamentals against the U.S.'s financing problems.

Despite the positive growth outlook, the risks for the world scenario are on the downside. One of the main reasons for concern is the sharp increase in energy prices (oil), which have been partially boosted by emerging countries' greater participation in world growth. Indeed, oil prices, which stood at USD 11/barrel in 1999, came up a few months ago to over USD 60 a barrel. In the mid term, Brent is expected to fall to between USD 40 and 50, which is considered to be its equilibrium level. Higher price levels would not only hamper demand, but they also set incentives to enhance oil supply, since they make profitable the use of alternative sources of energy. Nevertheless, this is a process that takes time, so the reduction in prices will foreseeably be gradual, implying that the price of the barrel of Brent should not get below USD 50 until the end of 2006.

So far, the impact of higher oil prices on the world economy has been moderate due to greater energy efficiency, the less important role played by wage-indexing mechanisms and the smooth and gradual increase in prices, that has permitted the adjustment of agents' expectations. Actually, together with the oil surge and, to an extent also as a consequence of it, we are witnessing a process of globalization that is partially offsetting the shock. World trade is more dynamic and there is a relatively larger supply of labour force. This is bringing labour costs down. However, there must be kept an eye on expectations in order to prevent a possible pass-through of oil prices into inflation and to avoid a worsening in confidence that could lead to a sharp slowdown, in particular in those economies where household indebtedness is relatively high.

[1] This figure includes the sharp increase in public spending and residential investment foreseen for the fourth quarter of 2005 related to the reconstruction work after the hurricanes Katrina and Rita.

Chart 2.3.
**World accumulation of reserves and change in net holdings of U.S. Treasuries of Asia and the rest of the world ($Bn)**
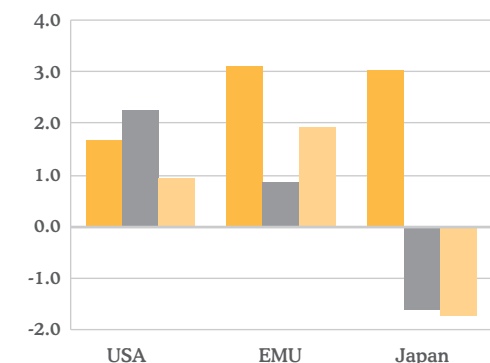


- Asia
- Rest
- Accumulation of reserves
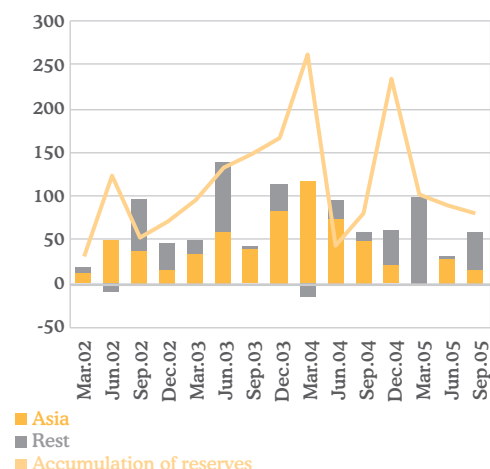
Source: National central banks and U.S. Treasury Department

Chart 2.4.
**Oil prices (Brent)**
**Baseline scenario**
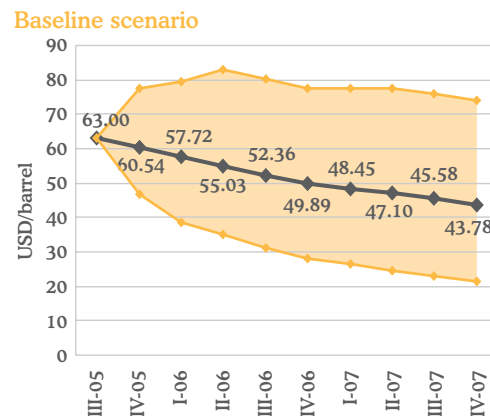


Source: BBVA

Chart 2.5.
**Unit labour costs**



- 1991-1995
- 1996-2000
- 2001-2005

Source: National statistical offices

3

**Chart 2.6.**

## EMU: GDP and ISA-BBVA forecasts
**YoY rates**



- Nov.05
- Jul.05

Source: BBVA

**Chart 2.7.**

## EMU: Output gap
**In % of GDP**



- HP
- Kalman filter

Source: BBVA
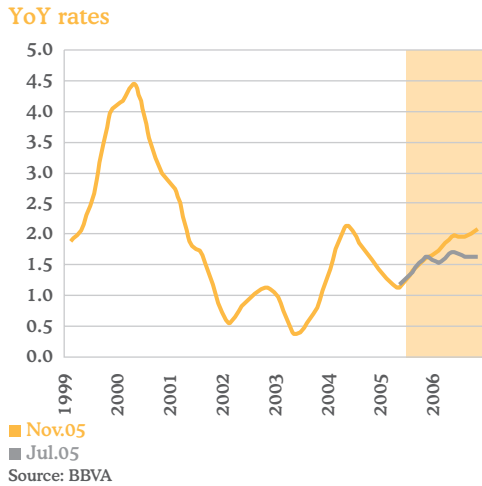
**Chart 2.8.**

## EMU: Investment to real GDP
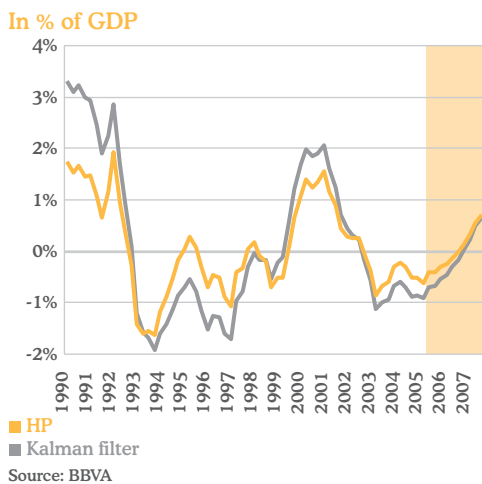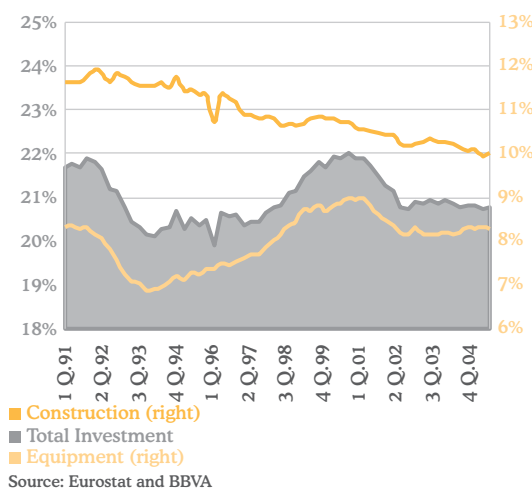


- Construction (right)
- Total Investment
- Equipment (right)

Source: Eurostat and BBVA

## EMU, towards the cyclical recovery

In Europe, after the slump in the second quarter, the cyclical situation has registered a generalized improvement, reflected both in sentiment indicators and in production and spending figures (see the article *"IA-BBVA UEM, a sector & country - wide synthetic indicator of economic activity"*). Business climate indicators corrected their downward trend, supported by an improvement in order books and improved output expectations, leaving behind the strong stock building registered in the second quarter of the year.

Although with some delay, consumer confidence is also beginning to improve, reflecting a rather more optimistic outlook for employment. Industrial production is picking up, aligned with the reactivation of world manufacturing. Additionally, household spending indicators, such as retail sales and car registrations, are pointing to a more positive performance of private consumption in the third quarter. The improvement, however, appears to be greater in the countries where consumption has been the most dynamic in the past few years, such as France, than in those where the trend has been weaker, like Germany. Moreover, exports are being positively affected by the world trade recovery and by the depreciation of the euro. It is also worth mentioning the observed strong capacity of adapting to changes in market demand. The slower exports to the U.S. and emerging Asia are being offset by the increase in imports in oil-exporting countries.

Thus, this seems to be the beginning of an upturn in EMU's cyclical situation, as growth figures released for 3rd quarter (0.6% t/t) already reveal. According to all signs, the recovery will remain in the coming months, supported by the favourable world context, the strength of the business sector and the gradual improvement in financial conditions. All these, are very likely to add further positive impulses in the mid term, consolidating the upturn in an economy where domestic demand has been growing below its long-term equilibrium for quite a long time. Forecasting models are pointing to an EMU growth of 2% in 2006 and 2.4% in 2007. Nevertheless, the output gap will remain negative in 2006, limiting possible inflationary pressures.

Still, the European recovery is only cyclical in nature since the reforms required to cope with problems posed on dynamism and competitiveness (that is, those that hold back its medium-term growth) have not yet been implemented. In that sense, the result of the constitutional referendum in France and the parliamentary elections in Germany clearly reflect the European society's opposition to these necessary structural reforms.

## Investment, on the right path?

Despite companies healthy situation and the more favourable financial conditions, real investment to GDP ratio, (which, is a very cyclical variable) remains well below its historical average since the last slowdown. In terms of capital investment, the picture remains the same, for it is the component that determines the cyclical swings in gross capital formation. Investment in construction has been on a negative trend since the beginning of the nineties, dragged down by the progressive decrease in residential and public investment in Germany. Here, the negative trend recorded in the past 30 years suggests an adjustment of a structural type. In the last two years, EMU construction investment to GDP stopped falling to some extent as the poor German construction figures were partially offset by a boom in some other countries like Spain. Investment in other products kept on rising during the last years, although it only accounts for no

more than 2% of the GDP. Further, investment in Information Technology and Communications (ITC) continued to grow at a faster pace than total investment, increasing its share to total investment and thus also its average depreciation rate.

A more detailed analysis of the factors determining investment allows to pinpoint the reasons for the delay in its recovery and thus to anticipate that conditions are in place for this gap to gradually close in the coming quarters.

Companies make their investment decisions comparing new expected capital investment profits with the opportunity cost of its acquisition and maintenance. Thus, their decisions are influenced by factors ranging from demand expectations to the expected performance of labour and non-labour costs, including funding costs and the return on alternative assets. Moreover, a company's financial situation with respect to solvency, profitability and indebtedness may have a significant effect on its borrowing conditions, especially in times of great uncertainty. This happened, for instance, in 2002 and 2003, when the combination of growing debt, a downturn in stock market valuation, the deterioration in expected profits, and problems in the banking sector in some countries made the borrowing conditions for EMU companies much tougher. However, this situation has improved substantially in recent years. Companies have streamlined their balance sheets and improved their indebtedness ratios substantially. In a context of very low real interest rates all along the yield curve, the spreads of corporate bonds, of both, companies with high credit quality and high-yield bonds, remain at relatively moderate levels. The loose monetary conditions have also been passed on to the lending rates, in an environment where banks are easing their credit standards, not only reducing margins, but also lengthening the maturity of the loans or making collateral requirements less stringent. Bank loans to companies are currently growing at a year-on-year rate of 7%, rates not seen since the end of 2001. Moreover, in countries where lending to companies is growing at a slower rate, such as Germany, this seems to be more due to reasons of demand than restrictions in supply. The cost of capital, as evaluated through a model of discounted dividends, is also falling. Without reaching the minimum levels of the end of the nineties, it is already below the average for the last fifteen years. In short, access to outside financing has improved substantially in recent years, in an environment where external funds are becoming increasingly important in funding investment projects.

But not only did companies' accessibility to outside funding improved. Shareholders' equity and/or profits are rising, thanks to very favourable margins, in a context of moderate labour costs and efficiency gains. The uncertainty seems to rely solely on the behaviour of oil prices. Nonetheless companies have proved reluctant to invest. Their perception of their capacity utilisation is still moderate (around the historical average) and so they have felt no urgent need to take on new investment projects. Their reluctance seems to rely in their expectations for demand, which are still very moderate. In this sense, the different frustrated "recoveries" of the European economy in the past few years have led European entrepreneurs to be especially cautious.

Instead of investing, in 2004 German companies, for instance, chose to use the increase in undistributed profits mainly to write off debt and only a small percentage was used to finance investment in machinery, capital goods, property and inventories. Thus, for the first time since 1991, German production companies did not require net external

**Chart 2.9.**
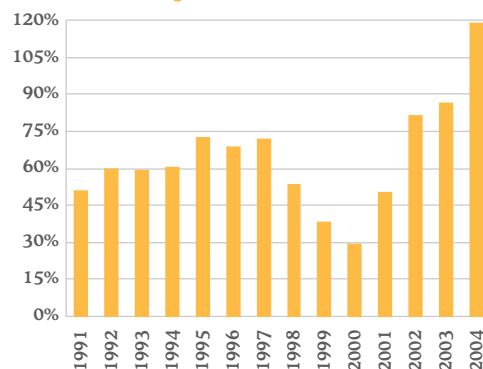**EMU: Corporate spread**
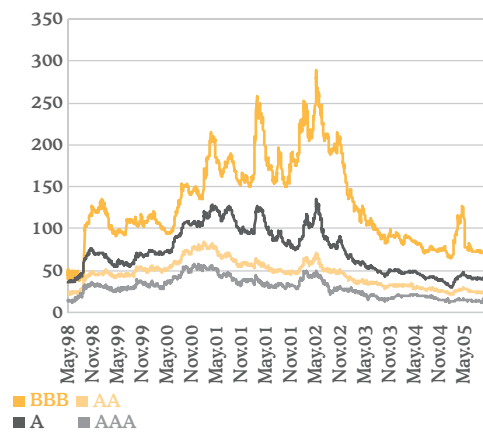


