

# EuropaWatch

March 2006

Economic Research Department



Cyclical recovery, hindered by structural factors  
ECB, signs of impatience  
Consumption in Germany, beyond the VAT  
Energy efficiency in Europe: where do we stand?

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Closing date: March 2 2006

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## 1. Editorial

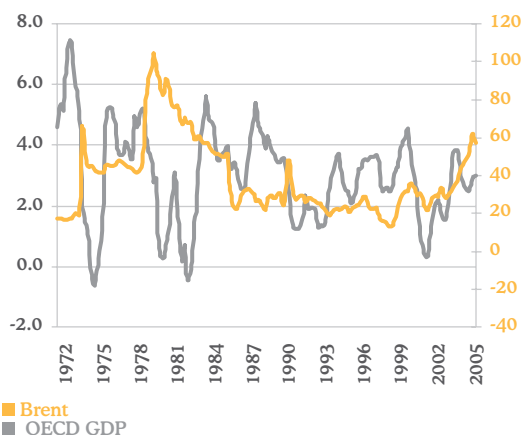
The European economy appears to be finally coming out of the doldrums. The battery of confidence indicators known over the last few months have been followed by "good news" in the real front, pointing to a relatively fruitful year in 2006. The maintained dynamism of the global economy, on the back of technological improvements and globalization, has been the support of the European economy in the recent past and will aid in the expansion in these coming years. But the prospects of sustainable growth in Europe must rely on the pick up of domestic demand, particularly in Germany. In this front, it must be noted that the partial data at our disposal points to somewhat greater dynamism of domestic demand already, although still too modest to claim that this recovery is "for real".

Notwithstanding, the consolidation of the cyclical expansion will only push European growth to 2% in 2006 and 2.2% in 2007, as the limits to growth posed by structural factors come into play. The Euro area has a low growth potential, which recent developments will not help to change. The recently approved Services Directive is quite disappointing. While it is a small step in the right direction, it is a long way from guaranteeing the flexibility and adaptability of the sector to the growing global challenges, making European consumers suffer the burden of the inefficiencies. No less disturbing is the protectionist atmosphere that has besieged Continental Europe, from agriculture and textiles to banking and utilities. In this context, the principles and the goals of the Lisbon Agenda, economic efficiency and innovation, are slowly disappearing in the horizon.

This regained dynamism is taking place in a context of limited inflationary pressures. Taking into account all available information, in the coming months, we can expect headline and underlying inflation to remain above 2%, although converging towards the ECB target. Inflation expectations appear to be firmly anchored, without any significant signs of wage pressures or pass-through from the energy price hikes. Additionally, the moderate growth recovery expected in the euro zone will not close the output-gap, which will remain in negative territory in 2006. And the ongoing globalization process should mitigate domestic price pressures thereafter, as the experience in economies more advanced in the cycle, like US or UK, clearly shows.

This gives the ECB a fair amount of room for manoeuvre. In fact, the apparent success of central banks around the world in anchoring inflation expectations after their efforts to gain credibility throughout the 90s now gives them more room for manoeuvre. This may be used to test the limits of non-inflationary growth. The current debate in the EMU over interest rates, for example, is couched in these terms. In this context, the ECB can proceed with the process of interest rate normalization at a pace of its choosing, aware of any signs as to the sustainability of the recovery.

Chart 2.1.  
Real oil price and OECD GDP growth



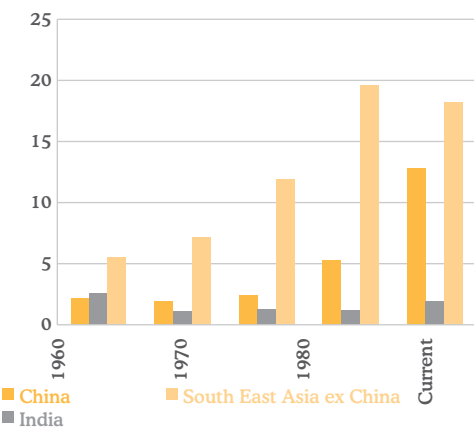
Source: OECD and Datastream

Table 2.1. GDP growth

	2004	2005	2006	2007
US	4.2	3.5	3.3	3.2
Euro zone	1.8	1.4	2.0	2.2
Japan	2.3	2.8	3.0	3.0
China	10.1	9.9	9.0	8.5
Latam	5.9	4.3	4.2	3.0

Source: IMF and BBVA

Chart 2.2.  
World trade by region  
(% of total trade)



Source: WTO

## 2. International Environment

### Dynamism of activity, despite oil

In 2005, the global economy managed to maintain a healthy growth pace despite rallying oil prices. In 2006 growth is likely to consolidate further albeit with downside risk, especially if Iran's uranium enrichment programme goes ahead and its oil production comes under embargo. If a conflict is averted, as expected in the core scenario, although oil prices would tension up in the first half, factoring in a risk premium, they could ease in the second half. Overall, the average oil price in 2006 would be USD61, vs. USD55 in the previous year, and the 2007 average would be USD57.

Despite this downside risk threatening growth, 2006 started with buoyant indicators, especially under the prospect that, although growth may slow down somewhat in the US, other economies will continue to expand or will take the baton from the US. Among those regions still expanding South East Asia and, particularly, China, come to the front. The latter has just upgraded its growth forecasts and will continue to post rates in line with recent years' average. The Chinese economy is notably dynamic in investment, as befits a model that seeks to develop export platforms, while household expenditure is likely to remain moderate. Europe is among the economies expected to compensate the US growth deceleration, with a likely recovery in domestic demand set to boost growth to slightly above potential.

Other emerging regions are benefiting from the shock in terms of trade, resulting from the increase in their raw materials export prices. Raw materials prices, although set to ease as compared to 2005, will remain high. In this context, the Middle East may keep posting around 5% growth, and, in view of the moderate growth in capital investment, could record the highest current account surplus among emerging regions. Some Latin American countries could also continue to benefit from the external context.

Overall, global growth will be similar to the 2005 figure, but its breakdown will be somewhat different. The United States will maintain growth close to its potential, but lower than in 2005. The property sector, which has spearheaded growth in recent years, is showing signs of moderation as a result of increased US interest rates. This moderation will be accompanied by lower growth in household expenditure and investment. This, plus a somewhat higher contribution by the foreign sector, will translate into a change in the growth breakdown with respect to 2005. In short, the economy will go from 3.5% growth in 2005 to 3.3% in 2006. Following the disappointing performance in 4Q05, the first quarter of 2006 could see activity attaining 5% annualised QoQ, amid a flurry of job creation and consumer confidence. Against this backdrop, the Federal Reserve is likely to keep its sights on controlling inflation expectations, pushing short-term interest rates to 5% in the second quarter of 2006. At these levels, which can be considered to fall within the bounds of monetary neutrality, the gradual process of interest rate hikes which started in June 2004 could be halted.

A favourable international context and a currency whose rally against the dollar petered out in 2005, bodes well for the Economic and Monetary Union. Confidence has started to rebound significantly, especially in Germany, enabling us to expect a recovery in activity towards levels of 2% in 2006, having grown by 1.3% in 2005. The cornerstone of a sustained improvement is healthier domestic demand. In a context of favourable financial conditions, job creation and an increase in wealth, the recovery in agents' confidence appears to be the variable which might underpin this recovery. However, we are not out of the woods yet. In the specific case of Germany, one of the questions is whether

the recovery is a consequence of bringing forward consumer decisions in view of the announced VAT increase in 2007. Uncertainty about growth will make short-term interest rate hikes relatively moderate in 2006. Official rates will likely be at 3% at 2006 year-end.

The last one to join in upping interest rates will be Japan, which may wait longer than the market is currently discounting (market forecasts point to the first increase coming mid-2006). Although activity figures came as a welcome surprise in 2005, and growth could approach its potential in 2006, inflation has yet to go positive. Signs of an end to deflation are still weak, and positive lending growth has only just begun. A premature hike in interest rates could negatively impact on expectations.

In short, monetary tightening towards more neutral positions is coming in a context in which the decline in inflation expectations is very limited. This implies that highs for official rates in this expansive cycle will likely be lower than in the previous cycle, which in turn limits scope for rate hikes to end up triggering a major adjustment in economies. The fact that US debt curves are relatively flat does not point to an economic recession, but is probably a consequence of the combination of low inflation and activity volatility, which reduces risk premia, and high levels of globalisation in financial markets.

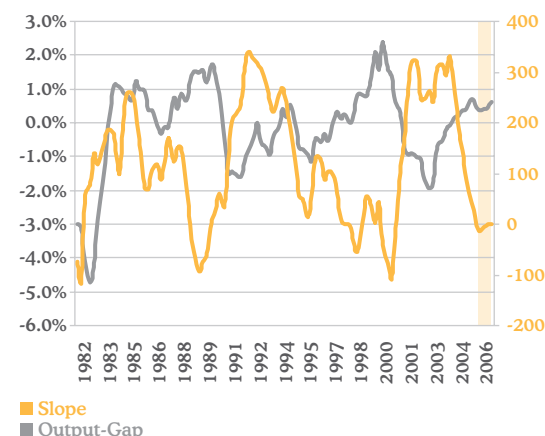
### Financial globalisation and diversification

One of the main elements of financial markets' performance is the intensification and diversification of capital flows. These capital flows have increased trendwise in recent years, and flows' participation in the total portfolio has gained weight. In this regard, high asset acquisition figures in the US in recent months came as a surprise, as did net portfolio inflows in some areas which had been posting net outflows in the last few years. Such is the case of Latin America, where portfolio flows have continued to be positive. Furthermore, it is worth noting the change in the breakdown of portfolio flows, where operations in bonds are gaining weight. This could respond to various factors. Firstly, uncertainty in the global economy, which has sparked a preference for these financial assets. Secondly, a demographic issue: in areas such as Europe and Japan, savings are high due to the life cycle. The demographic factor is one of the keys to interest rate trend. Thirdly, there are regulatory issues which mainly affect operations at insurance companies and pension funds which are increasingly stealing limelight in capital markets, and which are driving the preference for equities. Finally, developments in the European corporate market and emerging bonds markets in local currencies have allowed degrees of depth which imply an increase in weighting for these assets in investment portfolios.

In addition to increasing capital flows volume, another notable factor in recent years has been their diversification. More agents and countries actively participate in the financial market. Accordingly, not only has dispersal of current account balances not decreased, but it has actually increased in recent years. The US current account deficit is on the up and those posting a surplus include not only Japan and the South East Asia, but also oil exporting countries.

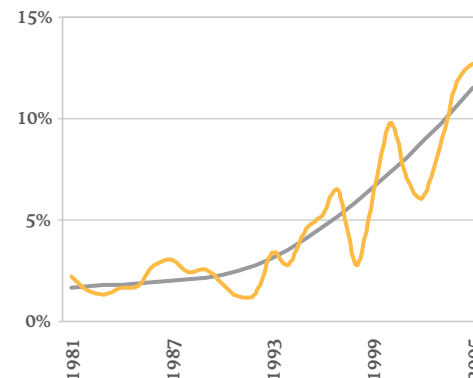
This diversification and intensification of capital flows, plus the reduction in risk premia, is helping to cut long-term debt instruments' yields. Some estimates suggest that this could imply almost one percentage point lower yield in the 10-year segment. Consequently, a key question for the future is whether these factors will persist. Although it is hard to forecast what will happen to risk premia, the downward trend in economies' nominal and real volatility does not look like halting in the short term, and monetary policy's credibility should not be compromised. As for globalisation and diversification in capital flows, there is unlikely to be a turnaround in performance.

Chart 2.3.  
US: Output-Gap and 10y-3m slope



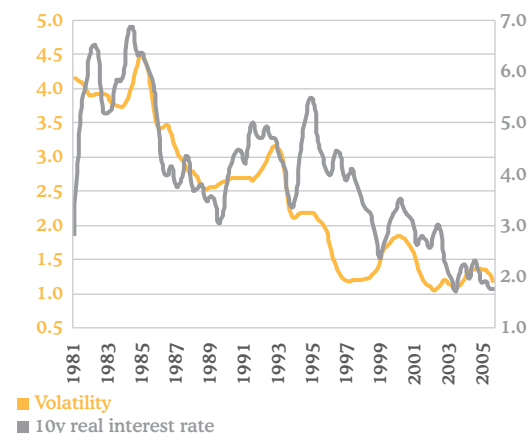
Source: BEA, Fed and BBVA

Chart 2.4.  
Capital flows  
(In % of GDP)



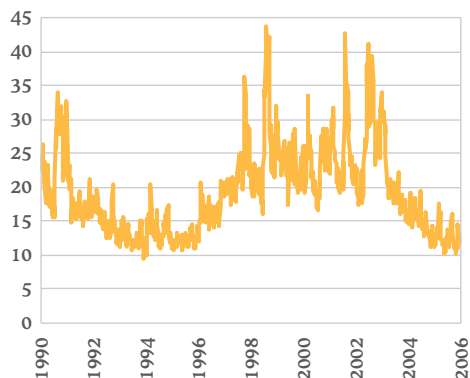
Source: IMF and BBVA

Chart 2.5.  
OECD: Inflation volatility and 10-year real interest rate



Source: OECD and BBVA

Chart 2.6.  
VIX (implied volatility, S&P)



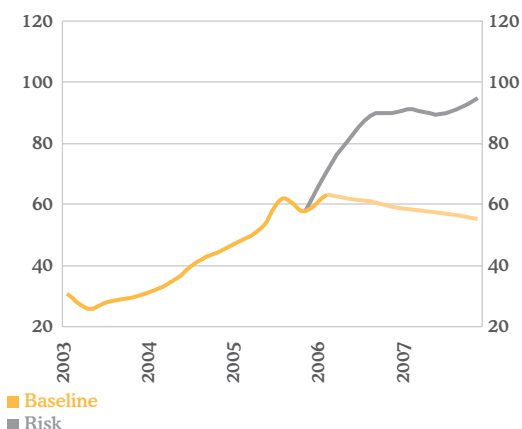
Source: Bloomberg

Chart 2.7.  
Dollar-euro exchange rate



Source: ECB and BBVA

Chart 2.8.  
Oil prices and forecasts  
\$ per barrel



Source: Datastream and BBVA

In this context, long-term yields are therefore likely to remain at lows. In particular, the US debt curve could remain almost flat, with 10-year rates which would close 2006 at 4.8%. In EMU, 10-year yield could reach 3.7-3.8% at 2006 year-end. This implies an ongoing positive EMU-US spread, although somewhat narrower than now.

