BBVA

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Economic Research Department

Take-off delayed, not cancelled
ECB, to do or not to do
A faltering potential
Excess global liquidity, a need for activism

Contents

This publication has been elaborated by:

Manuel Balmaseda	34 91 374 33 31	m.balmased@grupobbva.com
Gonzalo Cadenas	34 91 537 76 93	santiago.gonzalo@grupobbva.com
Julián Cubero	34 91 537 36 72	jcubero@grupobbva.com
José Félix Izquierdo	34 91 374 42 00	jfelix.izquierd@grupobbva.com
Elena Nieto	34 91 537 37 76	enieto@grupobbva.com

1. Editorial

The favourable outlook for world growth continues being one of the main factors supporting activity in EMU. Productivity gains linked to technological innovation, the growing globalization of production and saving favoured by market liberalization, the increase of capital flows, the strength of the financial and non-financial business sectors and the greater credibility of central banks all favour strong world growth, albeit with moderate inflation. This combination, in turn, gives central banks more room for manoeuvre, allowing monetary policy to focus on enhancing growth prospects.

In this environment, activity in EMU, after the deception of the second quarter, points to increased dynamism supported in the reactivation of activity in Germany. The pick up in activity will be fuelled by a regained vigour of internal demand under maintained favourable circumstances. Financial and monetary conditions, in an environment of absence of inflationary tensions, will continue being particularly lax, with interest rates that will not be raised until well into 2006 and an exchange rate somewhat less appreciated. In addition, real interest rates and credit spreads are at all-time lows, stock market returns are accumulating and credit conditions are gradually easing. This way, after growing 1,4% in 2005, the European economy will grow above 2% in 2006.

This scenario is not absent of risks. The main uncertainty in the short term continues being the evolution of oil prices, impelled by the strong dynamics of the emergent industrialized economies. However, the current shock, although it is of high-intensity, it is not having a high incidence neither on the activity nor on the inflation outlook of the developed countries. With regard to inflation, analysis suggests that the pass-through to consumption prices seems to have been reduced in the last years. Hence, the threat it represents to price stability is somewhat muted. In the longer term, an outstanding risk could be the excess liquidity in the global economy. Although not foreseen at the moment, it could translate into inflationary pressures, which would trigger the subsequent reaction of the central banks and lead to a slowdown of economic activity.

With respect to the long-term perspectives, potential growth in Europe seems to have been deteriorating over the last decade. In this sense, the recent recognition of this fact could signify a renewed impulse to the introduction of market reforms which could stop farther deterioration. As such, the institutional "detente" after the referenda in France and Netherland should not prevent the progress of economic integration. The focus of attention should be maintained on economic reforms and the much needed deregulation process. So far, there seems to be some progress, although slow, on this front. The incipient reforms of the labour market undertaken in France and, especially, in Germany could represent the beginning of a new understanding about the necessity of adding flexibility to the European productive structure. These reforms mark a step in the right direction, although they are still insufficient to guarantee the recovery of potential growth.

2. Europe

An unpromising second quarter

The past few months have not been particularly favourable for EMU. Agents' loss of confidence, in a context of further slowing in growth in the region, the consolidation of high oil prices and the political and institutional setback that came with France and Holland's rejection of the Constitutional Treaty have drawn more attention to the cyclical and structural discrepancies among countries in the euro zone, and to the difficulties for adjustment which arise in a common monetary area. The main risk resides in that the Governments in the region, more concerned about electors' discontent, do no more than lament the impossibility of using the exchange rate or monetary policy to cope with "national shocks", pressuring the ECB to ease the already very lax monetary conditions and putting any type of reform that could be unpopular on the back burner.

Fortunately, it does not look as if the reform process will come to a complete "standstill". The French Parliament has passed a law to boost employment which has some points in common with the much-praised "Hartz" reforms, which are already starting to bear fruit in Germany. But the most notable case is Germany, where the party with the strongest possibility of winning the forthcoming elections in September, the CDU, intends to continue with the present Government's reform programme, emphasizing the need for greater flexibility of the labour market and tax consolidation[1]. In fact, the prospect of a change in Government is already having a positive effect on the expectations of German employers who believe that this could be the turnaround the economy needs. The reform process in Europe, although slow and not without problems[2], seems to be inevitable in a context of increasing globalization of production and saving.

Optimistic factors for the coming quarters

With respect to the evolution of activity in EMU in the short term, there are factors that suggest that the bad patch of the second quarter will be overcome. The confidence of economic agents is showing timid improvement, in line with the reactivation of world growth. Financial and non-financial companies are in a streamlined situation, with significant efficiency gains and high margins and profits. Financial

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[1]   The reforms could go beyond what is foreseen in the programme if the CDU is obliged to form a coalition with liberal party FDP to form the Government.

[2]   French objections to the services directive are another example of Europe's "traditional" resistance to change.
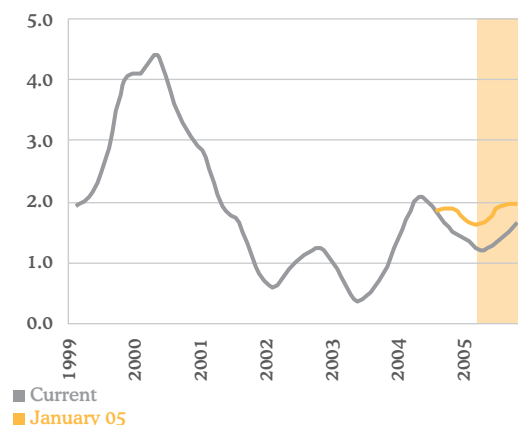
Chart 2.1.

EMU: GDP and ISA-BBVA forecasts
Year-on-year rates

■ Current
■ January 05
Source:

Table 2.1. Election programme of the main German parties

	CDU/CSU	SPD
Foreign Policy	1) Geop. Partner USA. 2) Rejection of Turkey's entry 3) Decision EMU budget	
Labour Market	1) Hartz IV continues 2) Greater labour market flexibility (dismissal) 3) Temporary hiring	2010 Agenda continues
Business Promotion	1) Promotion of Lending to Companies 2) Capital-risk promotion	2010 Agenda continues
Energy Policy	1) Reduction in subsidies for renewable energies and coal 2) Promotion of nuclear power	2010 Agenda continues
Taxation	1) Reduction in Corporate T. 25% to 22% 2) Increase in VAT 16% to 18% 3) Reduction in marginal Personal Income Tax rate (upper and lower brackets) 4) Rationalization Pensions, S.S. and Healthcare 5) Elimination of capital grant exemptions 6) Cut to transfers	1) Reduction in Corporate T. 25% to 19% 2) Increase in marginal upper bracket 42% to 45% 3) Increase in transfers to beneficiaries minimum subsistence

Source:

Table 2.2. EMU: macroeconomic table and forecasts

Year-on-year variation	2004				2005				2003	2004	2005	2006
	1 Q	2 Q	3 Q	4 Q	1Q	2 Q	3 Q	4 Q				
Private Consumption	1.1	1.1	1.0	1.6	1.3	1.5	1.5	1.4	1.1	1.2	1.4	2.2
Public Consumption	2.6	2.9	2.8	2.1	1.8	1.5	1.5	1.5	1.3	2.6	1.5	1.6
Gross. F.C. Formation	1.1	1.4	1.6	1.1	1.0	1.3	1.9	2.1	0.4	1.3	1.6	4.3
Variation in Inventories (*)	-0.2	-0.1	0.7	0.2	0.3	0.0	0.0	-0.1	0.4	0.1	0.0	0.0
Domestic Demand (*)	1.2	1.4	2.3	1.8	1.6	1.4	1.5	1.4	1.4	1.6	1.5	2.5
Exports	3.3	7.6	6.2	6.1	3.9	5.8	5.4	5.3	0.6	5.8	5.1	5.8
Imports	2.5	6.1	7.7	7.0	4.8	6.7	6.1	4.7	2.6	5.8	5.6	6.8
Foreign Balance (*)	0.3	0.7	-0.4	-0.2	-0.2	-0.2	-0.1	0.3	-0.7	0.1	0.0	-0.2
GDP	1.5	2.1	1.8	1.5	1.4	1.2	1.4	1.7	0.7	1.7	1.4	2.2
Inflation	1.7	2.3	2.2	2.3	2.0	2.0	2.1	2.0	2.1	2.1	2.1	1.6

(*) Contribution to growth
Source: Eurostat and BBVA

Chart 2.2.

Germany: Non-financial companies' internal financing ratio
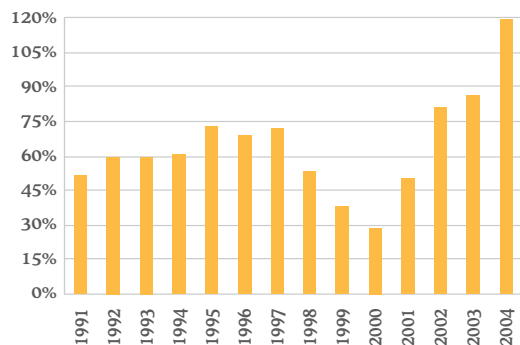
Source:

Chart 2.3.

Dollar/euro exchange rate

France Referendum

Range of forecast
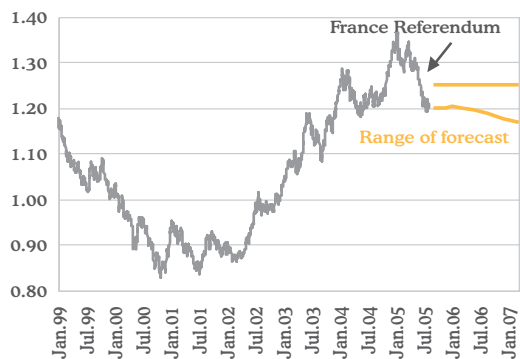
Source:

Chart 2.4.

Contribution of investment in TIC to GDP growth

■ 1990-95
■ 1995-2002
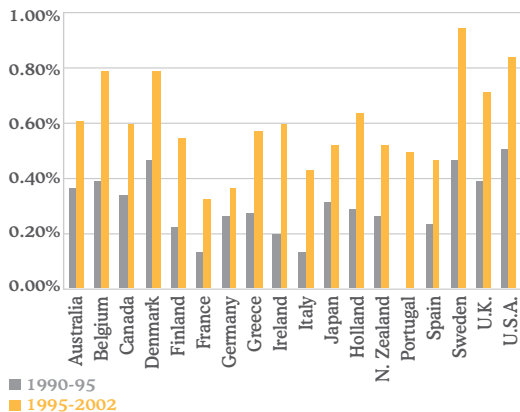
Source:

Chart 2.5.

Oil consumption by GDP unit

OCDE =100

■ Oil intensity
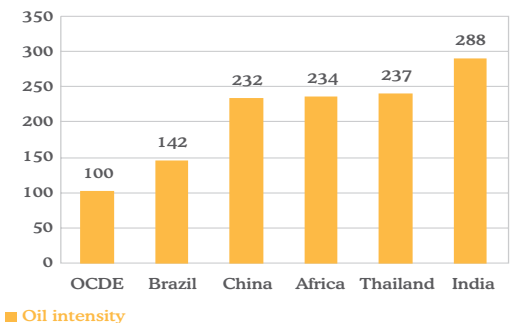
Source:

and monetary conditions continue to be very favourable for growth, with real interest rates and credit spreads at all-time lows, an increase in stock market returns and the gradual easing of credit conditions. In addition to this, the exchange rate has depreciated, which will serve as additional support for exports.

To date, the dollar/euro exchange rate has been driven mainly by the US financing problems. But, of lately, the combination of two factors has once again lent more weight to fundamentals in the determination of the exchange rate. On the one hand, the institutional uncertainty generated after the referendums in France and Holland, exacerbated by cyclical weakness in EMU. On the other, the diminished concern about the US current deficit. In this respect, the recent revaluation of the remimbi, although of smaller magnitude than expected, implies a definitive change in the Chinese Government's policy[3]. In this environment, the dollar/euro exchange rate is expected to remain in the range of 1.2-1.25 in the next few months and in the lower range of that band in 2006.

In this context, activity in EMU is expected to gradually speed up, with growth being forecasted at 1.4% in 2005 and 2.2% in 2006.

.... in a favourable "global" context with some uncertainties

The favourable outlook for world growth continues to be one of the main factors supporting activity in EMU. Productivity gains linked to technological innovation, the growing globalization of production and saving favoured by market liberalization, the increase of capital flows, the strength of the financial and non-financial business sectors and the greater credibility of central banks all favour strong world growth, albeit with moderate inflation. This combination, in turn, gives central banks more room for manoeuvre to boost growth or focus on financial stability.

But on the other hand, the greater participation of emerging economies in global growth also supposes an impulse to energy prices, which could affect growth and inflation in industrialized countries. Doubts about the capacity of oil supply to accommodate increases in demand could set prices at around USD50/barrel in 2005 and USD45 at the end of 2006, nearly USD20 above the average for 2000-2004 (see box "The paradoxes of the petroleum market"). With respect to its impact in EMU, the increase in the price of oil in dollars so far this year (over 40%) is amplified by the depreciation of the euro exchange rate (10% against the dollar since the beginning of the year).

However, there is evidence that, since the nineties, there has been a reduction in the pass-through of commodities' prices and of the exchange rate to import prices, and from these to consumer prices in industrialized countries, in general, and in EMU, in particular (see box). This change is attributable to the credibility of central banks, to the fiercer competition in goods markets and to the increased efficiency in the use of energy in OECD countries, factors that also justify a smaller impact of an oil shock on growth. Moreover, the present shock represents only about half, in real terms, of the shock registered in the seventies. In addition, insofar as the shock is linked to the increase in demand in fast-growing economies, the impact is partially countered by a more dynamic world trade. In the specific case of EMU, the elasticities of different macroeconometric models suggest that the negative effect of the higher oil prices on activity since the beginning

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[3] Apart from this, in recent months, there has been greater complacency about the U.S. current account deficit, which seems to stem from a combination of factors. First, the growing idea that a good part of this deficit is structural, resulting from globalization and, in particular, from the excessive savings in developing economies and in Europe and Japan – in the last two for demographic reasons. Second, because of less pessimism with respect to the US public deficit, although this is based on a cyclical improvement in the public accounts and timid plans to reduce military expenditure. And, third, because the US balance of income is still registering a surplus.

of the year is practically offset by the boost to exports stemming from the depreciation of the real effective exchange rate accumulated during this period (over 5%)[4].

Nonetheless, if the process of generating idle capacity and/or the gradual improvement in energy efficiency expected in emerging countries does not occur, there is a risk that oil prices will remain permanently above the previously forecasted levels, with the corresponding negative impact on growth. Another risk to global growth is related to the significant saving and investment discrepancies in some countries, especially the US, which could trigger brusque adjustments in exchange rates. Lastly, doubts remain about the possibility that the abundance of liquidity could be generating untenable increases in the prices of some assets (property market, bonds, …), with the risk to financial stability that this represents.

ECB, biding its time

At least in its communication strategy, the ECB is one of the central banks that is paying most attention to the risk that excess liquidity could pose in the long term[5]. In spite of everything, the forecasts continue to point to controlled inflation in the next two years. However, it is true that inflation expectations for 2005 have deteriorated and inflation is expected to finish the year above 2% (2.1%) for the sixth year in succession. But this deterioration is due exclusively to the worse-than-anticipated behaviour of energy prices, and there are no signs of this being transmitted to other prices. Thus, core inflation, which stands at 1.4%, is expected to remain at these levels for the rest of this year and the next. For 2006, the risks to the inflation outlook (1.6% forecasted) are upwards. Apart from the risks posed by oil prices and/or a pass-through higher than expected, one of the main risks arises from the evolution of indirect taxes[6]. In any event, expectations seem to be anchored at around 2%.

This favourable outlook, in a context of doubts about growth and increasing political pressures for more relaxed monetary conditions, have led the central bank to focus its attention on the evolution of economic activity. Thus, activity indicators are taking on special relevance during these months, to the point where a further weakening in the cycle could trigger a reduction in interest rates. This alternative, however, is not considered the most likely.