Source: Bloomberg

**Chart 2.10.**
**EMU: Output expectations**
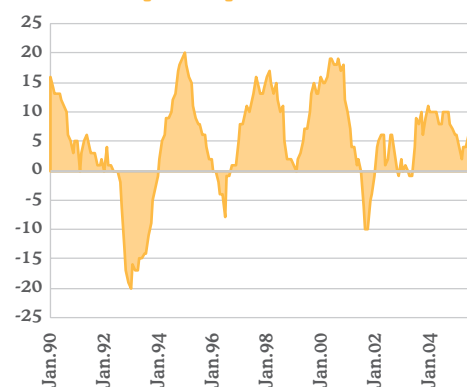


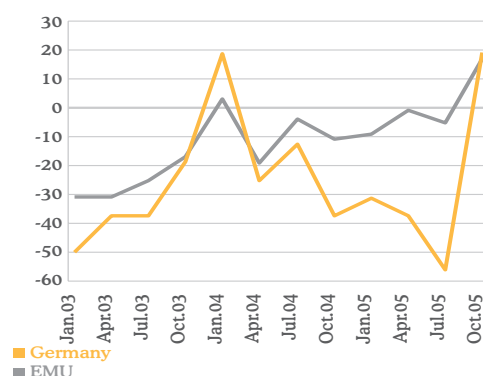Source: European Commission

**Chart 2.11.**
**Germany: Internal financing ratio of non-financial corporations**



Source: Bundesbank

**Chart 2.12.**
**Change in the demand of loans or credit lines to enterprises**
Net percentage according the Bank Lending Survey



Germany
EMU

Source: ECB and Bundesbank
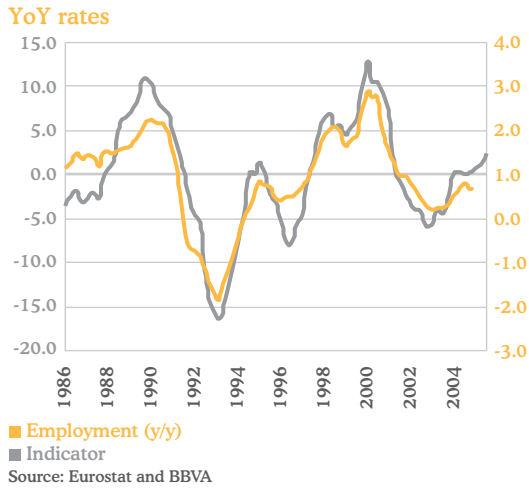
**Chart 2.13.**

**EMU: Employment and indicator**

YoY rates



- ■ Employment (y/y)
- ■ Indicator

Source: Eurostat and BBVA

**Chart 2.14.**

**Germany: Private consumption and disposable household income**

YoY rates



- ■ Disposable income
- ■ Consumption

Source: Bundesbank

**Chart 2.15.**

**EMU: Producer prices**

YoY rates



- ■ Energy
- ■ Consumer goods
- ■ Intermediate goods

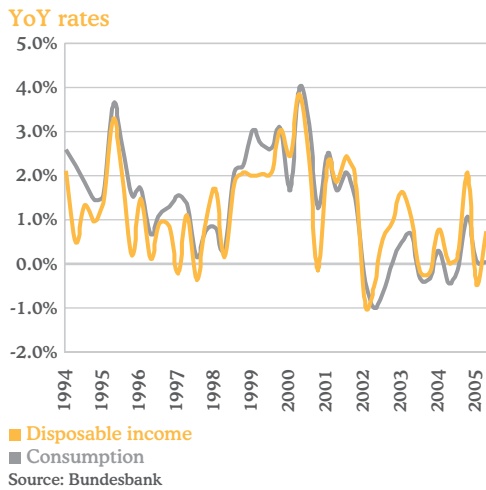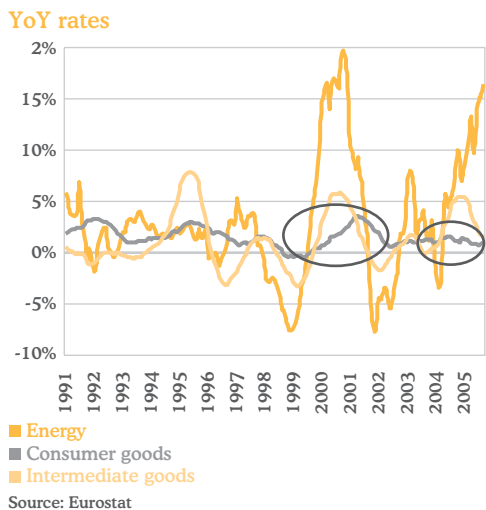Source: Eurostat

funding, but got financed solely by their own resources. In fact, they actually reduced their net acquisition of financial assets by Euros 23,000Mn. Such a major change had not taken place for 15 years.

However, it seems that things are currently changing. Output expectations are improving and in some sectors, such as investment goods, utilized capacity is already above the historical average. Notable, for example, is the buoyancy of capital goods and machinery production, and also of medical and optical instruments. It seems that conditions may already be right for investment to definitively rise to rates of 4% in 2006 and 2007.

### Employment will trigger consumption

Another sign of the revitalized activity is the new dynamism of employment, which is growing moderately, especially in the services sector. The indicators drawn up on the basis of business surveys suggest that this upturn will continue and spill over to other sectors. A boost in employment will contribute to more dynamic performance of disposable income whose moderate growth in the past few years (around 1% in real terms) was responsible of the relative weakness of private consumption.

In this respect, the proposals made in some countries, such as Germany, about boosting consumption through real wage rises appear to be unwise. Wage performance should reflect the increases in productivity and the relationship between labour supply and demand. In this regard, different estimates suggest that the effect on domestic consumption derived from a percentage increase in wages (discounting the tax rate, demand for imported goods and the part going to saving) would be more than outweighted by the negative impact in employment[2]. In addition, the economy would suffer a loss of competitiveness. According to this, it seems more sustainable to maintain a growth model based on competitiveness gains, which would eventually lead to an increase in employment that would later be passed on to consumption.

The evolution of wealth is another factor supporting private consumption in EMU. According to the financial accounts, European households have around 30% of their financial wealth in stock market assets and the EurostoXX 50 has appreciated by 15% so far this year. On the other hand, their largest part of wealth is actually in real assets, mainly in real estate, which is also appreciating notably. Moreover, the outlook for housing prices in the next few years remains favourable, given the gradual recovery of employment and the maintenance of fairly loose financial conditions, an issue that is becoming increasingly relevant when it comes to explaining the evolution of property prices in the Euro zone (see box: *"Housing prices in industrialised economies: performance and key factors")*. In a scenario of increasing employment, the favourable performance of wealth and an improvement in household prospects, consumption may be expected to increase by around 2% in the next two years.

### ECB, beware of the wolf

Given the improvement in activity indicators and the increase in inflation in EMU as a result of the higher energy prices, the ECB has been gradually intensifying its anti-inflation rhetoric. The monetary authority is trying to prevent a possible pass-through from higher prices into wages during the collective wage bargaining sessions to come. But it knows

[2] Different estimates show that every one percentage point increase in real wages produces a reduction in employment of approximately the same order. See "Higher collective wages. Not the right tool to boost domestic demand" Deutsche Bank Research, October 27 2005.

that only threatening with higher interest rates is not sufficient to contain inflation expectations. At the same time, the ECB had stated several times that the monetary stance is «very accommodative» and liquidity very ample according to all plausible measures, suggesting that it would feel more comfortable removing some of the accommodation. Thus, in a context of seemingly clear signs of recovery, the ECB has announced its aim to increase rates. This seems however, to be the beginning of simply a gradual upward trend, rather than the start of an aggressive tightening cycle.

A detailed analysis on inflation risks (see "*Inflation in EMU: upward risks?*") shows that these are not at all imminent and that there is still time to be sure about the economic recovery while interest rates are taken back to their neutral stance.

Recent experience, on several "frustrated" recoveries during recent years, justifies some caution from the monetary authority, who will not want to be responsible for a new set back in the cyclical recovery. A cautious behaviour is justified regarding the performance of different price indicators such as imports, producer and consumer prices, wages, demand and expectations. None of them reflecting any alarming sign of inflationary pressures. Moreover, in a context whereby the output gap will not become positive until 2007 and of growing globalization, inflationary tensions may be expected to be limited. Thus, EMU inflation is expected to reach 2.0% in 2006 and slow to 1.9% thereafter[3], in 2007. Monetary and financial indicators are the biggest cause for concern, but the relation between M3 and prices seems to have changed in the past few years. In any case, its performance will remain closely monitored by monetary authority.

In this scenario, monetary conditions in EMU are expected to remain relatively accommodative in the coming months. Interest rate hikes will be gradual, to reach 2.75% by the end of 2006 and to 3.5% in 2007. Consistent with monetary policy expectations and with the existence of international forces limiting the rise of interest rates at a global level, long term rates (10 year to maturity) will only increase moderately to 4.0% at the end of 2006 and 4.3% in 2007.

## Risks: Oil, sharp adjustment in the U.S., and confidence held back

The above described growth scenario has downside risks. The most relevant one is that, given the narrow gap between market supply and demand, oil price becomes highly sensible to possible shocks, as for instance, if an increase in geopolitical risk materialized.

An increase in oil prices affects economies in several ways. First, it reduces aggregate world demand, since oil-importing countries tend to have a greater propensity to consume than net exporters, and demand from these is supposed to gradually adjust to higher oil revenues. Second, it means higher production costs that may affect companies' expected profits and thus their investment projects. Third, it has impact on inflation, not only directly, through energy prices, but also indirectly. Its magnitude will depend on the extent to which consumers seek to offset the decline in their real incomes through higher wage increases, and producers seek to restore profit margins. Fourth, an increase in oil prices, insofar as it affects growth, inflation and profit expectations, may also have an influence on world financial markets, which are also conditioned by the way in which oil exporting countries place their savings. All this, keeping in mind that the negative

Chart 2.16.
**Negotiated wages**
YoY rates
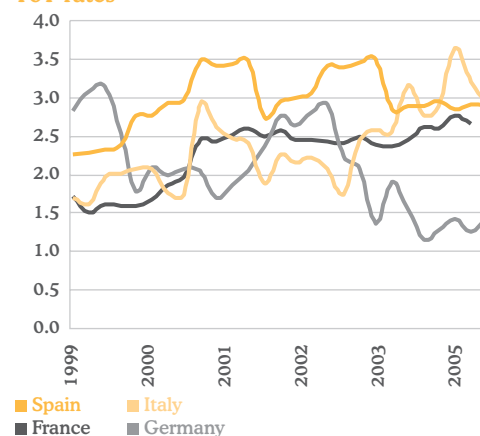


■ Spain   ■ Italy
■ France   ■ Germany
Source: National Statistical Offices and central banks

Chart 2.17.
**EMU: 3 month interest rate according a Taylor rule**



■ Core inflation*
■ General inflation

\* Core inflation corrected of the German VAT increase due on 2007 and the maintenance of caution attitude in ECB are assumed.
Source: BBVA

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[3] In this figure, it has been considered the German VAT increase from 16% to 19%, due on January 2007. Without this effect, the increase of HICP in EMU would be 0,3% less.
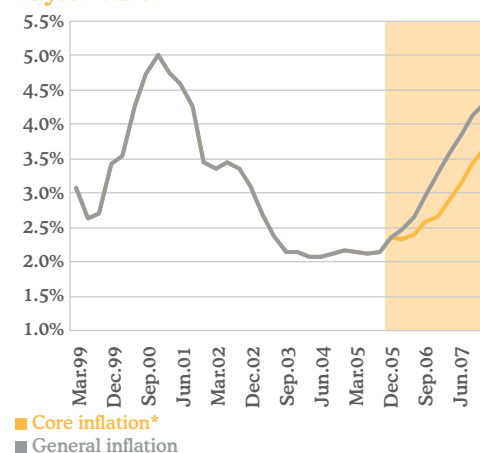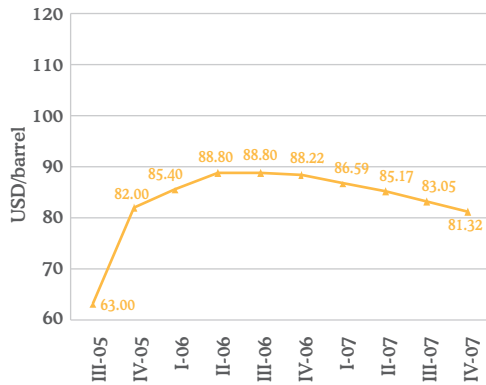
Chart 2.18.

## Oil prices (Brent)
### Risk scenario



Source: BBVA

effect of prices onto activity may be additionally amplified by its impact on agents' confidence, especially in net importer countries (EMU) where an increase in oil prices implies a loss in purchasing power with respect to exporter countries.

The macroeconometric models indicate that a 50% increase in oil prices detracts around 0.5 p.p. from EMU growth and adds the same amount to inflation during the first year. During the next two years[4] these figures lower to 0.1 and 0.2 p.p.. Nevertheless, these models show the average historical impact, and we are aware that there are signs suggesting that this could have changed in the past few years. They do not take into account, for instance, the fact that the negative impact on supply through higher production costs would be weaker than in the past due to higher energy efficiency in EMU. In addition, the wage issue (pass through) also seems to have become weaker, in an environment of low inflation, globalization and market liberalization and the greater credibility of monetary policy. Moreover, these models seem to be also partial since they do not include all transmission channels, such as the financial and confidence channels would be (see box: *"Oil and the Expectations Channel"*). For being linear models, neither do they consider "level" effects, or the possible existence of a "threshold" price that after reached certain types of production and/or investments are no longer profitable. What is more, they do not consider that the impact of an oil price increase on inflation and activity may vary according to the economy's cyclical state.

Bearing all these limitations in mind, it is estimated that: in a scenario where the price of Brent rose to USD80-90/barrel in 2006 (which would certainly lead to slowdown in world growth and in international transactions), the European economy would grow only slightly over 1% in 2006 and 2007. Inflation would reach over 2.5%, but the limited pressures stemming from demand and the risk of the impact on confidence would lead monetary policy to remain fairly accommodative.

However, if the oil price increase, or any other factor, were to trigger a correction in expectations in countries like the U.S., where households are significantly indebted, the impact on the world economy and on EMU activity, in particular, would be more severe. A downturn in confidence in the U.S. could lead to a reduction in demand for assets such as housing, resulting in a reduction in real estate wealth and a correction in consumption. In this risk scenario, the slowdown in the U.S. would not only take place sooner than expected, but it would also be longer-lasting and more pronounced. The Federal Reserve, who had initially raised interest rates to stop inflation expectations, could start lowering rates before the end of 2006, if the exchange rate were tending to depreciate to around the range of 1.25-1.33. In this context of much slower world growth, a more appreciated euro exchange rate and high oil prices, the European economy would grow by less than 1% in 2006 and 2007, although it would not accumulate significant imbalances.