### Scant overvaluation and narrow spreads, key factors for currencies

Although to a lesser extent than in 2005, the interest rate spread will continue to be a support factor for the dollar despite the US's high current account deficit. However, the dollar is less likely to find other drivers. In this regard, the dollar's highs at the end of the nineties were accompanied, from the capital flows standpoint, by considerable dynamism in direct foreign investment in the US, which is not the case today. Although the US maintains positive productivity spreads with other areas, no sector currently seems capable of spearheading an investment process similar to the one at the end of the nineties, linked to technology's performance.

Consequently, in absence of other major drivers for the next two years, supported on rates spreads and accounting for the risks that the current account deficit could again be factored into the currency's trading at any moment, the dollar will move in a range against the euro which could be 1.2-1.25 in 2006, with a bias towards a rally by the dollar in the first half.

Other currencies performances will be linked to two factors. The first is the fact that there are no major misalignments between current exchange rates and estimated currency equilibrium rates. Certainly, except for the Turkish lira, no overvaluation is observed. However, there is some undervaluation, and developments in this regard will be one of the uncertainties for 2006. The most obvious example is the Chinese currency, which will continue to endure pressure for a further upgrade, since the adjustment in 2005 was smaller than expected. In other cases, such as the Argentine peso, adjustment towards a more balanced valuation seems to be coming via the real rate rather than the nominal rate, which is notably stable.

The second factor which will continue to shape exchange rate performance will be yield spreads. Countries where interest rates are high will continue to appeal to investors more than those with low interest rates. This will trigger upward pressure on currencies in the former countries, which include Mexico and Brazil, while downward pressure will persist for the latter, which include Japan. All of this is in the absence of factors which might spark an increase in risk aversion in the event of developments leading to political risk in an emerging economy, deterioration in macroeconomic prospects or a shift in liquidity conditions in financial markets.

### Oil is the main risk

If the Iranian conflict heats up, oil prices could soar. This would lead to prices in the region of USD82 in 2006 and USD92 in 2007, well above the core scenario. An increase in oil prices would boost inflation risk in the short term, and risk of a deterioration in inflationary expectations would be especially acute, possibly triggering a pass-through from energy prices to other prices and to wages in oil importing countries. Consequently, the official interest rate trend would be upwards.

As long as oil prices remain high, downward risk for activity will remain considerable. If inflation does not distance itself considerably from 2% in Europe and the US, in this case taking the consumer deflator as a benchmark, central banks will start cutting their interest rates at the end of 2006. This would place a ceiling on the increase in long-term rates and, given the US's greater vulnerability due to higher household indebtedness, the dollar could slide.

## 3. Europe

### Recovery in progress

The latest EMU data point to a consolidation of the economic recovery with no inflationary pressures. In an economic environment characterized by a more efficient use of energy, the widespread phenomenon of globalization, broader and more diversified markets, and very low risk premia, the impact that continuing high oil prices is having on European economic activity and inflation is not as adverse as might have been feared. While it is true that, after strong third quarter growth, the eurozone economy slowed in the fourth quarter, partly due to a drop in external demand, the recovery is nevertheless holding up. The general improvement in leading indicators, largely based on expectations surveys, points to growth returning to potential in the first half of the year.

The dynamic pace of global growth will continue to drive European exports. Companies are already leveraging favourable economic conditions and their own healthy financial situation to undertake investment programmes. Even employment indicators are improving, which gives grounds for confidence in the recovery of private consumption, the key to the sustainability of the current expansion. Thus, with a growing contribution from domestic demand, the EMU economy is expected to grow 2.0% in 2006 and 2.2% in 2007.

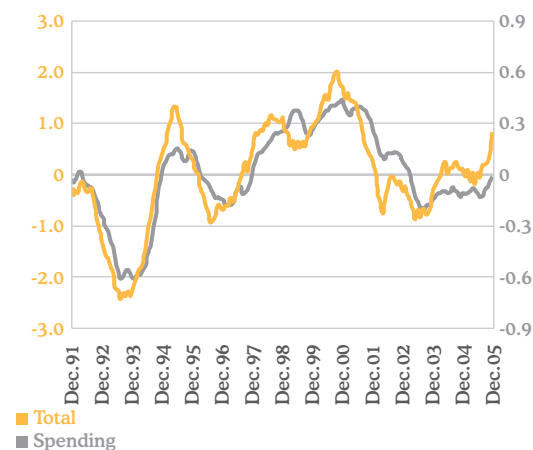
### Another disappointing year-end

We maintain the above outlook in spite of the disappointing fourth quarter GDP figure which, after the quarterly 0.7% growth posted in the previous quarter, slowed to 0.3%, the lowest rate since the last quarter of 2004. This figure, the result of negative surprises from Germany and France, has once again caused analysts and markets to question the strength of the economic recovery in Europe. After a number of "false starts", the ability of the European economy to return to sustainable growth rates in the region of 2% is beginning to be questioned.

The low growth rates in Germany and France have different causes. In the case of France, domestic demand grew at a significant pace in the fourth quarter. It was the major drain from the external sector, caused by imports growing to double-digit QoQ annualized rate, which explained the low GDP growth rate (0.2%). In Germany, however, it was the sharp drop in public and private consumption that caused growth to stagnate. A particularly disheartening trend, given the problems that German private consumption is having to take off. On the positive side, investment in capital goods and other products continues to grow, while construction seems to be consolidating the recovery observed in previous quarters. Taking the area as a whole, however, the surprise was clearly on the downside. It is encouraging that investment is still showing signs of health, but the key to sustainability is private consumption.

Chart 3.1.

### IA-BBVA-UEM. Total and spending contribution



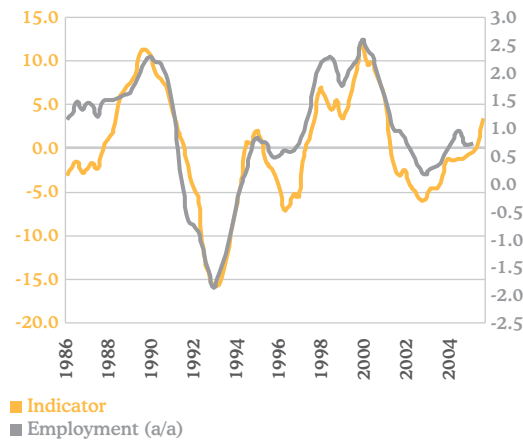
Source: Eurostat and BBVA

Table 3.1. Euro zone: 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	1.5	1.9	0.8	1.1	1.4	1.9	2.5	1.0	1.4	1.4	1.7	2.2
Public consumption	0.8	1.2	1.6	1.7	1.6	1.6	1.6	1.6	1.7	1.1	1.3	1.6	2.0
Gross Fixed capital formation	1.2	1.9	2.7	3.2	3.8	3.8	3.8	3.9	0.8	1.8	2.2	3.8	4.0
Stockbuilding (*)	0.4	0.3	-0.3	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.0	0.0
<b>Domestic demand(*)</b>	<b>1.6</b>	<b>1.8</b>	<b>1.7</b>	<b>1.5</b>	<b>1.8</b>	<b>1.9</b>	<b>2.2</b>	<b>2.6</b>	<b>1.3</b>	<b>1.8</b>	<b>1.6</b>	<b>2.1</b>	<b>2.5</b>
Exports	3.1	2.6	4.9	5.1	5.6	6.5	6.0	5.4	1.2	5.9	3.9	5.9	5.4
Imports	4.3	4.2	5.4	5.0	5.5	6.6	6.8	6.5	3.0	6.2	4.7	6.4	6.3
<b>Foreign Balance(*)</b>	<b>-0.4</b>	<b>-0.6</b>	<b>-0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>-0.3</b>	<b>-0.4</b>	<b>-0.6</b>	<b>0.0</b>	<b>-0.3</b>	<b>-0.1</b>	<b>-0.3</b>
<b>GDP</b>	<b>1.1</b>	<b>1.2</b>	<b>1.5</b>	<b>1.6</b>	<b>1.9</b>	<b>2.0</b>	<b>1.9</b>	<b>2.2</b>	<b>0.7</b>	<b>1.8</b>	<b>1.4</b>	<b>2.0</b>	<b>2.2</b>
<b>Inflation</b>	<b>2.0</b>	<b>2.0</b>	<b>2.3</b>	<b>2.3</b>	<b>2.3</b>	<b>2.1</b>	<b>1.7</b>	<b>1.7</b>	<b>2.1</b>	<b>2.1</b>	<b>2.2</b>	<b>2.0</b>	<b>1.9</b>

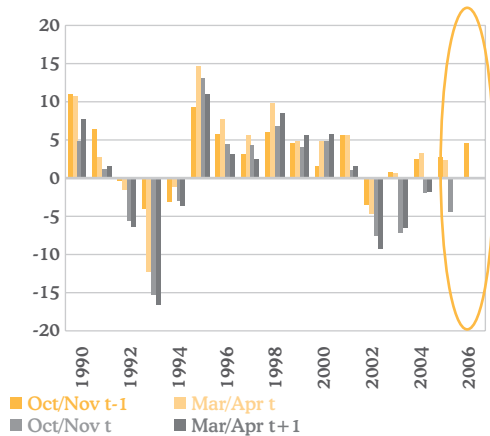
(\*) Contribution to growth  
Source: Eurostat and BBVA

Chart 3.2.  
Euro zone: Employment and indicator



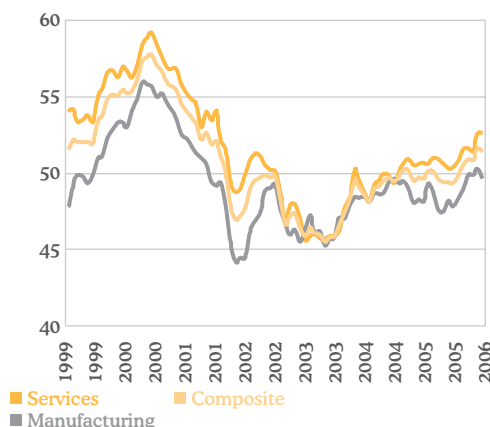
Source: European Commission and BBVA

Chart 3.3.  
Investment plans. Volume  
CE survey



Source: European Commission

Chart 3.4.  
Euro zone PMI, employment component



Source: NTC Economics Ltd.

But we should look beyond the fourth quarter figure - which may have been skewed to a degree by quarterly volatility, measurement problems of certain variables (such as retail sales in Germany) and/or the temporary slowdown in external demand - and focus on trends. Ultimately the fourth quarter figure is subject to be eventually revised, as it does not concur with information from other indicators, mainly business and consumer surveys, nor with some of the so-called "hard data". The synthetic indicator ISA-BBVA, which uses all definitive fourth quarter figures, points to a fourth quarter 2005 growth of QoQ 0.5%, two tenths above reported growth. Similarly the IA-BBVA, which draws on data from 150 eurozone indicators, points to an improvement of the cyclical situation during 2005 which is continuing in the early months of 2006.

**The trend is recovery**

In fact, if we look at the "trends", the outlook is rather more encouraging. Recoveries normally start with an expansion in net exports, which then affects investment and finally private consumption. In the present cycle, it has taken longer for investment to take off. In spite of their healthy financial situation, improved profitability and the exceptionally favourable financial conditions, European companies were been reluctant to embark on investment projects. That said, since mid-2005 it appears that this may be changing. Investment in capital goods is starting to show strong growth and investment initiatives by European companies are at their highest levels since 2001. Growth in bank loans to companies, which in January grew 8.5%, may be another sign that there is a renewed investing interest from entrepreneurs, whose expectations, according to various opinion surveys, is at a four-year high. The favourable outlook of worldwide growth and the persistence of relatively favourable financial conditions will help bolster business optimism.

In addition to increased investment, there has been some improvement in employment indicators, not only in the services sector but also in the industrial sector, which was lagging behind in this respect. Improved employment expectations are one of the keys to the recovery of private consumption, the final stage of any economic recovery.

All this process appears to be accurately reflected in the IA-BBVA business-cycle indicator. The indicator, which is currently at its August 2001 high, is boosted by production (industrial and construction), expectations, and employment, while the household spending component, although no longer a drain, has a contribution of zero.

**Consumption is the key**

The recovery of private consumption in the EMU and, in particular, in Germany is the factor which generates most uncertainty in the European scenario. Spending indicators are still lukewarm and it is feared that the three point rise in VAT announced for 2007 may act as a brake on the incipient recovery. Moreover, the effect of advanced purchases along with the World Cup in Germany this year may well generate a temporary boost to that recovery that could be mistaken for a sustainable expansion, some argue. However, there are several factors that need to be taken into account in this analysis. Firstly, that part of the increase in VAT will be used to lower social contributions, so its restrictive effect on consumption will be partially offset. Secondly, in the light of widening corporate margins and moderate demand pull, the entire VAT increase is unlikely to be passed on to prices. And thirdly, and most importantly, consumption in Germany has been growing, for several years now, below its long-term trend. In recent years consumer savings have grown considerably, partly related to uncertainty factors (doubts regarding tax accounts and the sustainability of social protection systems). Greater confidence could, to some extent, offset the contractionary



effect of VAT, and return consumption to something more in line with its long-term dynamics (see article "Consumption in Germany").

In this regard, in recent months we have seen a gradual recovery of the confidence of Germany's consumers that presages a more optimistic short-term outlook. Employment outlook has improved, as evidenced by the relevant consumer outlook expectation figures. The increase in home mortgage demand, after several years in the doldrums, also seems to reflect a more optimistic outlook of German households. In short, in a scenario characterized by a gradual increase of disposable income combined with a not inconsiderable rise in financial wealth and a somewhat more positive performance of real estate markets than of late, the increase in VAT would not seem to be an obstacle to a recovery in consumption. Moreover, financial conditions are expected to stay relatively favourable within a context marked by limited inflationary pressures which will prompt a very gradual rise in official interest rates.

### Where does this leave inflation expectations? Firmly anchored.

Inflationary pressures in the area are still conspicuous by their absence. Year-end 2005 saw inflation at 2.2% and a concern that high energy costs would have a major repercussion on inflation in future years. January tends to be a month of uncertainty in terms of reliable forecasting, bringing as it does a variation in regulated prices and indirect taxes throughout the EMU, added to which are the annual updates of the weighting of goods and services in the consumption basket and, this year, the change in the base year for calculation from 1996 to 2005. All this said, headline inflation in January came in at 2.4% and underlying inflation at 1.3%, so, as anticipated in the previous EuropaWatch, it would appear that there are no clear signs of any impact of these changes on the evaluation of core inflationary pressures. Industrial prices of consumer goods continue to show no major signs of passing on increased energy costs, unlike other industrial areas that are more directly linked to oil prices (intermediate and energy industries).

