Situación Spain

- Growth: winter blues

- Inflation differential: stuck on one

- Few are connected, but well connected

- Consuming fiscal policy

- What is the probability of recession in the Spanish economy?

Research Department

BBVA

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1. International environment

A delay in the recovery

The prospects of a recovery in activity in the industrialised economies are being put back: compared with the forecast that growth would reach its potential levels at the end of 2002, it appears increasingly probable that this will not take place until the second half of 2003. This situation reflects the increased uncertainty in place since summer as a result of a combination of factors. In the first place, there is the possibility of a military conflict with Iraq, which is putting upward pressure on oil prices, and could continue to do so in the next few months, lowering the expectations of economic agents. Secondly, there are the difficulties being faced by the corporate sector in overcoming its problems, as evidenced by the recent bankruptcy of United Airlines in the United States. The volatility of stock market prices and the high differentials in interest rates of corporate bond issues highlight that the uncertainty hanging over the corporate sector has not been lifted. The problems of excess capacity and the overestimation of the benefits of the New Economy are taking longer than expected in being corrected. Thirdly, there are growing doubts about the impact on the financial system of a prolonged slowdown in a number of countries. Lastly, within the context of a delay in the recovery in investment, the ability of demand policies to continue to support some components, mainly consumption and construction, supporting activity in turn, are beginning to be questioned. Related to this, the possibility that some assets that have become safe for investors, particularly housing and public debt, are becoming over-valued is beginning to cause concern. A significant deviation of these prices from their fundamental values could bring about a correction in the future that would have additional negative effects on activity through both real and financial channels.

Although it is probable that a number of these factors of uncertainty are being overstated, the truth is that they are causing a decline in business confidence, following the recovery observed in the first half of the year. This is leading to a further weakening in industrial activity. At the same time, a drop in consumer confidence is being observed. This alerts us to the possibility of a further sharp downturn in consumption, which is a source of particular concern in the United States, whose economic growth in the past few quarters has been driven by the positive impact of spending in both public and private consumption. Given that the latter has been based on the acquisition of consumer durable goods fuelled by excellent terms of financing, there is doubt as to whether this is sustainable. This is giving rise to the concern that a further fall in household con-

Graph 1.1

GDP growth forecasts for 2003
Year-on-year rates

Source: Consensus Forecast
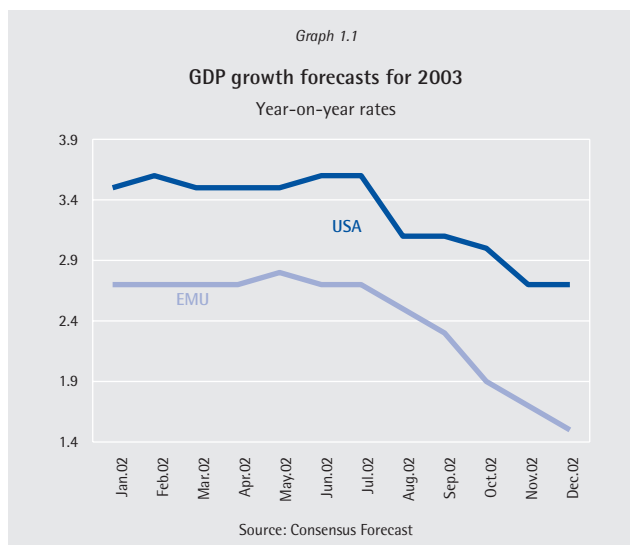
fidence could lead to a sharp drop in consumption instead of a moderate correction, which would be desirable.

Faced with this situation, we believe that the half a percentage point cut in Federal Reserve interest rates in November will allow the adjustments in consumption to take place in a moderate manner. In December, the drop in confidence indicators and the deterioration in the prospects for a recovery in activity, along with improving inflation prospects led the ECB to reduce interest rates within the EMU by the same amount.

A reduction in current uncertainty, therefore, stands out as the key factor for an economic recovery to take place, although this might occur later than had been forecasted a few months ago. After the cuts at the end of this year, interest rates in the United States and within the EMU are likely to remain stable over a prolonged period of time, with the probability even of some further reduction if there is a fresh negative shock to confidence levels, particularly in Europe. The start of an upward cycle in interest rates will not take place until the second half of 2003 when signs of a recovery begin to be seen. The rises will be modest, that is, half a percentage point in the United States and a quarter of a percentage point in the EMU, to stand at 1.75% and 3.0%, respectively.

Is deflation likely?

This scenario with downside risks to growth is characterised by a longer and deeper than expected correction of the late-1990s overvaluation in stock markets and a further weakening in confidence. The latter would then result in an adjustment in the prices of other assets, such as housing, thereby reinforcing the negative "wealth effect" on consumers. As a result, the sharp, inevitable adjustment in consumption could lead to the scenario of a "double recession" in the United States,

Table 1.1. GDP (year-on-year)				
	2000	2001	2002	2003
OECD	3.8	0.7	1.6	2.2
USA	3.8	0.3	2.3	2.5
EMU	3.5	1.4	0.8	1.7
Japan	2.2	-0.8	-0.2	0.6
Developing countries	5.9	4.3	4.0	4.8
Countries in transition	6.3	4.9	3.8	4.0
WORLD	4.7	2.3	2.7	3.2
Sources: IMF and BBVA				

Table 1.2. CPI (year-on-year rates)				
	2000	2001	2002	2003
OECD	2.5	2.3	1.6	1.9
USA	3.4	2.8	1.6	2.1
EMU	2.3	2.5	2.3	2.2
Japan	-0.7	-0.7	-0.9	-0.3
Developing countries	6.2	6.2	6.0	6.3
Countries in transition	22.0	18.1	10.7	10.1
WORLD	4.8	4.5	3.6	3.9
Sources: IMF and BBVA				

which would depress activity and trade in the rest of the world. This depression in demand, alongside greater competition and lower market power for companies, could end up in a number of economies, mainly the United States and Germany, becoming mired in a process of deflation and recession. This scenario would require significant cuts in short-term interest rates. Some point to Japan as an example of what could happen on both sides of the Atlantic.

Although the possibility of such a scenario taking place has been discounted by the financial markets, putting downward pressure on public debt yields at all maturities, there are factors which suggest the probability of this occurring is limited. Firstly, the gains in flexibility achieved in the goods, services and factor markets since the 1980s should help the much-needed adjustments in the economy to take place without entering a deflation-recession scenario. Besides, the behaviour of consumers, especially in the United States, shows a saving-consumption pattern very different from that of the Japanese, where the propensity to save is clearly higher. It is not clear either that house prices are overvalued to the extent of requiring an adjustment, with the costs that this could have in terms of activity and the financial system, at least in economies such as those of the United States and Germany[1]. The situation of the financial system is not comparable, either in terms of solvency or in matters or prudential regulation. Lastly, unlike events in Japan, there has been a rapid and aggressive reaction in monetary and fiscal policy in the economy of the United States.

Could fiscal deterioration put upward pressure on interest rates?

Despite the risk of deflation and recession and the downward pressure this exerts on interest rates, the longer term of the yield curve could see movement in the opposite direction. In effect, long-term interest rates are likely to come under upward pressure in the next few months in the face of the marked deterioration being observed in the fiscal situation. In this regard, the 2001/2002 budget period in the United States ended with a deficit of 1.5%, that is, four points below the maximum surplus achieved two years ago. Only a third of this change can be attributed to the behaviour of automatic stabilisers. The rest is the result of the adoption of discretional counter-cyclical[2] economic policy measures, that is to say, a structural deficit. This fiscal push is the most extensive experienced by the United States in the recessions that have taken place since the 1960s, although none of the earlier cases departed from such a healthy situation in the public accounts, nor were the stimulus measures put in place with such speed. Having reached this level of deficit, the question raised relates to its future evolution. In principle, the deficit figure is expected to deteriorate next year, and the risks are clearly on the upside, specially if military and security spending continue to increase.

After conceding in July of this year that Portugal's deficit had already exceeded 3% of GDP in 2001, starting the "excess deficit" process established under the Stability and Growth Pact (SGP), the EMU expects this limit to be reached in Germany in 2002. Given the slowdown in activity in the German economy, and bearing in mind that, because of inflation there, we are expecting at relatively more restrictive real interest rates than other European countries, the question has arisen whether the SGP needs to be reformed. The debate over making European budget levels more flexible has intensified after observing that up until now the fiscal deterioration of the main industrialised economies does not appear to have translated into an increase in long-term interest rates. However, the experience of the 1980s shows that there is a positive relationship between the public deficit and interest rates, and that a worsening of the situation can give rise to significant increases in long-term interest rates, with the subsequent costs in terms of private activity in economies.