Finally, even if there are no further increases in oil prices or a brisk correction of the imbalances in the U.S., the cyclical recovery of the European economy could be frustrated once again. The region's institutional problems, in a context of scant flexibility, or arising of new uncertainties concerning politics or healthcare could hamper agents' expectations from growing and hold back the sustained recovery of domestic demand.

[4] See "Oil prices and the euro area economy" ECB Monthly Bulletin, November 2004

# Oil and the expectations channel

One of the foremost risks in current EMU cyclical recovery is posed by oil prices. Economic theory and many empirical studies have assessed the direct effects of a surge in oil prices on activity and inflation in EMU. But most of these analyses do not take into account the additional decline which could come via the expectations channel.

One of the key factors in EMU's current cyclical phase is the consolidation of Germany's recovery. Since the IFO is the benchmark business confidence indicator, not only for Germany but also in EMU as a whole, it is interesting to evaluate how oil may affect business confidence as measured by this indicator. The IFO is a qualitative indicator aimed at senior managers and entrepreneurs in most sectors of the German economy, who assess the current situation and their business prospects, as well as overall economic performance in a six-month horizon.

When evaluating future business and economic prospects, the parties consulted are supposed to take into consideration growth prospects, USD/euro exchange rate expectations (in regard of the importance of exports in the German economy), stock market performance, which factors in earnings projections (the DAX), and raw materials prices (oil prices in USD/barrel). An econometric specification of the process ruling the formation of German business expectations would explain the changes in the IFO in line with changes in these determining factors. The expression is as follows:

$$\Delta IFO_t = \omega(L) \Delta P^{oil}_t + \beta(L) \Delta e_t$$

$$+ \alpha(L) \Delta spread_t + \gamma(L) \Delta Stock_t + N_t \qquad (1)$$

where the $spread_t$, the interest rate curve slope (10 years – 3 months), is used as a proxy of growth expectations. $P^{oil}_t$ is the price of oil, $e_t$ the exchange rate and $Stock_t$ the stock market. $\Delta=(1-L)$ is the operator of differences, and $\omega(L)$, $\beta(L)$ $\alpha(L)$ and $\gamma(L)$ are delay polynomials accounting for the IFO responses to the various time factors. On behalf of consistency, the absence of correlations among explicative variables has been tested. Here we paid particular attention to the relation between the variation in the stock market and the spread. Lastly, it is worth taking into account that business confidence also depends on political events and other idiosyncratic phenomena (war, natural disasters, etc.) which are hard to quantify and/or specify in a statistical model, and which we include using the stochastic seasonal perturbation $N_t$.

## Specification and estimation of the model

The model's specification and estimation results are shown in Table 1. It shows that all variables are significant and impact the IFO approximately with a month delay, except for the stock market whose impact appears to be simultaneous. Part of the explanation for these delays may rely on the methodology of the survey itself.

Since part of our explicative variables are related to expectations (spread and stock market), it seems necessary to check for feed-back dynamics between the dependent and the explicative variables. Granger's causality test cannot reject the null hypothesis " there is no causal relation from the dependent variable (IFO) to its regresors (Spread and/

### Table 1. Dependent variable: IFO
Sample period: Jan 1991- Oct 2005

| | | Lag | Coefficient |
|---|---|---|---|
| Oil Price: $(\omega_1 L)$ | | | |
| $\omega_1$ | | -1 | -1.58 (-1.8) |
| Exchange rate: $(\beta_1 L + \beta_4 L^4)$ | | | |
| $\beta_1$ | | -1 | -9.88 (-3.4) |
| $\beta_4$ | | -4 | -14.91 (-4.5) |
| Spread: $\alpha_2 L^2 / (1-\delta_1 L)$ | | | |
| $\alpha_2$ | | -2 | 0.61 (2.4) |
| $\delta_1$ | | | 0.81 (7.6) |
| Stock Market: $\gamma_0 / (1-\delta_2 L)$ | | | |
| $\gamma_0$ | | 0 | 3.42 (3.4) |
| $\delta_2$ | | | 0.68 (4.1) |
| Nt = $1/(1-\phi_3 L^3)$ | | | |
| $\phi_3$ | | -3 | 0.46 (6.5) |

T-value in brackets
Source: BBVA

or Stock variables)" (see table 2) which is to say that no evidence of feed back was found.

### Table 2.

| Null Hypothesis: | Obs | F-Statistic | Probability |
|---|---|---|---|
| $\Delta$ IFO does not Granger Cause $\Delta$ Spread | 177 | 1.140 | 0.312 |
| $\Delta$ Spread does not Granger Cause $\Delta$ IFO | | 2.280 | 0.049 |
| $\Delta$ IFO does not Granger Cause $\Delta$ Stock | 177 | 0.906 | 0.479 |
| $\Delta$ Stock does not Granger Cause $\Delta$ IFO | | 2.112 | 0.066 |

Source: BBVA

Based on this analysis, one may conclude that oil prices have a moderate impact on the IFO, whereas the spread and exchange rate have a greater one. In fact, the spread variable impacts the IFO after a two-month lag and its effect last for some time, allowing an accumulated long-term gain of 3.4 points for 100 basic points of variation therein. The second most relevant variable is the exchange rate, which induces a negative impact of 2.5 points for each 10% of appreciation. Stock market performance ranks third, for it adds (or subtracts) 1 percentage point for every 10% variation. Lastly, the effect of oil prices on the IFO is the most moderate, at an estimated 0.2 points per 10% variation in the price of this raw material[1].

In short, an increase in oil prices has a limited direct and negative effect on business confidence, whereas declining growth prospects and the likelihood of exchange rate appreciation have a greater negative impact. Nevertheless, the indirect impact may be greater insofar as, in an oil shock, growth prospects and stock market expectations also come into play. In this case, since the current context of corporate caution in terms of launching new investment projects, a further hike in oil prices could undermine investment reactivation in EMU, and the consolidation of a recovery in domestic demand in the area.

[1] All these shocks being equivalent in terms of volatility

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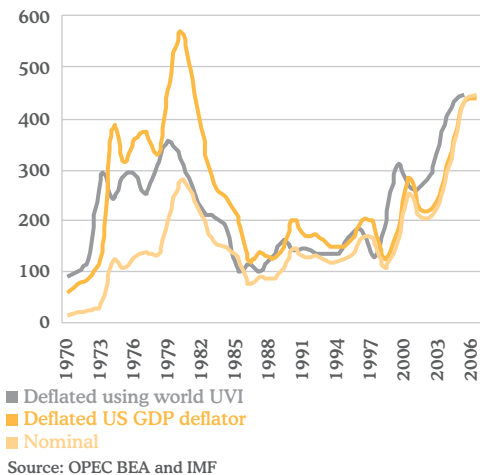edita.pereira@grupobbva.com

# Where do oil export revenues go?

A permanent increase in oil prices implies an income transfer from oil importers to oil exporters. EMU economic performance, therefore, as a net importer, is clearly hampered by oil price hikes. However, the way oil-producing countries spend their revenues is not irrelevant for the rest of the world, since it can affect global macroeconomic and financial conditions and in some cases it may even partially offset the negative effect on growth in non-exporting countries.

The price of Brent crude oil has increased from 11 dollars per barrel in 1999 to around 60 dollars per barrel in the third quarter of 2005. According to EIA estimates, the OPEC members plus Russia and Norway, which together account for more than 70% of worldwide oil exports, will rake in 580 billion dollars in 2005. This represents a more than 20% increase from 2004 revenues, and more than twice the 2002 figure. In real terms (constant 2005 dollars[1]), the OPEC's revenues this year will only be surpassed by the ones obtained in 1979, 1980 and 1981. In terms of purchasing power in international trade, the OPEC countries are at a 35-year high[2] (see chart).

## Saving and investment of oil exporting countries*
### In percentage of GDP



Investment
Saving

*According to the IMF definition
Source: IMF

## OPEC: oil export revenues
### In billion dollars



Deflated using world UVI
Deflated US GDP deflator
Nominal

Source: OPEC BEA and IMF

The use that exporting countries make of their ´additional´ oil revenues varies as much as their economic and political structures and/or preferences. However, common factors have been observed in recent years: strong dynamism of domestic demand, a boost in imports, improvements in the fiscal situation, an increase in the current account balance, a significant increase in foreign financial assets acquisition and a sizeable accumulation of reserves. In other words, as expected, part of the revenues are used for expenditure and part for saving, but the proportion 'aimed at´ spending may probably increase in the next years, as countries tend to expand the demand only gradually after windfall revenues. According to IMF estimates[3], oil exporters tend to spend about one-third of their additional revenues after one year, and 75% after three years. In a context where prudent management of oil surpluses is becoming the trend, this response may vary depending on the country's macroeconomic conditions and the absorption capacity of the economy. The increase in revenues is highly significant in terms of GDP (6% of GDP for the OPEC) and among other factors, the extent to which this may be permanent should be assessed.
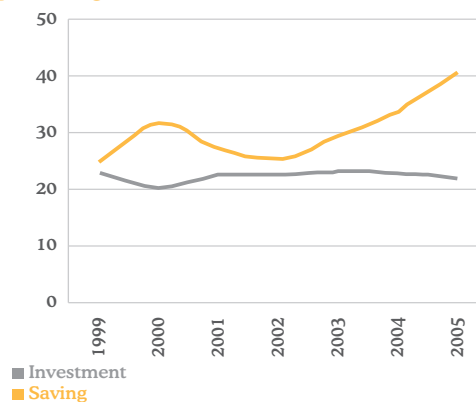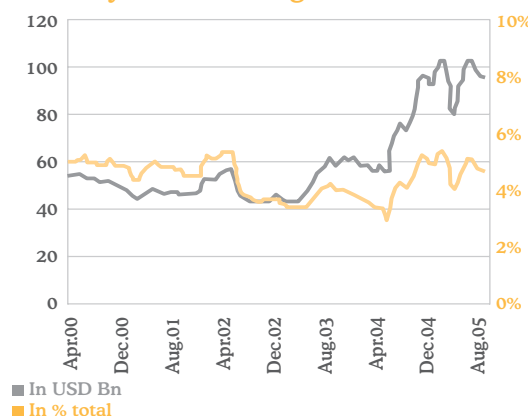
## Huge surge in saving

Up to now, what has been observed is a significantly increase is these countries' net lending position to the rest of the world. This has been the result of a sizeable gain in saving in GDP terms, combined with a relatively stable investment to GDP ratio. This 'extra´ saving has been partly deposited in the international banking system, but to a less extent than in the past. In fact, BIS figures show a sizeable outflow in recent years from oil exporters (especially Russia) towards deposits, although these are lower amounts in proportion to oil revenues than the ones recorded in the 70s and, more recently, during the 2000 peak.

Financial investments of oil exporters are currently more diversified, being the proportion of fixed income and equities higher. For example, TIC data from the U.S. suggest that these countries' holdings of U.S. Treasury bonds increased considerably in 2004, although have slowed since early 2005. There are also signs that exporters may be investing in safe havens such as gold, thus contributing to its price rally in recent months. In addition to greater diversification in terms of the kind of asset acquired, there is also greater diversification than in the 70s in terms of currency (especially for deposits) gaining the euro and the yen some positions against the pre-eminent dollar[4].

[4]This is in line with the trend in emerging countries of increasing the proportion of euro denominated reserves to the detriment of dollars.

## Treasury bond holdings: OPEC and Norway



In USD Bn
In % total

Source: U.S. Treasury Department

[1] Corrected with the U.S. GDP deflator.
[2] Deflated using the unit value index of world trade, based on IMF data.
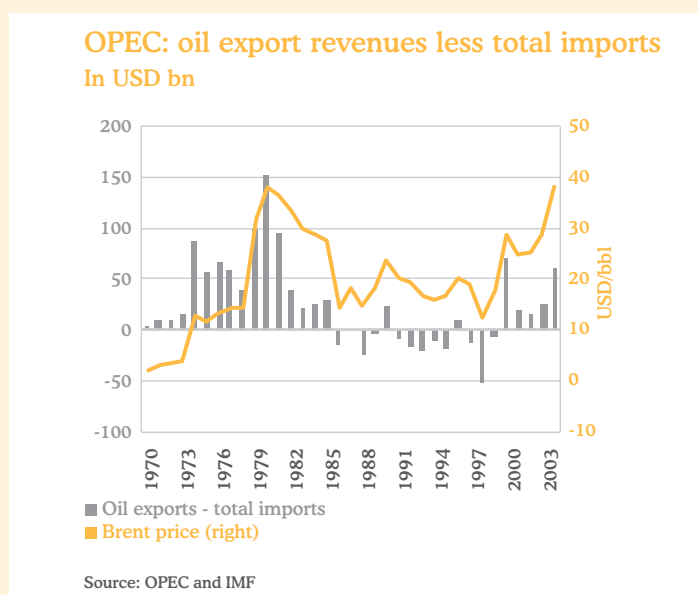[3] See "The impact of Higher Oil Prices on the Global Economy", December 2000, IMF Research Department

In short, exporters seem no longer to simply place their oil surplus in dollar deposits, but are rather opting to diversify. Their increased saving are helping to finance the saving-investment mismatch in economies such as the U.S. and to keep worldwide real interest rates relatively low. However, maintaining and even increasing financial imbalances on the international stage encompasses a medium-term risk of sharp adjustment. Oil revenues may help strengthen the euro as an international currency.

## Steady increase in spending

Oil revenues are also contributing to improve the fiscal situation in exporting countries and in some cases to cancelling debt. Although the improvement is not of the same magnitude everywhere, the use governments are making of funds is more balanced than in the 70s, being public expenditure lower. Governments seem to have learned the lesson: to avoid too sharp cyclical oscillations one must rule out unsustainable increases in public expenditure.

This does not prevent the significant increase in oil revenues from boosting domestic demand in exporting countries, as evidenced by the acceleration registered in credit growth to the private sector or their higher inflation that, although not comparable to the price escalade registered in the 70s, it contrast with the general global trend. Imports growth is also very significant. Indeed, the gap between oil revenues and current dollar imports is considerably narrower than in the 70s and it is even narrower than in the early 2000s (see chart). The increase does not seem to obey solely to a price effect. In 2004, the imports of goods in oil exporting countries increased by about 15%, that is five percentage points more than the increase in world trade of goods, being this difference expected to widen in 2005.