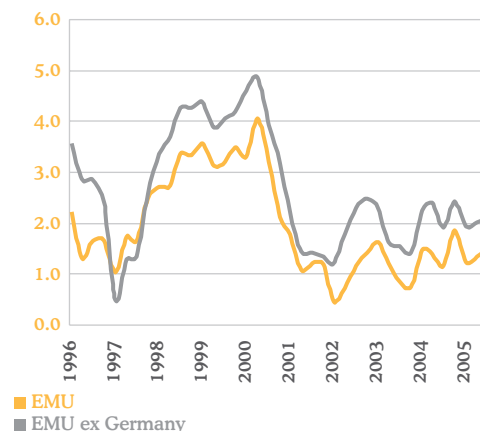
In an environment of high energy costs but limited demand pressures and a labour market characterized by the downward pressure exerted by the constant threat of delocalization and capital mobility, expectations of inflation in the EMU seem to be firmly anchored. The moderate pace of business recovery in the eurozone will not allow the output gap to close in 2006, and growing globalization will help to partially offset any demand pressures subsequently generated. Thus, although underlying inflation will tend to rise throughout 2006 and 2007, it should stay within ECB reference rates, with average forecasts of 1.7% for both years, although 0.4 p.p. needs to be added to the 2007 figure to account for the impact of the VAT hike in Germany. Conversely, headline inflation will follow a downward trend from the January high as energy prices remit, with average forecasts of 2.0% and 1.6% for 2006 and 2007 respectively, although the latter figure needs to be increased by 0.3 p.p. to account for the aforementioned VAT hike.

### Is the ECB pushing the envelope?

In the light of last year's divergent trend in headline and underlying inflation, the ECB reminded that, for the purposes of monetary policy, headline inflation is what matters in terms of its goal of stabilizing prices. But the monetary authority has gone a step further. It pointed out that underlying inflation is not always a good leading indicator of headline inflation and that sometimes it actually trails behind. The central bank therefore appeared to discredit those who related the low level of underlying inflation with the absence of inflationary pressures.

Chart 3.5.

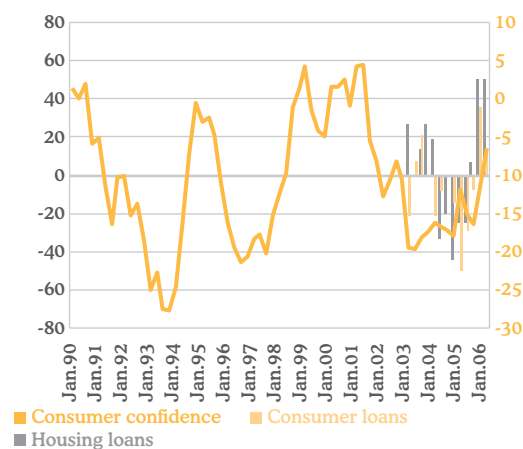
### Private consumption in euro-zone. YoY



Source: Eurostat, Destatis and BBVA

Chart 3.6.

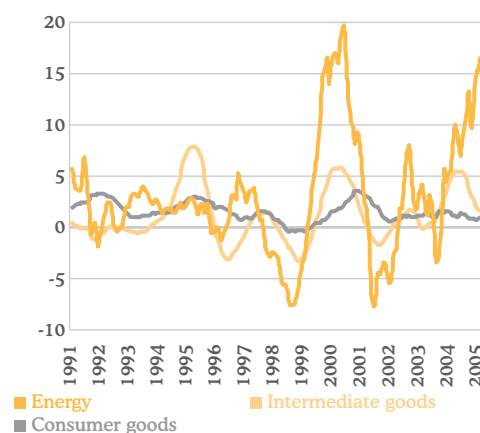
### Germany: Consumer confidence and credit demand



Source: European Commission and Bundesbank

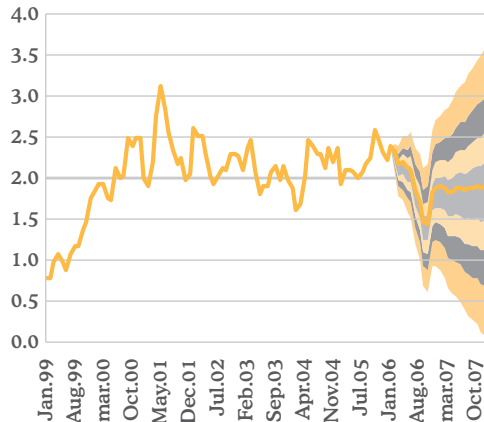
Chart 3.7.

### Euro zone: Producer prices. YoY rates



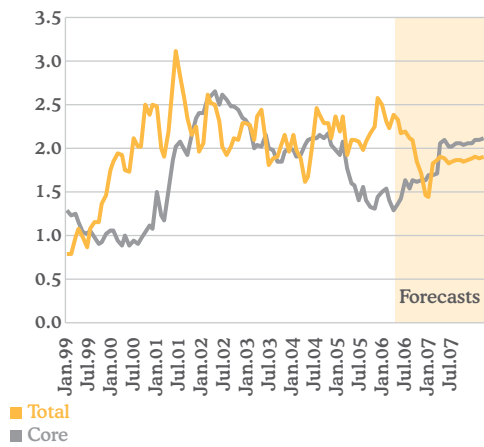
Source: Eurostat

**Chart 3.8.**  
**Euro zone: Inflation and forecasts**  
 80% confidence interval



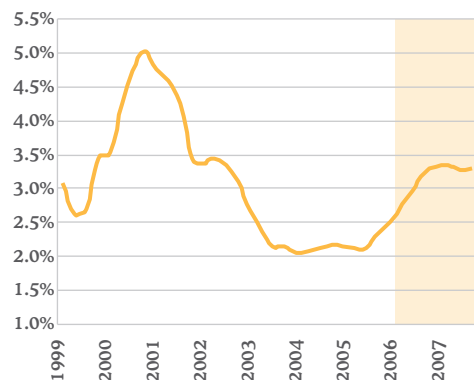
Source: Eurostat and BBVA

**Chart 3.9.**  
**EMU: Harmonized CPI**  
 YoY rates



Source: Eurostat and BBVA

**Chart 3.10.**  
**Euro zone: 3-month interest rate**  
 according a Taylor rule



Source: ECB and BBVA

However, this comment would appear to be unnecessary. Mainly because when we analyze inflationary pressures, we do not tend to focus solely on underlying inflation or on any other measurement of core inflation. Rather we tend to complement it with other indicators that might provide information about the current evolution of inflation expectations, such as surveys, market prices, and wages. We pay attention to the way inflation is transmitted along the price chain, and take into account factors such as the cyclical situation of the economy and/or the nature of the shock that may affect the way it is transmitted to expectations. It would seem clear that a central bank takes into account all available information when gauging possible inflationary pressures.

For simplicity and transparency it is necessary to define the goal of monetary policy in terms of a single price indicator. In this respect it seems reasonable to use the HICP, which is the most directly trackable index. But it would be useful if the ECB were to make a clear distinction between which part of the inflationary trend measured in this way it considers to be core (that is, it expects to continue into the medium term), and which part it considers transitory.

At present, taking into account all available information, in the coming months we can expect headline and underlying inflation to converge towards the ECB target. Inflation expectations appear to be firmly anchored, in a scenario in which the international environment is helping to keep prices under control. This gives the ECB a fair amount of room for manoeuvre. In fact, the apparent success of central banks around the world in anchoring inflation expectations after their efforts to gain credibility throughout the 90s now gives them more room for manoeuvre which, it is argued, it may be used to play a more active role in cyclical stabilization or financial stability. The current debate in the EMU over interest rates, for example, is couched in these terms. Although in the case of the ECB there is the added difficulty of cyclical and structural disparity within the area and uncertainties surrounding the way the transmission mechanism works.

In any event, in a recovery environment such as we are experiencing in the EMU, if interest rates are to be brought back to a more neutral stance, they will inevitably tend to rise. But limited demand pressures on prices will allow this upward path to occur gradually. We therefore expect official rates to reach 3% by the end of 2006, and they could rise by a further 25 basis points in the first half of 2007.

## Fiscal policy in the EU: It's the nominal growth!

Stability programmes probably represent one of the greatest transparency efforts ever done by Finance Ministries. Born during the convergence process towards the European and Monetary Union (EMU), they are nowadays at the core of fiscal surveillance under the Stability and Growth Pact (SGP). Since 1999, they include an internationally standardized four-year forecast of the main macroeconomic and fiscal variables of each European Union member<sup>1</sup>. Every year, they are evaluated by the European Commission and discussed at ECOFIN meetings.

In this Box, we take a first look at the forecasting record of the Stability programmes elaborated since 1999 by the five main European Union economies (EU-5), France, Germany, Italy, Spain and the United Kingdom. In particular, we focus on the accuracy of economic growth forecasts and their impact on aggregate fiscal balance.

It is widely accepted that fiscal consolidation in EMU has lost momentum since 2000, suffering a "Maastricht fatigue". The improvement in structural balances has barely advanced. In some countries, gains have even been reversed. Moreover, the composition of fiscal adjustment has deteriorated. In this context, the 2001-2003 slowdown led to a generalized breach of the SGP.

Given that, in the period 1999-2005, the accuracy of fiscal policy projections has been, at best, modest. On average, the projection of the Public Sector net borrowings (deficit), as a percentage of GDP, has been 1,5 percentage points (p.p.) higher than projected. This error is higher as the forecasting horizon widens. However, this poor track record hides notable exceptions<sup>2</sup>. Spain shows an impressive performance, with hardly a 0,03 p.p. error per annum, followed by the UK, with a 0,5 p.p. error. Meanwhile, the average forecasting error in France, Germany and Italy has been equal to 1,8 p.p., 2,0 p.p. and 2,1 p.p., respectively. As already stated, this performance is partly due to an optimistic bias in economic growth projections. Annual real GDP growth has been 0,8 p.p. lower than expected. This bias is shared by the EU-5 economies, ranging from 0,2 p.p. in the UK to 1,5 p.p. in Italy.

Up to this point, the message that emerges seems quite straightforward: EMU'S biggest economies are sinners. They stepped on the brakes in fiscal consolidation at the end of the nineties, and ignored the SGP during the economic downturn. UK seems to be successfully

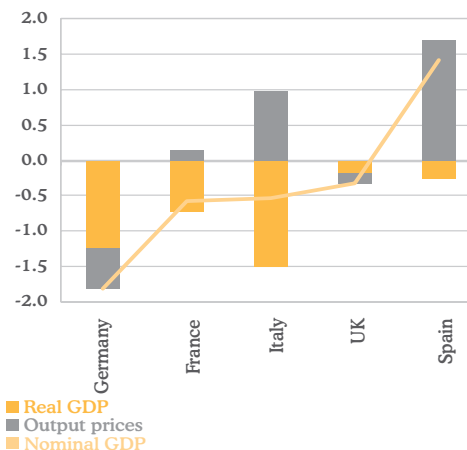
respecting its own fiscal rules. And Spain is an example of virtuosity under the SGP. However, this is a rather simplistic interpretation. The most obvious limitation arises from omitting a key variable, inflation.

Actually, the optimistic bias can be found in inflation forecasts as well. On average, inflation has been 0,4 p.p. higher than expected. But "good and bad students" change significantly. In particular, the German and the Spanish case are the most interesting ones. In Germany output prices have grown less than expected (0,6 p.p. a year), in line with the poor economic performance. In contrast, Spanish GDP deflator, due to housing boom, has exceeded forecasts, by 1,7 p.p. per year<sup>3</sup>.

Combining both results, the ranking of nominal GDP growth forecasters changes. On average, nominal growth has been 0,4 p.p. lower than projected. France (0,6 p.p.), Italy (0,5 p.p.) and the UK (0,3 p.p.) are close to the average. But that bias is larger in Germany, where nominal growth error has been -1,8 p.p. per year, whereas in Spain it has been 1,4 p.p. higher than projected.

### GDP and prices projection error

(Annual average 1999-2005, p.p.)



Source: National Stability programmes and BBVA

How far reaching are these biases? Nominal economic cycle has a significant impact on fiscal balances through the operation of automatic stabilizers. So, the mentioned nominal growth projection errors imply an automatic projection error on deficit estimates as well. Using the estimated average response of budgetary balance to GDP growth (done by the OECD, the European Commission and

<sup>1</sup> Downloadable from the European Commission website [www.europa.eu.int/comm/economy\\_finance/about/activities/sgp/scplist\\_en.htm](http://www.europa.eu.int/comm/economy_finance/about/activities/sgp/scplist_en.htm)

<sup>2</sup> For an analysis on this issue and its determinants, see Strauch, R., M. Hallerberg y J. von Hagen (2004), "Budgetary forecasts in Europe – The track record of Stability and Convergence Programmes", European Central Bank *Working Paper Series* No.307 (February).

<sup>3</sup> To be fair, the optimistic bias in real growth projections is shared by private forecasters. The one and two year projection error incurred by Governments is 0,5 p.p. per year, compared with 1,0 p.p. by Consensus Forecasts (2001-2005). In contrast, private forecasters' estimates of inflation was extremely accurate.,

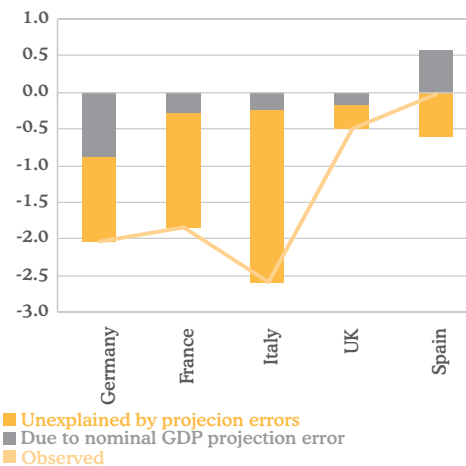
the European System of Central Banks)<sup>4</sup>, almost half of the higher deficit in Germany can be explained by its lower nominal growth (0,9 p.p. of GDP, compared to the aggregated bias of 2,0. p.p.). So, discretionary fiscal policy has been less active than it is usually assumed. On the contrary, a higher than expected nominal growth in Spain contributed with 0,6 p.p. of GDP each year. Therefore, the 0,03 p.p. error hides a slightly expansionary fiscal balance (deficit of 0,5 p.p. of GDP per annum).