In short, within the current context, while it is foreseeable that short-term interest rates will remain under downward pressure because of the risks of a further delay in the recovery, long-term rates will start to reflect this pressure because of the impact of the deterioration in the public accounts. This last will not take place as long as a deflationary scenario persists.

[1] In this economy, house prices fell in the past few years due to the considerable problems faced by the sector after reunification.
[2] Reflected in the Official Document on economic growth and tax rebates in 2001, the Official Document on the creation of employment and assistance for workers of 2002, and the increase in Defence spending.

2. The real economy

End of the slowdown, but continuing imbalances

The slowdown in the Spanish economy should ease off in 2003 as a consequence of two factors: the boost to household disposable income from the reform of IRPF personal income tax, and the impact of the improvement in the international environment on investment spending and exports. These two positive developments will have a relatively moderate impact, however, because of the limited strength of the external recovery and the rising indebtedness of companies and households. The savings rate of households is running at all-time lows.

Two other factors with a bearing on growth are the ongoing inflation differential with the EMU - above one percentage point since 1999 - and the current account deficit, which is expected to reach 2.4% of GDP in 2002. The inflation differential and the current account deficit will act as a check on the future growth of the Spanish economy, in particular as a result of a dearth of international capital flows and the impossibility of resorting to competitive devaluations of the exchange rate in order to correct the external deficit. The loss of competitiveness resulting from the inflation differential explains the loss of market share domestically and overseas. The external deficit, caused by an excess of unproductive demand, is hindering in turn the financing of the investment necessary to en-

Graph 2.1

Inflation and GDP growth

1996–2002

Sources: INE and BBVA
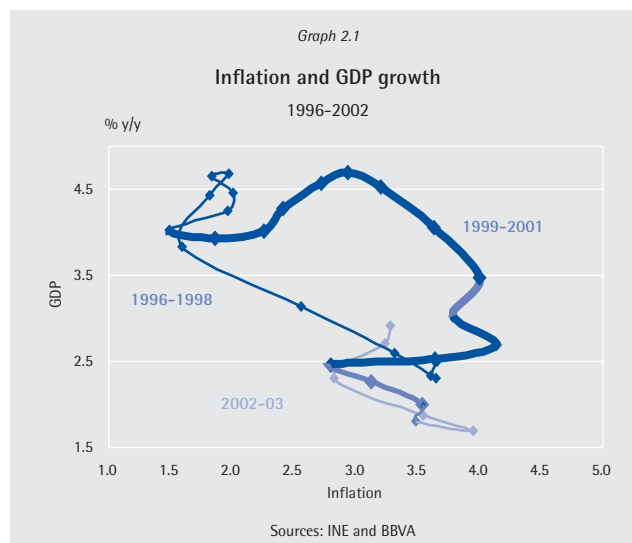
hance the long-term growth capacity of the Spanish economy.

Although it is too soon to evaluate if these long-term factors are already being felt, Spanish GDP growth has been slowing progressively since the middle of 2000. And inflation rates, with the exception of the second half of 2001 when energy prices fell, continue to show a considerable resilience to decline. That is, in contrast to the period 1996-2000, a scenario of slower growth and higher inflation.

GDP grew in the third quarter of 2002 at a rate of 1.8%, 1.2 percentage points less than in the same quarter of 2001. This slowdown was the result of a loss of momen-

Table 2.1. Macroeconomic data

seasonally-adjusted data year-on-year rates	2001				2002				2003						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2001	2002	2003
Household consumption (1)	2.4	2.3	2.7	2.6	2.3	1.6	1.4	1.2	1.7	2.3	2.9	2.8	2.5	1.7	2.4
Public consumption	3.2	2.8	3.1	3.1	3.1	3.1	3.2	3.2	3.0	3.0	3.0	3.0	3.1	3.1	3.0
Gross fixed capital formation	5.1	3.9	2.6	1.3	0.8	1.1	1.5	2.0	2.5	2.8	2.7	3.7	3.2	1.3	2.9
Capital goods and other products	3.7	1.2	-0.8	-2.7	-3.0	-2.9	-2.2	-1.0	0.0	1.6	2.0	4.2	0.3	-2.3	2.0
Construction	6.4	6.4	5.7	4.8	4.0	4.4	4.8	4.5	4.4	3.6	3.3	3.2	5.8	4.4	3.6
Inventories (*)	-0.4	0.2	-0.6	0.6	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Domestic demand (*)	2.9	3.0	2.2	3.0	2.3	1.7	1.8	1.8	2.2	2.6	3.0	3.2	2.7	1.9	2.7
Exports	9.8	4.6	2.1	-2.3	-2.8	-1.3	3.9	4.0	5.4	5.3	1.6	3.5	3.4	1.0	3.9
Imports	8.5	6.4	-0.2	-0.1	-1.6	-2.0	3.8	3.5	5.3	6.0	3.0	3.8	3.5	0.9	4.5
Net exports (*)	0.2	-0.6	0.7	-0.7	-0.3	0.3	0.0	0.1	-0.1	-0.3	-0.5	-0.2	-0.1	0.0	-0.3
GDP at market prices	3.0	2.4	3.0	2.3	2.0	2.0	1.8	1.9	2.1	2.3	2.5	3.0	2.7	1.9	2.5
Agriculture	-2.9	-3.7	-0.5	-5.5	0.9	-0.7	-1.9	2.9	4.0	0.6	2.1	0.0	-3.1	0.3	1.7
Industry (2)	1.4	1.6	2.7	0.1	-0.3	0.2	2.2	3.5	4.5	3.4	0.8	1.9	1.4	1.4	2.6
Construction	5.9	5.7	5.2	4.8	4.4	4.6	5.4	4.9	4.6	3.5	2.3	3.5	5.4	4.8	3.5
Services	3.3	3.5	3.3	2.7	2.4	2.4	2.0	1.9	2.2	1.8	2.0	2.9	3.2	2.1	2.2
market	3.6	3.7	3.4	2.5	2.2	2.2	1.6	1.5	2.0	1.5	1.8	2.8	3.3	1.9	2.0
non-market	2.5	2.7	3.1	3.5	3.2	2.9	3.2	2.9	2.9	2.7	2.5	3.4	2.9	3.1	2.9
Net tax on products	5.3	-2.9	0.5	6.6	3.6	3.0	-1.9	-4.4	-6.4	2.9	10.7	6.5	2.4	0.0	3.2

(*) Contribution to GDP growth (1) Includes NPISH
(2) Energy and industrial branches

Sources: INE and BBVA

tum in household spending, a weak recovery in capital goods investment, and an expansion in imports, partly offset by the good performance of exports and investment in construction.

The Spanish economy reached its cyclical low in the third quarter of 2002 - when GDP growth was 1.8% - and is expected to grow by 2.5% in 2003. The growth differential with the EMU will probably come in at 1.1% in 2002 and 0.8% in 2003, respectively. The process of real convergence of the Spanish economy should therefore continue, albeit at a slower pace than in the period 1997-2001, when the average growth differential was 1.4 points.

On the other hand, the inflation differential with the EMU is expected to exceed 1% (1.4% in 2002, and 1.1% in 2003), with a gap being registered for both tradeable and non-tradeable goods (services). Moreover, the continuing inflation differential cannot be explained as the result of a "catch-up" process, that is, a convergence in price levels from lower levels, nor by what is known as the Balassa-Samuelson effect, since it is not the outcome of a growth differential in productivity in favour of the Spanish economy[1].

To sum up, the Spanish economy is using up the benefits of nominal convergence afforded by its membership of the EMU, with interest-rate levels at all-time lows. What is more, economic agents view these rates as being sustainable over the long term, which is favouring a higher level of indebtedness, further increased by the special preference of Spanish households for house buying.

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[1] There is a differential in favour of Spain in 2001 and 2002, but this is not sufficiently significant to explain the high inflation differential. In 1998-2000, the differential in productivity growth was negative.