### OPEC: oil export revenues less total imports
In USD bn



Oil exports - total imports
Brent price (right)

Source: OPEC and IMF

## Increased demand for imports, an opportunity for EMU

Oil exporters' imports come, to a large extent, from EMU countries. For example, imports from the euro zone account for around 35% of the total in Russia and Norway, and 25% in the OPEC. Furthermore, this proportion has not declined in recent years, unlike in other countries such as the U.S., whose competitive position has been hurt by the fierce export pressure from nations like China. In fact, EMU's export share to OPEC members has remained more or less constant in the last few years, but the export share to Russia has increased. Russia's rapprochement to the European Union in the last few years has translated into an increase in political, economic and financial ties between the two regions.

### Oil exporting countries' imports by origin

| | OPEC | | | Russia | | | Norway | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1998 | 2001 | 2004 | 1998 | 2001 | 2004 | 1998 | 2001 | 2004 |
| EMU | 25.3 | 23.5 | 25.4 | 30.6 | 34.1 | 34.9 | 38.0 | 36.3 | 36.6 |
| USA | 14.8 | 11.9 | 8.4 | 9.4 | 8.7 | 4.6 | 7.6 | 6.8 | 4.9 |
| Asia* | 19.4 | 22.3 | 25.6 | 8.2 | 10.2 | 13.4 | 6.2 | 7.6 | 9.5 |
| China | 3.5 | 4.5 | 6.9 | 2.7 | 4.3 | 6.8 | 2.3 | 3.1 | 5.0 |

*Asia includes Japan and China
Source: IMF

Germany, being the largest exporter to oil supplying countries, it is therefore among the main beneficiaries of their greater demand for imports. Moreover, oil exporting countries mainly demand machinery and capital goods, which is precisely the core of German exports. Nevertheless in this year, there has also been a significant increase in exports to these countries from other European nations, like Italy and Spain.

In short, increased demand for imports in oil exporting countries could benefit European countries, which seem to be well positioned in this market, especially in Russia. Greater demand for imports from theses countries may also gather pace in the next few years, considering the usual time lag between increased revenues and their translation into spending. However, exports to oil exporting countries account for a relatively low percentage of total EMU exports (just over 5% of the total, a little over 10% of non-EMU exports). Furthermore, their boost impact on world trade may be limited, because they represent a low proportion of the total. In this regard, the WTO has recently expressed its doubts about the ability of the imports of these countries to offset deceleration in U.S. and emerging Asian imports, which it is also attributed to the impact of higher oil prices. Accordingly, in its latest report, it forecasts a deceleration in world trade in 2005 to 6% (from 9% in 2004).

On the financial side, saving in oil countries are favouring low worldwide real interest rates and thus boosting growth. But their contribution to increasing imbalances on the global economy may pose medium-term risks, especially if, as one might expect, oil exporters reduce the proportion of oil revenues they save. Countries that currently depend on oil exporters to finance themselves will have to seek alternative sources.

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# Housing prices in industrialised economies: performance and key factors

The recent performance registered in house prices in industrialised economies seems to be increasingly underpinned by financial factors rather than demographic and/or income related schemes. This issue is setting a change with respect to earlier cycles. Furthermore, the decline in the returns of many financial assets has made housing investment increasingly appealing for economic agents , a fact that has been boosting demand and prices in most industrialised countries.

Given the great amount of resources allocated in housing investments, it is worth pinpointing the key drivers of this market. For this purpose, in this analysis we revise the evolution of residential house prices in the industrialised economies and the main factors underlying its dynamics.[1] .

## Housing prices sometimes decrease...

In the last thirty years, there have been three periods in which property prices in real terms adjusted globally: in the late 70s, in early 90s, and at the beginning of this decade.

### House prices: real annual average decline
1973-2004



- Dispersion
- Average annual change

Source: BBVA
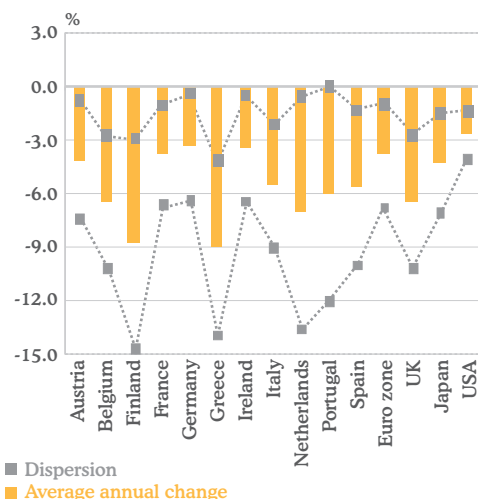
These periods lasted fairly over four years on average, and its average decline was 5.4%, implying a 25% house price correction that was registered in those phases in which dwelling prices grew underscoring inflation rates.

## but they increase more and for longer periods.

However, in nineteen of the last thirty-one years (60% of the period), house prices have outpaced inflation. Further, price increases were on average sharper (7.5%) than decreases (4.5%) and lasted, albeit of some country differences, longer (7 years) than recorded decline periods.

Southern European countries posted the sharpest surges in real estate prices, scoring a real appreciation over 10%. In the meantime others like the U.S. or Germany registered only moderate increases, that amounted on average figures below 3%. The net result is that in the last thirty years not all countries

in the sample have posted increases in house prices above inflation[2] .

## Housing prices, key factors

Despite of certain visible signs that resemble the existence of a common trend among countries in real estate prices, there is not a single set of variables able to explain the aforementioned price performance. This might be due to domestic issues conditioning each country's property market and/or indeed due to the existence of common factors whose impact varies over time

In any case, long-term housing investments are closely linked to demographic factors, although its short/medium term influence on property prices seems to be limited. For the new households to access the home market, and potential demographic demand to become effective demand, there must be a certain income level, adequate financing conditions and reasonable supply prices. Demographic variables are therefore filtered by economic variables.

## Employment and housing prices

In the last 30 years, housing prices and employment in the USA, Japan and EU developed almost in a parallel fashion: employment creation swelled as house prices accelerated and contracted as real estate prices decelerated or even declined.

In the U.S., residential prices and employment figures performed in a similar way until 1995 but then they decoupled as the strong job creation ceased to be followed by proportional house price increments. Moreover, the contrary happened: time later house prices began to rocket, as some job destruction started to appear. This switch in the behaviour suggests that the factors relevant to this market might have changed and that monetary and financial conditions increasingly held central role in residential demand.

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[2] Although figures from the last thirty years show that home prices have tended upwards, there is no clear certainty that they have positive profitability in the long term. In fact, R. Shiller (Irrational Exuberance, 2nd edition), from a historical perspective of more than one hundred years, claims that relative home prices oscillate around a constant.

### U.S.: employment and housing prices. Real change


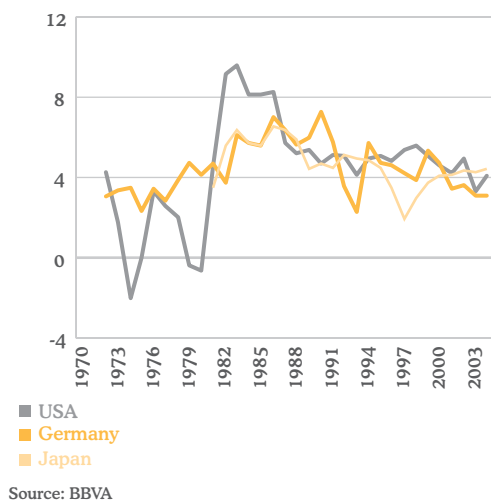
- House prices
- Employment

Source: IMF and OECD

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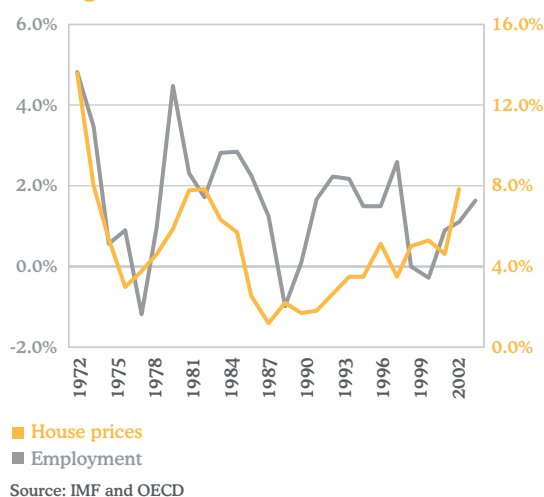
[1] Based on house prices from 1970-2004 in Japan, USA and main EU economies as compiled by the BIS and updated by the BBVA Economic Research Department.

In general, excepting Japan, there have been significant improvements in the mortgage financing conditions that have facilitated access to real estate ownership for a large share of households. Since the mid-90s, families' financial efforts to purchase a regular house, in relation to their income, is relatively low, especially in Europe.

significantly impact on property markets elsewhere. Quite the opposite behaviour was witnessed from the early 2000s onwards, as major appreciations in house prices were experienced in these countries where financial conditions eased the most. Finally, the steep decline in financial asset returns contributed additionally making investment in real estate more appealing for economic agents.

### Mortgage interest rates
Ex-inflation



Source: BBVA

### Spain: 10-year moving correlations with housing prices



Source: BBVA
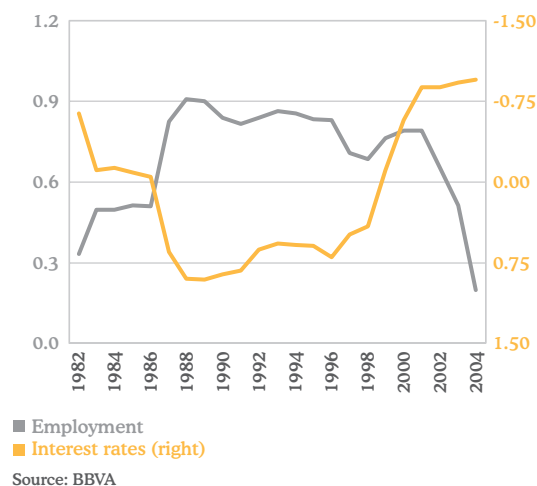
## Partial change of the paradigm during this decade

Although in the last decade employment was the factor most closely related to house prices, during the 2000s financial conditions took over and played the major role across the board.

Excepting Japan and Germany, where there was a zero growth in employment and property markets since the mid-90s, the decline in employment in the early 2000s did not

In this context, a change in current financial conditions would have a greater impact on the various industrialised economies' real estate markets than in the past. In fact, this impact has been already perceived in Sterling economies, where property prices have slowed down, or even declined, following the hike of interest rates.

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### Housing price developments

|  | 1991-1997 | | 1998-2004 | |
| --- | --- | --- | --- | --- |
|  | Price profile | Factor with highest coincidence | Price profile | Factor with highest coincidence |
| Spain | Decline and recovery | Employment | Acceleration and stabilisation at around 14% | Interest rates and lending |
| Portugal | Oscillation of around 0% (-3%, max. decline) | Employment | Deceleration and decline close to 3% | Employment |
| Italy | Declines close to 7% | Employment | Acceleration (7%) and stabilisation (4%) | Employment, interest rates and lending |
| France | Decline (-4%) and recovery | Employment | Acceleration (8% in 2000) and stagnation at 6% | Interest rates and lending |
| UK | Decline and recovery | Employment | Acceleration (15%) | Wages, interest rates and lending |
| Netherlands | Acceleration | Employment | Acceleration (17% in 2000), sharp deceleration and stagnation at 0% | Employment |

Source: BBVA

**Chart 3.1.**

**Oil prices and forecasts**

(USD/barrel)



■ Current ■ Apr-05
■ Jun-05 ■ Oct-04
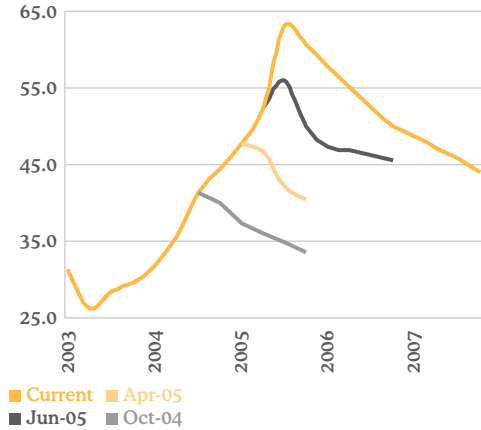
Source: Bloomberg and BBVA

**Chart 3.2.**

**HICP: Energy and unprocessed food**

YoY rates



■ Energy
■ Unprocessed food

Source: Eurostat and BBVA

**Chart 3.3.**

**HICP: core inflation**

YoY rates



■ Services
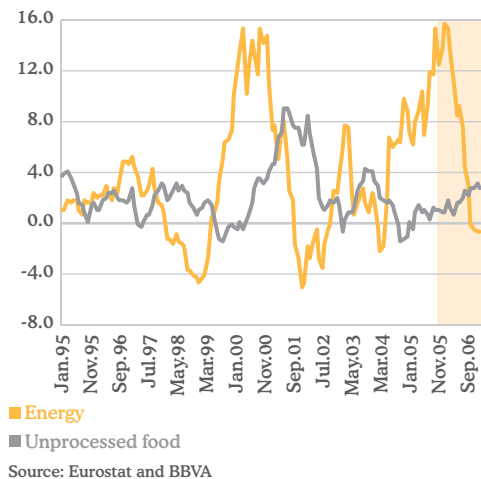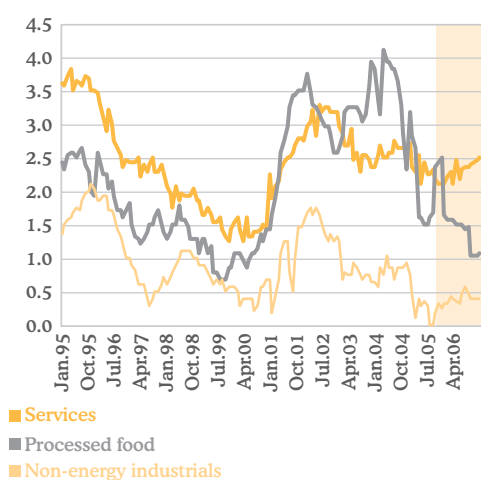■ Processed food
■ Non-energy industrials

Source: Eurostat and BBVA

# 3. Inflation in EMU: upward risks?

Driven by the pressure of energy prices, inflation in EMU has been rising since the beginning of 2005 until 2.6% in September, a figure not seen in almost 4 years.