To sum up, it is necessary to be cautious when choosing the benchmarks of fiscal policy in the EU. Some of the fiscal sinners performed badly, but not so badly (Germany). Some of the virtuous made great improvements, but not so huge (Spain). In others, the first impression was simply right (UK vs France and Italy).

<sup>4</sup> In fact, these estimates show the response of fiscal balance to (real) output gap, not to observed growth, so the point estimates should be taken with caution. The sources are European Commission (2000); "Cyclically adjusted budget balances – the Commission's method", *European Economy. Public Finances in EMU 2000*, pp. 137-138; Bouthevillain, C., P. Cour-Thimann, G. van den Dool, P. Hernández de Cos, G. Langenus, M. Mohr, S. Momigliano and M. Tujula (2001), "Cyclically adjusted budget balances: an alternative approach", European Central Bank *Working Paper Series* No.77 (September); and Girouard and C. André (2005), "Measuring cyclically-adjusted budget balances for OECD countries", OECD Economics Department *Working Papers* No.434 (July).

### Fiscal deficit projection error

(Annual average 1999-2005, p.p. of GDP)



Source: National Stability programmes and BBVA

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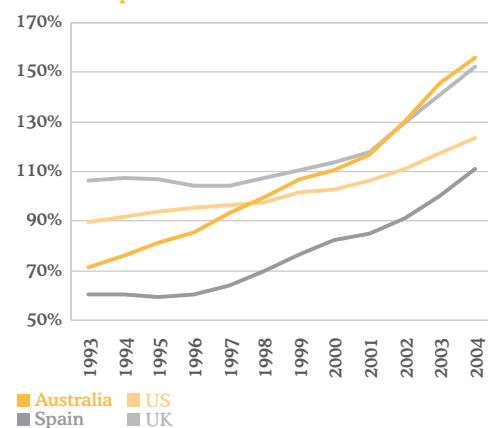
## Consumption, house prices and interest rates: the experiences of the UK and Australia

The property boom in recent years in some euro zone countries, such as Spain and, to a lesser extent, France, seems to stem mainly from macroeconomic factors. However, the favourable financial conditions, in a context of abundant liquidity and very low interest rates, have apparently been an additional driver. This brings to consider the possible impact on these countries' property markets of the steady correction of the liquidity excess via rates hikes. Indeed, since dynamic property prices have shored up private consumption in recent years, there are fears that a deceleration and/or correction thereof could magnify the impact on consumption of a normalisation of interest rates. This concern is additionally stressed by the strong increase in household debt in the last years.

### Examples are the United Kingdom and Australia

In this regard, it may be useful to review the situation of countries such as the United Kingdom and Australia, which have recently experienced a similar scenario. In both cases, house prices grew for various quarters at 20% YoY in real terms. Households had significantly increased not only their equity withdrawal (difference between mortgage debt and net investment in housing assets) but also their unsecured debt, reaching levels well above those currently recorded in Spain, for example. This all came in a context in which private consumption was booming. Both the Bank of Australia and the Bank of England were among the first to raise interest rates, although inflation, measured by the CPI, was quite well in check. The concern for financial stability and imbalances weighed heavily in these decisions<sup>1</sup>.

### Household liabilities In % of disposable income



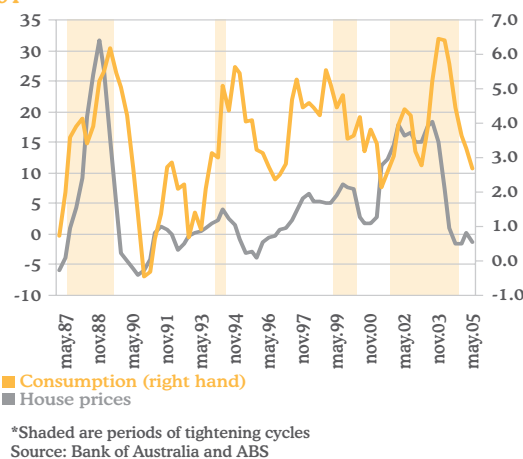
Source: Central Banks of Spain, Australia and United Kingdom, and OECD

In both cases there was significant deceleration in house prices approximately one year after the start of the tightening cycle. Nevertheless, the adjustment was smoother than in previous episodes of strong house prices acceleration, especially in the United Kingdom. In terms of financial stability, no problem has been observed. Despite the increase in the financial burden on households, there has not been a noteworthy increase in NPLs.

As regards private consumption, there has also been notable deceleration in both countries. However, with growth around 1.5% YoY in the United Kingdom and close to 3% in Australia,

it would be inappropriate to talk of a recession in private consumption, as has been the case in other episodes of property market adjustment. And all this despite the fact that it is precisely Anglo-Saxon countries which evidence the greatest consumption's net wealth elasticity, something attributed to the broadness and efficiency of their mortgage markets<sup>2</sup>.

### Australia: consumption and real house prices YoY



\*Shaded are periods of tightening cycles  
Source: Bank of Australia and ABS

### Impact of house prices on consumption

There are normally two channels throughout property prices may affect private consumption. The first is wealth. Housing account for a significant part of households' wealth, and the increase in house prices implies an increase in that wealth, at least for home-owners. However, non-home-owners may be worse off, either because they have to pay higher rent or because they have to save more for a future house purchase. The aggregate impact is therefore not as direct as with other assets. There may be an increase in house prices without implying an increase in aggregate wealth for the economy. However, in any event, there will be a change in the relative position of consumer groups (owners vs. non-owners), with different consumption trends, and relative prices (homes vs. non-homes) which may generate replacement effects.

The second channel is financial. An increase in housing prices enables home-owner households to borrow more cheaply by increasing the value of their available collateral. This impact is especially significant for households with major borrowing restrictions, which tend to be those which proportionately have a lower proportion of financial assets in their total wealth. Furthermore, this channel will become all the more significant in countries whose markets are more liquid and flexible, with more developed instruments to enable disposal of housing wealth via mortgage equity withdrawal.

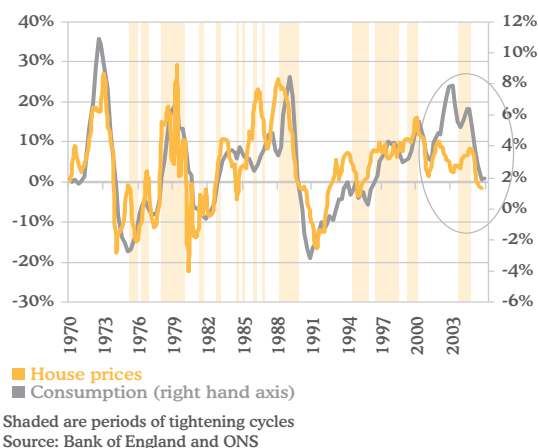
In the case of the United Kingdom, there has historically been a link between property prices and private consumption, as Chart 3 plainly shows. The explanation may be either of the aforementioned two reasons or a combination of both. A third possible explanation of the similarity between house price movements and private consumption is that they may be jointly affected by a third factor. For example, an improvement in future income prospects could trigger both an increase in consumption and an increase in house prices<sup>3</sup>.

<sup>2</sup> See Catte P., Girouard N., Price R. and P. André (2004): "Housing markets, wealth and the business cycle", *OECD Working Paper No. 394*

<sup>3</sup> See Atanasio O., Blow L., Hamilton R. and A. Leicester (2005): "Boom and Busts: Consumption, House prices and expectations" Working paper 05/24, *The Institute for Fiscal Studies*

<sup>1</sup> See Bank of England Minutes for meetings dated 5 and 6 November 2003 and the statement issued by the Bank of Australia on 8 May 2002 announcing interest rate hikes.

### United Kingdom: consumption and real house prices YoY



Since around 2000, the close link between house prices and private consumption in the United Kingdom seems to have crumbled. There are two standard reasons to explain this phenomenon<sup>4</sup>. First, it is attributed to greater access to borrowing, mortgage and non-mortgage alike, due partly to the improvement in risk management mechanisms at financial institutions, and in a context of very low interest rates. Borrowers seem to have taken advantage of these improved conditions not only to consume more, but mainly to accumulate more assets<sup>5</sup>. In fact, the ratio of consumption vs. disposable income remained quite stable in this period in the United Kingdom. A second explanation is that, in recent years, house prices and private consumption have not moved in line with a common denominator, such as income expectations. Specifically, it is put forward that in recent years house prices have been more influenced by factors such as household formation rates or demand for property as an investment due both to low returns on alternative assets and as a precaution in view of possible future problems in pension provisions.

One way to illustrate the change in the relationship between house prices and private consumption is by estimating a consumption function whose explanatory variables include disposable income, net financial wealth, net non-financial wealth and real long-term interest rates. With a sample period spanning from the first quarter of 1980 to the third quarter of 2005 a recursive estimate is made for fifteen-year periods, which shows how, in fact, long-term non-financial wealth elasticity has gradually lost weighting in the last few years.

In any event, since it is observed that an increase in house prices has not translated into greater consumption, it seems reasonable to think that an adjustment in house prices will not necessarily derive in a significant correction in private consumption. This has been the case, to an extent. Not only because of the possible decline in long-term non-financial wealth elasticity. The performance of other variables affecting private consumption has been better than in other phases of property market adjustment. Real disposable income and employment have declined less than in the past thanks to a

<sup>4</sup> See Nickell, S. (2004) "Household debt, house prices and consumption growth" Bank of England Quarterly Bulletin, Autumn, pages 383-89 and "House prices and consumer spending", table from the Bank of England Inflation Report, November 2004, pages 12-13

<sup>5</sup> However, it is necessary to take into account the distribution effect, since those who increase their debt are not necessarily the same people who increase their assets, and their propensity to consume, their degree of solvency and their exposure to an increase in rates need not be the same.

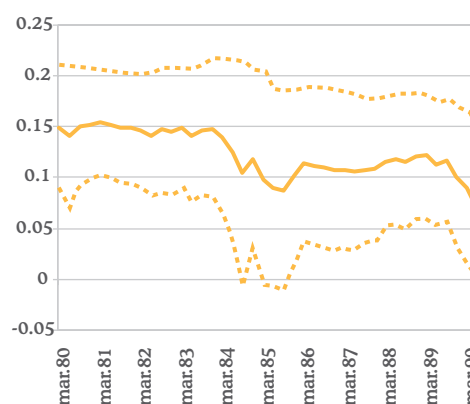
### Households consumption and asset and liability accumulation

In % of disposable income

	Net acquisition of housing assets	Net acquisition of financial assets	Consumption	Net acquisition of financial liabilities
UK				
1998	6,0	9,3	92,4	7,4
1999	6,3	9,4	93,6	8,9
2000	6,0	6,8	93,4	11,0
2001	5,5	11,1	92,4	10,4
2002	7,0	14,8	94,0	14,2
2003	7,4	15,1	93,7	17,7
Australia				
1998	8,0	11,3	87,5	15,9
1999	8,3	10,7	89,9	8,5
2000	9,4	18,1	90,3	17,7
2001	7,5	18,3	89,2	12,6
2002	8,7	21,0	89,8	21,3
2003	10,1	20,7	91,6	24,8

\* In the UK, net property asset acquisition is proxy by gross household capital formation   
 Source: ONS and ABS

### UK: Recursive estimate of consumption's net non-financial wealth elasticity



Source: BBVA

combination of dynamic global growth and a preventive monetary policy, which have together enabled a smoother adjustment by house prices and a more gradual increase in rates. Furthermore, the interest rate tightening cycle has already turned around (the Bank of England reduced 25 basis points the official interest rates in August 2005).

In short, in Australia and the United Kingdom, despite increases in interest rates, adjustments to the property market and high levels of household indebtedness, private consumption has not slumped, although it has decelerated significantly. A preventive monetary policy, in a favourable global economic cycle, has helped make deceleration of disposable income and employment, and therefore the adjustment in the property market itself, more moderate than previously. In the United Kingdom there has also been moderation in the consumption's elasticity to non-financial wealth, probably attributable to less restriction on borrowing in recent years. But the subsequent increase in indebtedness, although not used primarily for consumption, is not risk-free. This is especially true if those who have increased their debts are precisely those with the lowest solvency levels or those who are most vulnerable to an increase in unemployment.

## 4. Consumption in Germany, beyond the VAT

Gonzalo Cadenas

Economic Research Department

Recent data on German growth reveal that activity has remained weak in 2005. The lacklustre performance of domestic demand, in general, and private consumption, in particular, seems to be at the core of this evolution. For the second year, the economic recovery remains dependent on foreign demand, posing some uncertainty as to the sustainability of growth. This risk seems to be even more acute now since the new government announced its fiscal consolidation plan, which includes a +3% VAT hike in 2007 that could hinder further the prospects for a recovery of private consumption.

Germany represents one third of EMU's economy, so the factors that could be holding German consumption subdued are also weighting heavily on EMU's sluggish growth.

In Germany, consumption represents 60% of total demand. During other recoveries consumption has tended to accelerate (1.8% average) as employment and disposable income reacted to increasing export revenues and investment growth, leading thus to a fully blown expansion. This time, however, this is apparently not happening yet in this cycle. During the ongoing recovery not only did investment (and thus employment) start with a longer delay than in previous occasions, but also the economy kept registering a steady fall in consumption (-0.5% yoy) from the third quarter 2003 onwards that drained a large portion of the strength in GDP's recovery. In fact the direct effect of the expenditure shortage is estimated to have dampened economic growth by 1% since 2003 (see Chart 4.2).

### Stagnant consumption. On the search for determinants

Analysing what holds back German expenditure is not straightforward. Many factors hold an important stake on the issue:

Since 2003, the two key determinants of consumption growth have experienced rather dull dynamics. Income growth has been much weaker than in any other recovery (0.2% vs. 1.2% average) as a result of wage moderation in a context of nil job creation. Additionally household wealth also grew very modestly, scoring only a 0.1% growth rate as compared to its average (1.8%)<sup>1</sup>.

These lacklustre performance should have been mitigated by the loose enough financing conditions<sup>2</sup>. Consumers, however, did not take advantage of it to finance their standard of living. On the contrary, there was a strong deceleration of household indebtedness and a reduction of the outstanding liabilities. This reduction of the degree of leverage could have arisen in response to concerns about agents future income and wealth<sup>3</sup>. The combination of these factors has yield an increase in the household's savings ratio during the same period (Chart 4.9).