The depreciation of the exchange rate in past months has, in fact, meant an easing of monetary conditions which has given the ECB a wide margin for maintaining a "wait and see" attitude. An indicator of financial and monetary conditions, which includes real short and long rates, the real effective exchange rate and the stock market, shows that, in June, financial conditions were at the most lax since December 2002. Moreover, business surveys show rather more promising signs. The information from the monetary pillar, such as the significant increase in M3 above its reference level, which is increasingly difficult to attribute to portfolio shifts towards more liquid assets for reasons of uncertainty, or the reactivation of private sector lending, with mortgages to households growing at double digits, also advises caution. Thus, in the most probable scenario, that of gradual economic recovery, the central bank will opt to leave interest rates at their current all-time lows for an extended period of time. Thus, the process of interest rates' normalization should not begin until the end of 2006, with official rates rising to 2.5%. Long rates, consistent with the outlook for

Chart 2.6.
Price of barrel of Brent in euros

■ Face
■ Real
Source: BBVA

Chart 2.7.
Saving and investment (% GDP) in 2004 by region

■ Saving in percentage of GDP
■ Investment in percentage of GDP
Source:

Chart 2.8.
EMU: HCPI
Year-on-year variation

Forecasts

■ Total
■ Core
Source:

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4   Interlink, of the OECD, AWM of the ECB,, Multimod of the UMF, Quest of the European Commission.
5   One of the clearest examples is the Bank of England, which has taken into account the risks associated with the inflation of assets (and specifically the impact of a possible bubble in the housing market), not only in its communications but also in its monetary policy actions.
6   Specifically, the 1.6% forecast includes the impact of health reform in Holland, which could reduce EMU inflation by 3p.p. In contrast, the possible impact of the increase in VAT in Germany proposed by the CDU is not considered; according to the calculations of the German Institute of Statistics, this could add 3 p.p. to inflation in the euro zone.
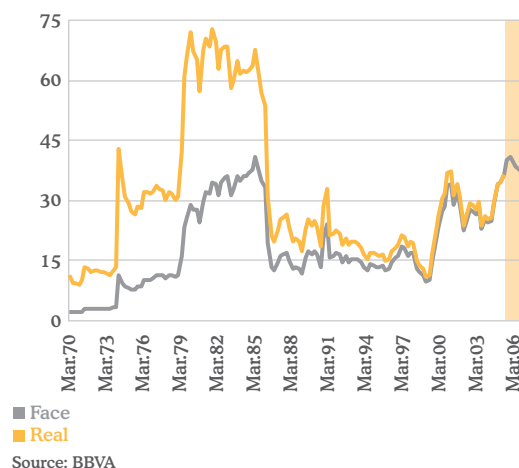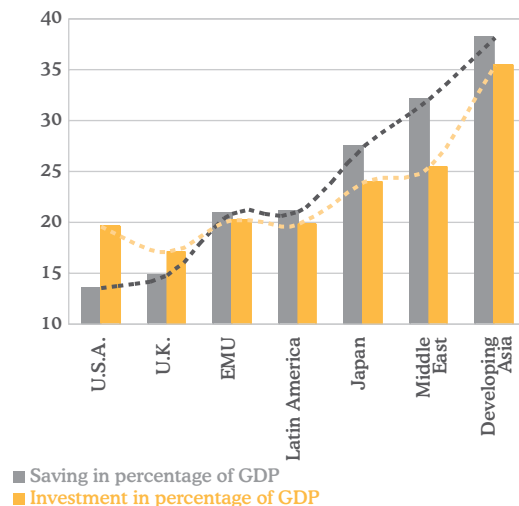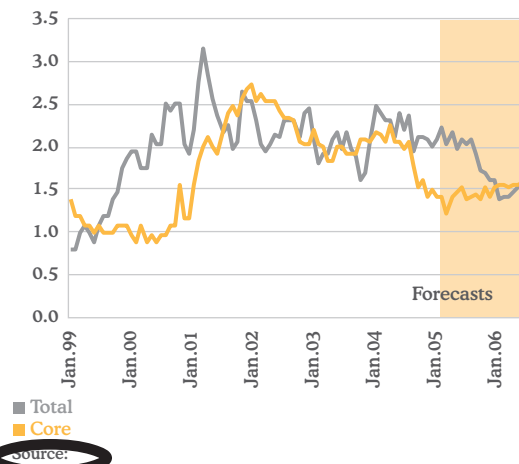
Chart 2.9.
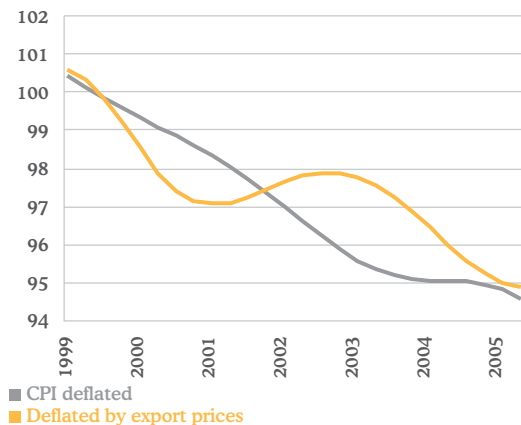## EMU: Financial and Monetary Conditions Index (FCI) and contributions

- ICF
- Contrib. Stock Market
- Contrib. 10y Rates
- Contrib. 3m Rates
- Contrib. REER
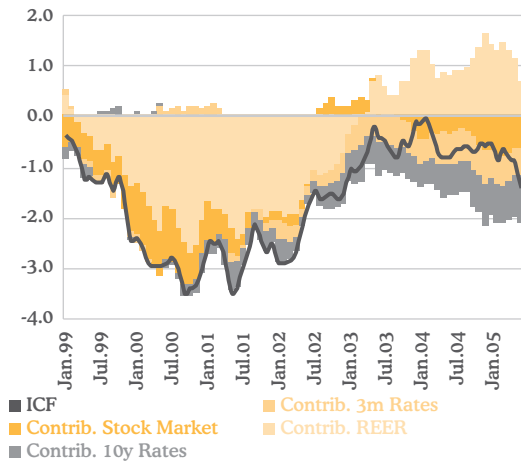
Source:

Chart 2.10.
EMU: M· and private sector lending
Year-on-year rates

- M3
- PS Lending
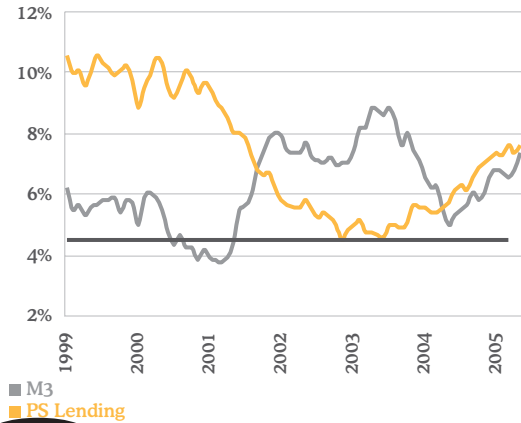
Source:

Chart 2.11.
German REER against the rest of the EMU

- CPI deflated
- Deflated by export prices

Source:

monetary policy and the factors which are pushing yields down on a global scale (global saving-investment imbalances, excessive corporate saving, moderate inflation expectations…), will remain low. The 10-year German bond could close 2006 at 4%, with the spread with the US bond widening slightly to 120 basis points.

Divergence among countries

Now then, the transmission of the monetary impulse and the expansionary effect of lax financial conditions vary from country to country in EMU. This is due to the differences in financial and production structures, the degree of openness, the degree of agents' risk aversion, market regulation, fiscal policy, etc. All of these factors also explain the different impact on individual EMU economies of common shocks and, to a certain extent, part of the differences in growth and inflation in the euro zone.

The divergences in growth and inflation among the different countries, and the evidence that the adjustment mechanisms inside a Monetary Union are slower, are generating some concerns in the countries of the area with lower growth. Indeed, the main channel for offsetting the different evolution across countries should be that of competitiveness. The economies presenting persistent cyclical weakness can be expected to experience lower inflation rates and reduced wage pressures. These, in turn, would translate into competitive gains which should help mitigate their cyclical growth deficit in the medium term. A clear example of this is Germany, which has accumulated significant competitiveness gains since the start of EMU in relation to its European partners. This channel, however, seems to be rather slow and may be somewhat compensated in the short term by higher real interest rates in economies with lower inflation, assuming that medium-term inflation expectations -the relevant ones for the agents' decisions- are affected by current inflation. In any event, this situation would generate a more unbalanced growth breakdown which would not be sustainable in the medium term.

The solution, however, does not include advocating greater discretionality in fiscal policy[7], or cutting the independence of the ECB, forcing it to focus on the evolution of activity rather than on prices. After all, the inflation and growth differences in the euro area are not so large. They are comparable, for example, to the differences among the States in the US[8]. Neither is there any evidence that there has been greater cyclical divergence since the creation of EMU. Moreover, the differences are partly due to factors such as inadequate national policies or structural inefficiencies which can be corrected to some extent through market liberalization and deregulation. Thus, once the advantages of belonging to a common monetary area like EMU are recognized in terms of stability, integration and market size, the efforts should be centred in those elements that hinder the adjustment mechanisms and in generating the most appropriate conditions for sustained growth.

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[7] The reform of the SGP, with a view to giving greater consideration to the particular circumstances of each country, has introduced too great a degree of discretionality in the valuation of the public accounts. For more information, see
"The Stability and Growth Pact and Macroeconomic Stability", EuropaWatch, April 2005
[8] See Gianoni, D and Reichlin, L (2005):"Trend and cycles in the euro area: how much heterogeneity and should we worry about it? and "Monetary policy and inflation differential in a heterogeneous monetary area", ECB monthly bulletin May 2005.

The paradoxes of the petroleum market

On analyzing the petroleum market, we meet with a major paradox: as supply improves and American stocks increase, the price rises. Up until 2002, there was a clear robust negative correlation between oil prices and the stock of reserves. Since then, if the impact of the improvement in stocks is examined, we find that the correlation has become positive. In other words, stocks increase and so do oil prices. Something similar happens with OPEC production: when the cartel decides to boost production quotas, prices rise.

In addition, a 10% increase in oil prices traditionally explained a downturn in demand for oil of between 0.3-0.5% in developed countries, depending on which stage of the cycle these countries were at. Today, it can be observed that the increases in prices in the past few quarters have not led demand to fall as expected, thus producing a reduction in price elasticity.

Another paradox is the scant transmission of the increase in oil prices to inflation in developed economies. The negative output gaps in the bulk of developed economies and US productivity gains, together with the fact that oil consumption by GDP unit is half what it was in the seventies, explain a much smaller increase in inflation than what the market had been discounting.

Prevalent in the market today is the view of a fragile equilibrium between supply and demand and, in particular, the fear that, if a producer with a high quota pulls out, there is no capacity to offset this. Support for this approach is to be found in the OPEC's additional output capacity and in the decrease in OECD countries' own production. In 1985, this surplus capacity was of 10 million barrels a day, equivalent to 17.2% of demand that year, while in 2005 it is of nearly 2 million barrels, only 2.3% of the demand expected this year. Insofar as the stockpiling responds to an improvement in supply, further output potential falls which -via expectations- produces an impact on prices not witnessed in the past. This conjunction of factors, together with stockpiling for precautionary reasons, which has produced a structural change in the desired level of these reserves, mean that they are seen more as an increase in "strategic reserves" than for short-term use. Today the market is discounting a scenario where, in the next three quarters, demand will exceed supply by around 1%. However, the market seems to believe that this is only the start of a long spell of increasingly short supply, like the one which the classical models for the exploitation of natural resources predict when reserves are considered to have moved into a critical stage.

From the supply standpoint, although the probability of occurrence of scenarios of a significant interruption in supply is below 2%, the recent political changes in Iran have led to overreaction in a market which is more sensitive to these events today than it was in the past. At the same time, fears about refining capacity mean that, although the US has the highest level of petrol stocks of the last five years, the increase in demand for precautionary reasons means that a different situation is perceived from what inventories as a whole are showing.

In this context, it seems as if the market cannot find the answers to two questions. In the short term, can supply accompany demand with less impact on oil prices than in the past, and demand which, moreover, comes largely from emerging countries? And in the medium and long term, given the characteristics of OPEC countries, where are 80% of oil reserves to be found? and will the investments required to transform these reserves into supply and dispel the fears of short supply actually be made? The answers the market is discounting are not very encouraging, as was shown by the introduction of a structural risk premium in the second quarter of the year, displacing the price curve.
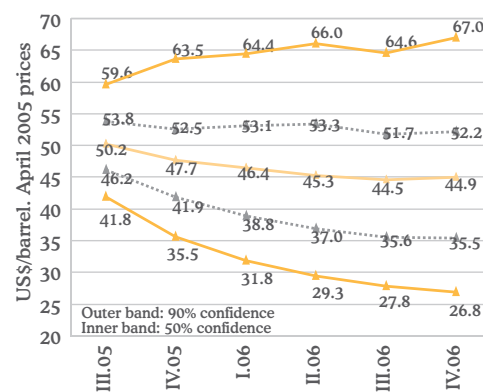
Revision of the price scenario

In view of this paradoxical performance in the oil market, we have revised our oil price scenario. The main feature of this revision is the introduction of a very high persistency of the effect on prices of news and market fears about the future balance between supply and demand for crude oils and distilled petroleum products. All of this leads to an increase in average price levels for marker crude oils in the coming quarters, and a potential increase in the frequency of future adjustments to the scenario.

In the central scenario, the expected average price of Brent for 2005 is USD 49.7/barrel, while it would be USD 45.3/barrel in 2006. The top and bottom limits, which define future uncertainty about prices, indicate that exaggerated fears of a possible hike in the average quarterly price of Brent to above USD 70 or even USD 100 are being dispelled. Prices which, as is shown in the adjoining chart, have a probability of occurrence of less than 5%, even within a horizon of one year.

Over and above the upward adjustment to our central forecast, the downward profile of the previous scenario is maintained, reflecting the transitory nature which the expectations shocks that led to the recent rally in oil prices are expected to have, in spite of their persistence.

Estimated Price of Brent 2005-2006

US$/barrel. April 2005 prices

	III.05	IV.05	I.06	II.06	III.06	IV.06
	59.6	63.5	64.4	66.0	64.6	67.0
	53.8	52.5	53.1	53.3	51.7	52.2
	50.2	47.7	46.4	45.3	44.5	44.9
	46.2	41.9	38.8	37.0	35.6	35.5
	41.8	35.5	31.8	29.3	27.8	26.8

Outer band: 90% confidence
Inner band: 50% confidence

Estimates: BBVA Banco Provincial Economic Research Services

Giovanni di Placido
giovanni_diplacido@provincial.com

The pass-through in the EMU

Over the last few years we have witnessed a substantial rise in the prices of commodities, primarily oil and metals, which have increased twofold and, in certain cases, by much more. In addition to the problems of uncertainty associated with oil supply, arising from the political instability in key producer countries, there are other structural problems deriving from the strong pressure on demand in certain Asian economies, China in particular, which exert substantial pressure on raw materials' prices. These increases cause a negative supply shock in developed economies, although prices, in real terms, do not reach the levels recorded in the 1970s. In any event, there is unease that the rise in international prices could be transmitted along the productive chain, causing inflationary pressures. To date, these pressures, as measured by consumer price inflation, have been very limited in all developed countries and, particularly, in the Euro Zone. All of which suggests that the impact of commodities' prices on inflation has fallen considerably as a result of industrial restructuring and energy saving and efficiency plans carried out at the end of the 1970s and in the early 1980s.

In order to evaluate the pass-through of international prices to final consumer prices in the Euro Zone, single-equation transference function and Phillips curve models have been estimated. These models allow us to evaluate the response of import prices to external price shocks and their filtering through the productive structures of the economy. Import prices (PIMP), represented by the deflator of imports of goods and services, would be expressed as a function of the dollar/euro exchange rate ($/€), of the Brent oil price, of an industrial raw materials index (CRBind), and a stochastic residual, not necessarily stationary, so that:

$$PIMP_t = f\ (fx(\$/€),\ Brent(\$),\ CRBind) + N_t$$

Meanwhile, the impact of import prices on final consumer prices can be estimated on the basis of a Phillips curve which allows the incidence of internal demand pressures to be isolated from those of external prices and of inflation inertia, via a stationary residual:

$$\Delta\pi_t = f'\ (cycle,\ PIMP,\ Brent(\$),\ fx(\$/€)) + n'_t$$

Given that the Phillips curve incorporates oil prices and the exchange rate together with import prices, it allows us to differentiate between the direct impact on inflation from the impact through import prices. The sample period used is from the first quarter of 1970 up to the fourth quarter of 2004. In order to evaluate if the impact has lessened over time, the sample period is divided into two sub-samples: from 1970q1 to 1989q4 and from 1990q1 to 2004q4. Table 1 displays the pass through of external prices to import prices in EMU.

Table 1.
Pass-Through to Import Prices

	From CRBind to Imp. Prices	From Brent ($) to Imp. Prices	Total Fx ($/€) to Imp. Prices
1970 to 1989	0.1284	0.0929	-0.3062
1990 to 2004	0.0992	0.0283	-0.0953
Source: BBVA			

The table shows that the effects have lessened considerably. The elasticity of import prices to oil and the exchange rate has fallen 70% relative to the decades of the 1970s and the 1980s. This result is in line with improvements and increased efficiency in energy usage over the period. On the other hand, the elasticity of import prices to industrial raw materials has fallen by just over 20% over the last fifteen years, which reflects that the Euro Zone economy has an important industrial structure dependent on raw materials which are difficult to replace.

Table 2 shows the results of the pass-through of import prices to final consumer prices in both sample periods.

Table 2.
Pass-Through to Consumer Prices

	From Imp. Prices to CPI	Total Brent ($) to CPI	Total Fx ($/€) to CPI
1970 to 1989	0.1411	0.0220	-0.0703
1990 to 2004	0.0633	0.0106	-0.0334
Source: BBVA			

The results indicate that there has been a fall of more than 50% of the general pass-through of import prices to consumer prices in the current period (from 0.141 to 0.063). Furthermore, the total specific effect of the changes in oil prices and in the exchange rate on consumer prices has also fallen substantially, by 50% in comparison with the same effect in the 1970s and 1980s. For example, the effect of oil prices on final consumer prices has gone from an average of 0.22% for each 10% increase in the price per barrel to 0.11% at present. What is more, the impact of changes in the exchange rate against the dollar has gone from an effect of 0.7% on consumer prices per 10% of change in the exchange rate to 0.33%.