The increase in inflation has been fuelled by the hike in oil prices, which have doubled since the end of 2004, reaching record highs of around USD 70/barrel in September 2005. The tension in oil prices is the result of a combination of structural factors related to demand (a growing world demand, with Asian countries, notably China, in the forefront) and to supply (lack of investment in upstream activities and refining), together with some transitory geopolitical uncertainty in the main OPEC countries (Saudi Arabia and Iran) and the temporary standstill in major production areas as a result of natural disasters (Gulf of Mexico). All these factors have translated into a situation where oil price scenarios have been systematically surpassed, with inflation expectations for 2005 and 2006 growing throughout the year. In addition, industrial raw materials prices have risen over the year, although they have had less impact on consumer prices. The oil price scenario for the coming quarters assumes a slight slide down to around USD 45/barrel at the end of 2007, after reaching USD 50/barrel at the end of 2006. Moreover, the scenario for industrial raw materials contemplates price stabilization throughout 2006.

## No signs of pass-through in core inflation

The analysis of inflation in EMU, based on the five leading goods and services markets, shows that, so far, the energy component is the only responsible for the deterioration of inflation expectations in the euro zone, with no signs of the increase in prices being passed on to core inflation. Energy prices, which account for 8.1% of the price basket, have been rising since the second half of 2004 and have now reached growth rates of over 15% year-on-year, largely on the back of fuels. Judging by the scenario foreseen for oil prices and the fair stability of the exchange rate, energy prices will slow down in the course of 2006.

The other most volatile component in the goods and services basket, fresh foods (7.7% share), has grown moderately, less than 1% since the end of 2004, although it is expected to speed up a little if the drought in southern Europe persists or if mistrust as regards the "avian flu" crisis becomes more pronounced (the deflationary pressure on this component will not be able to cancel the substitution effect on the price of other types of meat).

From the analysis of core inflation components, it can be observed that processed foods have been under considerable upward pressure in 2004 and 2005, largely as a result of the higher indirect taxation on the price of tobacco. Indeed, the price of this product registered average growth rates of 12% in 2004 and an average increase of 7% and 3,5% is expected for 2005 and 2006 respectively. Excluding this product, processed foods performed very moderately in the past two years, with average growth rates of 1.3% in 2004, and expected to fall to 0.4% in 2005. Overall, expectations for this component as a whole are of a gradual slow as the initial effects of the increases in prices during 2005 are replaced by more moderate rises in 2006.

On the other hand, the prices of non-energy industrial prices, which kept a modest and fairly stable inflation in 2004 (around 0.8%), slowed to levels close to standstill at the beginning of 2005 due to the sharp appreciation of the euro at the end of 2004 and beginning of 2005 and the downward pressure exerted by the imports of Chinese manufactured products. The increase in costs due to higher energy and raw materials

prices may push prices up but competitive pressure in the international markets due to globalization will partially offset this effect. As a consequence, it is expected that non-energy industrial prices will remain almost stagnant during 2006, with an average inflation rate close to 0.5%.

Lastly, the prices of services, that maintained a relatively stable inflation of around 2.6% in the year 2004, have slowed slightly in 2005 to rates of 2.2% at the end of the third quarter. However, the prices of transport-related services are coming under strong pressure from the rise in energy costs, which could be, to some extent, finally passed on to customers

Overall, core inflation remained stable at around 2.0% in 2004 and slowed at the beginning of this year to around 1.5%. Expectations for the different structural components suggest that core inflation could remain stable at around 1.5% in the coming months. Nonetheless, the associated risks are upward biased due to the pressure of higher energy costs, and their possible transmission through the production chain until consumer prices, as occurred in 2001. In that occasion, core inflation rose significantly from 1% to 2.5% by the end of the year. However, the current economic and cyclical situation in the euro zone is clearly different. GDP growth in 1999 and 2000 was 2.7% and 3.8% respectively, which led to the accumulation of demand pressures, that translated into a clearly positive output gap in 2001. In this context, higher oil costs easily turned into higher final prices. The slack activity of the last three years, together with the increase in international competition as a result of globalization, makes it more difficult for costs to be passed on to final prices.

## The impact of oil prices through the price chain

On the basis of the scenarios for oil, industrial raw materials prices and exchange rate, we can anticipate the behaviour of the prices (UVI*) of goods imported from outside EMU, which are a main driver for industrial prices. Thus, the pressure of international prices of raw materials as a whole has led import prices to grow at rates of over 5% since the middle of 2004 and they are expected to continue to increase until the beginning of 2006, when they should start to slow. Similarly, producer prices, have also grown faster as from the beginning of 2004, on the back of the increases in energy products. Moreover, the prices of intermediate goods have been boosted by the oil price increase, which has a big influence on the chemical sector, amongst others. However, in recent months these seem to have become more moderate, as can be observed in Chart 3.6. Producer prices of consumer goods remain stable below 1.0% in 2005 and, unlike 2000 and 2001 (when the increase in energy costs was passed on to their prices), this effect has not been detected so far, possibly due to the increasing exposure of the industrial sector to international competition and the weakness of both activity and demand. To sum up, the pressure on industrial prices stems from the high oil prices recorded in international markets, but the transmission of these costs to the production chain is limited by international competition and the absence of demand side pressures.

## The key: inflation expectations and wages

At this point it is essential to analyze how inflation expectations are performing and whether there are signs of transmission of the recent inflation increases to wages. There are no evidence of wage pressures in the data, although labour costs and wages indicators are released with quite a lag. They remain at historically very moderate levels. Only in countries like Spain, where demand pressures are mounting, some increase is observed, although from very low levels. Unless there are any surprises, it does not seem that unions will be asking for

* Unit Value Index

Chart 3.4.
**EMU: Harmonised CPI**
YoY rates



■ Total
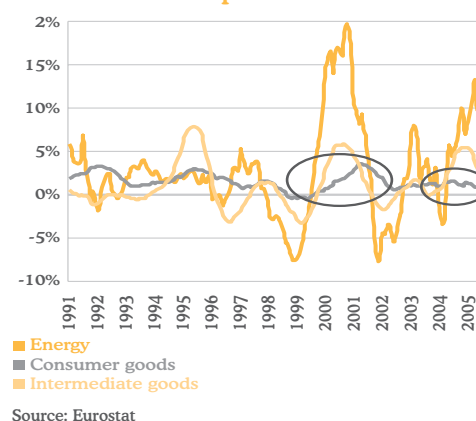■ Core
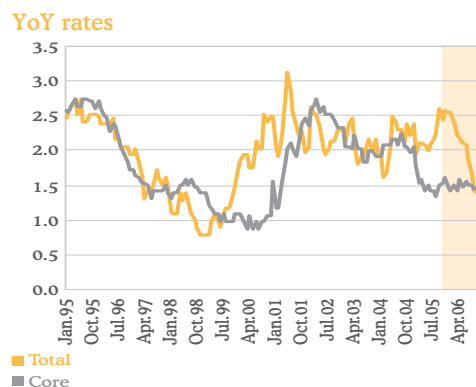
Source: Eurostat and BBVA

Chart 3.5.
**EMU: Producer prices (IPP) and import prices (IMP)**



■ IMP
■ IPP
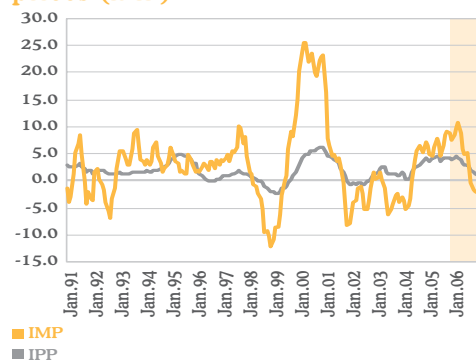
Source: Eurostat and BBVA

Chart 3.6.
**EMU: Producer prices**



■ Energy
■ Consumer goods
■ Intermediate goods

Source: Eurostat

Chart 3.7.
**Negotiated wages**
YoY rates



■ Spain    ■ France
■ Italy     ■ Germany
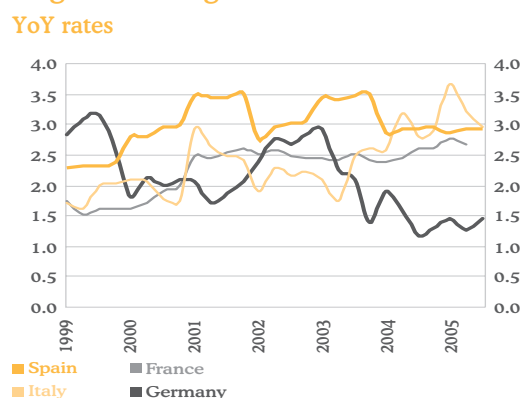
Source: National statistical offices and central banks

**Chart 3.8.**

**EMU break-even inflation and real 10-year interest rates**



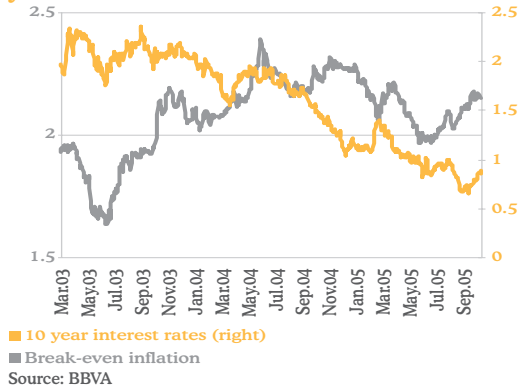- ■ 10 year interest rates (right)
- ■ Break-even inflation

Source: BBVA

**Chart 3.9.**

**EMU: Consumers perceived and expected inflation**



- ■ Percieved
- ■ Expected

Source: European Commission
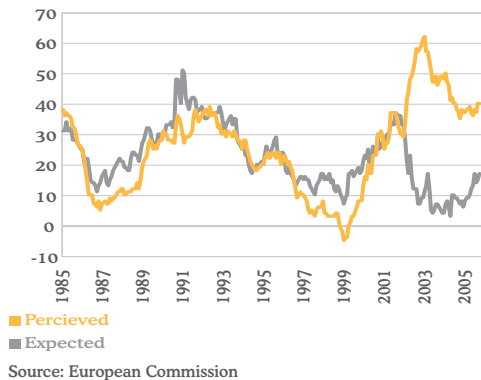
**Table 3.1.**

| | 2005 Q4 | 2006 Q1 | 2006 Q2 | 2006 Q3 | 2006 Q4 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|
| **Models on a monthly basis** | | | | | | | |
| Components | 2.5 | 2.4 | 2.1 | 1.6 | 1.4 | 2.2 | 1.9 |
| Indicators | 2.5 | 2.5 | 2.2 | 1.9 | 1.6 | 2.2 | 2.1 |
| **Models on a quarterly basis** | | | | | | | |
| Phillips curve | 2.6 | 2.6 | 2.6 | 2.4 | 2.2 | 2.2 | 2.5 |
| 4q2005 | 2.5 | 2.5 | 2.4 | 2.3 | 2.1 | 2.2 | 2.3 |
| 4q2005-1Q2006 | 2.5 | 2.4 | 2.1 | 1.7 | 1.4 | 2.2 | 1.9 |
| Phillips curve 90 (*) | 2.3 | 2.4 | 2.2 | 1.8 | 1.7 | 2.2 | 2.0 |
| 4q2005 | 2.5 | 2.7 | 2.5 | 2.1 | 1.9 | 2.2 | 2.3 |
| 4q2005-1Q2006 | 2.5 | 2.4 | 2.1 | 1.7 | 1.5 | 2.2 | 1.9 |
| CP. core money | 2.3 | 3.1 | 2.8 | 3.2 | 3.3 | 2.2 | 3.1 |
| Brent $/b | 60.5 | 57.7 | 55 | 52.4 | 49.9 | 55.4 | 53.8 |

Source: BBVA
(*) Phillips curve estimated for the period 1990-2004

**Chart 3.10.**

**Phillips curve-EMU: inflation simulation**



- ■ with 4q2005
- ■ with 4q2005 and 1q2006

Source: BBVA
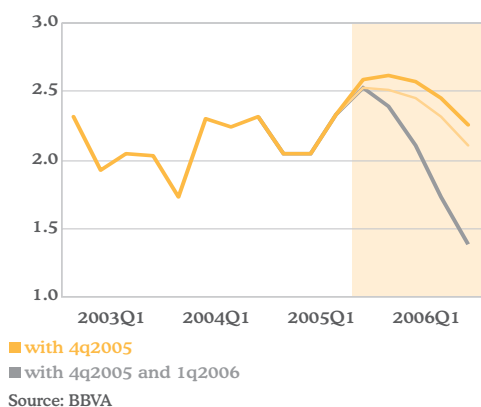
compensation for the loss of purchasing power deriving from higher oil prices. This was what the European Trade Union Conference -which has already shown its willingness to keep wages moderate- has stated. The unions' wage demands seem quite reasonable, particularly if we consider that, according to past experience, effective increases tend to be substantially lower than initial requests. For instance, the German union IG Metall, which is not only a reference in Germany but also throughout the euro zone, is considering rises of 4%, the same it requested two years ago, while the effective increases, at the end, were around 2-2.5%. Moreover, the constant threat of relocation of production made by multinationals, international competition and the absence of pressure from demand serve to soften wage claims.

Neither are any worrying inflationary tensions detected from the indicators of inflation expectations obtained from the financial markets (break-even inflation), from business and consumers surveys, and from analysts panels. The break-even inflation has increased in recent months, but it remains below the level reached at the end of last year. Analysts, entrepreneurs and consumers have raised their price expectations, but starting from very low levels.

## Results of different forecasting models

All of this suggests that consumer prices will perform in line with their indicators. In other words, if second-round effects from wages are ruled out, prices in the euro zone will tend to slow down in 2006. Projections made under our monthly-based model for the aforementioned five components suggest that they will reach an average inflation of 2.2% and 1.9% in 2005 and 2006 respectively.

These models, which are fairly reliable in the short term (up to 6 months) become less accurate as the forecasting horizon is extended. Other models providing more information should be used for more distant horizons. For example, monthly models using scenarios for industrial raw materials, oil and the exchange rate as a basis for projecting import prices and industrial prices, which are in turn used to forecast consumer prices. These types of models, known as indicator models, point to an average inflation for 2005 and 2006 of 2.2% and 2.1% respectively. Therefore, indicator models seem to predict slightly higher inflation than those based on components, although the differential (0.2 p.p.) is not statistically significant for the period considered.