The consumption dynamics are most likely explained by a combination of these factors. The determination of their different contributions and their net effects on expenditure was estimated using econometric techniques, in particular an error correction model.

### An ECM for the consumption function

According to the ECM approach, consumption oscillates over time around its long run equilibrium path. Its dynamics tend to restore this long-term equilibrium when deviations occur. The deviations from equilibrium are caused by short run factors of a cyclical nature which eventually subside.

On Chart 4.4 we may see the estimated long run behaviour of consumption. In our estimation we found a long run relation between

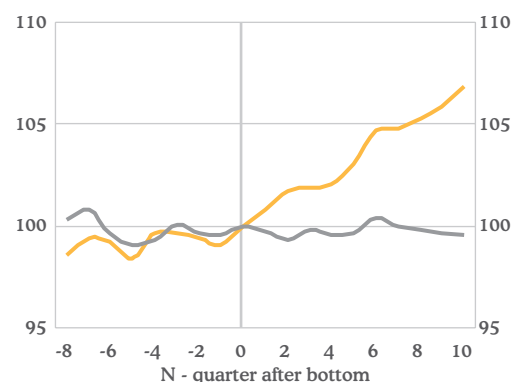
<sup>1</sup> Income and wealth growth are sufficient to characterise, using econometric techniques, the dynamics of expenditure in absence of any equilibrium relation.

<sup>2</sup> "Refi" rates at its all time lows.

<sup>3</sup> Recall that all started to happen as German Treasury admitted to have problems to guarantee Sustainable public finances and to see a risk on the pension system.

Chart 4.1.

### Germany, private consumption development in economic recoveries

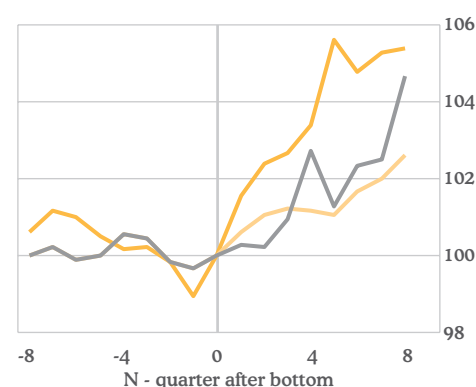


■ Average since 1980  
■ Current

Source: DESTATIS

Chart 4.2.

### Germany, GDP upturn in different economic recoveries

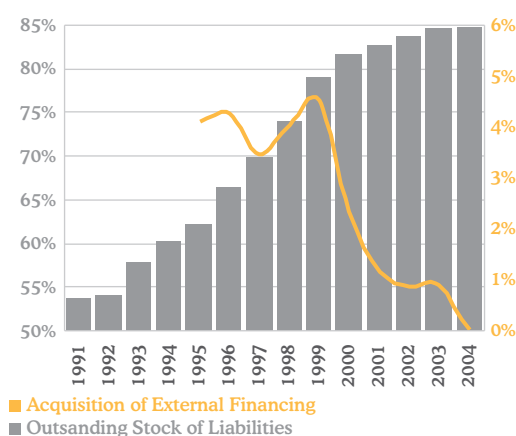


■ Average  
■ Current  
■ Simulated\*

\* Assuming consumption recovered as in average upturns  
Source: DESTATIS

Chart 4.3.

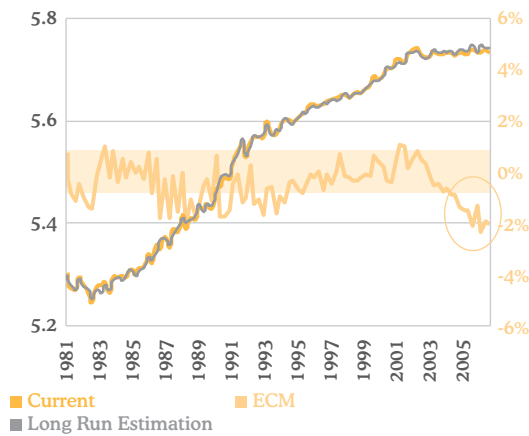
### Household indebtedness in % of GDP



■ Acquisition of External Financing  
■ Outstanding Stock of Liabilities

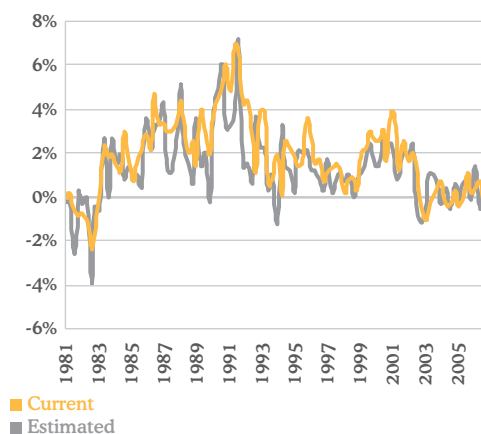
Source: Bundesbank

Chart 4.4.  
Consumption vs. long run model  
(log level)



Source: BBVA

Chart 4.5.  
Consumption vs. short run model  
(YoY change)



Source: BBVA

consumption and income (**RDR**), wealth (**RTR**) and the short-run interest rates (**TIR3M**). As expected, the long run elasticity of expenditure to income and wealth are positive and negative to interest rates. Income elasticity (0.92) is nine times larger than elasticity to net wealth (0.09). The joint elasticity of consumption to both variables is statistically equal to one, thus which consistent with the permanent consumption theory since it shows that on the long run the consumption to income -ratio and wealth-to-income ratio should be proportional. The model also captures the effect of the interest rates. The elasticity of consumption to the short-term interest rates is negative, supporting the evidence that when financing conditions tighten, consumption shrinks.

Notice that since 2003 the estimated long run path presents significant systematic outlying errors on the downside. This implies that the estimated consumption level is greater than actual consumption suggesting that since 2003 consumption remains subdued under its equilibrium level for reasons not tied to its fundamental long-run dynamics.

According to the estimation, the historical contribution of income to consumption has been 1.9% (from 2.2%) on average whilst wealth and interest rates only added 0.2% and 0.1%, respectively.

### Explaining low consumption: 2 facts - 3 reasons

On Chart 4.6 it has been represented the contributions of these factors over time. It can be observed that, since late 2001, the consumption dynamics have been very weak and solely founded on the very accommodative financing conditions.

At first glance, the weakness in the consumption dynamics could be explained due to the slack income growth registered since late 2001 (-0.1% average growth). This low-income growth could be a result of the restructuring of the labour market, which combined wage moderation and lay-offs. Recall that between 2001 and 2005 a series of restructuring, off-shoring and labour reforms brought up 1.15 million new unemployed and threaten with further dismissals. Simultaneously, trade unions have lost bargaining power, in particular as they have been restricted in the participation in the decision-taking process in large corporations (*Mitbestimmung*). In the positive side, this short-term costs are necessary and unavoidable in the process of labour market reform, that eventually should pay-off in the future.

Beyond the income dynamics, it was already mentioned that actual consumption is seemingly below its long run equilibrium, thus leading to a growth 0.5% lower than estimated by the model. This could be related to the sudden break in the equivalence between the *consumption-to-Income and Wealth-to-Income* ratios in 2001 (see Chart 4.8). This break could suggests that there may be some instability in the estimates of the consumption elasticities in the latter period (lower consumption for the same level of income).

There could be two reasons explaining the lower consumption willingness. It is reasonable to assume some precautionary reasons for it. As mentioned before, many companies were engaged in an intensive restructuring process that produced all-time-high unemployment figures, while unemployment benefits were being restricted due to the implementation of labour market reforms (Hartz IV). In this context it is likely that households expectations about their near future income deteriorated, thus cutting spending. On Chart 4.10 we identify a phase of subdued consumer expectations that corresponds to the stagnant consumption growth registered between 2001 and 2005.

An alternative explanation for the low consumption willingness is also related to uncertain future prospects, but rather concerning public expenditure and the long run. In 2001 the Ministry of Financial Affairs, in light of the poor budget performance, began to question the sustainability of the Pension System, the Social Security and the Public Health Care<sup>4</sup>. In this context, consumers could have begun to consider public financial needs and public debt as permanent threats to their long run income and wealth, and thus encouraged them to increase their savings, repay their debts and reduce investments. That is to say, in the spirit of Ricardian Equivalence theory, households acknowledge as theirs the necessary



fiscal consolidation process to bring sustainability to the public accounts, adopting their domestic decisions accordingly. In fact, the composition of the current account ratio to GDP, as approximated by the difference between (public and private) saving and investment-ratios to GDP could be indication of Ricardian Equivalence to be holding since 2001. On Chart 4.11 we may see how increasing private surpluses are used to finance public deficit (and the foreign sector).

### Let the future come. Consumption in 2006 and 2007

Partly because of its poor performance up to date, generalised prospects on income and consumption growth seem to be optimistic only in the short run. It is generally accepted that consumption will be boosted due to one off effects during 2006. Namely, the World Football Championship and some anticipation of purchases in advance of the VAT hike in 2007. However, this one-off impulses should be short-lived, thus leading to a sharp correction during 2007 that consequently will bring the economy back to very low growth.

Although there are risks to growth, there are some reasonable prospects on income, wealth and the savings ratios that could eventually offset these expected burdens, especially those regarding the introduction of the VAT hike. In our baseline scenario we think the following factors will play a role during 2006 – 2007:

- 1) Employment, Wage and Income. In our baseline scenario, corporations will still enjoy a healthy financial situation, foreign demand will remain dynamic and domestic demand will keep accelerating as a result of increased capital spending and the signs of recovery in the construction sector. Thus, employment growth will pick up, bringing the unemployment rate down during 2006 - 2007. Non-wage costs will be reduced due to the cut on employees and employers contributions to unemployment. For this reason employers will have no further need to adjust costs and an opportunity for wage normalisation will arise<sup>5</sup>. Thus, real income growth is expected to grow a modest 0,5% on average during 2006 and 2007.
- 2) Wealth growth. As 2005 GDP data resemble, construction sector recession seems to be reaching a turning point and housing investments could be rebounding, that would stop the drag on non-financial wealth. Meanwhile vigour of expected corporate profits seem to be swelling financial stock prices. In this context, wealth should be returning soon to its historical growth rate (1.8 % YoY).
- 3) Inflation. According to our prospects, in absence of brusque energy price hikes and in a context of very unlikely second round effects, inflation should remain under control, even with the VAT hike. Therefore we expect inflation to be between 1.5% and 1.7% in 2006 and between 2% and 2.4% in 2007
- 4) Short-term interest rates will remain relatively low as the pace of monetary tightening by the ECB will be slow.
- 5) The World Football Championship (WM06) due the third quarter of 2006, will have some effects on employment, export (services), income and consumption. All this will lead to a punctual acceleration of GDP in the second half of the year that could translate into additional income growth<sup>6</sup>. However, the extent of this transitory increase would result in lower growth in 2007.

In sum, consumption is expected to grow by 1.3% in 2006 and 1.0% in 2007. If we consider that the saving ratio was reduced to last decades average level, consumption growth could even surpass our baseline forecast by 0.4%.

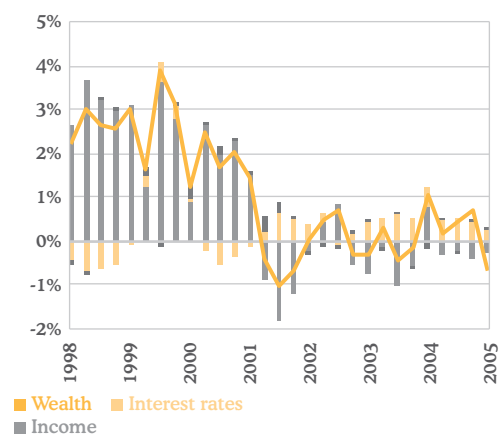
<sup>4</sup> In 2001/2002 the German pension system was semi-privatised under the *Riester* approach. In 2003 a labour reform was introduced as Hartz I to III programs. Additionally the "Pauschal" reform was introduced in the Health Care System introduction statutory contributions. In 2004 the Hartz IV was billed.

<sup>5</sup> Hence, in our baseline scenario we account a 2,8% YoY -wage growth rate corresponding to a 2,2% YoY nominal income growth during 2006 and 2007.

<sup>6</sup> For comparison, the Bank of Portugal estimated the effect of the *European Football Cup 04* to add approximately 0,5% to GDP. Although a *World Championship* is a much larger event than the *Euro Cup*, this "volume effect" should be more diluted, as the German economy is 12 times larger than the Portuguese.

Chart 4.6.

### Contributions to consumption growth

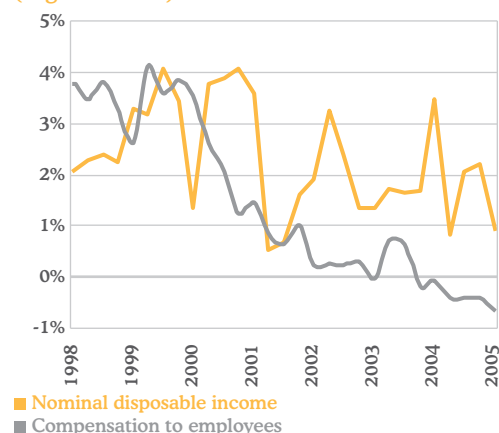


Source: BBVA

Chart 4.7.

### Compensation to employees vs. nominal disposable income

(% growth YoY)

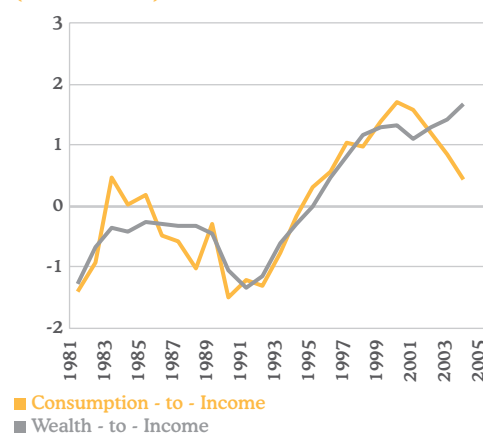


Source: BBVA

Chart 4.8.