We may conclude that the lower sensitivity of final prices implies that a shock in commodities prices of double the magnitude of that recorded in the 1970s would be required to have the same effect on consumer prices at present.

José Félix Izquierdo
jfelix.izquierd@grupobbva.com

IA - UEM, a new Indicator for Economic Activity

Knowing the "state" of the economy is critical for decision-taking in both the private sector and in public bodies. The most common synthetic indicator of economic activity is GDP, but it has the drawback of being on a quarterly basis and, consequently, its use for "real-time" decision-taking is limited by the delay in publication. In addition, monitoring activity in the Euro zone is currently hampered also by the fact that each member state has different schedules in the revision of their national accounts to the chain price system. A fact that is leading to a wide time-mismatch in the publication of their data and thus to more confusion. An other drawback in the use of GDP as activity indicator, is that does not incorporate the information that could be offered by other economic activity indicators (such as employment and agents' expectations), and as a result the evaluation of the cyclical momentum could prove to be somewhat incomplete.

The need to avail ourselves of an indicator (1) with a high frequecy, (2) which summarises information from a broad spectrum of activity indicators in a parsimonious fashion, (3) that offers precise indication of the current cyclical momentum of the economy, (4) that could be used to discern the contribution of each country to the total of the EMU, and (5) which may be easily be updated (incorporating new information and new indicators), has led us to construct the new synthetic activity indicator for the Euro Zone (IA-BBVA-UEM) using the methodology of principal component analysis (PCA) as set out by Stock and Watson[1] .

This indicator is similar to that constructed by CEPR (EuroCoin) in a way that it also identifies the state of the economy through unobserved underlying variables, but differs in the fact that the extraction procedure used is the reduction in principal components and not the inference of latent factors. This aspect could allow indicator predictions to be made based on the observed variables it comprises, something which is not immediate using the factor analysis approach.

Estimation

For this analysis monthly data of variables reflecting the economic performance of the EMU at both aggregate level and by countries, is used. The variables cover industrial production, construction, consumption, the foreign sector, employment and agents' expectations.

The available series date from January 1991 until June 2005 (T = 174). In order to obtain a stable statistical sign, seasonaly corrected series are used. Furthermore, their values are standardised so that they may be compared, their mean and variance therefore being zero and one respectively. Those that are not seasonal are transformed taking first differences (or rates depending on the series),

[1]   "Forecasting Using Principal Components from a Large Number of Predictors" Stock y Watson (2002)
"Macroeconomic Forecasting in the Euro Area: Country-Specific vs. Area-Wide Information" Marcellino, Stock and Watson (July 2000)

thereby assuring stability in the mean and covariance over time and averting estimation problems. In addition, the principal factor obtained is also standardised in order to value its fluctuations around its balance value with greater clarity.

The estimating procedure consists of selecting a linear combination of indicators which summarise most of the information used in the original matrix. In addition, the linear combination obtained should exploit the maximum correlation possible with the original variables. By construction, the information obtained (the linear combination) will be statistically independent (orthogonal) to the information that has not been used (that is, the linear combinations remaining aside).

The result of the estimation is an indicator which reflects the influence of data by country and by the set of variables used (employment, production, etc). The information is summarised in a single variable reflecting most of the monthly activity information initially gathered. In fact, the proportion of monthly variance reflected by the indicator against total information is above 80%. Thus we would obtain:

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

Where P, N and I define the set of countries and the group of variants used. Gamma is the orthogonal weighting giving the relative weight to each element (x) of the indicator.

Chart 1.

EMU, GDP vs IA-UEM

GDP in yoy rate

IA-UEM
GDP

Source: BBVA and Eurostat
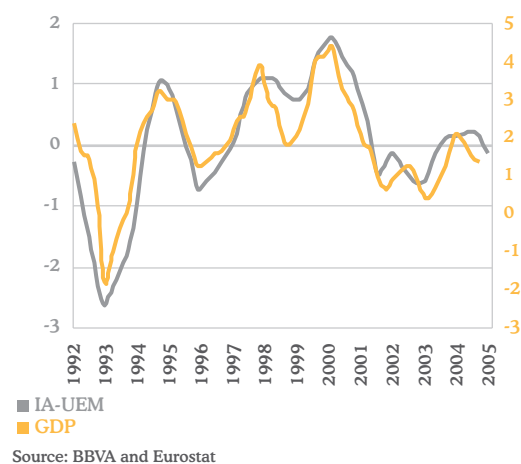
Results

The chart shows the similarity between the indicator and the performance of GDP in the Euro zone. In fact, the correlation is 90%.

The indicator copies the crisis at the beginning of the 1990s, reporting a sharp fall from its balance level. It also resembles

phases of activity slowdown in 1995-1996 and 2001–2003. Furthermore, the sluggish activity seen in the Euro Zone since 2003 may also be discerned as the very weak dynamic of the indicator (ranging around zero) since the 1st quarter of 2004. From the beginning of 2005 onwards, the indicator has reported (see attached table) lower values that might be coherent with the registered EMU's GDP slowdown in the first quarter of the year.

Regarding June[2], the indicator signalised a further drop in activity that eventually could reflect a restraint in second quarter's GDP growth coherent with the delay in confidence recovery. Delay that, however, seems to be holding up in July, for the latest data announce a renewed improvement in confidence and activity.

EMU, Activity 1Q 2004-2Q 2005

Date	Eurocoin*	IA -UEM	GDP EMU yoy
2004	0.16	0.16	1.7
2005 1Q	-0.14	0.15	1.3
2005 2Q	—-	-0.14	
2005 April	-0.04	-0.06	** 1.4
2005 May	-0.20	-0.13	** 1.3
2005 June	—-	-0.23	

*Estandarised ** Estimated
Source: BBVA and Eurostat

Chart 2.
IA-UEM
(monthly data)
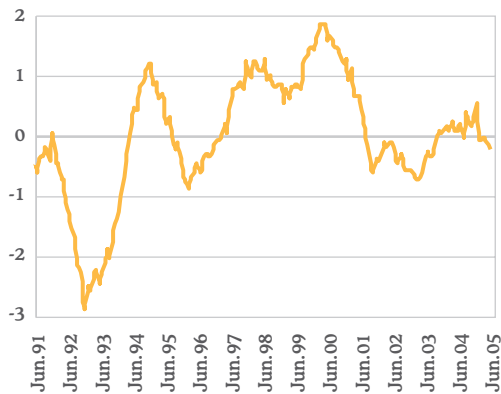
Source: BBVA

In conclusion, using the principal component analysis method we obtain a synthetic indicator with the following characteristics: it summarises a great deal of the available information on activity, it may be easily modified, it is highly frequent and parsimonious, and it reports a high degree of correlation with the EMU's GDP growth rate. Characteristics suitable to evaluate the degree of current activity in the Euro Zone which, in light of latest data, leads our indicator to point towards a further fall in activity during the second quarter of the year 2005.

Gonzalo Cadenas
santiago.gonzalo@grupobbva.com

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[2] Thanks to its high frequency, the indicator already provides a sign of the cyclical momentum for June before the GDP figure for the second quarter of the year is published.

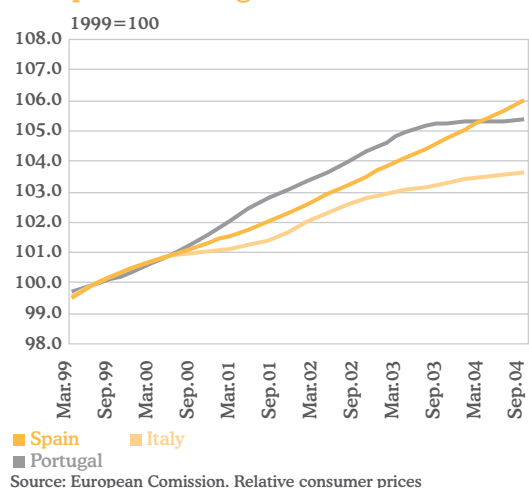# Spain, Portugal and Italy, common shocks, different adjustments?

The introduction of the euro implied that the exchange rate disappeared as a factor of competitiveness among EMU economies. In addition, the single monetary policy established a common interbank interest rate for the whole area. Thus, the performance of relative prices has become a decisive factor in competitiveness in the region, and the only distinguishing determinant of *ex post* real short rates across countries[1].

Some countries, such as Italy and Portugal, have seen their competitiveness undermined since the start of EMU as a result of the unfavourable performance of relative prices, which cannot be offset any longer by a depreciation of the exchange rate. In fact, there is some consensus in attributing part of the responsibility for the sharp slowdown in activity in both economies to these losses in competitiveness. However, in countries like Spain, which have experienced a similar deterioration in competitiveness, a similar adjustment has not taken place. This leads us to consider what factors explain the differences between these experiences and how far they might affect the dynamics of adjustment.

Common elements

It is worth emphasizing that both Italy and Portugal benefited –to the same important extent as Spain- from the shock of structurally lower nominal interest rates as a result of their joining EMU. Moreover, using different competitiveness measures, the deterioration registered in Italy and Portugal since the start of EMU is very similar to that experienced by Spain. Spain has registered an average spread of 1.1 percentage points in the relative increase in the consumer deflator with respect to the rest of EMU, a rate that is very close to that registered in Portugal and Italy: 1.0% and 0.8% respectively. The magnitude of the differentials varies according to the price indicator chosen, but in the long-term they all are of similar magnitudes as the consumer price differentials, although they are more volatile. Thus,

Chart 2.
3 month real interest rates

Source: Eurostat. 3 month euribor minus inflation rate
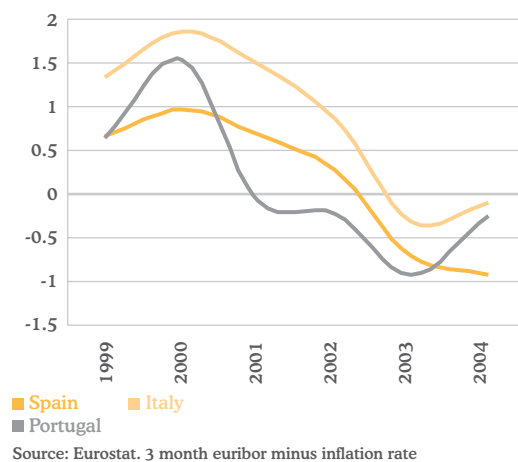
for example, the average spread of Spanish export prices with respect to the rest of EMU was also of 1.1 points, but with swings that ranged between 2.9 points in 2000 and -1.4 percentage points in 2004.

Differential factors

However, this is where the similarities end. In the case of Spain, it is surprising that the competitive deterioration registered, in comparison with both other EMU countries and the whole set of developed economies (because of euro appreciation between 2000 and 2004) did not bring a loss of global market share in its exports of goods and services (Chart 4)[2]. Regarding exports of services, Spain's relative performance is also very positive, surpassing the 1998 level by almost 10%. In contrast, the market shares in services in Portugal remained stagnant (figures up until 2003), while Italy's fell by nearly 20%.

Chart 1.
Competitivness against EMU12

Source: European Comission. Relative consumer prices

Chart 3.
GDP growth

Source: European Comission

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[1]   The rates calculated by subtracting from the nominal rate the inflation figures actually registered, which do not necessarily coincide with the players' inflation expectations, a variable which determines real interest rates *ex ante*.

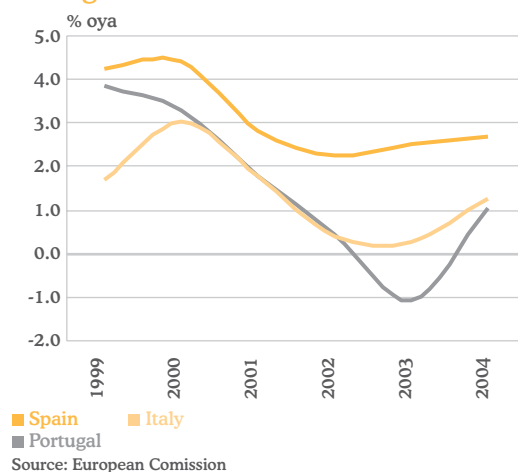[2]   The amplifying effect of the fluctuations in the exchange rate on nominal export shares is limited when countries in the same monetary union are compared.

Chart 4.
World merchandise exports quota

1999=100

- Spain
- Italy
- Portugal

Source: World Trade Organization

Chart 5.
Real Labor Cost

% oya

- Spain
- Italy
- Portugal

Source: Eurostat
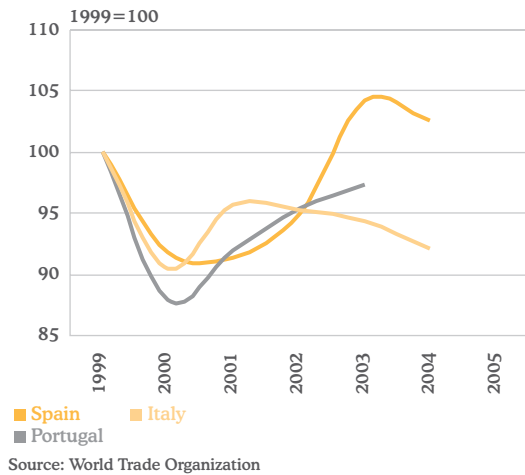
This different performance cannot be explained by a "destination market" effect. Spain does not export relatively more than Italy or Portugal to fast-growing economies, such as the emerging Asian countries or China. However, one of the factors that may help explain the different performance of the shares in goods exports, despite the common loss of price-competitiveness, is the different sector specialization of the economies in question. Italy and Portugal have a higher percentage of exports exposed to the growing pressure of emerging countries (Table 1). The products most subject to competition from the new industrialized economies are textiles, clothing and footwear, groups which together account for 12% and 23% of Italy and Portugal's exports to the EU and only 5.6% of Spanish sales.

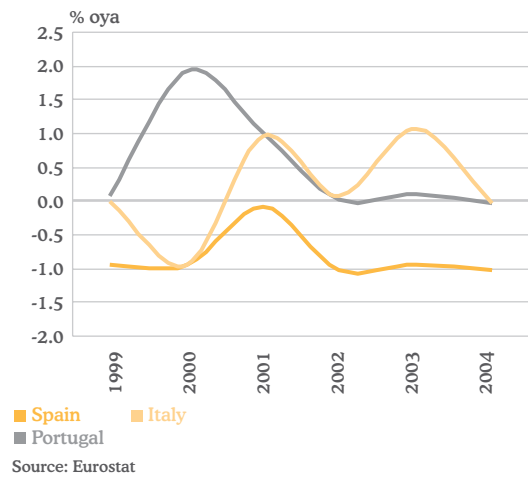**Table 1. Exports to the EU, each country's percentage of the total. 2003**

	Spain	Italy	Portugal
Food, drinks, tobacco, minerals, fuel, lubricants and related products	18.1	9.4	8.2
Raw materials, chemicals and related products	12.9	11.9	9.9
Machinery and transport equipment	43.6	36.5	34.8
Other manufactured products	24.7	38.8	47.0
Textile	2.0	4.2	5.2
Clothing and footwear	3.6	7.6	17.8

Source: Eurostat

Another of the distinguishing factors of the Spanish economy is the constant reduction in real unit labour costs since 1999, unlike what has happened in Portugal and Italy (Chart 5). This performance is the result of the combination of the increase in the flow of immigrants, which boosted available labour supply[3] at a time when interest rate cuts pushed up demand. The positive performance of real labour costs has given Spanish employers a wider margin to adjust their export prices, and has also stimulated labour demand.

Lastly, since it joined EMU, the fiscal policy implemented by Spain has also been different in comparison with the policies in Portugal and Italy. According to the structural public balances calculated by Eurostat, Spain is the country in the group which conducted a less pro-cyclical fiscal policy in the growth period 1999-2001 (Chart 6). Both, Italy and Portugal, added to an expansive monetary policy, a loose fiscal policy, reducing the room for manoeuvre for an anti-cyclical response at the time of the slowdown.

Chart 6.
Output gap and change in government structural balance

Source: Eurostat and BBVA
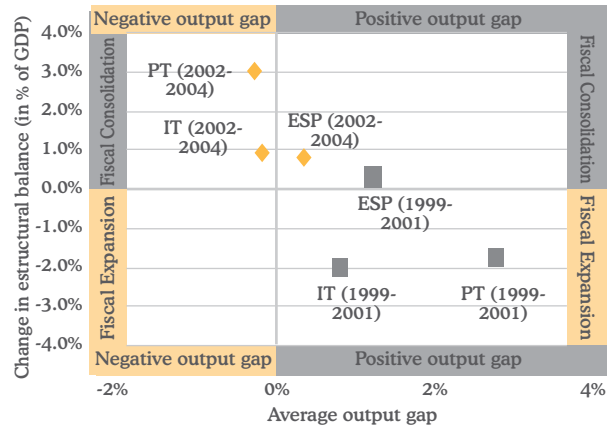
In short, everything suggests that it was not just the loss of price competitiveness, but also other factors (specialized trade, a sharp increase in real unit labour costs, inadequate demand policies) which led to the activity slowdown in Italy and Portugal. The adjustment which, in a monetary area, occurs through competitiveness, is a slow process. In Spain's case, an asymmetrical supply shock (namely, immigration), a more appropriate fiscal policy implemented and a different trade specialization could have helped prevent the slowdown.