In addition, the Phillips curve models on a quarterly basis, which contemplate both the external pressures on prices and the internal pressure from demand, are pointing to higher inflation in 2006, with an average rate of 2.5%. In this case, we must point out that this estimate should be taken as an upper bound, as there is evidence that the pass-through of external shocks has diminished in recent years in EMU[1]. Considering this reduction in the pass-through, inflation projections will be of 2.0% for 2006. In any case, these simulation exercises for 2006 do not consider the possible deflationary effect of the healthcare reform being developed in the Netherlands (it is estimated that this could take as much as 0.3 p.p. off EMU inflation)[2].

Given the greater forecasting ability of the components models in the short term and that of the quarterly models for a longer horizon, an additional exercise consists of replacing the forecast for the fourth quarter of 2005, and even for the first quarter of 2006, with the result of the forecast from the monthly models. In these cases, the projections for 2006 point to average inflation of 2.3%, in the first case, and of 1.9% in the second, exactly the same results as with the latest Phillips curve.

In short, taking into account the results of the different models and the exercises done, we could say that inflation will move between the higher

[1] See box "The pass-through in EMU" in EuropaWatch July 2005
[2] In this regards, Eurostat will likely take advantage of the recently announced base change on HICP figures to reweight the basket and to dilute this effect.

level marked by the Phillips Curve quarterly model (2.5%) and possibly a lower level established by the monthly components models (1.9%). In any event, all the models point to a falling inflation trend in EMU in the medium term, albeit from different levels.

## Monetary growth: long-term risk

The performance of the monetary and credit aggregates is, perhaps, the most worrying issue regarding inflation. M3 continues to grow substantially above the ECB's reference value and, unlike what happened between 2001 and 2003, the increase cannot be exclusively attributed to uncertainty and the low return on alternative assets. At that time, the growth of lending to the private sector was slowing and the analysis of the M3 counterparts seemed to link the faster growth of the monetary aggregate to the conversion by EMU's non-financial sector of a good part of its foreign securities and shares into more liquid assets. Thus, the ECB interpreted that the increase in M3 reflected a temporary or transitory change in portfolio allocation of the holding sectors, caused by the uncertainty and the consequences of the stock market bubble bursting in 2000, which accentuated the home bias. These portfolio shifts would have been further stimulated by the low yield of "less liquid" assets. If these were the reasons behind the acceleration of monetary growth, the concern about its impact on inflation in the medium term could be less than in other circumstances, since liquidity demand would be much more closely linked to precautionary and speculative reasons than to transaction motives, which are more directly related to spending.

However, since the middle of 2004, faster M3 growth has coincided with the acceleration of lending to the private sector, an item which is much more closely linked to spending. Thus, the ECB's concern about the pass-through to prices has increased. The liquidity gap accumulated, even corrected for portfolio shifts, is high and it is feared that it could be passed on to prices in the long term. In this regard, if there is anything that economists agree about, it is that inflation is, in the long term, a monetary phenomenon. In the top range, a long-term price model of the Phillips Curve type, which includes a measure of "monetary gap" as an independent variable, gives an inflation forecast for 2006 of over 3%[3].

Nonetheless, as has been shown in recent years, monetary analysis is not problem-free, especially in the euro zone, where the stability of the relationship between variables could have been affected by the structural change that implied the creation of EMU. Extracting the most relevant medium-term information from the monetary and credit aggregates for prospective inflation is not easy and occasionally it relies on assumptions such as that of portfolio shifts in Europe, which are difficult to verify. There is still insufficient data to confirm that there has been a change of this type, nor whether it is temporary or permanent, or whether doubts simply arise about the stability of the relationships between variables[4]. Moreover, there may be factors which are countering the impact of the strong monetary growth on prices. In this context, extracting overly-conclusive readings of the performance of the monetary aggregates does not seem to be the most advisable, although it is a factor to be borne in mind.

## Conclusion: moderate inflation with risks.

To sum up, everything seems to suggest that, after this year's expected 2,2%, inflation will remain at around 2% in 2006 (2.0%). Only the monetary analysis points to the existence of some risks that should be closely monitored, although different factors have been altering the relationship between monetary aggregates and prices in recent years.

[3] See "Inflation and core money in EMU", Europawatch July 2005
[4] The assumption of portfolio shifts helps to explain an increase in demand of liquidity which is not explained by the usual determinants factors (income, interest rates). Moreover, it helps to explain the apparent breakdown of the relationship between a measure of "core money" and inflation. See "Inflation and core money in EMU", Europawatch July 2005

**Chart 3.11.**
### EMU: M3 and counterparts
**Annual transactions (€ billions)**



- Loans
- M3
- Net external assets

Source: ECB
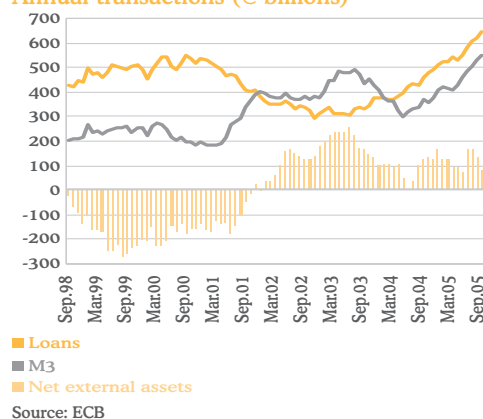
**Chart 3.12.**
### EMU: M3 and loans to other euro area residents (YoY rates)



- Loans
- M3
- M3 reference value

Source: ECB
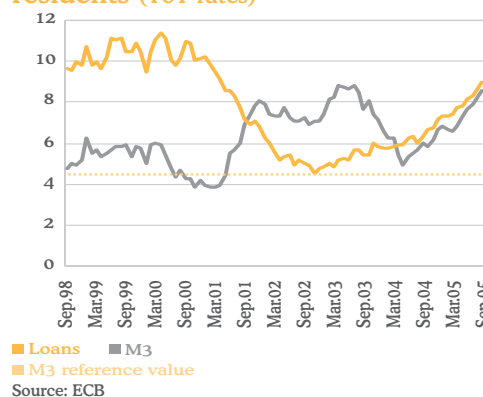
**Chart 3.13.**
### EMU: Real money gap
**In % of the stock of M3**



- Corrected of "Portfolio Shifts"
- Not corrected

Source: ECB and BBVA
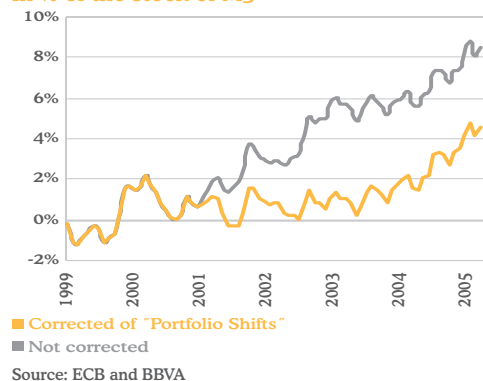
**Chart 3.14.**
### EMU: core money and inflation*



- Inflation
- Core money
- Core money corrected of porfolio shifts
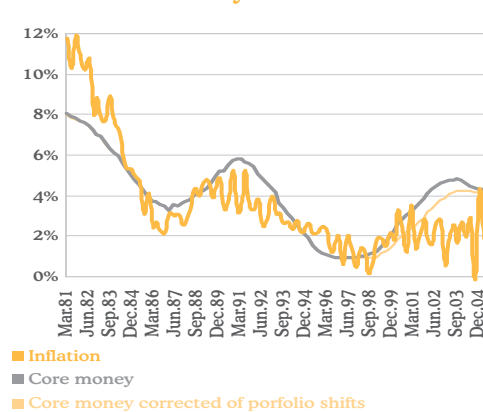
Source: ECB and BBVA
* annualised quarterly rate, sa

# 4. IA-BBVA UEM, a sector & country - wide synthetic indicator of economic activity

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## Motivation

Knowing the current state of the economy and in particular the recognition of business cycle turning points is crucial for private decision-taking and the implementation of timely demand policies. The goal of short-term economic analysis is to diagnose the "state" of the economy. In particular, it is specially relevant the evaluation of the cyclical phase in which the economy is, and so the probability of a phase change. Economic fluctuations, however, albeit being recurrent, differ from one to the next. The intensity and amplitude of business cycles depends on the underlying shocks that cause them and the economic conditions at the time of their impact.

The need to have an indicator capable of detecting in real time the probability of a change in the business cycle has motivated several approaches to the construction of a single measure of activity. The determination of the cyclical state of the economy in real time relies on the analysis of large number of economic indicators. However, the use of individual, and hence partial, indicators may be misleading. One specific indicator can yield a good signal in one period, while not providing significantly relevant information in the next. Because of this, the combination of a broad range of indicators in a single synthetic indicator, exploiting the common trend that individual indicators share, allows us to make a more accurate assessment of the state of the economy.

In practice, the main reference for tracking economic activity is GDP, which also serves as reference in the determination of the economic cycle in the Euro zone. However, several caveats seem to limit its utility: its quarterly release, the time mismatch among different countries publication schedules and the revisions due to calendar and chain price corrections. All these hamper the monitoring of activity and deprive coherence between data and real time decision-making.

Besides, GDP offers only a partial view of economic activity since it does not fully incorporate other relevant information (such as employment data and agents' expectations, for instance). As a result, the evaluation of the cyclical momentum could prove to be somewhat incomplete if only GDP was examined.

These reasons underline the need to have a summary indicator that works on a high frequency basis and in a parsimonious fashion, able to gather enough relevant information from a broad spectrum of indices and that consistently estimates the underlying drivers of European activity. A tool like this should avail us with a precise indication of the current cyclical momentum of the economy and, if possible, a sector and country–wide differentiation of the contributions to activity.

## Construction of the IA-BBVA UEM

In this article we estimate a new synthetic activity indicator for the Euro zone (IA-BBVA UEM) using the methodology of Principal Component Analysis (PCA) as set out by Stock and Watson (1999). This methodology has been used, for example, in the Federal Reserve Bank of Chicago to estimate the state of the U.S. economy (CFNAI), gauge inflationary pressures and recognize business cycle turning points. For the European

**Chart 4.1.**
**Activity recovery n-month after bottom**
(Acording to IA UEM)



- 1993
- 1996
- 2003
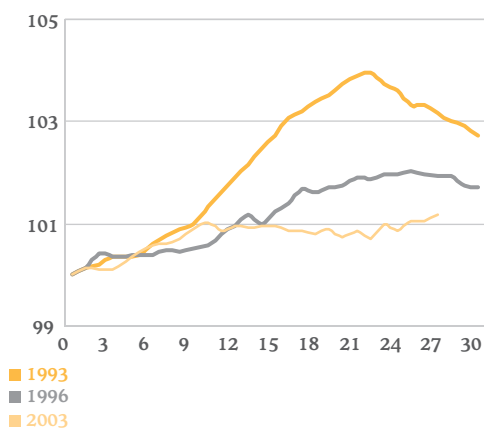
Source: BBVA

economy, the CEPR publishes a monthly indicator of the euro area business cycle, Eurocoin, to pin point the cyclical position of the economy using activity as measure[1]. However, its estimation procedure (Factor Model Estimation) identifies the state of the economy through unobserved underlying variables, and not by the estimation of a linear combination of a set of input variables (as the PCA does) and thus it could pose problems identifying the link between activity indicators and our measure of economic momentum.

The elaboration of the IA-BBVA UEM involves the aggregation of different Euro area indicators (currently the IA-BBVA UEM includes 158 different series). The co-movement of the economic series implies that there exists a common factor ("state of the economy") which accounts for a significant percentage of the total variability of the series selected. In sum, the IA-BBVA UEM provides a single, summary measure of the common trend underlying in EMU data, accounting for the largest share of independent information.

The estimation procedure attributes specific weight to each variable according to the information that it summarizes. The weight with which each series contributes to the final indicator is estimated using principal components analysis. This method allows us to transform a set of n correlated economic variables into $n$ linearly independent series which reproduce the variability of all of the original series. This transformation makes it possible to reduce the dimension of the analysis by eliminating the eigenvectors (principal components) with the lower explanatory power. In the extreme case, in which only the first principal component is chosen, the dimension of the analysis is reduced to 1, transforming the set of n-original variables into a single series with the capacity of explaining a high percentage of the overall variability.

Before aggregating the variables to construct the IA-BBVA UEM, the individual series are transformed to render them stationary. In practice, this means that trend variables are taken in log first differences, whereas variables without trend are not transformed. In addition, all the stationary series are standardised with a zero mean and unitary standard deviation.

Using these standardised data, we proceed to calculate the IA-BBVA UEM, extracting, first of all, the principal components of the set of indicators used. This allows us to construct the IA-BBVA UEM according to the weights of each indicator in the aggregate. Under this framework, the IA-BBVA UEM has the form of a linear combination $Z_{it} = \gamma_1 \cdot X_{1t} + \cdots + \gamma_i \cdot X_{it}$ where $X_{it}$ are the original indicators and $\gamma_i$ are the weights assigned to each series.

Constructed in this way, the monthly indicator is then standardised to have a zero mean and unitary standard deviation. As a large number of the individual indicators are deviations of growth rates from their average, the aggregate activity indicator may be interpreted as deviations of activity from trend. A value of zero would therefore represent that the indicator is growing at its trend rate.

Intuitively, the IA-BBVA UEM is the single measure that best captures the comovement of all underlying individual indicators within a month. When all data series evolve in unison in a month, the comovement will be high and the individual weight assigned to each indicator is relatively unimportant. But when the comovement degree is low, data point towards different directions, and thus the weights critically determine the value of the index.