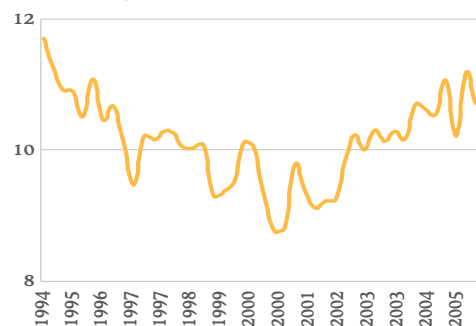
### Consumption-to-income & wealth-to-income ratio

(standardized)



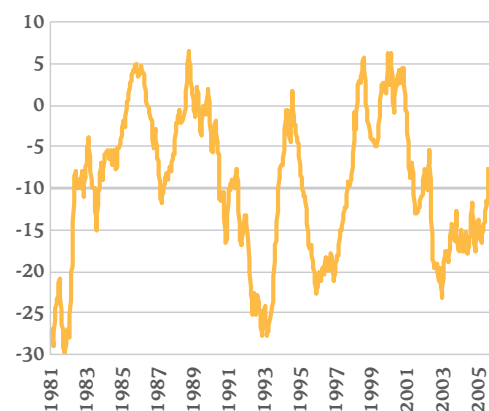
Source: DESTATIS

Chart 4.9.  
Households savings rate  
(in % of disposable income)



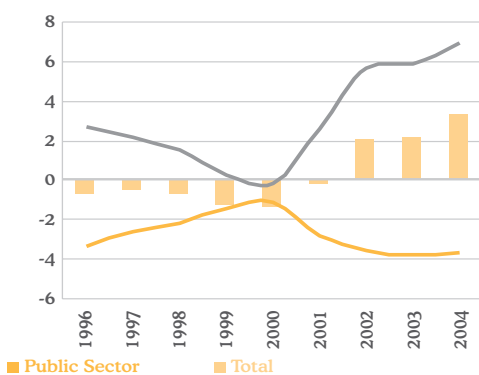
Source: DESTATIS

Chart 4.10.  
Consumers confidence



Source: European Commission

Chart 4.11.  
Net lending  
(in % of GDP)



Source: Bundesbank

## The introduction of the VAT hike and its potential downside risks on consumption growth.

The fiscal consolidation target, as set under the Grand Coalition Treaty (Public Deficit below 3% by 2007), requires € 35 k. million of additional gross savings. The optimal fiscal consolidation plan should have been pursued based on an expenditure cut. Rather, the current government opted for increasing fiscal revenues. Thus, a VAT hike from 16% to 19% was introduced for 2007.

Although among taxes, a consumption tax should be the least distorting measure<sup>7</sup> to achieve the fiscal target, its impact on 2007 consumption could be negative, as some expert do assert. The arguments used claim that the VAT hike (from 16% to 19%) would affect consumption growth through the following channels:

- 1) The VAT hike will be an extra burden on firms and households real income growth, at a time when domestic demand is still weak and the economic recovery is not assured.
- 2) It could result in higher inflation expectations and, consequently, increased wage claims, which could have a negative impact on a still faltering labour market and reduce income growth.
- 3) There will be an anticipation effect that could create certain time inconsistencies on the consumption pattern, higher than usual consumption in 2006 would result in lower consumption in 2007 (there is both a level and a growth rate effect).

Notwithstanding, there are factors that mitigate the impact of the aforementioned threats:

The first argument is partly true only because, in a context of high profit margins and subdued demand, the pass-through to prices will not be 1-1. In fact it may be assumed that the gross additional fiscal burden will be shared to 3/4 on consumers and to 1/4 on firms. However, the effect on firms will be fully neutralised in net terms as they will be enjoying an equivalent relief in the reduction in their contributions to the unemployment insurance and the looser capital amortization rules to be implemented on 2007. For this reason, the introduction of the VAT hike should not directly affect neither their corporate margins nor their investing or employment decisions. Consumers will also benefit from the reduction in the contribution to the unemployment insurance. But they will be in the end bearing an additional net burden of € 20.000 million<sup>8</sup> (3/4 of this will be related to the VAT hike). The pass-through from the VAT hike to consumer prices is estimated to be about 70%. This implies that the VAT hike will bring one additional percentage point of inflation above the original forecasted rate.

Second, the risks on inflation expectations and their effects on wages should only represent a limited threat. First, the economic situation is not conducive to second round effects. As a matter of fact there have already been five years of negative growth of compensation to employees without significant wage pressures emanating. Second, the VAT increase is fully anticipated, hence, incorporated in ongoing wage negotiations, and the evidence available does not point to significant *second round effect*.

Third, Regarding the anticipation effect there is only mixed evidence that a VAT hike will bring a surge in consumption during 2006, which would result in a drop thereafter. Historical experience shows that, on a year base, there were no systematic reactions before (up) and after (down) tax hikes in the past. The comparisons with similar experiences in the past is difficult as one must take into consideration the cyclical phase in which the economy is at the time of the tax hike. Only the 1997 VAT hike happened in a comparable cyclical position to where we think the German economy will be in 2006. Nevertheless in year on

<sup>7</sup> In the case of Germany, this argument gains special relevance for the country is among those with the lowest burden on consumption but the highest on labour, capital and income.

<sup>8</sup> Some sources, as *Commerzbank German Economic Monthly* (12/05), estimates that the burden to households' income, taking into account VAT increases and other fiscal measures (such as expenditure cuts etc.), will be about 20 thousand million euros in 2007.

year growth rates<sup>9</sup> we did not observe any consumption anticipation followed by a subsequent drop in that episode.

Testing the historical evidence in Germany with statistical tools did not provide any proof of anticipation effects either. On Chart 4.14 the estimation errors of our consumption function have been plotted during the three most recent VAT hikes carried in Germany (1983 1993 and 1997). In none of them the estimation errors are identified as outliers (far beyond the standard error intervals). Further, we also tested if the model accepted some dummy variables accounting for lagged, contemporaneous and forward looking consumption decisions around the date of the tax hike, but the model rejected their significance, thus providing further evidence of negligible effects of VAT hikes on consumption dynamics in the short-run.

Fourth, even if consumption would rebound prior to the VAT hike, that does not necessarily imply a subsequent correction in 2007. The “2006-excesses” could be corrected during several years thereafter, leading thus to a smoothed pattern in the correction to its natural growth rates, rather than the feared drop. If any resemblance of Ricardian Equivalence holds in Germany or of Consumption Smoothing, that should be the predicted path: anticipated consumption to be “corrected” *ad infinitum*.

Finally, even if the VAT hike has a negative impact on consumption, this could be compensated, at least partially, by the renewed confidence of agents as the economy grows in 2006 and the expected fiscal picture clears. If the slow dynamism of consumption in Germany has been caused by lack of confidence, its correction may lead to even stronger dynamism as consumption catches up with its long-term path.

### Some other reasons sustain further consumption growth beyond 2006

These factors limit the impact of the VAT hike, but they also have an incidence on the evolution of consumption itself beyond 2006.

- 1) As the economic situation, employment and income perspectives improve, consumer expectations could recover (as they are currently doing) such that most of the precautionary reasons to save fade away.
- 2) Fiscal consolidation -despite of being achieved at the expense of higher taxes- could carry expansionary effects on consumption and growth. On the one hand, employers could perceive that finally fiscal consolidation is been achieved and thus be encouraged to boost investment and employment, with its corresponding impact on all economic aggregates and renewed confidence, giving rise to a virtuous cycle. On the other hand, households who (in the spirit of the Ricardian Equivalence) had been saving to finance the public sector's excessive spending could start reducing their savings ratio, spending more and even taking new debt. In fact, households credit demand has been accelerating since the fourth quarter of 2005, when consumer confidence started to rebound.

These factors could help bring back consumer spending to its long term level, leading thus to an additional boost on consumption and expenditure growth.

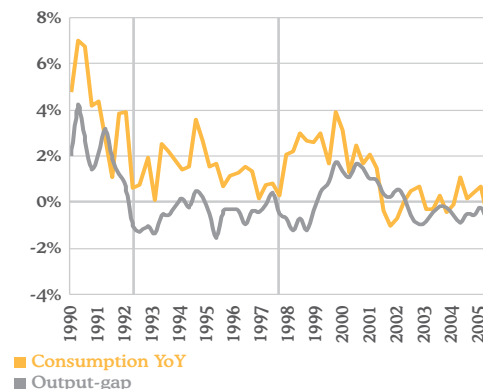
### Conclusion

After half a decade of subdued income growth and wealth stagnation the prospects for the German economy are getting better. Many factors support a recovery of households purchasing power and their renewed better expectations. These should remain the main drivers of consumption recovery during the next few years. Additionally the accounted one-off effects on 2006 will further push demand upwards, posing only limited risks for the subsequent years. Potential risks due the new governments fiscal policy (the VAT hike) will be offset thanks to a reinforced willingness to purchase either as a result Germans confidence or as a consequence of expansive effects of fiscal consolidation.

<sup>9</sup> We use year-on-year growth rates as, graphically, the quarterly frequency is contaminated with seasonal effects.

Chart 4.12.

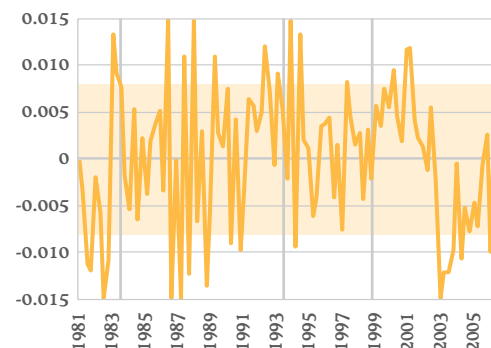
### Consumption, output-gap and VAT hikes (+1%)



Source: BBVA and DESTATIS

Chart 4.13.

### Consumption, estimation errors and VAT hikes (+1%)



Source: DESTATIS

## 5. Energy efficiency in Europe: where do we stand?

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Carmen Hernansanz

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### Introduction

Energy efficiency is increasingly recognised as a priority by developed economies. In the last years, rising energy costs, uncertainty regarding security of supply and global environmental awareness have outlined the importance of managing energy demand. In this context, the European Union published a Green Paper in 2005 calling its members for individual energy-efficiency plans and also enforced several Directives aimed at improving the energy performance of industry as well as households.

This article analyses the evolution of energy efficiency in the European Union (EU15) over the last ten years, with special focus on its five leading economies. As we will see, significant differences stand out and, while some of them have clearly improved their energy efficiency, others do not seem to have done so.

However, as we will see, the energy demand of each country is largely affected by fixed effects such as climate conditions or country extension and, more importantly, by factors such as per capita income and economic structure. Understanding these determinants is critical to evaluating an economy's energy efficiency and to estimating its potential for gains in the future.

### What is energy efficiency? A few thoughts regarding measurement

From a theoretical point of view, a process is energy efficient when it consumes the minimum amount of energy needed to produce one unit of output. This relationship is given by a production function that relates the final output with the available inputs and technology. In general, the more complex the process, the more energy will be needed.

However, the estimation of many production functions (as many as processes are involved in the productive chain of an economy) may be extremely burdensome. As a result, in order to analyse the energy efficiency of the economies, more aggregate tools tend to be applied.

The most commonly used one consists of an international comparison ("benchmarking") of the evolution of aggregate energy intensities, defined as the ratio between observed energy consumption and Gross Domestic Product (GDP) for each country. In this type of analysis, the economies with the highest intensity ratios are ranked among the most energy inefficient. However, this may be misleading since, as we will see, both the level and the evolution of aggregate energy intensities rely on several factors other than efficiency in energy usage. While some of them are independent of human action (like climate conditions or country extension), others depend on economic aspects such as the degree of development or the productive structure of a country.

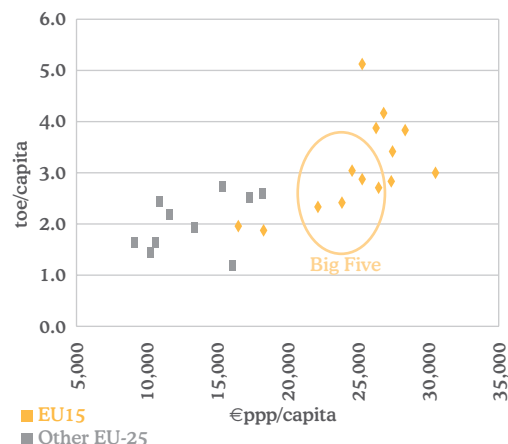
In effect, the degree of development of an economy affects its energy intensity through several channels. First, the better the technology available, the higher the productivity of factors and the output obtained per unit of energy consumed. Second, high developed economies tend to have big tertiary sectors, generally less energy intensive than industry. Third, environmental awareness tends to convey more rationality to energy consumption in developed economies. However, in these economies, all these effects may be offset by higher residential and transport fuel consumption (see Chart 5.1).

Table 5.1. Energy Indicators 2003

	PES/GDP		PES/capita	CO2/capita
	PES/GDP	(PPP)		
	(toe/thousand 2000 USD)	(toe/thousand 2000 USD PPP)	(toe/capita)	(kg CO2/ 2000 USD)
USA	0.22	0.22	7.84	19.68
UK	0.15	0.14	3.91	9.1
Germany	0.18	0.17	4.21	10.35
France	0.20	0.17	4.41	6.33
Spain	0.22	0.15	3.34	7.68
Italy	0.16	0.12	3.12	7.8

PES= Primary Energy Supply  
Source: International Energy Agency

Chart 5.1.  
Final energy consumption vs per capita GDP in 2003



Source: Eurostat

Table 5.2. Added value structure in 2004

	Industry (*)	Services	Other
EU15	26%	72%	2%
Germany	29%	70%	1%
Spain	29%	67%	4%
France	22%	76%	2%
Italy	27%	71%	2%
UK	26%	73%	1%

Source: Eurostat and National Accounts  
(\*) Including Construction

The energy intensity is also bound to the economy productive structure because some activities, like industry, tend to consume more energy per output than others. For example, heavy metal industries may consume, per unit of value added, five times as much energy as non-transport services. Consequently, an economy whose gross value added is more concentrated in industry rather than services will tend to show, *ceteris paribus*, a higher aggregate energy intensity ratio.

In sum, all these factors imply that international comparisons of aggregate energy intensities should only be done for economies showing similar degrees of development and productive structures.

In this article we compare the evolution of energy intensity (corrected by PPP)<sup>1</sup> of the five leading economies of the European Union (EU15) during the last ten years. As can be seen from Table 5.2, the productive structures of these countries are reasonably homogeneous.

We conclude that, apart from fixed effects such as country extension or climate conditions, differences in GDP per capita and productive structures still explain to a great extent the discrepancies observed across countries, confirming the insight that cross-country and/or inter-temporal benchmarking analysis must be taken with a pinch of salt.