Apart from the risk of real-estate prices becoming over-valued, the other notable risk with regard to the evolution of the Spanish economy is the loss of wage moderation, a key element in the expansion in the second half of the 1990s. In this sense, the widespread use of inflation-adjustment clauses in collective agreements implies the indexation of wages a posteriori, which helps convert temporary shocks on prices into permanent ones.
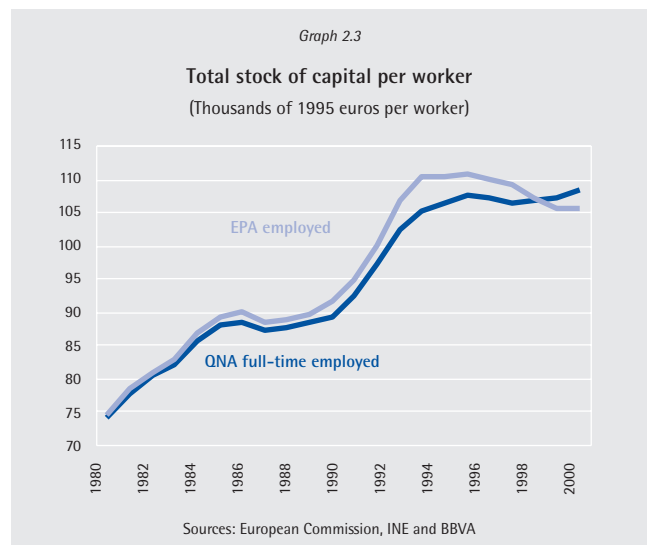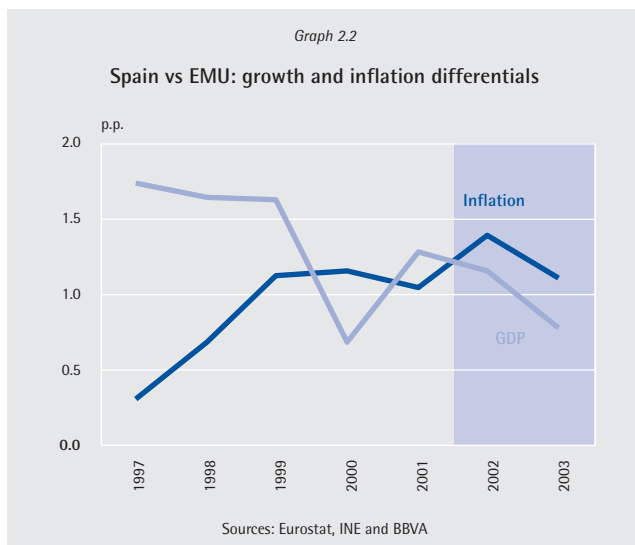
In this context, the renewal in 2003 of the agreement signed by the social agents in December of 2001 to enable wage moderation is even more necessary, at least as a "second-best" option in the absence of a reform of the collective-bargaining system.

Without investment the competitiveness of the Spanish economy will not improve

The deterioration in the competitiveness of the Spanish economy in the past few years, mainly due to the inflation differential with its main trading partners, is limiting the Spanish presence in the global market and bringing about a reduction in its domestic market share.

In the medium term, to improve the level of competitiveness, it is necessary to increase investment at a sufficient rate to raise the stock of capital per worker. This, and more specifically the stock of private productive capital, is one of the main determinants of the potential growth of an economy and of labour productivity.

In Spain, the scant progress achieved in the area of the stock of capital per worker is due not only to the high rate of job creation in these years, but also fundamentally to the lack of dynamism in investment during the recent expansion phase and low growth in productivity.

Graph 2.2

Spain vs EMU: growth and inflation differentials

Sources: Eurostat, INE and BBVA

Graph 2.3

Total stock of capital per worker
(Thousands of 1995 euros per worker)

Sources: European Commission, INE and BBVA

Graph 2.3 plots the evolution of the total stock of capital per worker since 1980[2].

It can be seen that independently of the employment variable used (labour survey –EPA- workers in employment" or "full-time employment" of the Quarterly National Accounts –QNA-), the stock of capital per employee, after reaching a maximum in 1996, maintained a downward trend until 2001, the year in which it started to increase again. Despite this recovery, growth has been significantly below that observed in the previous expansion phase. Thus, while the stock of capital per employed full-time worker grew an accumulated 1.3% between 1985 and 1990, it increased by only 0.8% in the period 1996 to 2001[3].

These figures show that the period of economic expansion was not taken advantage of to undertake the investments necessary to enhance the competitiveness and productive capacity of the Spanish economy. This aspect is of greater significance because of the inevitable increase in competition that will result from the enlargement of the EU to include Eastern and Central European countries.

More consumption, but with less confidence

As was expected, household consumption is growing more slowly than it did in 2001, although some current indicators on spending and production of consumer goods (retail sales, the industrial production index (IPI) and foreign trade) are showing a more positive tone in the second half of the year than they registered in the first half of 2002. This contrasts with consumer expec-

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[2] The stock of capital has been calculated using the permanent inventory method based on the investment data published by the European Commission.
[3] This difference is even greater when only the evolution of the stock of private productive capital is considered. In this case, the ratio increased by 5.9 pp in the period 1985-1990, against 3.4 pp in the period 1996-2001.

Graph 2.4

Household savings rate and consumption

(% GDP)   (% y/y)

Consumption (right)

Savings rate (left)

Sources: INE, Bank of Spain and BBVA

tations, which, according to European Commission confidence data, show negative values in the period July-November 2002, something that has not been observed since the middle of 1996.

Despite the recent pick-up in current indicators, the moderation in household spending will be accentuated in the final quarter of 2002, to the extent that average growth will fall to 1.3% in the second half of the year, from 2% in the first half.

Throughout 2002, job creation has been slowing and the unemployment rate rising as a result of higher increases in the active population. Employment nonetheless continues to be the main support of household disposable income - a fundamental determinant of consumption - since growth in real wages has been practically zero. In 2003, the most significant driving force behind household spending will be the IRPF reform, which will mean an increase in household disposable income of about 3 billion euros (0.4% of nominal 2002 GDP), according to the Government's estimates. This, along with an improvement in household expectations and a positive wealth effect, will allow consumption to grow by 2.4%. The effect on spending of the IRPF – Impuesto sobre la Renta de las Personas Físicas, income tax- reform will be moderated by the current low savings rate and a forecast deterioration in the rate of unemployment, which will translate into a stimulus of a lower magnitude than that of the 1999 reform. Greater uncertainty regarding economic prospects will lead to a part of the increase in household disposable income arising from IRPF reform going to savings.

The slowdown in consumption in 2002 has allowed the household financial savings rate to maintain the levels of 2001 at slightly above 10% of gross disposable income. In 2003, a further rebound in the savings rate will take place as a result of both the current low levels (close to the all-time low) as well as the uncertainties facing households with regard to their financial situation. In this sense, a significant fall has taken place in the expectations of households about their capacity for current and future saving, which, according to the data from qualitative surveys by the European Commission, stood around their all-time lows in the second half of 2002.

Construction continues to hold up

Investment in construction continues to be, alongside public consumption, the most buoyant component of spending. However, according to a breakdown of figures provided by the Public Works Ministry in the ECIC, Construction Industry Trends Survey, construction activity slowed in the third quarter of 2002. This slowdown

Table 2.2. Construction				
% y/y	2000	2001	2002	2003
Gross fixed capital formation	6.2	5.8	4.4	3.6
ECIC investment	6.9	7.8	5.0	4.0
ECIC building	8.6	6.7	7.0	6.0
ECIC public works	1.1	10.4	3.0	0.0
Sources: INE, Ministry of Public Works and BBVA				

Graph 2.5

Capital goods

Sources: INE, Ministry of Finance and BBVA

was the result of slower growth rates in the residential building segment (demand for homes), and, in particular, the fall-off in public works in the last quarter (demand by the public administrations). Also, non-residential building, which is more linked to corporate demand, also showed a depressed tone. Given all of this, it is foreseeable that, as was the case in previous revisions, it will be the information provided by the ECIC survey which will determine the profile of investment in construction in the National Accounts.

As a whole, the sector is expected to slow in 2002 and 2003, because although investment in residential construction is expected to accelerate slightly in 2002 with regard to 2001, there will also be a deceleration in public works once the maximum positive effect of the electoral cycle is over.

Leading indicators of residential activity, such as building permits, have shown a recovery in the second part of 2002, which points to a continuation of activity in this segment. This continuing expansion in the supply of housing contrasts with a worsening in the conditions of access for households to the housing market, which could, in the medium term, lead to a moderation in new projects and a reduction in activity. However, while the rate of sales remains high at current prices, real-estate promotion will also continue to be strong. Because of this, given the inertia that characterises the sector, a significant deterioration in activity is not expected in 2003.