[1] See *Alissimo, Bassanetti et all.(2001)*

Chart 4.2.
**Share of the variance explained by each factor (in %)**
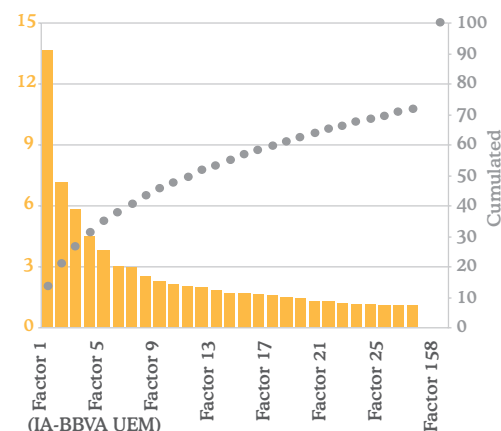


Source: BBVA

Chart 4.3.
**IA-BBVA UEM**



Source: BBVA

Chart 4.4.
**EMU GDP vs. IA UEM**
Lagged correlation



Source: BBVA

## Table 4.1. EMU, activity 1Q 2004 - 3Q 2005*

| Date | IA - BBVA UEM | GDP EMU yoy |
|------|---------------|-------------|
| 2004 | 0.10 | 1.7 |
| 2005 1Q | 0.15 | 1.3 |
| 2005 2Q | -0.05 | 1.1 |
| 2005 3Q (p) | 0.28 | 1.5 |
| 2005 July | 0.39 | |
| 2005 August | 0.13 | |
| 2005 Sep (p) | 0.33 | |

(p) preliminary
* On a quarterly basis
Source: Eurostat and BBVA

## Table 4.2. Country Contribution to IA BBVA UEM

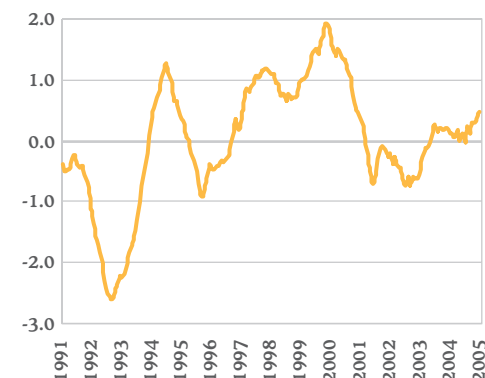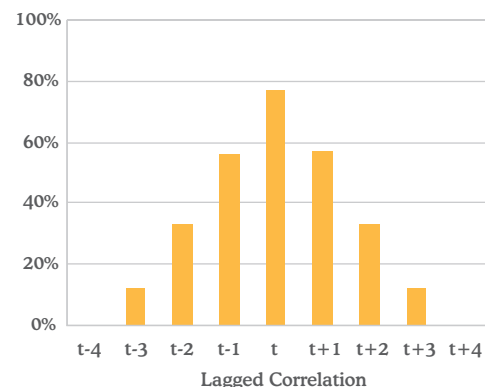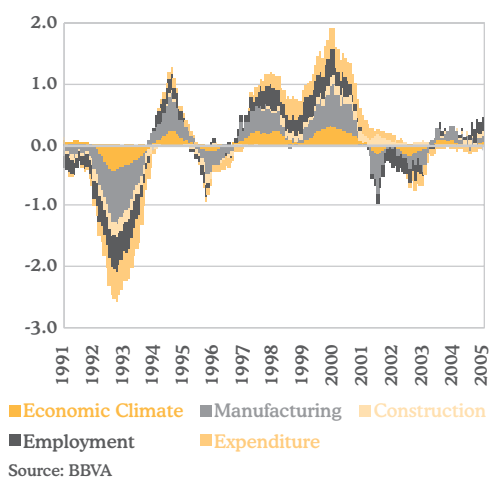| DATE | IA-BBVA UEM | Germany | France | Italy |
|------|-------------|---------|--------|-------|
| 1991- 1994 | -1.01 | -12% | -18% | -10% |
| 1995 - 1999 | 0.42 | 20% | 13% | 7% |
| 2000- 2005 | 0.34 | 1% | 20% | 17% |
| 1st Half 2005 | 0.08 | -46% | 86% | -44% |
| 3 Q. 2005 | 0.23 | 29% | 63% | -21% |
| October | 0.39 | 19% | 43% | -14% |

| DATE | IA-BBVA UEM | Spain | Other EMU | Total |
|------|-------------|-------|-----------|-------|
| 1991- 1994 | -1.01 | -32% | -28% | 100% |
| 1995 - 1999 | 0.42 | 29% | 30% | 100% |
| 2000- 2004 | 0.34 | 33% | 28% | 100% |
| 1st Half 2005 | 0.08 | 122% | -17% | 100% |
| 3 Q. 2005 | 0.23 | 29% | 1% | 100% |
| October | 0.39 | 19% | 1% | 100% |

(*) last update 18/11/2005
Source: BBVA

Chart 4.5.
## Sector Contribution to IA BBVA UEM



Economic Climate   Manufacturing   Construction
Employment   Expenditure
Source: BBVA

The strategy followed here, as in the Eurocoin or in Marcellino and Watson (2002), is to include both country-specific and EMU aggregate information. In practice, we use data from the largest economies in the Euro area (Germany, France, Italy and Spain) and a set of relevant indicators from other countries in the Area in addition to EMU aggregated data. The information contained in the individual country series allows us to estimate a more parsimonious aggregate synthetic indicator. It also allows for the estimation of each country's contribution to EMU aggregate.

The economic series chosen can also be disaggregated according to their sector contribution to the state of the economy, and thus allowing us to construct sector-specific indices for the Euro zone:

1. Production: these data include manufacturing statistics.

2. Construction: data related to finished houses and construction activity indexes.

3. Labour market: these data include employment growth rates, unemployment rates and vacancies.

4. Personal consumption: these data include the growth rates of several categories of personal consumption expenditures (consumption, car registrations, retail sales, etc.).

5. Foreign sector: includes data on trade.

6. Agents valuation of the "state" of the economy: as reflected in consumer and business surveys.

## IA-BBVA UEM: activity finally picks up

As expected, the estimated IA-BBVA UEM presents a high correlation with EMU's GDP growth (near 80%). The index clearly captures the economic recessions of 1993, 1996-97 and 2000s.

Since the input varibles (and the indicator itself) have been standarised, fluctuations of the indicator around zero correspond to activity dynamics over (under) its long term trend. According to this, it is easy to identify turning points in the european business cycle from 1991 to 2005. Clearly the recession of 1993 corresponds to the first registered sharp fall of the IA-BBVA UEM. Further, the other two phases of activity slowdown (1995-1996 and 2001–2003) which were significantly milder than the 1993 recession (see Chart1), are also captured as negative deviations from zero, the long term trend. More recently, the index clearly picks-up the signs of recovery since mid-2003. This expansion only acomplished a narrowing of the negative gap, failing to consolidate into a full blown expansion. From the second quarter of 2004, the Euro economy is showing very weak dynamics, reflected in the IA-BBVA UEM oscillating around zero. The latest data, although subject to possible future revisions, anticipate that the economic expansion is finally consolidating in the third quarter of 2005. On a quarterly basis, the indicator presents the highest levels since 2001, a figure consistent with GDP growth above previously registered figures.

The IA-BBVA UEM can be decomposed in different subcomponents. In particular, the indicators that conform the IA-BBVA UEM can be aggregated according to the country or sector they belong to. These alternative indicators are constructed by summing up only the weighted series in each respective category. Hence, the IA-BBVA UEM can be reconstructed as the sum of the country (sector) indices. If each sub-index is then re-scaled to have a standard deviation of one, its evolution can be compared with the aggregated index to clearly identify whether it adds or deducts from aggregate activity.

## Sector decomposition of the index

The decomposition of the IA-BBVA UEM in its sector components allows us to examine the sector contributions to aggregate activity level, offering a cross sector interpretation.

According to the estimated factor loads, almost all relevant information entering the indicator is related to production, expenditure, employment and economic sentiment, whereas the foreign sector appears to have only a marginal effect. The cross sector composition of the indicator has been changing over time (see Chart 5). Notice that in the last decade, the expenditure component increased its contribution to activity twofold, while the contribution of the labour component was reduced to a third. The contribution of manufacturing output has remained relatively stable through time, whereas the contribution of the construction component surged abruptly at the beginning of the 2000's as some countries (like Spain) experienced a boom in activity that remains today.

The economic recoveries registered prior to the year 2000 developed in the same –confidence/ output / employment / expenditure / confidence/ (…)– sequence. In these, the recovery of the labour market triggered a surge in expenditure, and both components jointly ensured the acceleration of the recovery dynamics towards a fully blown expansion. The last upswing, however, did not happen in such way (see Chart7), since the recovery in production was followed by a lackluster contribution of labour and by a drain in expenditure, preventing activity to gain momentum, and thus leading to the weak growth registered since mid 2003.

Nevertheless, activity seems to be currently rebounding, pulled (finally) by higher employment and production figures that compensate the poor expenditure dynamics.

## IA-BBVA UEM: a country-wide perspective

In the same manner as in the sector disaggregation, the decomposition of the IA-BBVA UEM into its country components allows us to evaluate the contribution of each of the larger euro economies to the registered sluggishness in activity.

Each country's contribution to the overall activity level is represented on (chart num.8). Clearly, the country composition of activity has changed during the last decade. The contribution of Germany, which added significantly to the "state" of the Euro zone economy in the nineties, turned nil in the early 2000s. Other large areas maintained their share to activity during the same period. In fact, the lagging activity in the area of the last few years, as can be seen in the graph (chart num.9) was mainly due to the negative contribution of the German economy. Since the beginning of 2005, in which overall activity remains in practically neutral mode, the dynamism of the Spanish economy comes to the front, while the rest of EMU is slowly beginning to contribute. As such, data for the third quarter of the year, although provisional, shows the rebound of activity during the third quarter of the year. The drivers of this newfound expansion are Germany, Spain and France, while other countries still have only a marginal effect.

The dynamics of each country's individual activity indicators are consistent with the evolution of their respective GDPs. As a matter of fact, the correlation between each country activity index and their GDP growth rates scores 71%, 85%, 56% and 82% for Germany, France, Italy and Spain respectively. The behaviour of all countries is quite similar through time, although the intensity of activity slowdowns and upswings differed among them. For example, all countries suffered downturns at the beginning of the 90's, but they were significantly more acute in Spain

Chart 4.6.
### IA BBVA - UEM and expenditure component



■ IA UEM
■ Expenditure Contribution to IA UEM
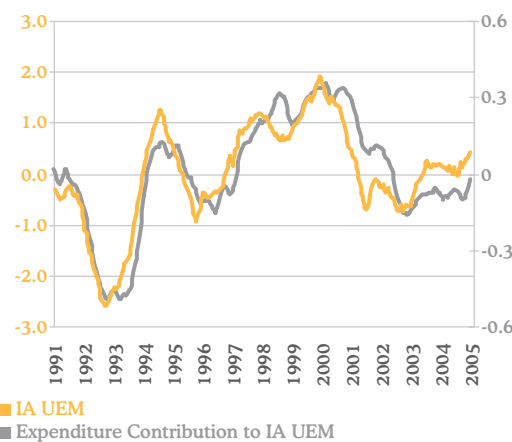
Source: BBVA

Chart 4.7.
### Sector contribution to IA BBVA UEM



■ Economic Climate  ■ Manufacturing  ■ Construction
■ Employment  ■ Expenditure
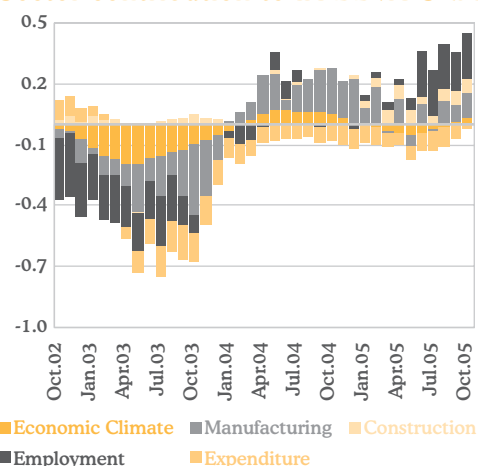
Source: BBVA

Chart 4.8.
### Country contribution to IA BBVA UEM



■ Other EMU  ■ Germany  ■ France
■ Italy  ■ Spain
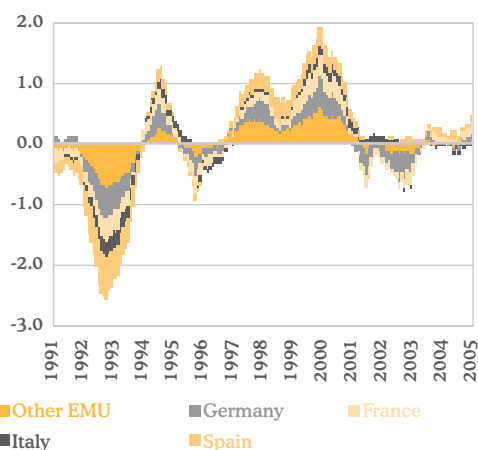
Source: BBVA

Chart 4.9.

## Country contribution to IA BBVA UEM



Other EMU   Germany   France
Italy   Spain
Source: BBVA
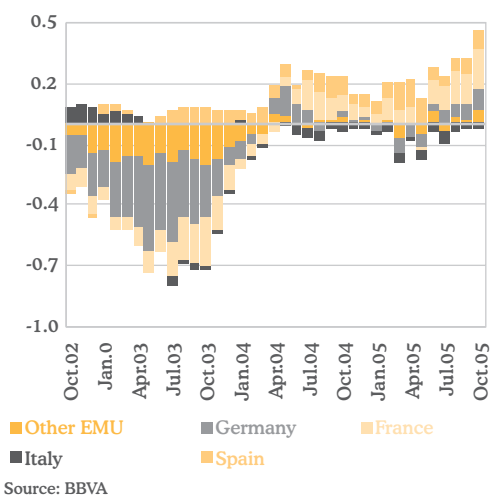
## Table 4.3. IA BBVA UEM: country correlation

|         | Germany | France | Italy | Spain | Portugal |
|---------|---------|--------|-------|-------|----------|
| Germany | 100%    | 66%    | 81%   | 70%   | 78%      |
| France  |         | 100%   | 73%   | 80%   | 78%      |
| Italy   |         |        | 100%  | 79%   | 75%      |
| Spain   |         |        |       | 100%  | 87%      |
| Portugal|         |        |       |       | 100%     |

## GDP: cross country correlation

|         | Germany | France | Italy | Spain | Portugal |
|---------|---------|--------|-------|-------|----------|
| Germany | 100%    | 76%    | 75%   | 60%   | 56%      |
| France  |         | 100%   | 75%   | 66%   | 43%      |
| Italy   |         |        | 100%  | 77%   | 51%      |
| Spain   |         |        |       | 100%  | 60%      |
| Portugal|         |        |       |       | 100%     |

Source: BBVA

and Germany. The subsequent upturn was, nevertheless, much sharper in Germany and France than in other economies.