### The Aggregate energy intensity

Chart 5.2 shows the evolution of GDP per capita and final energy consumption for the “big five” EU15 economies. As can be seen, there is a positive relation between both variables, although each country displays its own peculiarities. In Spain, the extraordinary 35% increase of per capita GDP between 1991 and 2003 was accompanied by an even higher growth of its (per capita) energy consumption (+37%). In contrast, per capita GDP in the UK has also increased by a remarkable 36%, but its (per capita) energy consumption shows almost no rise (+2%). Germany, France and Italy have experienced lower rates of economic growth. In the first two cases, there has been no increase of per capita energy consumed (-3% and 1% respectively), whereas Italy shows the second highest per capita energy rise (13%) after Spain.

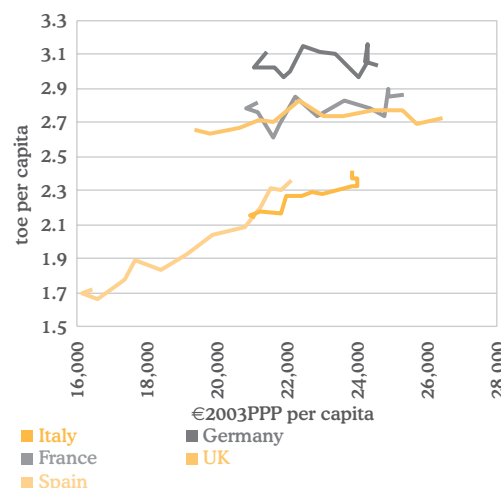
Where do these different energy patterns come from? In order to give an answer to this question, it is helpful to look at the evolution of aggregate energy intensities, shown in Charts 5.3 and 5.4 (both for primary and final energy, and corrected by PPP).

As can be seen, the whole EU15, Germany, France and, more notably, the UK have significantly decreased their energy intensities since 1995. In contrast, Italy and Spain show a slight increase in their primary intensities and a significant rise in their final energy intensities, especially the last one.<sup>2</sup>

The UK shows the best performance over the whole period and, contrary to other countries, it still showed a prominent decreasing trend in 2004. In that year, it had the lowest final energy intensity among the big five and was only overcome by Italy in terms of primary energy due to the huge electricity imports of this country<sup>3</sup> (Italy is the first net electricity importer in the EU). The opposite happens to France (the biggest net electricity exporter in Europe), whose performance in terms of final energy intensity is better than in terms of primary energy.

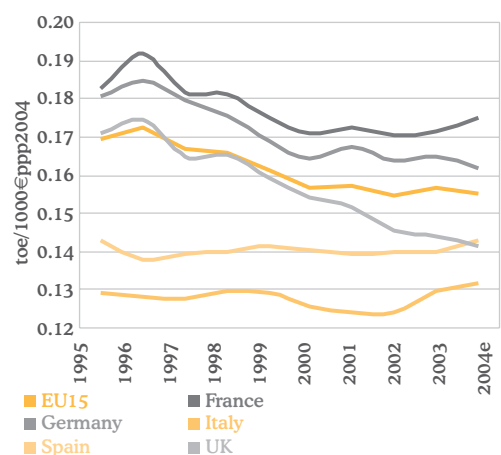
<sup>1</sup> For an explanation on how we have corrected by PPPs and calculated the aggregate energy intensities, see methodological box “How to construct an aggregate energy intensity ratio”.  
<sup>2</sup> The concern of the Spanish Authorities about this issue has translated into an ambitious National Action Plan 2005-2007. See BBVA Situación España (February 2006) for an indepth analysis of the energy efficiency of the Spanish economy.  
<sup>3</sup> This implies that Italy does not have to consume all the primary energy needed to generate the electricity it consumes (in this process, more than two units of primary energy are needed to obtain one equivalent unit of electricity).

Chart 5.2. Evolution of per capita GDP and final energy consumption 1991-2003



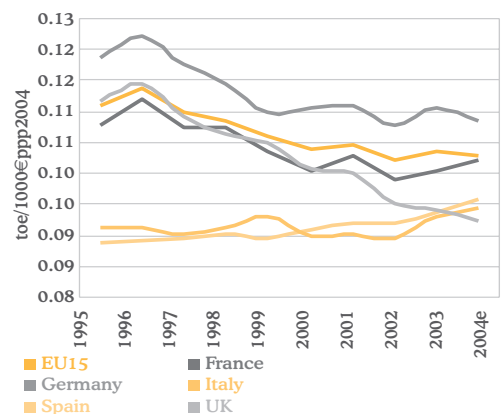
Source: Eurostat

Chart 5.3. Aggregate primary energy intensity



Source: Eurostat and BBVA

Chart 5.4. Aggregate final energy intensity



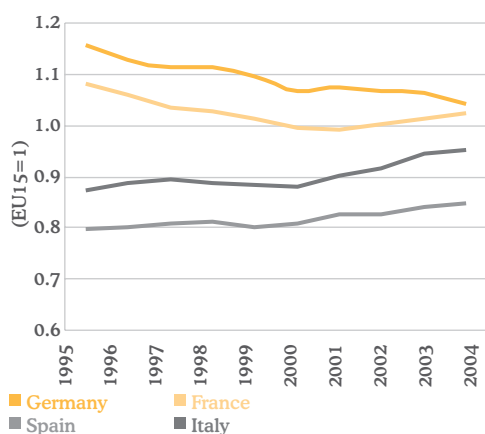
Source: Eurostat and BBVA

## How to compute an aggregate energy intensity ratio

There are different specifications for both the numerator and denominator of an aggregate energy intensity ratio. The numerator can be expressed in terms of primary or final energy. In general, primary energy must be transformed in order to be suitable for final consumption. Therefore, one of the main differences between primary and final energy lies with electricity (which is a final energy produced from primary sources such as nuclear energy, coal or wind) and oil derivatives resulting after petroleum refining. Important losses are generated through the transformation process and, therefore, final energy will always be smaller than primary energy in national energy balances.

Regarding the denominator, GDP is the most generally used variable to measure output but Gross Value Added is used in sectoral analysis. Comparisons across national GDPs of GVAs is not straightforward due to differences in national accounting standards, exchange rates and price levels. Fortunately, the homogenisation of national accounts within the EU considerably mitigates the two first distortions. However, in spite of the remarkable convergence achieved in nominal terms, prices are still far from being unified across Europe. Consequently, the variation of output series in real terms reflects, not only changes in quantities of goods and services produced in each country but also changes in relative prices. In order to have quantities expressed in uniform prices, we must apply Purchasing Power Parities (PPPs).<sup>1</sup> PPPs act as spatial deflators that convert national GDPs to a common currency while removing the existing differences in national price levels.

### PPP evolution in some EU15 countries

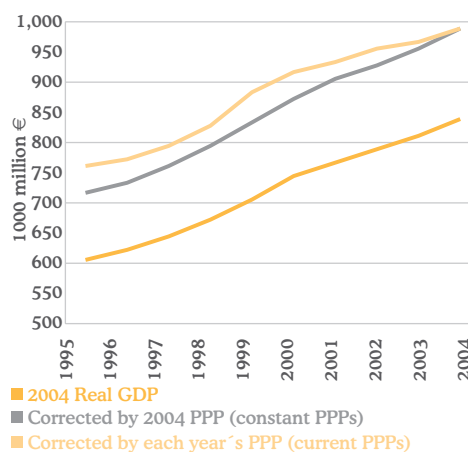


Source: Eurostat

Yet, in order to keep consistency over time, we need to use a GDP series whose growth rate only reflects real changes. This can be done by selecting a base year, correcting that year's GDP by its PPP, and then generating the rest of the time series by applying the growth rate of real GDP observed in each year. The main drawback with this approach is that it assumes constant PPPs over the whole period. However, as the preceding chart portrays, this is not what happens in real life.

Therefore, there is a clear trade-off between time and spatial consistency of GDP series and imposing a constant price structure through constant PPPs. In line with OECD recommendations, we have given priority to the first goal and have applied constant PPPs for the whole period. However, contrary to other energy efficiency studies, we have selected as the base year the one corresponding to the most current available data (i.e., 2004 for the aggregate economy, 2003 for the sectoral analysis). The main advantage of this approach is that it avoids the constant PPPs problem for the most recent data, as shown by the following chart.

### Effects of different PPP corrections of GDP: Spain



Source: Eurostat

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<sup>1</sup> Purchasing Power Parities are conversion factors that eliminate differences in purchasing power between countries. In this article, we used the PPPs provided and calculated by Eurostat (base 95) under the Joint OECD-Eurostat PPP programme, with respect to the EU15 (i.e.,  $PPP_{EU15}=1$ ).

In order to understand the main drivers underlying the diversity of energy intensities across Europe, we have performed an analysis of energy intensities by sector, which we show in the following sections.

### The industry: different structures explain a big part of the story

Industry represents around 30% of energy demand. However, energy consumption is diverse across the various industrial sub-sectors. In the metals and minerals sectors, high temperature processing dominates (coke ovens, blast furnaces, etc), while in chemicals and food and drinks branches low temperature processing accounts for most of the energy. In other industries, space heating and use of electric appliances are simply the main energy use. Therefore, differences in industrial structures are crucial to understand differences in national industrial energy intensities.

Chart 5.5 displays the evolution of the industrial energy intensity in each country between 1995 and 2003.<sup>4</sup> As can be seen, except for Spain and Italy, all countries show a fluctuating and decreasing trend, the British industry being markedly less energy intensive than the rest.

To a great extent, this can be explained by the different industry structures of these countries. Tables 5.3 and 5.4 show the distribution of gross value added (GVA) and energy consumption for the top-4 energy-intensive sub-sectors. As can be seen, these branches consume between 58% and 65% of all the energy used in the industry, while they hardly create more than 30% of its gross value added.

In the UK, these four branches concentrate a relatively small part of the industry's GVA (23%) and, in particular, the weight of non-metallic minerals (probably the largest energy consuming industrial branch) is 2.3%, which explains the low energy intensity of the British industry.

On the other extreme, France has 35% of its industry concentrated in the top-4 energy-intensive sub-sectors. However, it is not this country, but rather Spain and Italy, that show the highest energy intensity ratios for the industry. The higher degree of specialization of both economies in non-metallic minerals contributes to explain this fact, especially in Spain, where construction's GVA has been growing at an average real 6.2% per year since 2001.<sup>5</sup> According to industry sources and Odyssee database, while both countries are the main cement producers in Europe (again probably the most energy intensive subsector within non-metallic minerals), their energy usage per tonne of cement is among the lowest of the EU.

Finally, compared to France, Germany shows higher energy consumption rates, especially in the chemical and primary metals industries, which are more energy intensive than that of food and drinks. This may be due to compositional effects (Germany being skewed towards the most intensive subactivities inside the top-4 intensive industries) or to a higher energy efficiency of French peers. In any case, on aggregate, the energy intensities of the industries of both countries are quite similar. Again, this could be due to compositional effects (in this case, France being skewed towards more energy consuming branches inside the non-energy intensive group) or to a higher efficiency of Dutch peers.

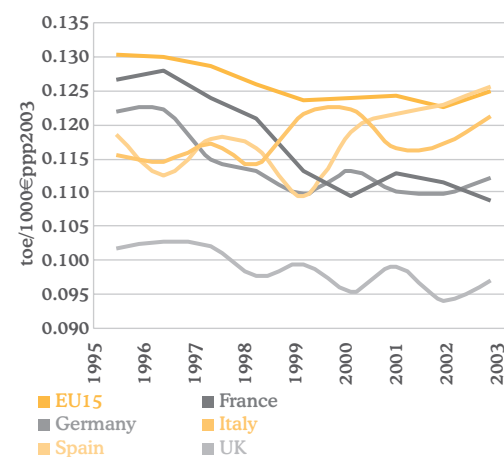
### Services and households: the increasing role of electric appliances

The household and private commercial and public services sectors are important contributors to energy consumption. In the EU15, nearly 40% of all energy demand is consumed by these sectors. Again, there are wide differences across countries: in 2003, they accounted for 43% of the total energy demand in Germany, 33% in Italy and 23% in Spain (see Table 5.5).

<sup>4</sup> France's GVA for the year 2003 has been estimated.

<sup>5</sup> Non-energy consumption is not included. Otherwise, the Chemical industry would be the most energy intensive one, given the huge amounts of oil used as raw material in the petrochemical industry.

Chart 5.5. Final energy consumption over GVA: Industry



Source: Eurostat and National Accounts

Table 5.3. Top 4 energy users: share of industry added value in 2003

	Non metallic minerals	Chemicals	Primary metals	Food and beverages	Total top-4
EU15	3%	7%	8%	8%	27%
Germany	2%	8%	10%	7%	26%
France (*)	3%	9%	11%	12%	35%
Italy	5%	6%	10%	8%	29%
Spain	4%	6%	9%	8%	27%
UK	2%	6%	6%	8%	23%

→ less energy intensive

(\*) 2002 data  
Source: Eurostat and BBVA

Table 5.4. Top 4 energy users: share of industry energy consumption in 2003

	Non metallic minerals	Chemicals	Primary metals	Food and beverages	Total top-4
EU15	13%	17%	18%	10%	58%
Germany	11%	20%	23%	8%	62%
France	11%	19%	17%	13%	60%
Italy	21%	14%	17%	9%	62%
Spain	25%	14%	16%	10%	65%
UK	6%	19%	16%	10%	51%

→ less energy intensive

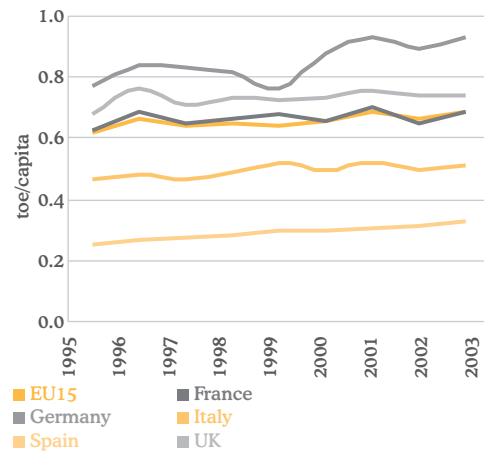
Source: Eurostat

Table 5.5. Energy consumption in 2003

	EU15	Germany	France	Italy	Spain	UK
Industry	28%	26%	24%	31%	33%	23%
Transport	32%	27%	32%	33%	41%	35%
Other services	11%	10%	16%	10%	8%	11%
Households	26%	33%	26%	23%	15%	29%
Other	3%	4%	2%	3%	3%	2%

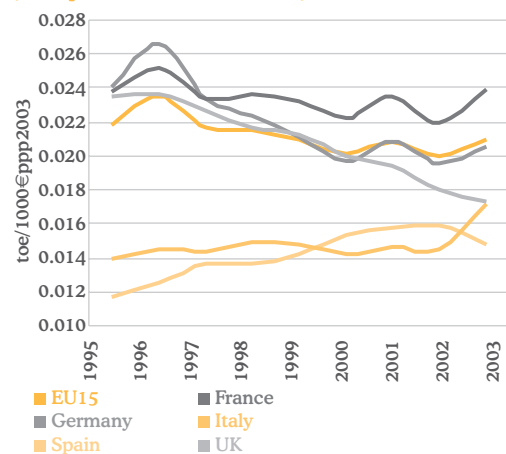
Source: Eurostat

Chart 5.6. Final energy intensity: Households



Source: Eurostat

Chart 5.7. Final energy intensity: Services (transportation not included)



Source: Eurostat and National Accounts

This reflects the fact that average energy consumption of households and services depends, not only on economic factors such as per capita GDP or sector structure, but also, and perhaps more importantly, on the specific circumstances of each country such as climate and/or building conditions.