Incipient recovery in capital goods investment

Current indicators for investment in capital goods present a scenario that suggests there is a good chance of a recovery in this component of spending in 2003 after two years of slowdown (2000 and 2001) and one year of negative growth (2002). The rate of capacity utilization has picked up in the fourth quarter to 80.3%, the highest level seen since the fourth quarter of 2000. Also, this increase has been common to all the productive branches: capital, intermediate and consumer goods. The expectations of industrial companies are also showing less negative values that those registered at the start of the year, in line with the improvement seen within the EMU.
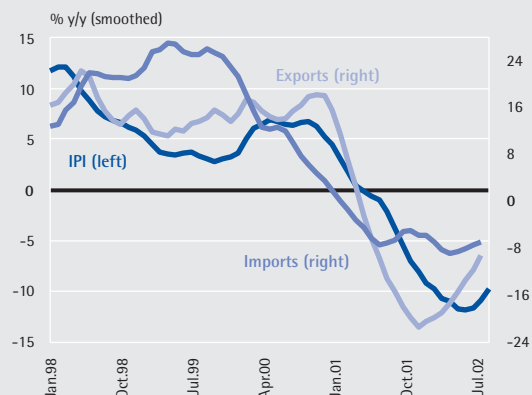
Industrial output of capital goods also began to pick up from the middle of the year, bringing to an end the phase of accelerating declines that started in the second half of 2000 and continued throughout 2001. Exports of capital goods have also registered a much stronger performance in the latter part of 2002, although annual rates of growth remain negative. Only imports of capital goods continue to register flat growth rates with no signs of an upward trend starting.

However, some recent indicators of activity expectations in the leading EMU countries dampen the optimism about the sustainability of the rate of recovery in capital goods investment in Spain. The expansion is nonetheless expected to take place gradually in the course of 2003 as the European recovery and hence companies' expectations of demand strengthen.

The other factor underpinning the recovery in investment is the behaviour of real interest rates, which, at close to all-time lows, are holding the real cost of capital at low levels. In addition, according to the data of the Bank of Spain's Quarterly Central Balance Sheet Office, the financial situation of the corporate sector is generally positive. Thus, corporate profitability is running slightly above the level of previous years (8.6% in the first half of 2002, 8.4% in 2001), while the cost of financing continues to decrease owing to the falls in nominal interest rates. Improvements here are nonetheless limited by the greater volume of corporate debt.

Net exports: null contribution to GDP

The last few months have seen a lowering of expectations about international growth, reducing the forecast GDP growth rate for 2002 and the size of the subsequent expansion. The limited acceleration in global economic growth in 2003 will also mean a very moder-

ate recovery in international trade, in any case below the average of 6% registered in the past 20 years. Thus, after registering a real fall in 2001, the first drop since 1982, a certain improvement in trade is already being seen in 2002. Global imports have gone from an annual fall of 3.3% in the second half of 2001 to growth of 1.6% in the first half of this year, according to preliminary data from the IMF.

In the euro area, the recovery initiated at the end of 2001 remains very tepid, with average growth in 2002 expected to come in at 0.8%, 0.7 percentage points less than in 2001. The positive contribution of the external sector is providing more support to growth than domestic demand. In this regard, among the major clients of the Spanish economy, France and Germany registered real contractions in imports of goods and services in the first half of 2002, in line with the slowdown in consumer demand and the fall in investment. The customs data show a real fall in goods exports to the European Union of 1.8% (exports to the rest of the areas posted a rise of 1.7% in the same period), although with a slight recovery in the past few months.

The slackness in merchandise trade in the first half of 2002 was not compensated for by tourism income. Only the latest available figures for tourist entries corresponding to the month of October show a degree of recovery, up from an accumulated increase of 0.1% in the period up to July to 2.1% in the period up to October. However, an improvement in real income per tourist has so far failed to take place, with a very noticeable downward trend visible from the middle of 2001. This is an important indicator given the increased competition from other destinations in the south and east of Europe or from North Africa, areas with which it is difficult to compete on prices.
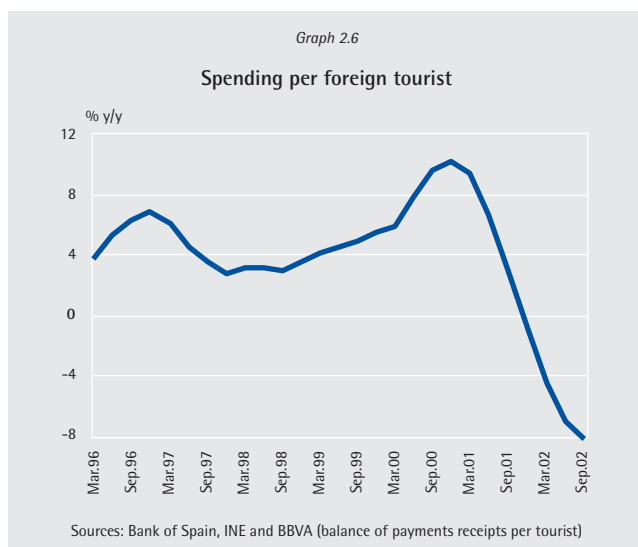

Graph 2.6

Spending per foreign tourist

% y/y

Sources: Bank of Spain, INE and BBVA (balance of payments receipts per tourist)

Table 2.3. Competitiveness (REER %)			
	SPA-WORLD	SPA-EMU	EMU-WORLD	$/€
1998	1.2	0.2	2.5	1.12
1999	-1.5	1.1	-6.1	1.07
2000	-3.1	1.2	-9.7	0.92
2001	2.1	1.0	2.5	0.90
2002	3.2	1.4	4.4	0.94
2003	2.8	1.1	4.2	1.00
Source: BBVA			

Exports are nonetheless forecast to contract by 0.9% in 2002, although, having initiated a recovery in the second quarter, annual rates of growth should continue to pick up gradually. In a parallel fashion, imports of goods and services will consolidate the recovery already apparent in the latest Customs and National Accounts data[4]. This performance, despite the slowdown in domestic spending, is being supported by the sharp fall in the prices of imported goods as a result of the fall in dollar merchandise prices in the international markets as well as the gradual appreciation of the effective euro exchange rate (see Box in this chapter). It should also be highlighted that the limited recovery in exports in 2003 will result from the accumulated effect of the loss of price competitiveness of Spanish goods. This performance is the outcome of both the sustained differential in prices compared with Spain's main trading partners as well as appreciation of the euro.

Within this environment, the slowdown in the unit value indices (UVI) for goods exports (0.4% year-on-year in the first eight months of 2002, four points down from the same period of 2001) and the growth in the industry deflator below that of unit labour costs are evidence of the process of competition via prices and the compression of margins in Spanish sales.

Employment weathers the slowdown

Employment in 2002 is growing at lower rates than in previous years, but without seeing negative growth rates. This is something new, given that the Spanish economy is growing at under 2%, a figure that is considered critical for the creation of employment. Thus, since 1981, the first figure available for the change in GDP under the ESA95, 2002 will be the first period in which, with a growth rate of 1.9%, a fall in the level of employment will not be registered. The number of full-time equivalent jobs grew at an annual rate of 1.3% in the first three quarters of the year, with the economy growing at 2%.

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[4] The Quarterly National Accounts figures reflect the sudden, strong recovery in trade flows registered by Customs in Q302, which in the case of both exports and imports grew at seasonally-adjusted real rates not seen since Q194 and Q297, respectively.

Table 2.4. Foreigners in Spain, share of total (%) and change (% y/y)					
	Dec-98	Dec-99	Dec-00	Dec-01	oct-02 (**)
SS registrations (%/total)	1.7	2.3	3.0	3.8	5.1
(% y/y)		44.7	36.0	33.8	39.3
EPA employed (%/total)	1.1	1.4	1.7	2.3	2.8
(% y/y)		29.9	30.6	40.0	28.7

(*) Q202 for EPA
(**) Q302 for EPA
Sources: INE, Ministry of Labour and Social Affairs and BBVA

There are a number of factors that explain the relatively stronger performance of employment in the current slowdown. Firstly, the actual deceleration is quite moderate, unlike what happened in 1992 and 1993 when GDP growth was 0.9% and –1.0%, respectively. Besides, regulations governing the labour market have been made more flexible since then. This has helped to ease wage "aggressiveness", which, though still high, fell to 1.9 percentage points in the period 2001-02 (after an average of 3.8% in 1991-93). As well as this, the greater rigidity in the labour market in the period 1992-1993 meant that the adjustment during the crisis came more via quantities (employment) than via prices (wages). To sum up, the current relatively moderate slowdown, together with a relatively more flexible labour market, and a number of years of real wage moderation have made room for a comparatively stronger employment performance.

The slowdown in employment growth was halted in the first half of 2002, the slight acceleration registered gathering pace in the third quarter, according to Social Security data. The increase in Social Security registrations in the third quarter of 2002 (3.2% year-on-year, up from the 3% average recorded in the first half of the year) is partly due to strong employment growth among foreigners. Thus, while in December 1998 the employment of foreigners represented 1.7% of total registrations and 1.1% of EPA employment, in October of 2002 the percentage of foreigners in total Social Security registrations stood at 5.1%. In the EPA, employed foreigners in the third quarter of 2002 represented 2.8% of the total. Although the current EPA is based on new population projections with migration flow hypotheses more in line with reality, its structure based on households as the elementary unit means that it may be underestimating the percentage immigrants have in employment. In addition, the successive reforms of the labour market have developed a system of subsidies for hiring workers which could be leading to the creation

of a "statistical" rather than real phenomenon with regard to part of the growth in registrations, in the sense that it is the outcome of employment not previously legally registered cropping up in the statistics. This effect could be stronger in activities in which there are more foreign workers[5].