[3]   In the last five years, Spain has registered the largest increase in the population of working age in the EMU.

J. Julián Cubero
jcubero@grupobbva.com

3. EMU: cyclical or structural weakness?

Since the cycle peaked in 2000, economic activity in EMU has recorded very moderate growth. Unlike other areas, and in contrast to forecasts made by analysts, by the market and by international institutions, the euro zone economy has not yet taken off. Its poor performance seems to have been influenced by both, cyclical factors (currency appreciation at the time of global take-off, geopolitical uncertainty, adjustments in corporate balance sheets, etc.) and structural ones (product and factor markets constraints). In order to determine the appropriate economic policy to implement, it is vital to gauge the extent of the impact of each of these factors. On the one hand, if the causes of the current weakness are mainly structural there is little that demand policies, monetary and fiscal, can do to curb it[1]. That is, if a significant reduction in potential growth were attributable to structural factors, then the cyclical situation would be less negative than previously thought, and any measures to stimulate demand could prove to be counterproductive. On the other side, if low growth were due solely to cyclical factors, more aggressive demand policy than that hitherto implemented might be in order.

However, breaking growth down into its cyclical and potential components is subject to considerable uncertainty, making it advisable to consider alternative methodologies to estimate them. In this article several options are considered. Firstly, a breakdown into cycle and trend using the simplest univariate filters, such as the Hodrick-Prescott filter. Secondly, this results will be compared to those extracted from a multivariate model with unobservable components that takes into account certain empirical regularities, like the positive relationship between the investment rate and the cyclical component of GDP and the negative relationship between the output gap and cyclical unemployment. Thirdly, the estimates provided by a structural VAR, which divides shocks into permanent and non-permanent impulses, associating the former with potential output (Blanchard and Quah, 1989). And, finally, results obtained from the estimation of a production function, which, additionally, allows us to explicitly identify the sources of growth. All these approaches coincide in indicating that there has been some decline in potential growth in Europe in recent years, although there is also a significant cyclical component in the latest deceleration.

An initial approach: the Hodrick-Prescott filter

Despite its well-known limitations, the Hodrick-Prescott (HP) filter has been widely used in the analyses of economic cycles. The ease with which it is instrumented and the similarity, in practice, between its results and those obtained using other more elaborate methods, have led it to be considered as a useful tool to estimate the cyclical component. Its main disadvantage, in addition to its lack of economic content, is the instability of the estimates at each end of the sample.

The HP filter estimates the unobservable variable "trend" as the solution to the problem of minimization:

$$(y^*_t)_{1,T} = \arg\min \left(\Sigma^T_{t=1} (y_t - y^*_t)^2 + \lambda \, \Sigma^T_{t=2} ((y^*_{t+1} - y^*_t) - (y^*_t - y^*_{t+1}))^2 \right)$$

where y is the logarithm of the reference variable, GDP, y^* is the trend component, and λ the smoothing factor. The λ normally used in most studies is 1600 for quarterly data (equivalent to 6.7 for annual data), which corresponds to removing from the trend all cycles whose

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[1] The ECB, for example, asserts that low current growth, in a context in which monetary conditions are already very relaxed, has much to do with structural problems, which must be solved using supply policies.

Chart 3.1.
GDP growth

■ USA
■ EMU
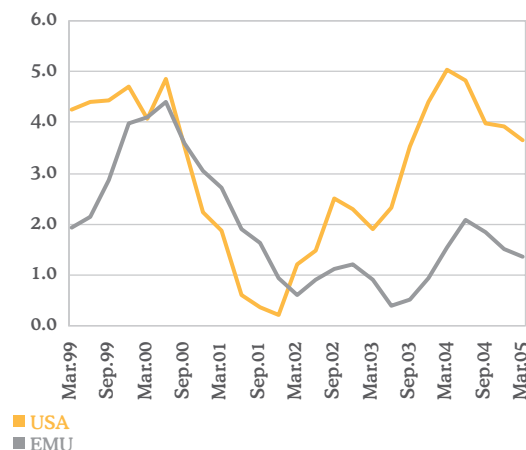
Source: BEA and Eurostat

Chart 3.2.
EMU: cyclical GDP component

■ λ=1600
■ λ=25.199

Source: Eurostat and BBVA

Chart 3.3.
EMU: cyclical GDP component

■ Kalman
■ HP 1600

Source: Eurostat and BBVA

Chart 3.4.
EMU: unemployment rate and trend
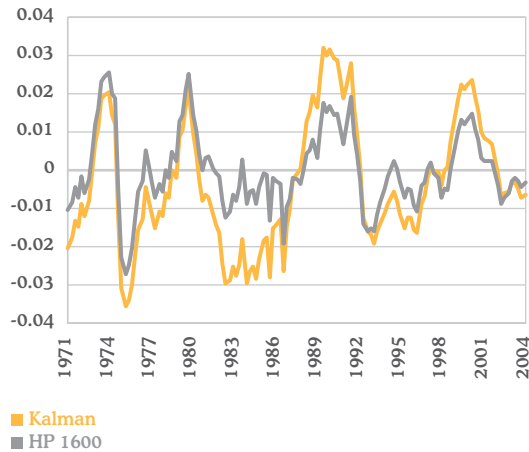
Trend

Source: Eurostat and BBVA

frequency is greater than 9.9 years. A higher λ provides a more volatile cycle and a smoother trend.[2]

Chart 2 shows the result of applying the HP filter to the quarterly EMU GDP data for the sample period which runs from the first quarter of 1970 to the first quarter of 2005. Two alternative λs were used, 1600 and 25199, equivalent, as mentioned above, to cycle frequencies higher than 10 and 20 years, respectively. As the chart shows, estimated cycles are qualitatively similar. The most significant difference between the two specifications comes in the eighties and, especially, at present. The resulting cyclical components show a more moderate negative output gap, narrowing marginally, with a 10-year cycle. In contrast, when all the frequencies over 20 years are extracted, the estimated recession is sharper and there are still no clear signs of cyclical recovery. The discrepancy in regard to the current cyclical situation between the two specifications, resulting from estimation difficulties at the ends of the sample, make it necessary to use alternative methodologies to determine the nature of the current situation.

Unobservable components model.

The sensitivity of the estimates of univariate filters at the end of the sample and the absence of economic significance in the HP filter have led to the proposal of alternative models to solve this problem. These also allow for the information from other economic variables related to the economic cycle to be used. This is the case of multivariate unobservable components models, which may be estimated using the Kalman filter[3]. In this article we use a variant of the model proposed by Doménech and Ledo (2004) which used existing information in the Okun rule (relationship between activity and the unemployment rate) and in an IS equation (relationship between activity and the investment rate) to break down GDP into its cyclical and trend components. Accordingly, output is specified as follows:

$$y_t = y_t^* + y_t^c$$

where y_t is output, y_t^* is the trend component and y_t^c the cyclical component. The variation in the trend component is still a random walk, whereas the cyclical component follows a seasonal process AR(2).

The negative relationship between the cyclical component of unemployment and that of activity (Okun's law) is shown in the following expression:

$$u_t = \Sigma_{i=1}^{4} \beta_i\, u_{t-i} + (1 - \Sigma_{i=1}^{4} \beta_i)\, u_t^* + \beta_y\,(L)\, y_t^c + \varpi_{ut}$$

where it is possible that activity may affect unemployment with various lags. In this equation, u_t is the unemployment rate and u_t^* the trend rate, which can be interpreted as being structural, and the difference is assumed to be a random walk. L is the lag operator.

Similarly, also considered is the relationship between the investment rate and the cyclical component of output (IS curve), expressed as follows:

$$i_t = \Sigma_{i=1}^{4} \varphi_i\, i_{t-i} + (1 - \Sigma_{i=1}^{4} \varphi_i)\, i_t^* + \varphi_y\,(L)\, y_t^c + \varpi_{it}$$

where i_t is the investment rate and i_t^* its trend component, whose difference, as in the unemployment trend rate, is assumed to be a random walk.

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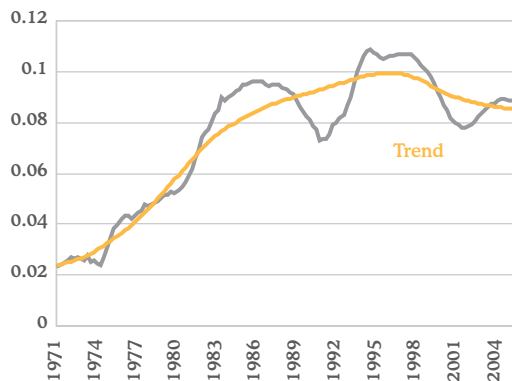
[2] For example, λ = 100 in annual figures (25199 in quarterly figures), removes from the estimated trend all cycles lower than 19.8 years. See "Time Aggregation and the Hodrick-Prescott Filter" Agustín Maravall and Ana del Rio, Bank of Spain working paper No 0108.

[3] The Kalman Filter is a powerful recursive algorithm which allows estimates to be sequentially updated based on prior information.

The model, formulated in the state space form, is estimated by maximum likelihood using the Kalman filter. The estimated cyclical component of output is similar in profile to that of the HP filter with $\lambda = 25199$[4]. However, in the most recent period, the diagnosis based on the Kalman filter suggests that the EMU cycle has halted its decline, although there are no clear signs of recovery. With regard to the GDP trend component (which may be associated to potential growth), the unobservable components model points to a steady deceleration since the 1970s, linked, among other causes, to the deceleration in the trend investment rate. Notwithstanding the necessary precautions when discussing trends, which compel us to consider long time periods in order to completely iron out any possible cyclical effects, the sharp decline in the trend rate of output growth in recent years is cause for concern. Recent data would place trend growth at 1.5% and the average in the last 4 years at 1.9%, below the 2%-2.5% range, which the ECB and international institutions were considering until now.

Structural VAR

Structural VAR models (SVARs) may also be used to extract cyclical and trend components. As compared with unobservable components models they have the advantage that they do not impose specific short-term dynamics upon the trend component (its differences may be other than a random walk). Furthermore, identification restrictions are determined by economic theory, making them more robust and interpretable. Specifically, following the methodology of Blanchard and Quah (1989), shocks are identified according to their long-term impact. Namely, transitory shocks have no impact on activity in the long term. The SVAR methodology, however, also has some disadvantages. Most notably, its sensitivity to the chosen model specification. This is especially true for the European economy, in view of the high persistence of the unemployment rate (hysteresis) and the structural changes in the euro zone since the 1970s (such as the process of European integration and Germany's reunification).

In this work, in line with the Blanchard and Quah specification, a bivariate reduced VAR model is considered:

$$x_t = \delta(t) + A(L)x_t + \varepsilon_t$$

where $x = \{\Delta y, u\}$ includes output growth (in logs) and the unemployment rate, $\delta(t)$ is the deterministic component vector, $A(L)$ the matrix of delay polynomials, and ε_t is a residual vector with mean 0 and variance Ω.

Imposing the identification restrictions, which enable us to orthogonalize the perturbations, the following structural equation is obtained:

$$x_t = \mu(t) + T(L)\,\eta_t$$

where $\mu(t)$ is the modified deterministic component vector and η is the orthogonal shock vector. In particular, GDP growth is broken down into a deterministic component and those due to structural shocks, permanent and transitory. Specifically,

$$\Delta y_t = \mu_y + T_1^p(L)\,\eta_1^p + T_1^c(L)\,\eta_1^c$$

where μ_y is the deterministic component, η_1^p is the vector of shocks with permanent effects on output and η_1^c the vector of shocks which have only a transitory effect.

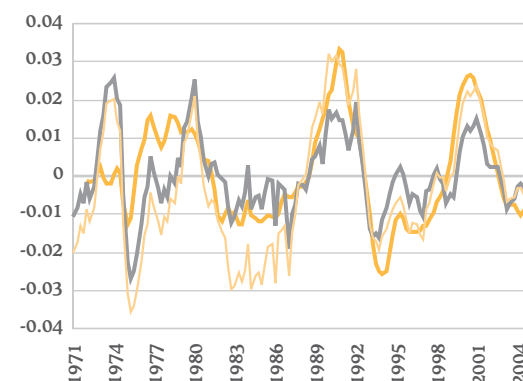[4] It is worth noting that the HP filter is a special case in the unobservable components model, in which only the GDP equation is taken into account, and in which the ratio of variances of the cyclical and trend components, expressed by λ, is restricted

Chart 3.5.
EMU: investment over GDP and trend

Trend

Source: Eurostat and BBVA

Chart 3.6.
EMU: ciclycal GDP component

■ BQ
■ HP
■ Kalman

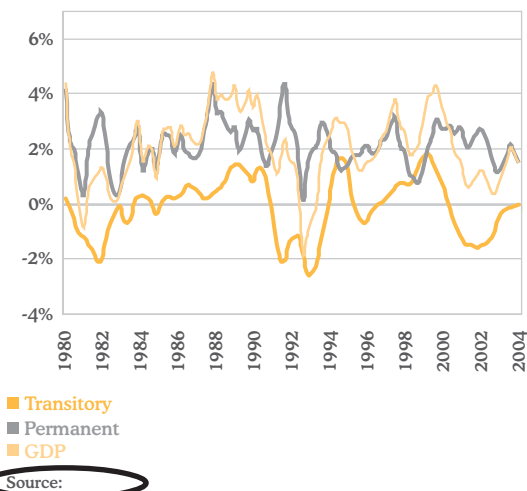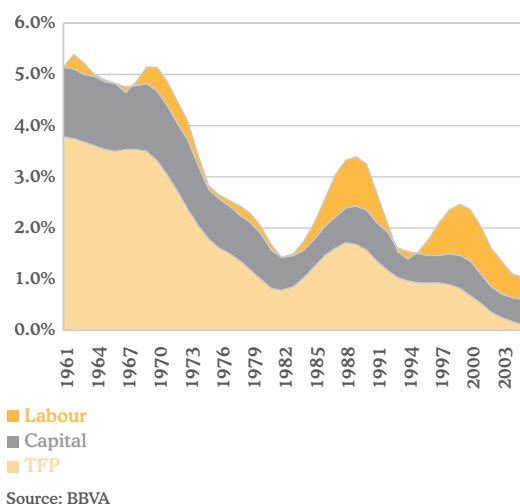Source: BBVA

Chart 3.7.
Breakdown of GDP growth

- Transitory
- Permanent
- GDP
Source:

Table 3.1.

HP $\lambda = 6.7$	Potential Growth %	Contribution to potential Growth		
		Labour trend	Capital Accumulation	TFP
Average periods				
1981-1985	1.7	0.1	0.6	0.9
1986-1990	3.1	0.8	0.7	1.6
1991-1995	1.9	0.1	0.6	1.1
1996-2000	2.2	0.8	0.6	0.9
2001-2005	1.4	0.7	0.5	0.3
Source: BBVA				

Chart 3.8.
EMU: contribution to potential growth
HP $\lambda =6,7$

- Labour
- Capital
- TFP
Source: BBVA

In this context, the cyclical component is defined as the one owing to transitory shocks in economic activity. For its part, potential growth is defined as the sum of permanent shocks and the deterministic component:

$$\Delta y^c{}_t = T_1{}^c(L)\, \eta_1{}^c$$

$$\Delta y^*{}_t = \mu_y + T_1{}^p(L)\, \eta_1{}^p$$

As we have mentioned, empirical estimation of these models is subject to limitations. In particular, results are influenced by the specification chosen for the deterministic component (constant, trend, truncated constant, etc.). This choice influences the breakdown of the growth rate, since the deterministic component is associated with permanent shocks.

In any event, the results are qualitatively similar regardless of the specification used[5]. Accordingly, as in the estimates with unobservable components, a deterioration is observed in the potential growth of the European economy since the mid-90s, when it was around 2.5%. Potential growth in the last five years, depending on the chosen specification, is in the range of 1.6%-2.0%, and with a downward trend, consistent with results presented so far.

Estimation of a production function

The methodologies presented so far allow GDP growth to be decomposed into its cyclical and structural factors in line with certain economic restrictions. Nevertheless, none of these methodologies allows us to evaluate the factors which underlying the structural decline in European economic growth. An alternative methodology, which does allow the examination of the causes of this decline, is the estimation of a production function. This allows explicit identification of the sources of growth: work, capital provision and technological innovation. But this is not free of problems, such as those relating to the choice of a suitable specification for the production function or the measurement of unobservable components, like total factor productivity. In this article, a Cobb-Douglas production function with constant returns to scale is used:

$$Y = L^\alpha K^{1-\alpha}\, TFP$$

where Y is GDP, L is the labour factor, K is the stock of capital, and TFP is total factor productivity. The most relevant hypotheses underlying this specification are the constant returns to scale and unitary price elasticity of the factors. This implies that thee labour-output elasticity, α, and the capital-output elasticity, $(1-\alpha)$, under the hypothesis of constant returns to scale and perfect substitution, may be estimated based on wage participation in output.