Heating (both for space and water) represents almost 70% of domestic energy consumption, and space heating accounts for over a half of energy consumption in the services sector. Thanks to regulations setting minimum requirements for the insulation of buildings, the energy demand of new constructions is considerably lower than that of the existing stock (at the present time, new built properties require 60% less energy for heating than new built properties 30 years ago).

Therefore, it is not surprising that countries with a cold climate and/or which are particularly skewed towards older properties (UK, Germany, France) show higher energy intensities in their residential and services sectors (see Charts 5.6 and 5.7). However, the use of air conditioning and electric appliances has increased considerably as a result of economic growth. This trend is expected to continue in the future, specially in Spain given its hotter climate and margin to improve its real economic convergence.

Finally, composition effects similar to those observed for the industry may also explain a part of the differences observed in energy intensities of commercial services, specially the higher French record. Unfortunately, due to the lack of disaggregated data, it has not been possible to test this hypothesis neither.

### Transportation: big potential for efficiency gains

Transportation is the main driver of energy consumption in the EU15. It represents about one third of final energy consumption (in Spain it accounts for 41%) and around 80% of it corresponds to petroleum being used for road transport.

As Chart 5.8 shows, the lowest intensity ratio must be attributed to Italy, though the United Kingdom shows the best performance in terms of intensity evolution, with an accumulated improvement of 29% for the period 1995-2003.

However, in this sector, the ratio of energy consumed over GVA is a poor indicator of energy intensity since a big part of fuel consumption goes to private transportation and doesn't contribute to the sector's GVA. Energy intensity would be better measured as the ratio of energy consumption to the amount of freight or passengers carried and the distance travelled (measured in tonnes-kilometre and passenger-kilometre respectively), giving an indication on how efficiently energy is used for moving goods and people in a country. However, separating energy consumption by these types of transportation is very complicated because national energy balances are generally disaggregated by fuel and broad traffic type (road, rail, water, and air) but not by passenger and freight transportation (nor for commercial or private use).

If we compute intensity by dividing energy consumed by GDP (see Chart 5.9), then Spain shows the highest energy intensity in transportation and Italy the lowest one. Meanwhile, UK and Germany show the best performance in terms of intensity improvement.

According to the International Energy Agency (IEA), Italy displays specific features that help to explain its lower energy intensity in transportation. First, Italian cars tend to be relatively less energy intensive due to their smaller size. Second, the number of vehicles fuelled either by liquefied petroleum gas (LPG) or natural gas is significantly higher than in other economies. Third, fuel taxes and



fuel prices are comparatively high in Italy. All these factors seem to counterweight one of the highest car ownership ratios in Europe and a relatively low utilisation of rail and maritime freight transportation.<sup>6</sup>

In Spain, the main source for energy inefficiency seems to lie in passenger transportation. Comparatively cheap fuel, old cars with a low occupancy rate, low rail utilisation both for passenger and freight transport and an increasing number of air passengers have been identified as the main sources of one of the uppermost transportation energy intensities across Europe.<sup>7</sup>

## Conclusions

Energy efficiency has become an important issue for regulators and academics. Last year, the European Union published a “Green Paper towards energy efficiency” which estimates the potential savings due to improvements in energy efficiency at around 60 billion euro (taking into account an oil price of 30 USD a barrel). Accordingly, individual members are implementing energy-efficiency plans at the national level and are taking measures to transpose several European Directives aimed at enhancing the energy performance of industries and households.

Since 1995, the energy intensity of the European Union (EU15) has improved by 8%. However, there are significant differences across countries. Those showing the highest energy intensities at the beginning of the period have managed to reduce it, especially the UK and Germany, while those with the lowest energy intensities (Spain and Italy) have slightly increased them.

Why is that the case? Although international benchmarking of energy intensities is limited by aspects concerning comparisons, the analysis done in this article by sectors provides some interesting insights.

First of all, differences in industry structures are crucial to understanding the disparity in energy intensities across countries. Those economies with a higher (and increasing) presence of energy intensive industries, like Spain or Italy, tend to present higher intensity ratios than others, such as the UK.

Second, the energy demand of domestic and services sectors’ is widely affected by climatic conditions. The biggest potential for energy efficiency in this field has to do with improving the energy performance of buildings although electric appliances are gaining an increasing role in electricity consumption by households and offices, specially in countries with the lowest per capita incomes.

Third, transport is the most important contributor to energy consumption, with more than 80% being concentrated in the road. The more advanced countries have managed to decrease their energy intensity in this sector whereas for others, like Spain, it clearly constitutes the main source for energy inefficiency. Switching to a higher utilisation of rail could bring a big potential towards improving efficiency (and reducing reliance on petrol) in some European economies.

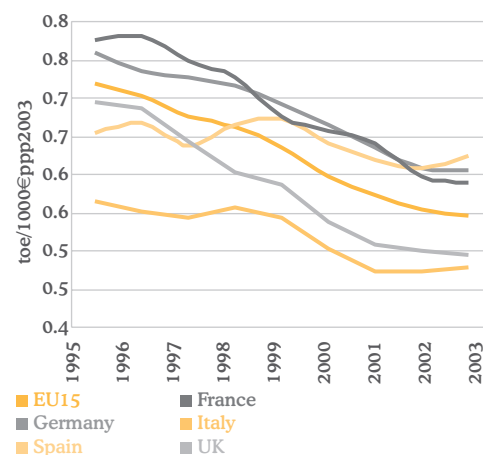
Finally, it is of great importance that the authorities (both at the national and European level) take a step forward towards the publication of more disaggregated energy balances and GVA data.

<sup>6</sup> Rail and maritime freight transportation are at least two times less energy intensive than road transportation.

<sup>7</sup> Aviation is one of the least energy-efficient modes of transportation.

Chart 5.8.

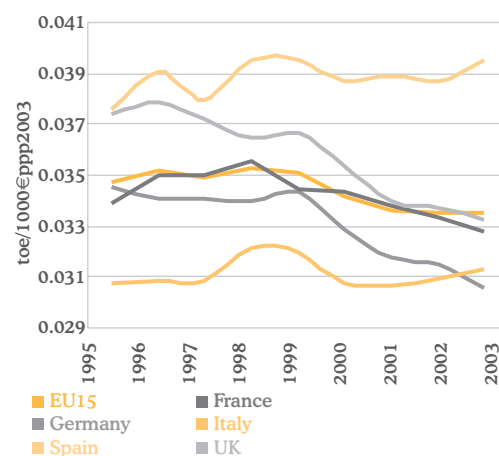
### Final energy consumption over GVA: Transportation



Source: Eurostat

Chart 5.9.

### Final energy consumption over GDP: Transportation



Source: Eurostat

## 6. Summary of Forecasts

### Germany: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006	2007
Private consumption	0.1	0.2	0.2	1.3	1.0
Public expenditure	0.1	-1.6	0.1	0.1	0.5
Gross fixed capital formation	-0.7	-1.5	0.2	3.3	3.5
Equipment	0.2	1.1	3.7	5.0	5.5
Construction	-1.5	-3.8	-2.9	1.6	1.5
Inventories (*)	0.6	0.5	0.3	0.0	0.0
<b>Domestic demand (*)</b>	0.6	0.1	0.5	1.4	1.3
Exports	2.3	8.3	6.6	5.8	6.0
Imports	5.0	6.1	5.5	5.6	5.8
<b>Net exports (*)</b>	-0.8	1.0	0.6	0.4	0.4
<b>GDP</b>	-0.2	1.1	1.1	1.8	1.7
<b>Inflation</b>	1.0	1.7	2.0	1.5	2.4

(\*) Contributions to growth  
Source: BBVA

### France: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006	2007
Private consumption	1.6	2.2	2.1	2.0	2.4
Public expenditure	2.1	2.7	1.5	2.3	2.3
Gross fixed capital formation	2.7	2.1	3.3	3.0	3.8
Inventories (*)	-0.1	0.8	0.2	0.0	0.0
<b>Domestic demand (*)</b>	1.8	3.1	2.4	2.3	2.7
Exports	-1.8	2.2	3.2	5.0	5.0
Imports	1.3	6.1	6.6	5.8	6.0
<b>Net exports (*)</b>	-0.9	-1.1	-1.0	-0.3	-0.4
<b>GDP</b>	0.9	2.1	1.4	2.0	2.3
<b>Inflation</b>	2.1	2.1	1.7	1.5	1.4

(\*) Contributions to growth  
Source: BBVA

### Italy: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006	2007
Private consumption	1.0	0.5	0.1	0.5	1.0
Public expenditure	2.0	0.5	1.2	1.5	2.0
Gross fixed capital formation	-1.7	2.2	-0.6	2.5	3.5
Inventories (*)	0.3	-0.1	0.3	0.0	0.0
<b>Domestic demand (*)</b>	0.9	1.0	0.3	1.1	1.7
Exports	-2.4	3.0	0.3	2.5	3.5
Imports	0.8	2.5	1.4	2.0	4.0
<b>Net exports (*)</b>	-0.8	0.1	-0.3	0.1	-0.1
<b>GDP</b>	0.0	1.1	0.0	1.2	1.5
<b>Inflation</b>	2.8	2.3	2.0	1.7	1.5

(\*) Contributions to growth  
Source: BBVA

### Spain: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006	2007
Private consumption	2.6	4.4	4.4	3.6	3.2
Public expenditure	4.8	6.0	4.5	5.0	5.0
Gross fixed capital formation	5.6	4.9	7.3	6.0	3.6
Equipment	2.5	3.7	9.5	7.1	5.9
Construction	6.3	5.5	6.1	5.5	2.0
Others products	7.7	4.4	7.7	6.0	5.0
Inventories (*)	0.0	0.0	0.0	0.0	0.0
<b>Domestic demand (*)</b>	3.8	4.9	5.3	4.9	4.0
Exports	3.6	3.3	1.0	2.7	3.8
Imports	6.0	9.3	7.1	6.8	6.0
<b>Net exports (*)</b>	-0.8	-1.8	-1.9	-1.7	-1.2
<b>GDP</b>	3.0	3.1	3.4	3.1	2.8
<b>Inflation</b>	3.0	3.0	3.4	3.2	2.6

(\*) Contributions to growth  
Source: BBVA

# Summary of forecasts

## Euro zone (YoY)

	2001	2002	2003	2004	2005	2006	2007
<b>GDP at constant prices</b>	1.9	1.0	0.7	1.8	1.4	2.0	2.2
Private consumption	1.9	0.9	1.0	1.4	1.4	1.7	2.2
Public consumption	2.2	2.6	1.7	1.1	1.3	1.6	2.0
Gross Fixed Capital Formation	0.6	-1.4	0.8	1.8	2.2	3.8	4.0
Inventories (*)	-0.5	-0.2	0.2	0.3	0.1	0.0	0.0
<b>Domestic Demand (*)</b>	<b>1.2</b>	<b>0.5</b>	<b>1.3</b>	<b>1.8</b>	<b>1.6</b>	<b>2.1</b>	<b>2.5</b>
Exports (goods and services)	3.6	1.7	1.2	5.9	3.9	5.9	5.4
Imports (goods and services)	1.8	0.4	3.0	6.2	4.7	6.4	6.3
<b>External Demand (*)</b>	<b>0.7</b>	<b>0.5</b>	<b>-0.6</b>	<b>0.0</b>	<b>-0.3</b>	<b>-0.1</b>	<b>-0.3</b>
<b>Prices and costs</b>							
CPI	2.3	2.2	2.1	2.1	2.2	2.0	1.9**
CPI core	1.9	2.5	2.0	2.1	1.5	1.7	2.1**
Industrial Prices	2.0	-0.1	1.4	2.3	4.0	2.7	1.5
<b>Labour Market</b>							
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
<b>Public Sector</b>							
Deficit (% GDP)	-1.8	-2.5	-3.0	-2.7	-2.9	-2.9	-2.7
<b>External Sector</b>							
Current Account Balance (% GDP)	-0.3	0.8	0.3	0.6	-0.3	-0.2	-0.2

\*Contribution to growth  
\*\*Taking into account the increase in German VAT

## International environment (YoY)

	Real GDP growth (%)				Inflation (%)**			
	2004	2005	2006	2007	2004	2005	2006	2007
US	4.2	3.5	3.3	3.2	2.7	3.4	2.8	2.1
Japan	2.3	2.8	3.0	3.0	0.0	-0.2	0.2	0.5
Latam*	5.9	4.3	4.2	3.0	6.8	6.0	6.4	5.5
China	10.1	9.9	9.0	8.5	3.9	1.8	2.5	2.0

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

## Financial variables (end of period)

	Official rate (%)				10 year interest rate (%)			
	02/03/06	Jun-06	Dec-06	Dec-07	02/03/06	Jun-06	Dec-06	Dec-07
Euro zone*	2.50	2.75	3.00	3.25	3.6	3.6	3.7	4.1
US	4.50	5.00	5.00	5.00	4.6	4.8	4.9	4.8

\* 10 year interest rate refers to Germany bonds

	Exchange rate (vs euro)				Brent			
	02/03/06	Jun-06	Dec-06	Dec-07	02/03/06	Dec-06	Dec-07	
US	1.20	1.20	1.23	1.26	\$/b	64	59	55

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