A virtually stable unemployment rate in 2002 and 2003

Despite the slowdown in activity in 2002, EPA employment is forecast to grow by 1.9%. However, this expansion will be more than offset this year by the increase of 3% expected in the active population. This should translate into an increase in the unemployment rate in 2002 of almost one percentage point, from 10.5% in 2001 to 11.4%. In 2003, the unemployment rate is expected to remain practically stable (it will probably drop by 0.1 points to 11.3% of the active population) as a consequence of the slowdown in EPA employment and in the growth in the active population[6].

In sum, the forecast scenario for growth and activity implies an increase in 2002 of the apparent productivity of labour of 0.6%, up from 0.3% in 2001, but still very low. This is especially so if compared with the EMU as a whole, where labour productivity in the period 1997-2001 in the euro area grew by 1.0% year-on-year, 0.4 percentage points above the rate in Spain.

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[5] 15% of the "black market" jobs detected by the Labour Inspectorate in 2001 were occupied by foreigners, above the 3.8% share of foreigners in total social security registrations.

[6] It should be pointed out that the improvements in the EPA (new population projections, a re-weighting of population groups by age and sex and a change in the definition of unemployment) mean greater uncertainty regarding forecasts for the labour market in the short term.

Graph 2.7

Employed

Sources: Ministry of Labour and BBVA
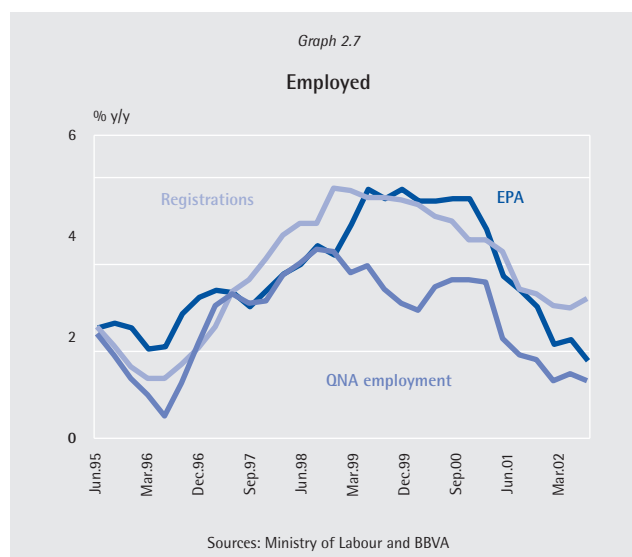
What are the Determinants of Private Consumption in 2003 Signalling?

The slow pace at which the world economy is emerging from the current phase of deceleration has led to a significant revision of growth prospects for 2002 and 2003 across the globe. In this context, the consolidation of the recovery in the Spanish economy in the course of 2003 will largely depend upon a strengthening of domestic demand. Specifically, private consumption, which represents around 60% of GDP, is the component of domestic demand that will have the largest impact on GDP growth in 2003 (1.5 percentage points according to BBVA projections). Given the role played by private consumption in the recovery of the Spanish economy, therefore, it is important to examine the evolution of its main determinants and to analyse its sensitivity to changes in them.

In order to carry out this exercise, we shall use the private consumption function estimated for the Spanish economy by BBVA Research Department[1]. This function incorporates the changes that took place in the 1990s in the composition of households' net financial wealth, and which, without doubt, have affected their purchasing capacity. In concrete, stock market wealth and housing market wealth have played an increasing role in spending decisions. While, in the long term, private consumption depends upon the evolution of households' disposable income and the current value of their stock of wealth, in the short and medium term the existence of liquidity restrictions, uncertainty about the evolution of their income and wealth, and consumption habits may cause it to depart transitorily from the path marked by its determinants. The function estimated therefore expresses private consumption as being dependent upon disposable income (yd), fixed-income financial wealth (wf), equity financial wealth (we), net real-estate wealth[2] (wi) and another set of variables denoted by Z (unemployment rate, real interest rate, inflation rate, stock of durable goods, "euro effect", etc.):

$$(1) \quad c = f (yd, wf, we, wi, Z)$$

The table below presents the behaviour forecast for these variables in 2003. Weaker expectations of the evolution of future income as a result of the deteriorating labour market, higher real interest rates, the losses accumulated in stock market wealth and the interruption of the process of rapidly rising house prices relative to the consumption observed in recent years will limit the recovery in private consumption in 2003. Particularly since this comes in a context of uncertainty about the solidity of the economic recovery, with a significant increase in the level of household indebtedness and record-low levels of saving. In such a scenario, the consumption function projects a sharp slowdown in private consumption in 2002, to rates of growth around 1.7%, followed by a mild recovery in the course of 2003, to an average rate of 1.7%. These results are nonetheless conditioned by one-off factors such as the "euro effect" and the IRPF personal income tax reform. Unlike the reform undertaken in 1999, the impact of the new reform on consumption will be more modest. First, because it is expected to have a smaller effect on disposable income[3], and, second, because it comes in an economic context in which, following the stock market setback, households will probably opt to rebuild their personal financial situation, and will increase saving rates.

The sensitivity of the private consumption projection for 2003 to the assumptions adopted about the evolution of the determinants of consumption is tested by running simulations of the model estimated. These alternative assumptions can be related to the impact that different fiscal and monetary policy measures would have on consumption. Thus, for instance, a monetary policy tightening that, *ceteris paribus*, brings about a one-point increase in nominal interest rates, and which is assumed to increase real interest rates by a similar amount, would on average reduce private consumption the year after its introduction by 0.1 points. As regards fiscal policy, a reform of the tax system[4] that adds 0.8 points to the disposable income growth that would have been observed in the absence of the reform (some 3.6 billion euros in 2003) would increase consumption by 0.3 points in the year the reform becomes effective.

Turning to the wealth effect, the changes in the structure of household financial assets have increased the vulnerability of wealth to falls in equity prices and house prices and hence the risk of a sharp downturn in private consumption. If the participation of households in the Spanish stock market registers a similar decline in 2003 to that seen in 2002, the rate of growth of consumption would be reduced by 0.4 points. This effect will probably be more than offset by an increase in housing market wealth similar to that expected for 2002. However, house prices have been rising faster since the end of the 1990s than warranted by structural factors and the unwinding of factors transitorily pushing prices higher (the "euro effect"), in a context of slower economic growth, means that house prices in 2003 are unlikely to sustain similar rates of growth, in real terms, to those of previous years.

In sum, the expected evolution of the long-term determinants of private consumption (disposable income and wealth) and that of the other short-term determinants (unemployment, real interest rates and consumer confidence) indicate that consumption will slow in 2002 and that recovery in 2003 will only be gradual. These results are nonetheless conditioned by one-off factors such as the "euro effect" and the IRPF reform.

[1] A comprehensive analysis of the private consumption function can be found in Balmaseda, M and P. Tello, "Have the determinants of private consumption changed in Spain?", Situación Spain, July 2002.
[2] The stock of wealth was adjusted for the outstanding stock of mortgage credit extended by resident financial institutions.
[3] According to official estimates, the IRPF reform planned for 2003 will reduce net tax payable by around 3 billion euros, approximately 62% of the final impact of the previous reform in 1999.
[4] The reform of the tax system is considered to be transmitted only through its direct impact on households' disposable income, that is, it does not affect either wage bargaining, the public deficit, welfare payments or inflation.

Simulation of the impact on consumption of changes in its explanatory variables

(% annual)	Baseline scenario			Alternative scenario	Deviations of the rate of growth of consumption relative to the baseline scenario
	2001	2002	2003	2003	2003
Disposable income	2.6	1.7	2.9	3.7	0.3
Unemployment rate	10.5	11.5	11.4	12.5	-0.2
Real interest rate	1.8	1.4	1.7	2.4	0.1
Consumer confidence	-4.0	-10.0	-0.1	2.3	0.3
Stock market wealth	-8.6	-14.1	4.9	-14.1	-0.4
Fixed-income wealth	6.1	3.4	4.6	6.1	0.3
Housing market wealth	14.1	14.2	5.6	14.2	0.6

Source: BBVA

Broadband Internet limits in Spain: Internet and computers

According to Eurobarometer figures for June 2002, compiled for the European Commission, 18% of Spanish with households Internet access have a broadband connection (ADSL or cable). This represents an increase of about 12 percentage points since June 2001 when the percentage of households, which had these technologies available, stood at 6.3%. The foundation of this development has been the spectacular increase in ADSL connections, which in June 2002 reached 14% of households with Internet access (against 2.9% in 2001). Meanwhile, the increase in Internet cable modem connection has been modest, reaching 4% (against 3.4% in 2001).