The estimation of potential output Y* in the economy requires estimation of the potential values of each production factor, L*, K* and TFP*. With respect to capital, the potential usage considered is full usage of the stock of working capital in the economy at any given time (K* = K). The contribution of labour to potential output is rather more difficult to specify. Since there is no physical limitation to the factor, potential employment will be understood as the level of employment consistent with the stability of the inflation rate (NAIRU). Potential employment is therefore obtained by applying the NAIRU, estimated by smoothing the unemployment rate, to the potentially active population. The latter is obtained by applying the smoothed labour participation rate to the population of working age. Lastly, the potential total factor productivity is approximated by a smoothed Solow residual.

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[5] Especially significant is the specification of the deterministic component chosen for the unemployment rate, in view of its persistence and its profile during the chosen period.

In the estimation of the production function we used the AMECO annual database, updated in March 2005, for the 1960-2004 period, and projections for 2005. The parameter α was obtained from the participation of wage income in GDP at the cost of factors adjusted by the weighting of employees in total employment for full sample period. The necessary smoothing was performed with the HP filter using two alternative smoothing parameters λs: λ=6,7 and λ=100. The use of these parameters allows us to bound the magnitude and volatility of the cycles and potential growth rates estimated.

Tables 1 and 2 and charts 8, 9 and 10 present the results of the various exercises. Except for the higher volatility of estimates using the filter with λ=6.7, the results are qualitatively very similar to those obtained with the unobservable components model and with SVAR: steady decline in potential growth, especially during the seventies, moderating in the eighties and nineties, and becoming sharper as from 2000. Consequently, potential growth in the euro zone economy would be delimited between 1.4% and 1.9%, depending on the cyclical frequencies extracted.

The decomposition of potential growth in the factors that determine it shows that, at present and unlike other instances of deceleration in potential growth, the decline is due mainly to a decline in the contribution of TFP. It also shows that in the last phase of high growth potential (1997-2000), TFP did not contribute as it did in the 1986-1991 phase. In sum, the contribution of productivity to growth in EMU has been declining since the mid-nineties, deteriorating additionally in the last five years. This aspect has already been highlighted by a number of empirical studies. These show how, contrary to the European experience, in the US there has been a major increase in productivity attributed to the introduction of new information technology to production processes, widening the productivity gap between the two economies.

Conclusions

Knowledge about the precise cyclical situation of an economy is crucial for the implementation of demand policy, both monetary and fiscal. The decomposition of output growth into its potential and cyclical components, however, can be estimated using an array of alternative methodologies. This article has outlined four different approaches for breaking down cycle and trend (HP filter, multivariate unobservable components model, structural VAR and production function), outlining some of the pros and cons of each one. The main conclusion put forth by these alternative methods seems to be quite robust: low growth rates in the European economy since 2000, in addition to a cyclical component, are associated with a decline in growth potential.

All estimates suggest that growth potential in EMU has deteriorated significantly since the seventies, and that following some stabilization in the eighties and nineties, it appears to have commenced a new slide, and could now have dipped below 2%[6]. This result coincides with the estimates by various international institutions (see Table 3). Looking at longer period averages, such as 10 years, to iron out completely the cyclical effects on the deceleration, estimated EMU growth potential would be at the lower end of the 2-2.5% range. The decline is therefore slow, but not new.

The declining growth potential can be attributed to a large extent to the poor performance by total factor productivity. As such, the results highlight the need to make headway in supply policies which would help boost European potential growth. The aim must be, not only to

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[6] The ECB, in the table "Trends in the Euro Area Potential Output Growth", featured in its Monthly Bulletin - July, also expresses its concern for the downward trend in EMU growth potential.

Table 3.2.

HP λ = 100	Potential Growth %	Contribution to potential Growth		
		Labour trend	Capital Accumulation	TFP
Average periods				
1981-1985	2.1	0.4	0.6	1.1
1986-1990	2.5	0.4	0.7	1.4
1991-1995	2.1	0.4	0.6	1.1
1996-2000	2.1	0.6	0.6	0.9
2001-2005	1.9	0.8	0.5	0.6

Source: BBVA

Chart 3.9.
EMU: contribution to potential growth
HP λ =100

■ Labour
■ Capital
■ TFP
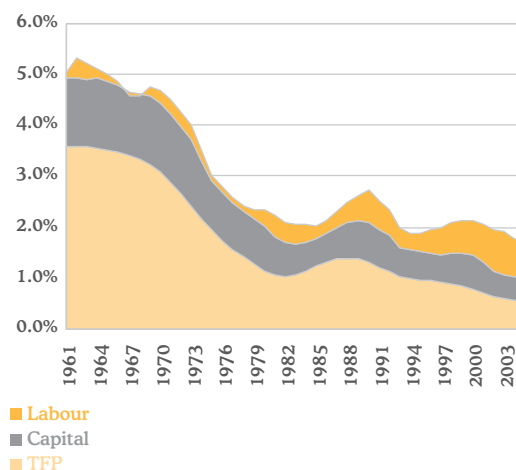
Source: BBVA

Chart 3.10.
EMU: potential growth
annual variation (%)

Source: Ameco and BBVA

Table 3.3. Estimates of potential output growth in EMU
Average growth rates: percentage points

	Recent periods		
	1991-1995	1996-2000	2001-2005
BBVA			
Kalman	2.3	2.1	1.9
VAR (B-Q)	2.2	2.1	1.9
PF $\lambda = 6.7$	1.9	2.2	1.4
PF $\lambda = 100$	2.1	2.1	1.9
European Commission	2.2	2.0	1.9
IMF	2.2	2.1	1.9
OECD	2.1	2.0	2.0

Sources: European Commission: Spring Economic Forecasts (April, 2005);
IMF: World Economic Outlook Spring (April, 2005);
OECD: Economic Outlook, June 2005

prevent the slow decline which seems to be materializing already, but also to avoid that it becomes more acute in the next twenty years.

The ultimate economic causes of this decline, though, are hard to establish. In addition to the well-known demographic factor, the effects of which will become increasingly visible in the long term[7], difficulties in tapping the advantages of the technology shock, against a backdrop of growing globalisation, could be hampering the relative competitive position of the European economy. The cost of German reunification could also be having a negative impact on that country's potential growth, especially in the short term, considering that Germany is the country which, judging by the production function results, records the sharpest decline in potential growth.

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[7]   According to various exercises by the IMF (IMF Country Report 03/297) and OECD (Economic Survey of the Euro Area 2005), demographic trends push potential growth down to 1% in 2020.

Potential growth in major EMU economies

In the light of the results outlined in the article " EMU, structural or cyclical weakness? " it is worth taking a closer look at each of the leading EMU member economies. We shall try to asses which of these economies is behind the slowdown and to what extent the scant factor productivity growth experienced has been the main reason for structural weakness in EMU growth during the last five years. For this purpose, the same methodology of production functions and the same database used therein has been applied for Germany, France, Italy and Spain.

The tables provided synthesize the average potential growth in five-year samples periods according to different smoothing parameters (λ) for the trend component, $\lambda = 6.7$ removes all cycles of less than 10 years from the estimated trend, and $\lambda=100$ removes cycles shorter than 20 years.

Germany

| | Potential Growth | | | Contribution to potential Growth | | | | |
	$\lambda=6.7$	$\lambda=100$	Labour Trend $\lambda=6.7$	$\lambda=100$	Capital Accumulation	Total Productivity Factor $\lambda=6.7$	$\lambda=100$
1981-1985	1.4	2.0	0.3	0.5	0.6	0.6	0.9
1986-1990	3.3	2.7	1.1	0.7	0.6	1.6	1.5
1991-1995	2.1	2.3	0.0	0.4	0.7	1.3	1.2
1996-2000	1.6	1.5	0.3	0.2	0.6	0.7	0.8
2001-2005	0.8	1.0	0.2	0.2	0.3	0.4	0.5

Source: BBVA

The estimated potential growth for the major economies reproduces the pattern for EMU as a whole, regardless of the length of the cycle being examined. Nevertheless some differences arise when it comes to country-to-country comparison.

Italy

| | Potential Growth | | | Contribution to potential Growth | | | | |
	$\lambda=6.7$	$\lambda=100$	Labour Trend $\lambda=6.7$	$\lambda=100$	Capital Accumulation	Total Productivity Factor $\lambda=6.7$	$\lambda=100$
1981-1985	1.8	2.5	0.4	0.6	0.8	0.7	1.1
1986-1990	2.6	2.1	0.4	0.2	0.8	1.4	1.2
1991-1995	1.2	1.6	-0.3	0.1	0.6	1.0	1.0
1996-2000	1.9	1.6	0.5	0.3	0.6	0.8	0.7
2001-2005	1.1	1.6	0.9	0.9	0.6	-0.4	0.2

Source: BBVA

These differences come clear, for instance, taking the last decade (1996-2005) when Germany and Italy emerged as the two countries posting the lowest potential growth, (less than 2%) whereas France and Spain's potential growth rates were estimated at above 2%.

France

| | Potential Growth | | | Contribution to potential Growth | | | | |
	$\lambda=6.7$	$\lambda=100$	Labour Trend $\lambda=6.7$	$\lambda=100$	Capital Accumulation	Total Productivity Factor $\lambda=6.7$	$\lambda=100$
1981-1985	1.8	2.2	0.1	0.3	0.7	1.0	1.3
1986-1990	2.8	2.2	0.3	0.1	0.8	1.8	1.4
1991-1995	1.3	1.8	0.0	0.2	0.6	0.7	1.0
1996-2000	2.4	2.1	0.9	0.6	0.5	1.1	1.0
2001-2005	1.8	2.1	0.6	0.8	0.5	0.7	0.8

Source: BBVA

The decline in potential growth becomes more evident if we focus on the last five years. For a cycle shorter than 10 years, the results show a sharp decline in the potential growth rates of all countries. For longer cycle (20 years) potential growth rates seem more stable.

In Italy, France and Spain potential growth was relatively stable during the last 15 years, at 1.5%, 2% and 3%, respectively. Germany's potential growth, however, has declined towards 1.0%, from around 1.5% during the second half of the nineties and above 2% prior to that.

Spain

| | Potential Growth | | | Contribution to potential Growth | | | | |
	$\lambda=6.7$	$\lambda=100$	Labour Trend $\lambda=6.7$	$\lambda=100$	Capital Accumulation	Total Productivity Factor $\lambda=6.7$	$\lambda=100$
1981-1985	1.5	1.7	-0.7	-0.3	0.7	1.5	1.3
1986-1990	4.2	3.2	1.7	0.8	1.1	1.4	1.3
1991-1995	1.7	2.7	0.3	1.0	1.0	0.4	0.6
1996-2000	3.6	2.9	1.8	1.4	1.0	0.8	0.5
2001-2005	2.7	3.2	1.6	1.8	1.1	0.0	0.3

Source: BBVA

From the standpoint of contributions to growth, overall, it is worth mentioning the stability in the contribution of capital in all countries, the decline in the contribution of total factor productivity, which was especially sharp in the last five years, and the steady or increasing contribution of the labour factor. The latter two effects, loss of contribution by the productivity factor and gains by the labour factor, were especially intense in the last five years in Spain and Italy.

Consequently, as shown, EMU's potential growth characteristics are no more than the weighted reflection of the potential growth corresponding to its main drivers, dominated by the decline in German prospects.

José Félix Izquierdo
jfelix.izquierd@grupobbva.com

Table 4.1.

Main steps in electricity reform

Restructuring	Vertical unbundling of activities
	Reduce horizontal concentration
Competition	Wholesale market and retail competition
	Allow new entry in generation and supply
Regulation	Incentive regulation in network activities
	Independent regulator
Grid access	Regulated third party access

Source: Jamasb & Pollit 2004 and BBVA

Table 4.2.

Market opening and switching estimates in main European electricity sectors

	Market opening	Eligibility threshold	Switching large users	Switching others
Austria	100%	-	22%	3%
Belgium	90%	non HH	35%	19%
Denmark	100%	-	>50%	5%
Finland	100%	-	>50%	na
France	70%	non HH	22%	
Germany	100%	-	35%	6%
Greece	62%	non HH	0%	
Ireland	56%	1GWh	>50%	1%
Italy	79%	non HH	15%	
Netherlands	100%	-	30%	35%
Portugal	100%	-	9%	1%
Spain	100%	-	18%	0%
Sweden	100%	-	>50%	na
UK	100%	-	>50%	>50%
Norway	100%	-	>50%	>50%

Note: «Non HH»=non households
Source: DG Tren, January 2005.

Table 4.3.

Network access and unbundling in main European electricity sectors

	Unbundling		Number of firms		Access charge* (€/MWh)
	TSO	DSO	TSO	DSO	
Austria	L	L	3	133	61
Belgium	L	L	1	27	58
Denmark	L	L	2	125	42
Finland	O	A	1	104	40
France	L	M	1	166	48
Germany	L	A	4	950	62
Greece	L	none	1	1	na
Ireland	L	M	1	1	50
Italy	O	L	1	170	36
Netherlands	O	L	1	20	36
Portugal	O	A	1	11	38
Spain	O	L	1	308	35
Sweden	O	L	1	180	44
UK	O	L	2	15	30
Norway	O	L/A	1	150	30

* Estimation by Eurostat (average charges out of taxes)
Unbundling: Accounting, Management, Legal, Ownership
Source: DG Tren, January 2005.

4. The Internal Electricity Market: Assessing Liberalisation

Tatiana Alonso Gispert

Economic Research Department

In line with the principles of the Single Market (free movement of goods, services and capital), the European Union seeks to maximize energy trade efficiency by integrating European power markets.

For integration to be effective, national markets must be fully opened to competition (liberalised), well interconnected and sufficiently harmonised in terms of market rules and transmission arrangements. However, most European countries present very different status quos as a consequence of the diverse paths followed by the development of their energy sectors. This clearly hinders the way towards the Internal Energy Market, but Europe has accepted the challenge persuaded that the benefits may well compensate the costs.

Such benefits are associated to the reduction of costs and profit margins as national incumbents abandon their traditional "de facto" monopolies and new entrants come into play. If liberalisation and integration are effective, average prices will decrease and converge across Europe and customers will benefit from a higher product choice and enhanced quality of service.

Fully aware of this, and knowing that the opening up of domestic markets is critical for integration, the European Commission initiated an energy liberalisation process in the electricity sectors in 1997 which will be reviewed in this article, with special attention to the main EMU economies.

The origins of the liberalisation process

The power sector has some physical characteristics that shape its optimal regulatory design. It is made up of four differentiated activities (generation, transmission, distribution and final supply)[1] which were traditionally carried out by vertically integrated firms operating under geographical monopolies. However, just as the world's economic paradigm evolved from protectionism to liberalisation, so did the electricity sector and a new model arose in which competitive generation and supply markets coexisted with regulated network activities. The time for regulatory changes and sector restructurings had come. (See Table 4.1.)

When the first liberalising Directive came into force in 1997 (96/92/EC), most of the major European power markets were closed to competition. A few years later, some of them had already evolved to more deregulated structures, such as Germany or Spain, but severe obstacles to competition remained. Thus, the Commission approved a new Directive, 2003/54/EC, to remove them.

The Directive 2003/54/EC

The new Directive provides freedom of choice of supplier for industrial customers as of July 1, 2004, and for residential ones from July 1, 2007, on. However, legislative opening of markets does not ensure competition. When there is potential for market dominance and predatory behaviour, vertically integrated incumbents may block new entries.

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[1] As network activities, transmission and distribution display natural monopoly features.

In order to guarantee a non-discriminatory and fairly priced access to the network, the Commission requires member countries to regulate third party access to the network and to designate an independent regulatory authority which ensures non-discrimination and effective competition.

Finally, vertically integrated firms are obliged to separate their regulated activities from the competitive ones (the so called unbundling) in order to prevent cross subsidisation practises from the first group of activities (where revenues are granted by law)[2] to the second one (where revenues come from the market). Although separate ownership is not required, transmission and distribution must have their own legal personality and be managerially independent from their parent company.

Assessing liberalisation: Market opening

The transposition of Directive 2003/54/EC to national laws is still ongoing. Some EMU economies have already opened their markets, like Germany (1998) or Spain and Portugal (2004). Others, like France and Italy, are still in the process of doing so: only non-residential clients can freely go to the market and there are no plans to extend this right to residential ones prior to July 2007.

In any case, legal opening does not reflect customer switching. The last data published by the European Commission (switching rates calculated on the basis of number of switchings registered until 2003) proves somehow worrisome. In Germany, 35% of industrial clients had changed supplier by 2004 but only 6% of residential ones had done so. Portugal and Spain displayed much lower rates for large clients (19% and 18% respectively) and the domestic segments display even negligible rates (1% and 0% respectively, though 18% of Spanish consumers have renegotiated contracts with their existing supplier)[3]. Surprisingly, France and Italy, where freedom of choice is restricted to large customers, show higher switching rates, 22% and 15% of them having switched respectively. (See Table 4.2.)[4].

Assessing Liberalisation: regulation and network access

Low switching rates indicate, among other things, that access to the network is not straightforward. The most paradigmatic case can be found in Germany, where third party access has been negotiated until recently, opening the door for network owners to "play games" when negotiating network access. After repeated calls by the Commission to transpose the Directive 2003/54/EC, Germany finally introduced regulated third party access and designated a regulatory body which took up its duties just a few weeks ago.