The similarity in the dynamics among the individual activity indices of the countries is even more evident if we look at the cross-country correlation table. These levels of cross-correlation among the "states" of the different economies are significantly higher than those estimated on the base of GDP figures.

## Conclusion

The Principal Component Analysis approach provides us with an indicator that summarises a great deal of the available information on the Euro area activity. It offers a consistent estimate of its true underlying factors and may be easily modified in order to broaden its scope to new relevant variables. The methodology allows for the decomposition of the aggregate index into several subcomponents, giving us a sector and country perspective on the evolution of activity in EMU.

The IA-BBVA UEM has a high degree of correlation with the growth rate of EMU's GDP. The availability of the IA-BBVA UEM at the monthly frequency allows us to track, in real time, the effect of new incoming data onto activity.

The IA-BBVA UEM suggests that EMU activity is at the beginning of a renewed expansion, after the recovery initiated last year failed. With the exception of Italy, all major euro are economies are contributing positively to the index. With respect to the sectors, the production and the employment component seem to be the main drivers of activity at present. The expenditure component, while still maintaining a negative contribution to the overall index, has stopped deteriorating and is showing some signs of modest recovery.

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# The construction of IA-BBVA UEM

The **IA-BBVA UEM** corresponds to the first principal component extracted, by means of Principal Component Analysis, from a data set containing of 158 individual indicators of real activity in the Euro area. As such it accounts for the largest share of overall volatility in the data. By construction the factor equals a weighted average of all indicators used, that has been balanced such that the combination is most representative of the underling trends in our data set.

Allow $X_{TXK}=[x_{1t},..,x_{kt}]$ to be our data set containing T=178 monthly samples of K=158 inflation adjusted economic variables taken between jan.-91 to oct.-05.

These variables have been drawn in a cross sector fashion covering expenditure (consumption, retail sales and car registrations), manufacturing, construction, employment (number of un/employed persons and vacancies), foreign sector (imports and exports) and agents valuation of the economic situation (business surveys). Likewise, data were also pulled out in a country manner, incorporating information related to aggregate EMU activity, Germany, France, Italy, Spain and some additional information from other countries. Unlike other similar analysis, no variables related to monetary growth, prices or interest rates have been used since the analysis focuses exclusively on activity in real terms.

In some cases, backward and/or forward forecasting had to be done in order to infer some missing values. That was the case for those series starting after 1991 and for some others whose October 2005 value has not yet been reported.

Prior to the factor estimation, it was necessary to make some data transformations in order guarantee the stability of the second moment matrix of the data (upon which PCA is conducted). Non stationary series were rendered stationary taking rates or first differences. These new series were then corrected for outliers. In the Stock and Watson manner, we identified outlying values as those greater than 6 times the inter-quartile range of the data. All outlying data were substituted for the median value of the series. Finally we standardized the data set to make all variables comparable having zero mean and unitary standard deviation.

After transforming the data, we estimate the second moment matrix (in this case, correlation matrix) $\Sigma = (T-K)^{-1}X'X$. that quantifies all possible relations among the variables, a source that we will exploit to extract the factor that bests represents the underlying common trend in the data.

Factor extraction is conducted by means of Principal Components Analysis (PCA) -a review of the PCA estimation method and its efficiency and consistency properties are to be found in Stock and Watson (2002)- it suffices to know that the method reduces actually to solve an Eigenvalue/ Eigenvector problem over the correlation matrix of the data

## Excursion: The eigenvalue / eigenvector problem:

(…) Suppose $X =[x_{1t},..,x_{kt}]$ to be the data set, and $\Sigma = (T-K)^{-1}X'X$ its second moment matrix. The PCA procedure reduces to seek a base of $\Gamma_\kappa^* = [\gamma,…,\gamma_k]$ such that it solves: $\Gamma_\kappa^* = \arg(\Gamma_\kappa^*\Sigma_\kappa - \Lambda_\kappa^*\Gamma_\kappa^*=0)$, where $\Lambda_\kappa^*$ is the eigenvalue matrix of $\Sigma_\kappa$ and $\Gamma_\kappa^*$, its corresponding eigenvactor matrix. As a result, $Z_\kappa^* = \Gamma_\kappa^*X_\kappa$ is a set of (orthogonal) k-linear combinations such that its quadratic expression reproduces the original covariance matrix, i.e $\Gamma_\kappa^*Z'Z\Gamma_\kappa^{*'} \rightarrow \Gamma_\kappa^*\Lambda_\kappa^*\Gamma_\kappa^* = (T-K)^{-1}X'X$ (…)

Since the empirical correlation matrix used is a consistent estimation of the underlying correlation matrix of the data, the estimation of the underlying factors will also be consistent (Stock and Watson 2002). From all estimated factors (k=158) we take the one $(Z_{1t})$ that accounts for the largest share of information $(V(Z_{1t})> V(Z_{jt}))$.

Thus, the IA UEM has then the following form

$$\hat{Z}_{t,1} = \sum_{p=1}^{P}\left(\sum_{s=1}^{N}\left(\sum_{i=1}^{I}\hat{\gamma}_{i1} \cdot x_{i,s,p,t}\right)\right)$$

Where P and N define the set of variables in a country and sector fashion, whereas I corresponds to variables within each set. The $(\gamma)$ are the consistent estimates of the loads used to weight each element (x) in the the indicator.

The additive condition of the indicator allows alternatively to decompose the IA-UEM either as the sum of indicators from a country perspective or from a sector wide scope. Both expressions reflecting identical measures but different perspectives.

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# 5. Summary of Forecasts

## Germany: GDP growth and inflation forecasts

| YoY rate | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Private consumption | 0.1 | 0.2 | 0.2 | 0.9 | 1.5 |
| Public expenditure | 0.1 | -1.6 | -0.1 | 0.8 | 0.5 |
| Gross fixed capital formation | -0.7 | -1.4 | 0.4 | 1.3 | 2.5 |
|     Equipment | 0.2 | 1.3 | 5.1 | 5.7 | 6.0 |
|     Construction | -1.5 | -3.8 | -4.0 | -3.6 | -1.7 |
| Inventories (*) | 0.6 | 0.5 | 0.2 | 0.0 | 0.0 |
| **Domestic demand (*)** | 0.6 | 0.1 | 0.3 | 0.9 | 1.4 |
| Exports | 2.3 | 8.3 | 6.2 | 5.9 | 6.3 |
| Imports | 5.0 | 6.1 | 4.8 | 5.3 | 6.1 |
| **Net exports (*)** | -0.8 | 1.0 | 0.8 | 0.5 | 0.4 |
| **GDP** | -0.2 | 1.1 | 1.1 | 1.5 | 1.9 |
| **Inflation** | **1.0** | **1.7** | **2.0** | **1.8** | **2.3** |

(*) Contributions to growth
Source: BBVA

## France: GDP growth and inflation forecasts

| YoY rate | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Private consumption | 1.6 | 2.3 | 2.0 | 2.1 | 2.4 |
| Public expenditure | 2.1 | 2.7 | 1.6 | 2.1 | 2.1 |
| Gross fixed capital formation | 2.7 | 2.1 | 3.5 | 3.8 | 4.0 |
| Inventories (*) | -0.2 | 0.8 | 0.2 | 0.0 | 0.0 |
| **Domestic demand (*)** | 1.8 | 3.2 | 2.4 | 2.4 | 2.7 |
| Exports | -1.7 | 2.1 | 3.5 | 5.8 | 6.0 |
| Imports | 1.3 | 6.1 | 6.1 | 6.8 | 6.3 |
| **Net exports (*)** | -0.8 | -1.1 | -0.8 | -0.4 | -0.2 |
| **GDP** | 0.9 | 2.1 | 1.6 | 2.0 | 2.5 |
| **Inflation** | 2.1 | 2.1 | 1.8 | 1.7 | 1.5 |

(*) Contributions to growth
Source: BBVA

## Italy: GDP growth and inflation forecasts

| YoY rate | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Private consumption | 1.4 | 1.0 | 0.9 | 1.6 | 1.8 |
| Public expenditure | 2.3 | 0.7 | 1.1 | 2.0 | 2.0 |
| Gross fixed capital formation | -1.8 | 1.9 | -1.6 | 2.5 | 3.0 |
| Inventories (*) | 0.4 | -0.3 | 0.3 | 0.0 | 0.0 |
| **Domestic demand (*)** | 1.3 | 0.8 | 0.7 | 1.9 | 2.1 |
| Exports | -1.9 | 3.2 | 0.0 | 1.9 | 3.0 |
| Imports | 1.3 | 2.5 | 1.9 | 3.4 | 4.0 |
| **Net exports (*)** | -0.9 | 0.2 | -0.5 | -0.4 | -0.3 |
| **GDP** | 0.4 | 1.0 | 0.1 | 1.5 | 1.8 |
| **Inflation** | **2.7** | **2.2** | **2.0** | **1.8** | **1.6** |

(*) Contributions to growth
Source: BBVA

## Spain: GDP growth and inflation forecasts

| YoY rate | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Private consumption | 2.6 | 4.4 | 4.5 | 3.9 | 3.4 |
| Public expenditure | 4.8 | 6.0 | 4.7 | 4.5 | 4.5 |
| Gross fixed capital formation | 5.6 | 4.9 | 7.5 | 6.0 | 4.5 |
|     Equipment | 2.5 | 3.7 | 9.3 | 7.5 | 6.0 |
|     Construction | 6.3 | 5.5 | 6.3 | 4.6 | 2.9 |
|     Others products | 7.7 | 4.4 | 8.2 | 8.1 | 7.0 |
| Inventories (*) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Domestic demand (*)** | 3.8 | 4.7 | 5.2 | 4.4 | 3.8 |
| Exports | 3.6 | 3.3 | 1.1 | 3.3 | 3.6 |
| Imports | 6.0 | 9.3 | 7.5 | 7.3 | 6.5 |
| **Net exports (*)** | -0.8 | -1.6 | -1.8 | -1.3 | -1.0 |
| **GDP** | 3.0 | 3.1 | 3.4 | 3.1 | 2.8 |
| **Inflation** | **3.0** | **3.0** | **3.4** | **2.9** | **2.8** |

(*) Contributions to growth
Source: BBVA

# Summary of forecasts

## Euro zone (year on year)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|
| **GDP at constant prices** | **1.8** | **0.9** | **0.7** | **1.8** | **1.4** | **2.0** | **2.4** |
| Private consumption | 1.8 | 0.9 | 1.1 | 1.4 | 1.3 | 1.8 | 2.4 |
| Public consumption | 2.2 | 2.5 | 1.5 | 1.1 | 1.2 | 1.6 | 2.0 |
| Gross Fixed Capital Formation | 0.1 | -2.3 | 0.7 | 1.4 | 1.4 | 3.6 | 4.0 |
| Inventories (*) | -0.4 | -0.2 | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 |
| **Domestic Demand (*)** | **1.0** | **0.3** | **1.4** | **1.7** | **1.5** | **2.1** | **2.6** |
| Exports (goods and services) | 4.1 | 1.9 | 0.7 | 6.0 | 4.6 | 5.7 | 5.5 |
| Imports (goods and services) | 2.2 | 0.3 | 2.7 | 6.1 | 5.2 | 6.3 | 6.3 |
| **External Demand (*)** | **0.8** | **0.6** | **-0.7** | **0.1** | **-0.1** | **-0.1** | **-0.2** |
| **Prices and costs** | | | | | | | |
| CPI | 2.3 | 2.3 | 2.1 | 2.1 | 2.2 | 2.0 | 1.9*** |
| CPI core | 1.9 | 2.5 | 2.0 | 2.1 | 1.5 | 1.7 | 2.0*** |
| Industrial Prices | 2.0 | -0.1 | 1.4 | 2.3 | 4.0 | 2.0 | 1.5 |
| **Labour Market** | | | | | | | |
| Employment | 1.5 | 0.7 | 0.3 | 0.7 | 0.8 | 1.0 | 1.2 |
| Unemployment rate (% of labour force) | 7.9 | 8.3 | 8.7 | 8.9 | 8.6 | 8.4 | 8.2 |
| **Public Sector** | | | | | | | |
| Deficit  (% GDP) | -1.8 | -2.5 | -3.0 | -2.7 | -2.9 | -2.9 | -2.7 |
| **Foreign Sector** | | | | | | | |
| Current Account Balance (% GDP) | 0.0 | 0.9 | 0.3 | 0.6 | 0.0 | -0.2 | -0.2 |

*Contribution to growth
**Including UMTS receipts
*** Taking into account the increase in German VAT

## International environment (year on year)

| | Real GDP growth (%) | | | | Inflation (%)** | | | |
|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2004 | 2005 | 2006 | 2007 |
| US | 4.2 | 3.6 | 2.8 | 3.0 | 2.7 | 3.4 | 2.6 | 2.1 |
| UK | 3.2 | 1.6 | 2.0 | 2.2 | 1.3 | 2.1 | 2.0 | 2.0 |
| Japan | 2.7 | 2.0 | 2.5 | 2.0 | 0.0 | -0.2 | 0.2 | 0.2 |
| Latam (*) | 5.9 | 4.4 | 3.6 | 3.0 | 6.8 | 5.9 | 5.7 | 5.5 |

*Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela.
** For Latam, end of period forecasts

## Financial variables (end of period)

| | Official rate (%) | | | | Long-term interest rate (%, 10y) | | | |
|---|---|---|---|---|---|---|---|---|
| | 25/11/05 | Dec-05 | Dec-06 | Dec-07 | 25/11/05 | Dec-05 | Dec-06 | Dec-07 |
| Euro zone (*) | 2.00 | 2.25 | 2.75 | 3.50 | 3.4 | 3.5 | 4.0 | 4.3 |
| US | 4.00 | 4.25 | 4.75 | 4.75 | 4.5 | 4.6 | 4.9 | 5.1 |

* 10 year interest rate refers to German Bund

| | Exchange rate  (vs euro) | | | | | Brent | | |
|---|---|---|---|---|---|---|---|---|
| | 25/11/05 | Dec-05 | Dec-06 | Dec-07 | | 25/11/05 | Dec-06 | Dec-07 |
| US | 1.18 | 1.19 | 1.22 | 1.25 | $/b | 55 | 48 | 43 |

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