These figures place Spain slightly above the average in the European Union (EU), where 17% of households with an Internet connection were equipped with a broadband connection in June 2002 (10% ADSL and 7% cable). From this point of view, the initial evaluation of the situation in Spain is positive, reflecting the commercial success of broadband operators, as well as Spanish households clearly opting for fast connections to the Internet. This also means significant progress as regards the *eEurope Action Plan 2005* "An Information Society For All"[1], which was approved by the European Commission in May 2002 to take over from where the *eEurope Plan 2002*[2] left off, and which sets as its main objective the availability of broadband Internet at competitive prices in all of the EU.

However, a more detailed analysis of the data above requires this evaluation to be refined. Firstly, from the third quarter of 2002 a certain slowdown in the spread of ADSL connections in Spain has taken place. And more importantly, the process of digital convergence cannot be confined to improving the technology in households already connected. It also requires closing the important gap that persists in global Internet connection penetration levels in Spanish households compared with other European countries. Thus, although the percentage of Spanish households with an Internet connection has grown 6 percentage points in one year, reaching 29.5% in June 2002, this figure is 11 points below the average in the EU (40.4%). This explains why, as regards the total number of households, broadband Internet penetration in Spain (5.3%) remains below the European average (6.9%).

In dynamic terms, there has been a widening of the digital divide within the EU, as the spread among countries as regards Internet penetration levels increased. In this process, Spain has succeeded in reducing significantly the lag it showed with respect to the EU in terms of the percentage of households with high-speed connections (reducing the gap from 3.2 pp in June 2001 to 1.6 pp in June of 2002), as well as increasing its lead over the three countries furthest behind (from 0.3 pp in 2001 to 4.4 pp in 2002). On the other hand, the leading countries in the use of broadband Internet have increased their lead with respect to Spain (from 10.3 pp in 2001 to 13.7 pp in 2002)[3].

Complete convergence for Spain depends to a large extent on increasing global penetration of the Internet amongst the population. Using the figures of the *Estudio General de Medios* (EGM) elaborated by the *Asociación para la Investigación de los Medios de Comunicación* (AIMC), the profile of the diffusion of the Internet in our country appears to correspond to the conventional "S curve" model, based on the premise that the adoption of this new technology is limited by the spread of information about it[4]. From this approach, under the first phase, which took place from March 1996 to March

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[1] See http://europa.eu.int/information_society/eeurope/news_library/documents/eeurope2005/eeurope2005_en.pdf

[2] See http://europa.eu.int/information_society/eeurope/action_plan/pdf/actionplan_en.pdf. For an assessment of the results see "*eEurope 2002*: Spain is advancing but not converging with the European Union". Situación Spain, April 2002, p.11. BBVA Research Department. Madrid.

[3] In each period, the three countries with the highest and lowest level of penetration of broadband Internet in households were selected. Amongst the leading countries, the only one which appears in all three readings is The Netherlands, and amongst the laggards, Greece.

[4] Regarding this type of models, known as "epidemic models" due to the similarity in the process of the diffusion of information on new technologies and the spread of epidemics, as well as alternative models, see P.A. Geroski (1999): "Models of technology diffusion". CEPR, *Discussion Paper* No. 2146.

Broadband Internet in the EU, 2000–2002

(% of households)
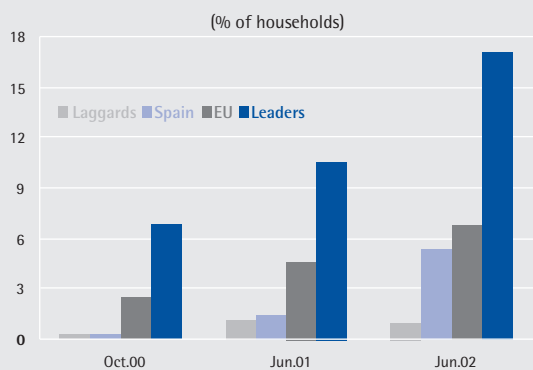
Note: The simple average of the three leading countries and the three countries furthest behind is displayed for each period.

Sources: European Commission and BBVA

Computers and Internet in Spain, 1996–2002

(% of population >14 years old)
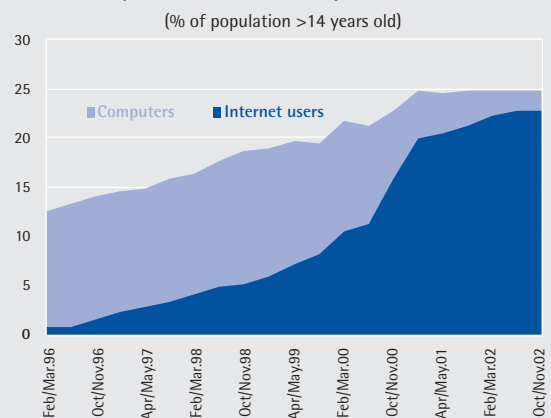
Note: The penetration of computer equipment is assumed to be constant since November 2001 as no data are available thereafter.

Sources: AIMC-EGM and BBVA

1999, only a limited proportion of the population was aware of and used the Internet, which meant that the increase in penetration was moderate. Later, users passed on information to non-users, who got connected to the Internet and themselves informed other non-users, bringing about an accelerated diffusion, which took place between April 1999 and March 2001. Finally, as penetration levels increased, the probability of information being passed on to non-users was reduced, bringing about from April 2001 the current slowdown in the rise in penetration towards the level of potential users. According to the latest EGM data, the number of Internet users in Spain reached about 7.9 million in November 2002, equivalent to 22.6% of the population over 14 years old.

Therefore, the main reason for concern does not lie so much in the model of technological diffusion– which as has been pointed out is a common one – but rather in the saturation level it seems to point to. To deepen in this subject, from March 1996 to November 2002, a simple specification for a *logistic functional form* has been estimated, whose graphic representation approximates an "S curve":

$$INT_t = \frac{INT_p}{(1+\phi \bullet e^{-\kappa T})}$$

where INT_t is the number of Internet users according to the EGM (in thousands people), T is a time trend, INT_p is the number of potential Internet users k is a parameter which represents the speed of the process of diffusion, ϕ determines the position of the curve and t is the time period of the survey (every two months)[5]. This model predicts that, given the pattern of technological diffusion, the Spanish Internet population will stabilise around 9.6 million people from 2008, approximately 27.5% of the population over 14 years old[6]. The confidence interval for this potential level, taking two standard deviations, would be around 25% to 30% of the population over 14 years old (between 8.7 and 10.5 million Internet users). This saturation level would be notably lower than that seen in the technologically most advanced countries of the EU (Sweden, Finland, United Kingdom, Denmark), where the increase in the penetration of the Internet did not start to slow down until it had reached 50-55% of the population.

Can this stagnation be avoided? One limiting determining factor appears to be the low level of Spanish households which have computer equipment available. Using EGM data, it can be deduced that about 90% of computers at present have an Internet connection, having observed that the penetration of Internet use started its deceleration when this percentage rose above 80%. In this sense, the above-mentioned *eEurope Plan 2005* places special emphasis on multi-channel access, and proposes enhancing the content offer to make it available to the different means of access extensively in use among the population of Europe such as the mobile telephone and digital television. These measures are particularly necessary in the case of Spain, where, according to Eurobarometer, only 2% of households use the television to access the Internet, and scarcely 1% the mobile phone or a video games console, against 97% who use the computer. However, the main limiting factor is the availability of computers in the Spanish households. Increasing these equipment should be a priority, since it would allow, in a more immediate way, to surpass the current ceiling on Internet penetration, as well as facilitating the full convergence of Spain with the EU in the extension of the use of the Internet though broadband facilities.

[5] The data between the three annual surveys of the EGM (February/March, April/May, October/November) are linearly inferred in order to homogenize the time period between each poll. As a result, there are 41 readings, 21 direct and 20 inferred.

[6] The goodness of fit of this specification is based not only on the significance of the estimated coefficients, but also on its ability to successfully identify the period of the greatest spread of the Internet in Spain at the end of 2000. However, an alternative specification of the "S curve" was estimated, the so-called *Gompertz function* $INT_t = INT_p \bullet e^{-\phi \bullet e^{-\kappa T}}$, as well as an exponential function, whose results were not satisfactory as they failed to correctly capture the current deceleration.