France, Italy and Portugal have already put in place independent regulators empowered with the responsibilities specified by the Directive, including tariff-setting issues. However, the Spanish Energy Commission is not allowed to set tariffs and the tariff setting process is fairly opaque, given the limited information being published by the government.

Finally, the unbundling of transmission system operators (TSO) has generally been more stringent than for distribution ones (DSO). Many countries have already applied legal or ownership separation but distribution firms still remain legally bundled to their main companies in Germany, Portugal and France. (See Table 4.3.)

Table 4.4.
Generation Market Structure

	Largest generator (by capacity)	Top 3 generators (by capacity)
Austria	45%	75%
Germany	30%	70%
Belgium	85%	95%
Netherlands	25%	80%
France	85%	95%
Greece	100%	100%
Ireland	85%	90%
Italy	55%	75%
Portugal	65%	80%
Spain	40%	80%
UK	20%	40%
Denmark Finland Sweden Norway	15%	40%

Source: DG Tren, January 2005.

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[2] As regulated activities they earn their revenues from a regulated tariff which fully recognises their costs after accounting for some assumed efficiency gains.

[3] More recent data published by the Spanish Energy Commission indicates that, as of March 2005, 5% of residential clients have abandoned the full-service tariff, although only 1% would have switched to a retailer not owned by their traditional supplier.

[4] Across Europe, only Norway and the UK have switching rates above 50%. Both countries provide a good example of successful liberalisation processes. Moreover, Scandinavian Nordel constitutes an excellent reference for the benefits associated to cross border integration.

Table 4.5.

Market Shares in retail supply

	Suppliers with market share >5%	Top 3 market share	Foreign suppliers market share
Austria	4	67%	2%
Belgium	2	90%	<10%
Denmark	5	67%	na
Finland	6	30%	25%
France	1	88%	9%
Germany	3	50%	20%
Greece	1	100%	0%
Ireland	4	88%	12%
Italy	6	35%	na
Netherlands	3	88%	18%
Portugal	3	99%	33%
Spain	5	85%	8%
Sweden	4	70%	39%
UK	6	60%	50%
Norway	4	44%	2%

Source: DG Tren, January 2005.

Chart 4.1.

Evolution of industrial average prices
(without taxes)

EU 15   Spain   Italy
Germany   France   Portugal

Source: Eurostat

Assessing Liberalisation: Market concentration

Even when the market is legally opened and network access is properly regulated, competition may be hindered by market concentration. In fact, European markets are dominated by one or a few traditional suppliers and, as the European Commission points out: "concentration is now the most important obstacle to the development of more vigorous competition". (See Tables 4.4. and 4.5.)[5]

The most worrisome case can be found in France, where state owned EDF has a "de facto" monopoly in generation and supply. After years of criticism from the Commission and national governments, France deregulated its electricity sector in 2004 and the Government has recently approved a 30% floating of EDF. However, no significant independent generators have entered the market yet, with EDF holding an 85% market share.

In contrast, the Italian government forced ENEL to sell some 30% of its generating capacity in 2000, giving raise to three new independent companies. However, ENEL's market share is still close to 55% and the top 3 producers gather 75% of installed capacity. The Italian State has recently reduced its participation in ENEL to 20%.

In the Iberian peninsula, Portuguese traditional monopoly EDP, has a market share of 80% in generation and 100% in distribution. Still, an important step towards competition has been recently taken with the cancellation of the long-term power purchase agreements (PPAs) signed between the TSO (REN) and EDP.[6] Across the border, four incumbent vertically integrated players dominate the scene. The largest one, Endesa, has a 40% market share and top three generators control as high as 80% of the market.[7]

Finally, even if hundreds of energy firms operate in the German electricity market, a large portion of generation is controlled by only four large companies, namely RWE, E.On, Vattenfall and EnBW.

Assessing liberalisation: prices

Given that one of the ultimate goals of competition is to achieve lower prices, the evolution of this variable is generally taken as an indicator of the liberalisation performance.

However, in addition to efficiency and competition gains, electricity prices respond to exogenous factors such as the evolution of fuel prices (all the more so when the country's generation mix is heavily based on thermal, non nuclear, generation).[8]

Between 1997 and 2002, real electricity prices decreased by 13% on average for industrial European consumers and by 7% for residential ones. Since then, retail prices have somehow stabilised as wholesale prices increased due to bad weather conditions, low hydraulicity, and high fuel costs. (See Chart 4.1.)

This has been mainly due to a political will of keeping control over tariffs as a means of controlling other macroeconomic variables such as inflation. However, as liberalisation and integration move forward, retail prices should become more transparent and reflective of wholesale market conditions and a considerable degree of convergence should be observed across Europe.

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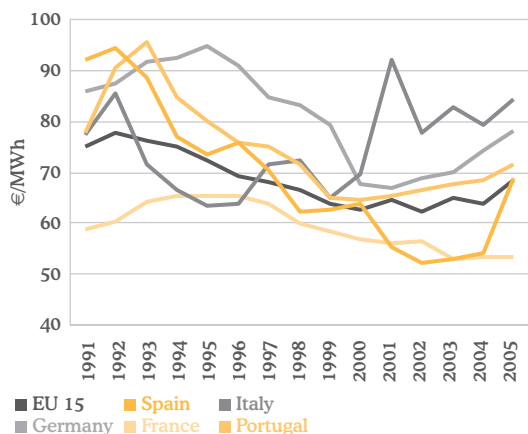
[5]   Annual Report on the Implementation of the Gas and Electricity Internal Market. Communication from the Commission, COM(2004) 863, 05/01/2005.
[6]   The termination of these contracts opens the door to wholesale competition in this country. For further detail see BBVA's "Situaçao Portugal", May 2005.
[7]   Although market shares may get diluted in the future Iberian Electricity Market (MIBEL), the incumbents will likely continue to dominate their historical supply areas unless interconnections are improved and further technical harmonisation is achieved.
[8]   The high price of green house emissions rights adds to the costs of this kind of generation.

Conclusions

This paper has reviewed the development of the liberalisation process undergone by the main EMU power sectors. Although significant advances have been made with respect to market opening and non discriminatory access to the networks, switching rates remain low, market concentrations high and new entry is limited.

Still, this is the world's most extensive cross border-jurisdiction reform ever undertaken in the energy field[9], so the number of complexities associated is really big. A good level of interconnections[10] and sufficiently harmonised wholesale and transmission arrangements will be essential to provide a good level playing field to all stakeholders.

Therefore, if Europeans want to benefit from an Internal Energy market, much joint effort will be needed to go forward with the liberalisation and integration processed. No doubt, an increased use of competition policy at the national level, together with more co-operation between national governments and the European Commission, will bring significant improvements in this way.

Last, but not least, the authorities should foster the creation of independent consumers' associations aimed at protecting and promoting the interests of electricity consumers. The complaints gathered by these watchdogs would help regulators to identify the main difficulties experienced by consumers in the liberalisation process.

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[9]   Tooraj Jamasb & Michael Pollitt, 2004. "Electricity Market Reform in the European Union: Review of progress towards liberalisation and integration", Department of Applied Economics, University of Cambridge.

[10]   It is considered that an electricity system should have a capacity of connection to other systems of at least a 10% of its installed capacity. At present, the Iberian Peninsula, Italy and the United Kingdom and Ireland, are insufficiently interconnected with Central Europe (see Table 7).

Table 4.6.

Presence of largest companies in some countries

	RWE	Electrabel	EDF	ENEL	EDP	Endesa	EON
Germany	L		x				x
Netherlands		L					
Belgium		L	x				
France		x	L			x	
Italy		x		L		x	
Portugal					L	x	
Spain					x	L	
UK	x		x				x

Note: an «L» identifies largest firm in each country
Source: DG Tren, January 2005.

Table 4.7.

Generation and Interconnection capacity across Europe

	Installed generation capacity (GW)	Import capacity (GW)	Import capacity/ installed capacity
Belgium	16	4.6	29%
France	112	14.0	13%
Germany	109	12.2	11%
Luxembourg	1	1.0	90%
Netherlands	20	4.7	17%
Italy	80	6.0	8%
Portugal	12	1.0	8%
Spain	56	2.2	4%
UK	80	2.3	3%
Ireland	5	0.3	6%
Norway	23	4.2	18%
Sweden	27	7.8	29%
Denmark	8	4.0	50%
Finland	14	1.9	14%

Source: DG Tren, January 2005.

Chart 5.1.

G7: Liquidity measured by the ratios of money supply to GDP & corresponding trends
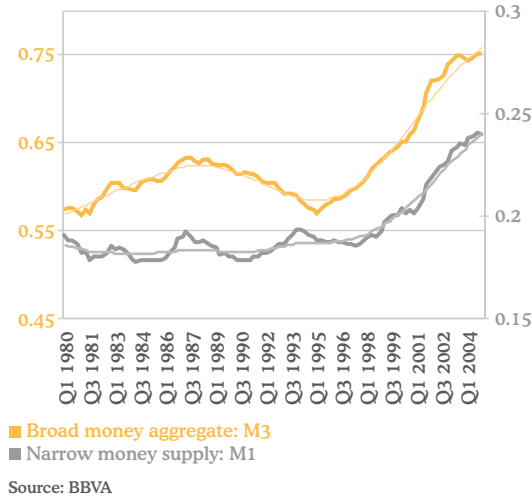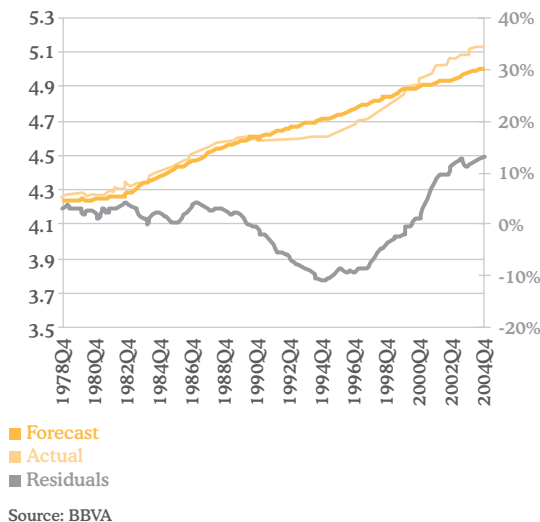(Weighted by GDP PPP)

■ Broad money aggregate: M3
■ Narrow money supply: M1

Source: BBVA

Chart 5.2.

G7: Money demand, long run

■ Forecast
■ Actual
■ Residuals

Source: BBVA

5. Global Liquidity: Potential Bubbles in Stocks, Emerging and Real Estate Markets[1]

Sonsoles Castillo
José Luis Escrivá
Eduardo Pedreira

Economic Research Department

5.1. Introduction

One of the major concerns that financial globalization has entailed is the swift increase of "global liquidity". Low interest rates, high asset prices or elevated credit growth lead us to wonder whether a shift in the supply (globalization, technology) justifies a change in price levels or if after this accommodative monetary period, there would not be any financial stability problems.

In this context, the first question is whether there is an excess liquidity or not, and the second one is to determine the impact it may have and how Central Banks should react. Broadly speaking, there are two concepts of liquidity. On the one hand, market liquidity makes reference to the capacity of financial markets to absorb temporary fluctuations in supply and demand without distorting prices. On the other hand, monetary liquidity relates to liquidity provided by Central Banks. Our study will be devoted to analyze the behavior of monetary liquidity.

The issue of globalization or greater financial market integration is an undeniable fact from any point of view. This fact leads economists not to deal only with domestic liquidity, but with "global liquidity". There are several reasons why global liquidity, and not only domestic liquidity, should be carefully analyzed. Cross-border country flows may have non-negligible effects on inflation or asset prices due to the high level of financial and trade integration attained by the world economies. It is very common to hear about the ample availability of funding that has spurred leveraged speculation in the form of carry trades, where the effect of borrowing short term at low rates is to drive down rates on the higher yielding, long term assets in which the funds are invested. Spillovers among countries are well documented in literature[2].

The layout of the article is as follows. In Section 5.2. we present the different approaches to assess the global liquidity. Section 5.3. presents the major concerns surrounding global liquidity and the likely reaction of Central Banks. Section 5.4. concludes the study.

5.2. Excess of global liquidity?

To assess, from a global point of view, the preponderant liquidity conditions we will use three variables[3] : (i) monetary aggregates represents the supply and demand of liquidity, (ii) short-term interest rates represents the cost of the liquidity and (iii) foreign exchange reserves gather the movements of international liquidity. We will refer to an "excess liquidity" as the situation in which the realized values of the variables are above (monetary aggregate) or below (interest rate) their equilibrium levels.

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[1] This article draws extensively on the paper "An Assessment of Global Liquidity: Potential Bubbles in Stocks, Emerging and/or Real Estate Markets" prepared for the International Conference of Commercial Bank Economists, Brazil 2005.
[2] See among others Baks and Kramer (1999). Also, very recently, Ciccarelli and Mojon (2005) documented that inflation is not a domestic phenomena.
[3] The first two proxies will be constructed as a GDP PPP weighted average of the G7 countries. For the first variable we used the broad money supply. For the second, we used short term official real interest rates. To assemble the full liquidity puzzle, we also used the annual accumulation of foreign exchange reserves

The first approach is based on broad monetary aggregates (M3). From Chart 5.1. we can state that in the last 10 years monetary growth has exceeded nominal GDP growth in the period.

A more sophisticated approach could be made by an empirical approximation of the demand for money. In the applied economics it takes the following semi-log linear form:

$$m_t - p_t = \alpha_0 + \beta_1 y_t + \beta_2 r_t \tag{1}$$

where m_t is the log of the broad money supply, p_t is the log of the w.a. of the consumer price index for the G7, y_t is the log of the real GDP for the G7, and r_t is the short-term nominal interest rate for the G7. β_1 measures the long-term elasticity of demand for money with respect to income, while β_2 measures the long-term semi-elasticity of money demand with respect to interest rate money. Results of the estimation of Equation 1 for the sample 1980:4-2004:4 are the followings:

$$m_t - p_t = -6.4 + 1.1 y_t - 0.5 r_t \tag{2}$$

Chart 5.2. illustrates the estimation results. It can be seen that the mid 90s were characterized by a certain monetary restriction, while since 2001 we observe signs of "excess liquidity".

For the second approach we use real interest rates. Chart 5.3. displays the G7 short-term real interest rate and real GDP, also pointing to ample global liquidity. Following the work of Taylor (1993), a basic monetary rule for the G7 is easily estimated by ordinary least squares (OLS). The specification for the Taylor rule is as follows:

$$i^*_t = \alpha + \gamma_1 \, (y - y^*)_t + \gamma_2 \, (\pi - \pi^*)_t + \varepsilon_t \tag{3}$$

where i^*_t is the target for the nominal interest rate, π_t is the inflation in period t, π^*_t is the target for the inflation (we assume it is constant), y_t is the growth of the real GDP, and y_t is the growth of the potential GDP. The coefficient γ_1 and γ_2 are the response of nominal interest rate as a result of a change in the inflation gap and in the output gap, respectively.

The output for the different Taylor rules are stated in Table 5.1., while Chart 5.4. shows the results for the specification corresponding to column 2 of this table, and allows us to argue in two ways. The first one is that current level of interest rates indicate "excess liquidity" because the estimation values are above the realized values. The second is that it could be the case that real interest rates had significantly decreased, and with it the constant of the estimation. This change would imply real interest rates at zero, which appear to be excessive.

The third approach is based on foreign exchange reserves. Note from Chart 5.5. that the path displayed by the reserve accumulation is signaling a high degree of international liquidity. Also note that during the last years the flows of reserves have become an alternative source of funding. Paradoxically, these flows (or accumulation) of reserves are largely dominated by developing economies, hence financing developed economies.

5.3. Should we worry about an excess of global liquidity?

The two simple models formerly used to assess the existence of global liquidity clearly confirm the wide concern prevailing in financial markets. But, should we really worry about being "surfing" on global liquidity? In order to answer this question, we will analyze the relation between liquidity and inflation as well as the one between asset prices and the liquidity measures obtained in the previous section.