Model of Internet diffusion in Spain, 1996–2002

Dependent variable: Internet users (INT_t)

Non-linear least squares estimation

Period: March 1996 - November 2002

Initial values: INT_p=7856, ϕ=0 y κ=0

	Coefficient	Standard error	t statistic
Potential Internet users	9559.38	449.81	21.25
ϕ	51.24	8.83	5.80
κ	0.14	0.01	15.05

Adjusted R²=0.98; Standard error of regression=359.25

Source: BBVA

Internet in Spain, 1996–2010
(Thousands of Internet users)

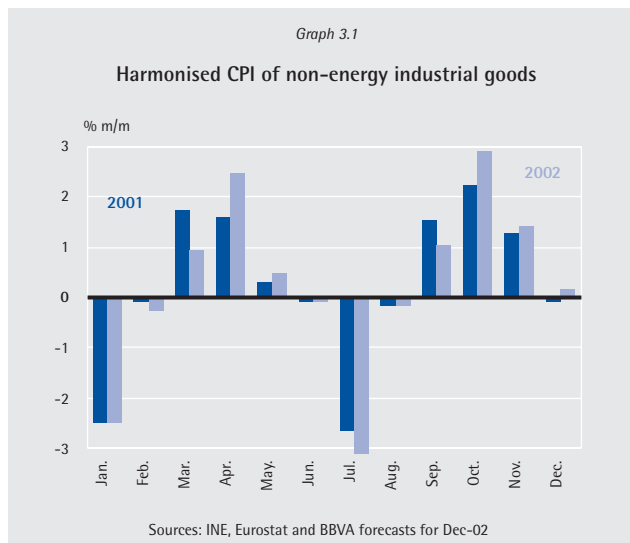$$INT_t = \frac{9,559}{(1+51.24 \ e^{-0.14T})}$$
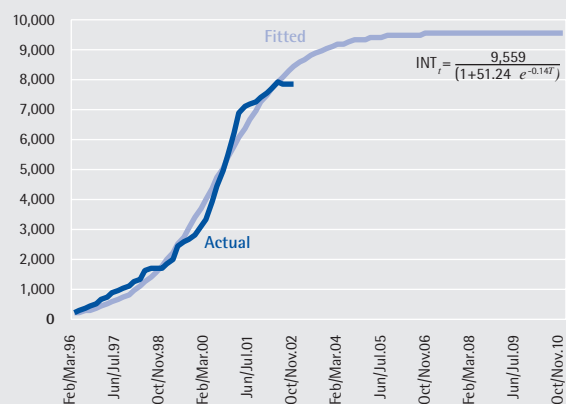
Sources: AIMC-EGM and BBVA

3. Prices and wages

No reductions in inflation

Inflation measured as the annual change in the consumer price index (CPI) in the third quarter of 2002 was 3.5% (the same rate as in the second quarter), which interrupted the upward trend in prices since the start of the year. More stable inflation indicators such as the IPSEBENE index (total CPI without fresh food and energy) and the BBVA Trend CPI (IPSEBENE without tourism, communications, tobacco, oil and university taxes) not only did not accelerate in the third quarter of 2002, but rather saw a fall in growth rates. This allowed the generalised rise in the most volatile components of the CPI, energy and fresh foods, to be compensated for. However, in October and November, basically as a result of the acceleration in the prices of non-energy manufactured industrial goods, inflation picked up again to the 4% level.

Thus, the most recent behaviour of prices confirms the structural change registered in the CPI of non-energy industrial goods. In the third quarter of 2002, the rate of increase of prices of these goods slowed by 0.6 points from 2.8% in the second quarter of 2002 to 2.2%, a much greater relative variation than any other posted in the historical series. The change in the behaviour of the prices of this type of goods is due both to the changes introduced in the basket of products which make up the index and the introduction in its calculation of seasonal reductions and occasional special of-

Graph 3.1

Harmonised CPI of non-energy industrial goods

Sources: INE, Eurostat and BBVA forecasts for Dec-02

fers (winter and summer sales and "fantastic offers"), which before were not taken into account[1]. The inclusion of the sales increases the impact of the current economic situation on inflation, which has also been affected by the differences in dates used for the start of the new season for products such as clothing and footwear, as happened in September and October of 2002. Also, part of the pick-up in November in clothing and footwear prices (3.9%) might have been due, at least partly, to a certain "rounding-up effect" with the arrival of products for the new season.

In addition, the measures of underlying inflation which have been used up to now, which factor out the most erratic components of the index not subject to more or less permanent economic factors, were in turn "trend" measures of inflation in that they had reduced volatility. This is no longer the case. The increase in the vari-

[1] For a summary of the changes introduced in the CPI see: BBVA (April 2002): "A more modern CPI," Situación Spain pp. 15-16. A comprehensive analysis of the effect of the sales on inflation can be found in BBVA (July 2002): "Inflation: sales and volatility". Situación Spain pp. 17-18.

Table 3.1. Inflation												
	Overall CPI			**IPSEBENE**			**Residual CPI**			**Trend CPI**		
(% annual)	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003
Jan.	3.7	3.1	3.6	3.1	3.6	3.3	5.4	2.4	2.8	3.0	3.3	3.8
Feb.	3.8	3.1	3.5	3.2	3.6	3.2	5.7	2.2	3.1	3.2	3.4	3.6
Mar.	3.9	3.1	3.3	3.3	3.5	3.2	5.4	2.7	2.0	3.3	3.3	3.7
Apr.	4.0	3.6	2.8	3.4	3.9	2.9	5.6	2.9	1.5	3.4	3.9	3.3
May	4.2	3.6	2.6	3.5	4.1	2.7	6.3	2.9	0.8	3.4	3.9	3.3
Jun.	4.2	3.4	2.8	3.5	4.1	2.8	6.4	1.7	1.5	3.4	4.0	3.2
Jul.	3.9	3.4	3.0	3.5	3.8	3.0	4.7	2.9	2.0	3.5	3.5	3.4
Aug.	3.7	3.6	3.2	3.6	3.8	3.1	3.9	3.3	2.8	3.5	3.7	3.3
Sep.	3.4	3.5	3.3	3.5	3.5	3.3	2.9	4.0	2.1	3.5	3.3	3.8
Oct.	3.0	4.0	3.0	3.7	3.7	2.9	1.4	4.8	1.8	3.5	3.7	3.5
Nov.	2.7	3.9	3.4	3.7	3.6	3.0	0.2	3.9	3.5	3.5	3.9	3.4
Dec.	2.7	4.1	3.4	3.8	3.6	3.0	0.2	4.4	3.5	3.5	4.0	3.3
average	3.6	3.5	3.2	3.5	3.7	3.0	4.0	3.2	2.3	3.4	3.7	3.5

Sources: INE and BBVA forecasts

ability of the CPI for non-energy industrial goods has affected the IPSEBENE, in which it has a weighting of 38%, and the BBVA Trend CPI, in which it has a weighting of 42%. As a result of this, these estimates of trend inflation are less stable[2]. All of this means, at least in the short term, an increase in the uncertainty of forecasts of inflation, since the behaviour of seasonal sales must now also be estimated without a prior historical pattern.

Inflation moving lower in 2003

The inflationary tensions in the Spanish economy as measured by the BBVA Trend CPI stand at 3.7% in 2002, three tenths of a point above the 3.4% rate registered in 2001. Overall inflation will probably stand at 4.1% at the end of 2002, 1.4 percentage points more than in December of 2001. As a result, the average annual rate will be 3.5%, one tenth of a point less than in 2001.

Average inflation in 2003 is expected to fall to 3.2%. Inflation as measured by the BBVA Trend CPI will probably be 3.4% at the end of next year, 0.5 points down from a year earlier. This fall in trend inflation will be more marked in processed foods (excluding tobacco and oil) and in services (excluding education, communications and tourism). The change in prices of non-energy industrial goods will be practically the same as in 2002, in line with the behaviour of prices in earlier stages of production as shown in the index of industrial prices of non-food consumer goods.

As regards services, a deceleration of 0.9 percentage points is forecast for 2003, from 4.6% in 2002 to 3.7%.

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[2] The average volatility of the monthly rate of the HICP of non-energy industrial goods was 0.09 percentage points up to 2000, rising to 0.26 pp from 2001 up to October of 2002.