Chart 5.3.
G7: Liquidity vs GDP growth trend
(Real interest rates weighted by GDP PPP)
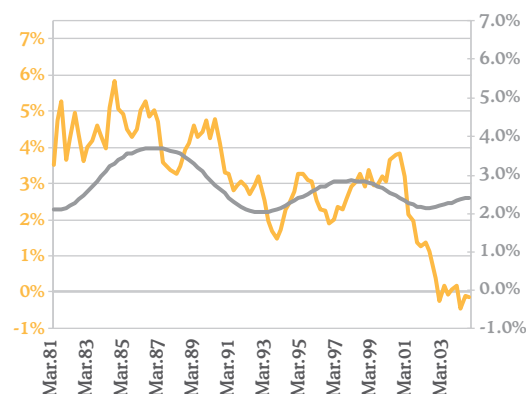
■ Real interest rates
■ GDP trend (right)

Source: BBVA

Table 5.1.
Taylor rule estimations*

	1986 - 2004	1990 - 2004	1990 - 2004
Constant	0.04	0.04	0.047
	[27.24]	[27.32]	[-47.13]
Inflation	1.6	1.36	1.2
	[8.81]	[7.37]	[11.09]
Output gap	-0.12	0.19	0.15
	[-0.77]	[1.12]	[1.43]
Dummy_2002-2004			-0.026
Centered R²	0.95	0.95	0.98

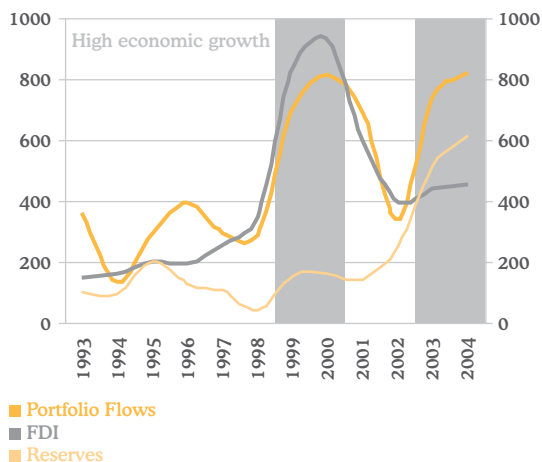*t-statistic in parenthesis
Source: BBVA

Chart 5.4.
G7: Output gap and CPI
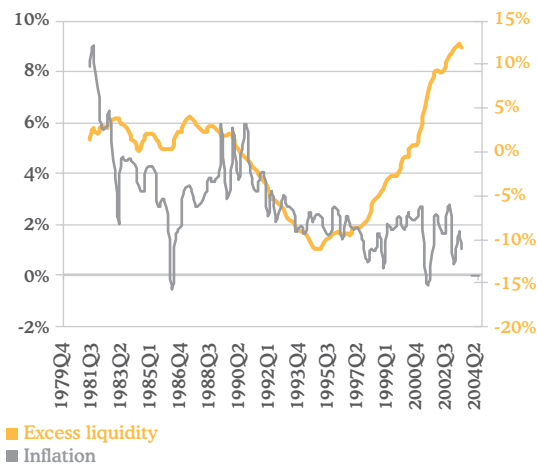(Weighted by GDP PPP)

■ Interest rate
■ FIT
■ Residuals

Source: BBVA

Chart 5.5.

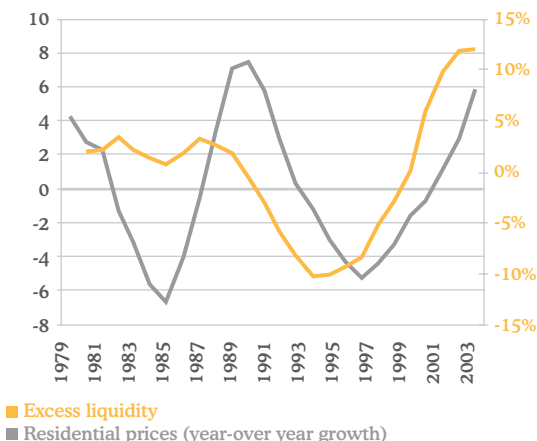## World capital flows
(Thousand millions US dollars)

High economic growth

- Portfolio Flows
- FDI
- Reserves

Source: BBVA

Chart 5.6.

G7: Excess liquidity and inflation
(quarterly annualised rate)

- Excess liquidity
- Inflation

Source: BBVA

Chart 5.7.

G7: Residential Prices and excess liquidity

- Excess liquidity
- Residential prices (year-over year growth)

Source: BBVA and BIS

5.3.1. Global liquidity and inflation

Despite the high global liquidity, it is remarkable that global underlying inflationary pressures remain contained. Recently, in G7 countries, and specially in the U.S., CPI based inflation has indeed accelerated but has barely reached the 2.5%. However, global inflation remains subdued even though its context has not been favorable: commodity prices have risen, slack in economies has been importantly reduced, monetary and fiscal policies are accommodative.

Following some empirical studies, we use a Phillips curve in order to test the role of money in inflation behavior. We establish a link between inflation expectations and the growth of the money stock by the following equation:

$$\pi_t = \alpha_0 \pi_{t-1} - \alpha_1 \pi^*_t + \beta_1 (y - y^*)_t + \beta_2 (m - y)_t \qquad (4)$$

where $(m-y)_t$ denotes a measure of excess liquidity, that is, the residuals in our previous estimation of money demand equation. We obtained the following coefficients:

$$\pi_t = 0.6\pi_{t-1} - 0.4\pi^*_t + 0.2 (y - y^*)_t + 0.07 (m - y)_t \qquad (5)$$

Our analysis unveil a relationship between excess liquidity and inflation. During recent years, and contrary to what occurred during the mid 80s to the mid 90s, our measure of excess liquidity does not display a high co-movement with inflation (Chart 5.6.). Similar results were obtained for the UEM. In Annex 1 readers can find in the estimation of the Phillips curve for the UEM. Based on this lack of co-movement, one may state two scenarios: one that implies a return to the late 60s (leading to high inflation) or a second one suggesting that we are in a new economy order, where economic conditions have morphed (inflationary pressures subdued contained).

Under the first scenario, some parallels be found between the current international monetary system and that of the late 60s and early 70s. Firstly, both periods were characterized by accommodative monetary policies and expansionary fiscal policies. Secondly, nowadays we see a regime similar to that of Bretton Woods, where some Asian countries intervene to fix their exchange rates. Lastly, high commodity prices, in particular that of oil have characterized both periods. These factors contributed to the build up of inflationary pressures, and eventually to a higher inflation rate, even before the oil price hike.

During the 60s, these pressure factors were misperceived by policymakers. What we hopefully learned from this past lesson is that we should be very careful with lags in inflation reaction, therefore we cannot rule out a scenario of a sprout in inflation.

Regarding the second scenario, some differences could be pinpointed: globalization has expanded notably[4], linkages between oil prices and the macroeconomy are more benign, and wages have developed in a more muted way than before[5], along with a stronger credibility of many central banks.

Even if we were in a "new world" some questions remain open: (i) Are the central banks employing an excessive monetary accommodation? (ii) Will central banks face a "timing problem"? (iii) Are central banks stretching out the credibility gains of the nineties?

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[4] One can measure globalization by the ratio of international trade in goods and services to world GDP, or by the extent to which savers invest in foreign assets.
[5] This could be a sign of the flexibility of the labor market.

5.3.2. Global liquidity and asset prices

Global liquidity can affect asset prices in several ways. One way is when global liquidity comes out with an increase in the demand for a fixed supply of assets beyond country boundaries, thus causing inflation in these asset prices. Another way is by means of an interest rate decline induced by the increase in liquidity. The reduction of the discount factor will be reflected in higher equity prices. Explaining the link between asset prices and liquidity is not simple because there are many underlying factors driving global liquidity or real estate prices, and disentangling these factors is all but undemanding.

There are different explanations to support the fact that monetary policy could cause an asset price boom. The first one is based on the liquidity view[6]. The argument is as follows: Central banks increase liquidity, hence enhancing a substitution process from more to less liquid asset. Demand for equity and real estate increases. Thus, an expansionary monetary policy will impact on these asset prices. The second approach, followed by the Bank of International Settlements (BIS), asserts that asset price booms are more often in a context of low and stable inflation. Central banks could enhance this process because of their credibility stabilizing inflation and also because of their passivity allowing bank credit to fuel the boom. Their proposal seems very clear: once central banks have achieved monetary stability, they should focus on financial stability. This view implies that the price index targeted by the central bank should include asset prices, while invigilating the "financial imbalances". Finally, another view comes from the dynamic general equilibrium macroeconomics models, showing than asset price booms are the result of a failure of monetary policy to stabilize inflation at low levels in a credible way.

A growing number of studies[7] have recently reviewed the empirical relationship between asset prices and monetary policy, concluding that monetary policy has a significant impact on asset prices.

To analize the empirical relationship between asset prices and global liquidity (and excess liquidity), we used the aggregate index of the BIS for the period 1979-2004 for the G7 countries. We distinguished between the aggregate index which includes residential prices, commercial state prices and equity prices, and the residential prices component, to test if the latest component is closer to money behavior[8]. Obviously, fundamentals play a significant role. Employment growth seems to be one of the factors behind the increase of housing prices as can be seen in Chart 5.8..

As shown in Chart 5.9. a significant growth in money is followed by a boom in residential prices. When measuring excess liquidity as the residual of our money demand estimation, we found a significant relationship since the mid eighties (Chart 5.7.). Moreover, in recent years excess liquidity happen at the same time that residential prices growth over its average.

When we considered the aggregate asset price index, a closer relationship was found between money and asset prices growth. However, during the period 2001-2004, excess liquidity does not seem to have had any role in explaining the behavior of asset prices (Chart 5.10.).

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[6] See Metlzer (1951) and Brunner and Meltzer (1973).
[7] See among others Borio and Lowe (2002), Detken and Smets (2002) and Bordo and Wheedlock (2004).
[8] Ferguson (2005) argues that monetary growth has significant relationship with housing prices, but no relationship with stocks prices.

Chart 5.8.
Housing Prices and Employment
YoY change. Average 1994-2004
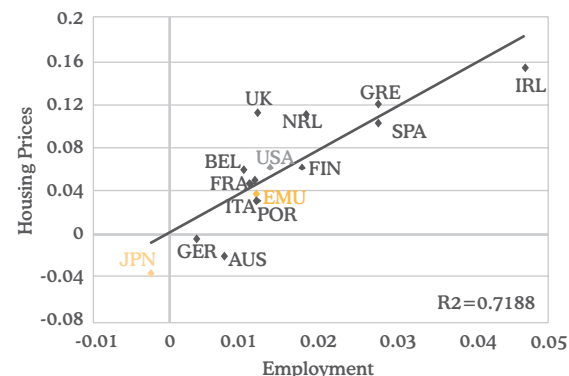
Source: Eurostat, IMF and BBVA

Chart 5.9.
G7 residential prices and money growth
Year-over-year growth

■ Money
■ Residential
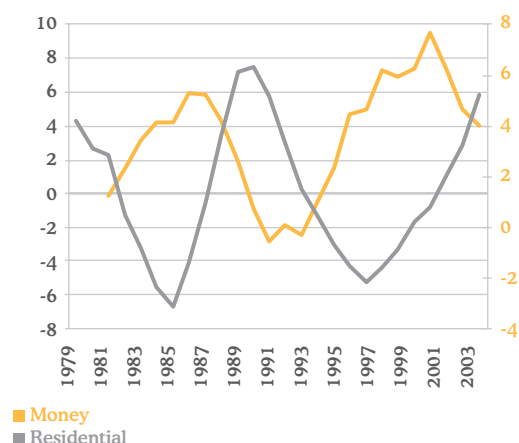
Source: BBVA

Chart 5.10.
G7 asset prices and excess liquidity

■ Excess liquidity
■ Asset prices (year-over year growth)
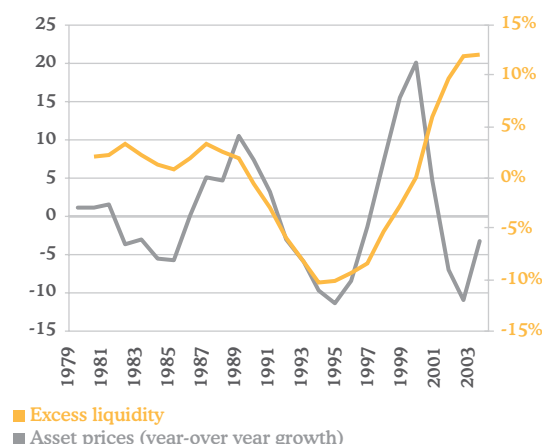
Source: BBVA

Chart 5.11.

G7 residential prices and domestic credit over GDP

- Domestic credit /GDP
- Residential

Source: BBVA and BIS
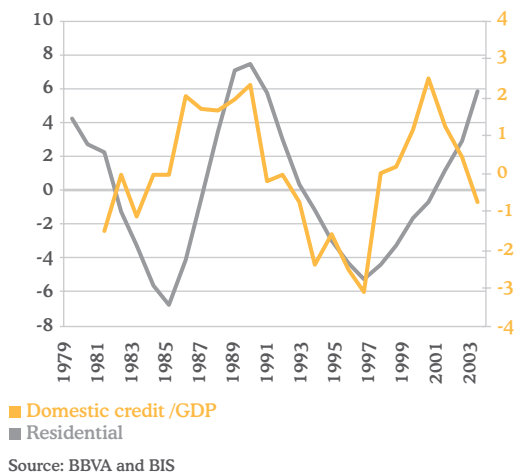
Chart 5.12.

G-7 asset prices and domestic credit over GDP

Year-over-year growth

- Domestic credit over GDP
- Asset prices

Source: BBVA and BIS

Chart 5.13.

EMBI+LATAM and Taylor Gap

- Taylor gap
- EMBI+ LATAM

Source: BBVA and JP Morgan

Besides that, the growth in the ratio of credit over GDP seems to be strongly correlated both with residential prices and with asset prices (see Charts 5.11. and 5.12.). One striking feature of this relationship is that credit over GDP has been moderating its growth in recent years, whereas residential prices continue to increase significantly.

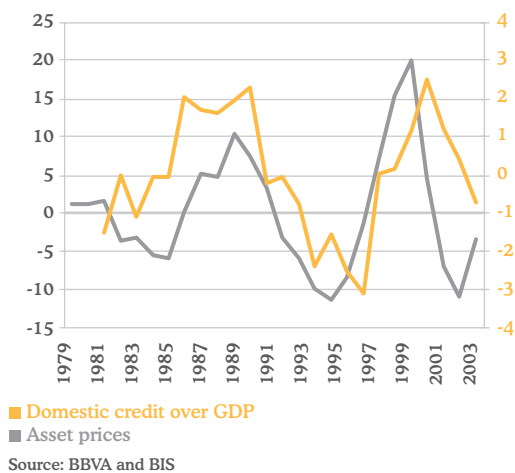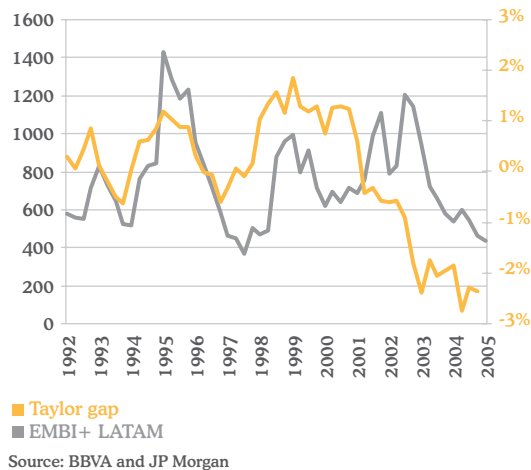Analyzing emerging countries will be useful to test the spillover of expansionary monetary policy in the G7 to these countries. We take into account the EMBI spread index (JP Morgan). We focus on the Latin American EMBI. Charts 5.13. and 5.14. show that there is no close relationship between excess liquidity and this index. The emerging crises, common in the nineties, weakened this relationship. However, as expected this relationship seems to be closer in periods with no domestic crises. The latest minimum of these spreads, reached at the beginning of 2005, seems to be related both to significant money growth in the G7 countries and to the excess liquidity in these countries.

5.3.3. What should Central Banks do?

Having achieved monetary stability, central banks have some room for manoeuvering towards financial stability. However, this issue remains controversial and many questions are open. For example, should the central banks react to asset prices directly or indirectly, regarding possible future threats to price stability? The asymmetric costs of fluctuations in asset prices, very significant in real terms during a financial bubble crash, is the main argument for the supporters of an explicit role of asset prices in monetary policy.

From an orthodox point of view, asset prices have no special role in monetary policy[9]. On the other hand, some economists advise to explicitly target asset prices ("pro-financial stability view"). Between these stances, the supporters of "leaning against the wind " have been increasing their influence[10]. The main assumption of this view is the non-linearity and the asymmetric impact of asset prices shocks. Likewise, it implies that central banks – mainly in developed countries – could conduct a slightly tighter policy in order to ensure price stability when there is some likelihood of a growing bubble. The Bank of England appears to behave in such way, i.e., it took into account the housing prices for the latest rises in interest rates.

The monetary policy framework needs to be very flexible in order to deal with financial stability. In our opinion, the "leaning against the wind" view has many advantages. But, some changes in communication could be appropriate in order to justify certain policy actions. Also, if central banks make known the likelihood of risky scenarios, they could help people understand monetary policy actions, and if financial crisis are considered, the relevant horizon for monetary policy actions could be longer than that price stability. Finally, a monetarist approach is not desirable, because money growth is not the only relevant factor to understand asset prices. Excess liquidity and credit growth provide additional information. The ideal framework could be characterized as more pragmatic: a "just get on with it" approach, similar to the way the Federal Reserve acts in conducting monetary actions.

[9]   Trichet (2005) presents several arguments against the idea of targeting financial prices.
[10]   See among others Borio (2005) and the references there in.

5.4. Conclusions

As other concepts, liquidity should be analyzed from a global point of view. Excess global liquidity is not only important because of its effects on inflation, but also because of its impact on other asset prices such as equities and real estate. Moreover, from a birds eye point of view, this situation concerns the strategies to be followed by central banks in order to achieve financial stability.

We have documented evidence of an excess global liquidity in the recent period. The relationship between inflation and liquidity, measured by a Phillips curve, seems to be lost since the mid90s, so we cannot rule out an inflation risk even if we were to be in a "new world economy".

Regarding asset prices, evidence is mixed. There is a weak relationship between equities and other emerging countries securities with the excess global liquidity. However, the relationship is stronger for residential estate prices.

Central banks should undertake a "leaning against the wind" course of action. This would imply that central banks should constrain monetary policy even more than markets prices nowadays.

Chart 5.14.
EMBI+LATAM and Excess Liquidity

■ Excess liquidity
■ EMBI+ LATAM
Source: BBVA and JP Morgan

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Inflation and core money in EMU

When the ECB assumed responsibility for monetary policy in the euro zone, in 1999, it announced that the framework of analysis for price stability risk valuation would rest on two main pillars. The first, in the analysis of monetary and credit aggregates, using the rate of growth of M3 monetary aggregate as the benchmark. The second, analysis of the risks posed to price stability by real and financial activity. In 2003, after revising the two pillars strategy, the ECB realigned the content of its communication statements to emphasize the relevance of the monetary pillar for price stability in the long term. Consequently, the ECB's policy decision statements generally still include warnings on surplus liquidity and the systematic growth of monetary aggregates above the benchmark, which could pose a risk to price stability.

The relationship between inflation and the monetary aggregates may be modelled by linking expectations to core money growth via a Phillips curve:

$$\pi_{t+1} = \pi^e_{t+1,t} + \beta(y_t - y^*_t) + \varepsilon_{t+1} \qquad (1)$$

where π_{t+1} is the inflation rate, $\pi^e_{t+1,t}$ is the expected inflation rate, $(y_t - y^*_t)$ is the output gap, defined as the deviation from its trend level (in natural logarithms -logs-), and ε_{t+1} is a random white noise perturbance. The expected inflation rate is modelled as dependent on the core inflation rate and the real inflation rate:

$$\pi^e_{t+1,t} = \alpha\pi^*_t + (1-\alpha)\,\pi_t \qquad (2)$$

Based on the balance between demand and supply in the money market, the core inflation rate is defined as the difference between nominal permanent monetary growth and the permanent component of growth in the demand for money (both in logs):

$$\pi^*_t = \Delta m^*_t - \lambda\,\Delta\,y^*_t \qquad (3)$$

This difference determines core money growth. By combining the above equations, we obtain the solution for the inflation rate based on the Phillips curve,

$$\pi_{t+1} = \alpha(\Delta m^*_t - \lambda\,\Delta\,y^*_t) + (1-\alpha)\,\pi_t + \beta(y_t - y^*_t) + \varepsilon_{t+1}$$

where the first parenthesis summarizes core money growth, i.e. surplus nominal permanent monetary growth over real permanent monetary growth. To account for external shocks, oil prices and non-energy import prices are added to the previous equation. After adding a delay polynomial to enrich the inflation dynamic, the following operating equation is obtained:

$$\pi_t = \alpha(\Delta m^*_{t-1} - \lambda\,\Delta\,y^*_{t-1}) + \alpha_2(L)\,\pi_{t-1} +$$

$$\beta(y_{t-1} - y^*_{t-1}) + \phi(L)\,\Delta p^{oil}_t + \gamma(L)\,\Delta^2 Impne_t + \varepsilon_t$$

where the permanent components of monetary growth (m*) and real activity (y*) are obtained by applying the symmetrical Baxter-King filter (2,32) -BK(2,32)- to the first difference in logs of M3 and real GDP[1].

Estimation results are shown in column (1) of table 1. It can be observed how the sum of the core money parameters over inflation, α, and delayed inflation, α_2, is statistically equal to 1, confirming the long-term unitary relationship between core money and inflation. Furthermore, the estimated income elasticity in real long-term monetary demand, λ, is similar to estimates obtained in other studies[2] on monetary demand in the euro zone, which oscillate between 1.3 and 1.4. The effect of the output gap is negligible and statistically insignificant. And the variables showing the influence of external shocks are significant to explain short-term inflationary performance.

Table 1.

Sample period	lag	From 1981q1 to 2004 q4				From 1981q1 to 2000 q4	
		M3		M3c		M3	
α	-1	0.33	(0.08)	0.45	(0.08)	0.45	(0.10)
λ	-1	1.42	(0.15)	1.47	(0.16)	1.49	(0.18)
Inflation t-j							
$\alpha 2$	-1	0.63	(0.07)	0.53	(0.07)	0.54	(0.08)
O-gap							
β	-1	0.013	(0.04)	0.011	(0.04)	0.005	(0.04)
P oil							
$\phi 0$	0	0.007	(0.01)	0.007	(0.01)	0.007	(0.01)
$\phi 1$	-1	-		-		-	
$\phi 2$	-2	0.003	(0.01)	0.003	(0.01)	0.003	(0.01)
Impne							
$\gamma 1$	0	0.024	(0.01)	0.021	(0.01)	0.023	(0.01)
$\gamma 2$	-1	0.027	(0.01)	0.026	(0.01)	0.017	(0.01)

Standard error in brackets
M3c = M3 corrected of portfolio shifts
Source: BBVA

Chart 1 shows that estimated core money (grey line) quite accurately describes the inflationary performance in the euro zone almost throughout the whole sample period. However, as from 2001, there is a decoupling between core money and inflation. While core money accelerates inflation remains stable at around 2%.

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[1] Quarterly data from 1981 q1 to 2004 q4 plus seasonally-adjusted figures (sa) were used.

[2] See Brand and Cassola (2000), Calza, Gerdesmeier and Levy (2001), and Bruggeman, Donati and Warne (2003).

Chart 1.
EMU: core money (BK (2.32)) and inflation (*)

■ inflation   ■ core money
■ core money corrected of portfolio shifts

(*) annualised quarterly rate, sa
Source: BBVA
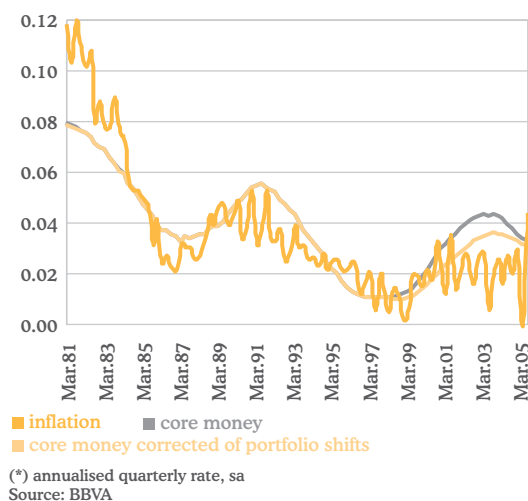
According to the ECB, the acceleration in the monetary aggregates could be partly attributed to the restructuring of agents' portfolios, towards safer assets, after the tech bubble burst. Following in the footsteps of the ECB[3], M3 was corrected of the possible effects of portfolio shifts in order to obtain a corrected M3 series as from 2001 (see Chart 1).

Chart 2.
M3 and M3 corrected of portfolio shifts
YoY rate

Forecast

Reference value

■ M3
■ Corrected M3
Source: BCE and BBVA
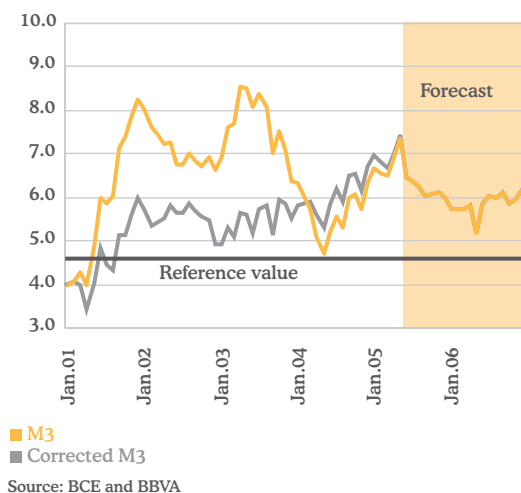
The estimation results of the previous equation with the corrected M3 series are shown in column (2) of Table 1. As can be observed, the unitary relationship between core money and inflation is maintained, the output gap still has no significant effect and external variables still explain inflation in the short term. If we compare (1) and (2), we can see that

the parameter α is now higher than previously and that α_2 is somewhat lower.

Chart 1 shows estimated inflation and core money based on M3 and M3 corrected for portfolio shifts. It is clear that, despite the correction, core money is still more dynamic than inflation as from 2001.

To confirm the impact changes after 2001 due to the portfolio shifts the equation was estimated, with the "original" M3, until 2000 q4. The results, presented in column (3) of Table 1, show that there is almost total coincidence between the parameters of the equation with M3 corrected (column 2) and those with M3 until 2000 (column 3). The correction of portfolio shifts seems to imply that the relationship between core money, once measured appropriately, and inflation is stable. This, however, rises some other questions. How will the extra-liquidity accumulated be drained from the system once the special circumstances have passes? Will this lead to higher inflation?

The assumption is that these portfolio shifts are not permanent, they are the result of increased uncertainty which should reverse once the uncertainty dissipates. The reversal should manifest itself as money growth below benchmark for a number of periods. This implies that we would require negative portfolio shifts to restore liquidity levels. In this context, the rate of growth of the monetary aggregates will not help explain inflation dynamics in the near future, as it would fluctuate below trend inflation as the excess liquidity disappears[4].

At present, it would seem that the uncertainty that justified the shifts has passed but the monetary aggregates are still growing at above their benchmark Charts. As argued by the ECB, the present monetary dynamics could pose a threat to future inflation. The excess liquidity in the system will eventually translate into higher consumer price inflation, if agents decide to spend the extra liquidity, or into higher asset price inflation, if agents opted for the purchase of alternative assets[5].

In sum, the resort to portfolio shifts to justify the discrepancies between the evolution of inflation and the monetary aggregates does not help predict the future path for inflation, as the persistency of these shifts and the manner in which liquidity levels are restored play a crucial role. In this sense, the monetary pillar has (temporarily or permanently) lost its significance as guide for price stability.

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[3]   See Box I of the May 2003 issue of the ECB Monthly Bulletin, the article entitled "Monetary analysis in real time" in the October 2004 issue of the ECB Monthly Bulletin, and Box I of the January 2005 issue of the ECB Monthly Bulletin.

[4]   It could be argued that the change in agents' liquidity preferences is permanent and that we are still observing the adjustment dynamics to the new equilibrium levels. However, we would still have to explain why agents' preferences have changed.

[5]   This could also lead to higher future consumer price inflation through the wealth effect channel, for example.

José Félix Izquierdo
jfelix.izquierd@grupobbva.com

6. Summary of Forecasts

Germany: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006
Private consumption	0.3	-0.4	0.7	1.9
Public expenditure	-0.4	-0.7	0.3	0.3
Gross fixed capital formation	-1.6	-1.8	-0.1	1.0
Equipment	0.2	0.8	5.3	5.5
Construction	-3.2	-4.0	-5.5	-4.0
Inventories (*)	1.0	0.8	-0.1	0.0
Domestic demand (*)	**0.7**	**0.1**	**0.4**	**1.3**
Exports	1.7	8.0	5.8	6.1
Imports	4.2	5.8	4.2	5.8
Net exports (*)	**-0.7**	**1.0**	**0.8**	**0.4**
GDP	**0.0**	**1.0**	**1.2**	**1.8**
Inflation	**1.0**	**1.7**	**1.7**	**1.3**

(*) Contributions to growth
Source: BBVA

France: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006
Private consumption	1.6	2.3	2.3	2.0
Public expenditure	2.1	2.7	2.0	2.1
Gross fixed capital formation	2.7	2.2	3.9	4.2
Inventories (*)	-0.2	0.8	0.1	0.0
Domestic demand (*)	**1.8**	**3.2**	**2.6**	**2.5**
Exports	-1.7	2.1	3.1	5.9
Imports	1.3	6.1	6.1	7.0
Net exports (*)	**-0.8**	**-1.1**	**-0.9**	**-0.4**
GDP	**0.9**	**2.1**	**1.7**	**2.1**
Inflation	**2.1**	**2.1**	**1.7**	**1.4**

(*) Contributions to growth
Source: BBVA

Italy: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006
Private consumption	1.4	1.0	0.5	1.5
Public expenditure	2.3	0.7	1.1	2.0
Gross fixed capital formation	-1.8	1.9	-2.0	2.0
Inventories (*)	0.4	-0.3	0.1	0.0
Domestic demand (*)	**1.3**	**0.8**	**0.2**	**1.7**
Exports	-1.9	3.2	0.1	2.0
Imports	1.3	2.5	1.1	2.5
Net exports (*)	**-0.9**	**0.2**	**-0.3**	**-0.1**
GDP	**0.4**	**1.0**	**-0.1**	**1.5**
Inflation	**2.7**	**2.2**	**1.8**	**1.8**

(*) Contributions to growth
Source: BBVA

Spain: GDP growth and inflation forecasts

YoY rate	2003	2004	2005	2006
Private consumption	2.6	4.3	4.5	4.0
Public expenditure	3.9	6.4	6.4	5.5
Gross fixed capital formation	5.4	4.4	7.1	5.7
Equipment	1.9	2.1	9.4	7.0
Construction	6.3	5.5	6.0	5.0
Others products	7.8	4.4	7.2	6.0
Inventories (*)	0.2	-0.1	0.0	0.0
Domestic demand (*)	**3.8**	**4.7**	**5.8**	**5.1**
Exports	3.5	2.7	0.3	2.5
Imports	6.2	8.0	7.0	7.0
Net exports (*)	**-0.9**	**-1.6**	**-2.4**	**-1.9**
GDP	**2.9**	**3.1**	**3.4**	**3.2**
Inflation	**3.0**	**3.0**	**3.3**	**2.6**

(*) Contributions to growth
Source: BBVA

Summary of forecasts

Euro zone (% change y/y, except for express indication)

	2000	2001	2002	2003	2004	2005	2006
GDP at constant prices	**3.8**	**1.8**	**1.0**	**0.7**	**1.7**	**1.4**	**2.2**
Private consumption	3.0	1.9	0.9	1.1	1.2	1.4	2.2
Public consumption	1.4	2.1	2.6	1.3	2.6	1.5	1.6
Gross Fixed Capital Formation	5.2	0.0	-2.3	0.4	1.3	1.6	4.3
Inventories (*)	0.1	-0.4	-0.2	0.4	0.1	0.0	0.0
Domestic Demand (*)	**3.2**	**1.1**	**0.3**	**1.4**	**1.6**	**1.5**	**2.5**
Exports (goods and services)	12.4	4.0	2.1	0.6	5.8	5.1	5.8
Imports (goods and services)	11.2	2.1	0.5	2.6	5.8	5.6	6.8
External Demand (*)	**0.6**	**0.8**	**0.6**	**-0.7**	**0.1**	**0.0**	**-0.2**
Prices and costs							
CPI	2.1	2.3	2.3	2.1	2.1	2.1	1.6
CPI core	1.0	1.9	2.5	2.0	2.1	1.5	1.5
Industrial Prices	5.3	2.0	-0.1	1.4	2.3	3.6	1.0
Labour Market							
Employment	2.2	1.4	0.7	0.2	0.6	0.8	1.0
Unemployment rate (% of labour force)	8.1	7.9	8.3	8.7	8.9	8.8	8.6
Public Sector							
Deficit (% GDP) (**)	0.1	-1.8	-2.5	-2.9	-2.8	-2.9	-2.9
External Sector							
Current Account Balance (% GDP)	-1.0	-0.3	0.8	0.3	0.6	0.6	0.4

*Contribution to growth
**Including UMTS receipts

International environment (% change y/y)

	Real GDP growth (%)					Inflation (%) (**)			
	2003	2004	2005	2006		2003	2004	2005	2006
US	3.0	4.4	3.6	3.2		2.3	2.7	3.0	2.9
UK	2.2	3.1	2.5	2.6		1.4	1.3	1.8	1.6
Japan	1.4	2.7	1.5	2.0		-0.3	0.0	-0.2	0.2
Latam (*)	1.7	6.0	4.1	3.6		7.1	6.8	6.5	6.0
China	9.3	9.5	9.0	8.5		1.2	3.9	4.5	4.5

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

Financial variables (end of period)

	Official rate (%)				Long-term interest rate (%, 10y)			
	22/07/05	Sep-05	Dec-05	Dec-06	22/07/05	Sep-05	Dec-05	Dec-06
Euro zone (*)	2.00	2.00	2.00	2.50	3.2	3.3	3.5	4.0
US	3.25	3.75	4.00	4.50	4.2	4.3	4.5	5.2
Japan	0.10	0.10	0.10	0.10	1.2	1.4	1.6	2.0

* 10 year interest rate refers to Germany bonds

	Exchange rate (vs euro)					Brent		
	22/07/05	Sep-05	Dec-05	Dec-06		22/07/05	Dec-05	Dec-06
US	1.20	1.22	1.22	1.21	$/b	58	48	45
Japan	134	130	128	123	€/b	48	39	37

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