Graph 3.2

Inflation

Sources: INE and BBVA

Graph 3.3

Inflation

Sources: INE and BBVA
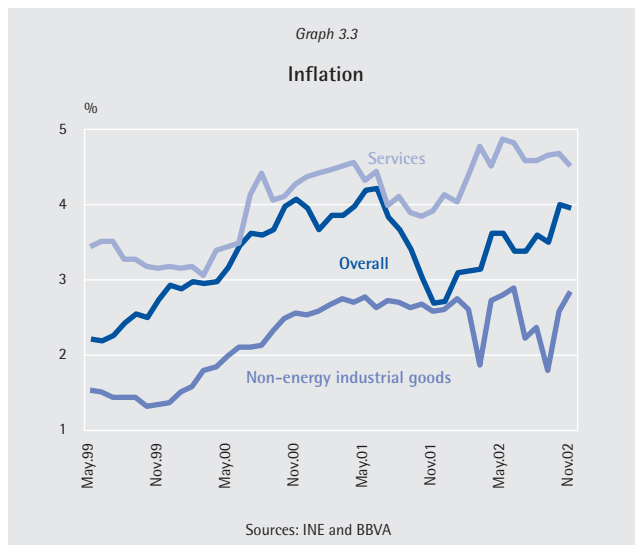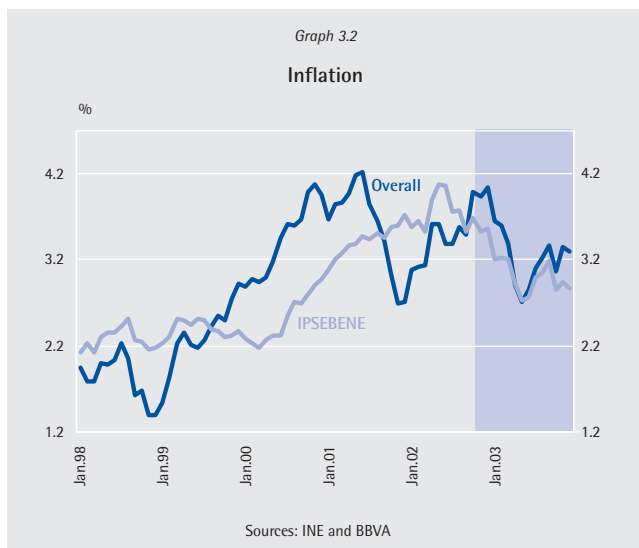
These figures consider that the impact of the "rounding-up effect" in 2002 after the introduction of the euro has constituted a shock to price levels but not to rates of growth[3]. In this sense, the CPI sub-class of bar and restaurant prices, after accelerating 1.1 percentage points in the second quarter of 2002 (from 4.7% to 5.8%), posted a rise of 5.9% in the third quarter of 2002, only 0.1 percentage points more than the previous period, a rate that was repeated in the months of October and November.
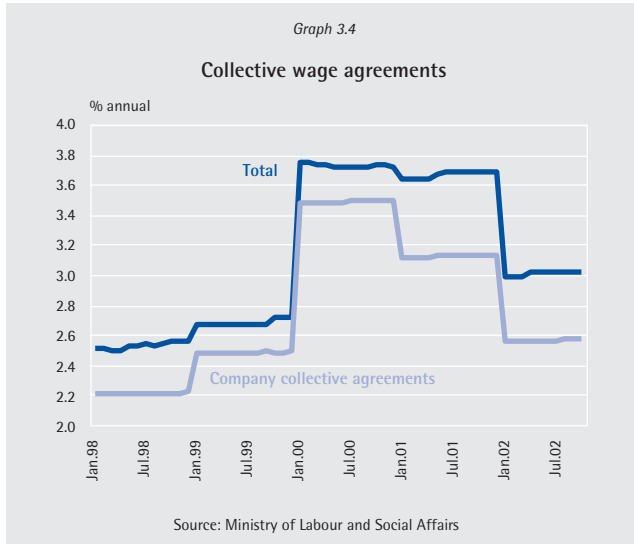
As regards the rest of the components of the CPI, energy prices are expected to rise by 1.9% in 2003. These figures are consistent with a slight rise in average crude prices (25 to 25.5 dollars for a barrel of Brent), the appreciation of the euro and a rise in the residential electricity tariff of 1.5-2.0%.

With all of this, inflation will probably be 3.4% at the end of 2003, remaining below 3% during the second quarter of the year. Despite the fall in average inflation in 2003, the differential with the EMU as a whole will remain above 1%, a figure that is in line with the average gap in the period 1998-2001, and well above the minimum registered in 1997 (0.3%). As a result, the Spanish economy will continue to lose competitiveness for another year. This deterioration will be aggravated as regards the non-EMU area owing to the expected appreciation of the euro, by 5.5% against the dollar from 0.94 dollars/euro to 1.0.

Wage moderation in the absence of productivity

The accumulated rise in wages negotiated under collective agreements up to October 2002 was 3.0%, rates below those accumulated in the previous year (3.5%, but 3.7% after the effect of purchasing power catch-

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[3] If this increase in prices filters through to wage negotiations, it could have a long-lasting effect on inflation.

Graph 3.4

Collective wage agreements

% annual

Total

Company collective agreements

Source: Ministry of Labour and Social Affairs

up clauses). This was the first time since 1998 that this has occurred.

The wage moderation seen in 2002 took place in a less dynamic economic environment (deceleration, lower growth in employment, more unemployment) and after the signing by social agents in December 2001 of the Interconfederal Accord on Collective Bargaining 2002. This document takes as its reference point for wage negotiations this year a figure of 2%, although this can rise depending on the evolution of productivity.

The business and union organisations are due to analyse the results of the accord for 2002 and negotiate its possible extension into 2003. This appears more likely after the recent parliamentary reform of the decree approved by the government in May for the reform of the system of unemployment benefits.

Wage agreements are an important element in achieving wage moderation, more so if they facilitate a closer
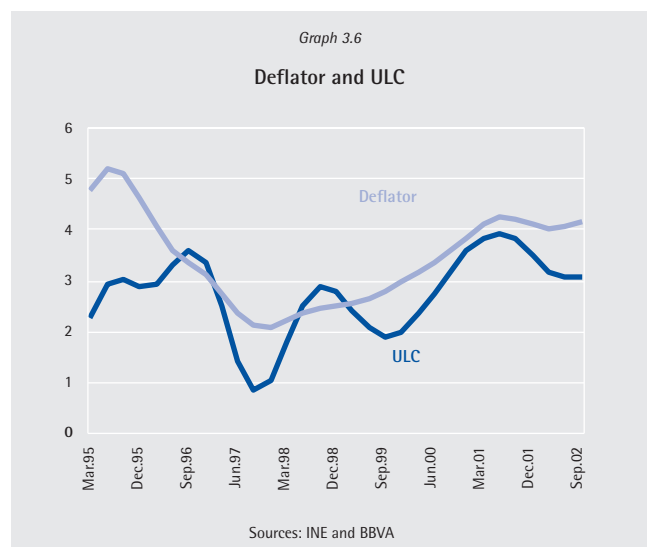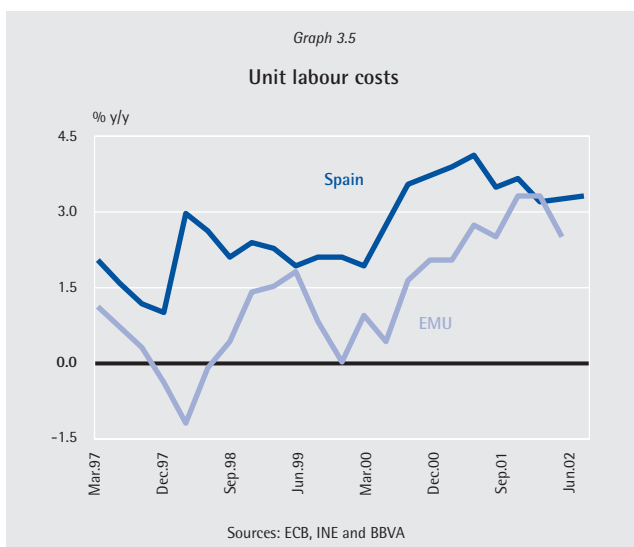
correlation between the evolution of wages and productivity. In this sense, "ambitious" salary growth targets should be set, that is, low by Spanish standards, but at least in line with the EMU as a whole. This would pave the way for growth in activity and employment in the medium term. The linking of salary costs to developments in productivity is a necessary (but not sufficient) condition for enhancing the competitiveness of the Spanish economy within the EMU.

However, periodic wage agreements are a transitory solution for adjusting salaries to productivity, and need to be revised and negotiated continually. In this sense, the very reform of the mechanisms for collective bargaining among the social agents, which the government has announced now and again, is a more appropriate tool. This reform should take the form of moving towards greater decentralisation in the negotiating process, leaving the negotiation of wages and working hours to the company level, with the areas of contractual arrangements and worker safety issues left to the higher levels.

Moderation in real wages growth in the second half of the 1990s has been one of the factors underpinning the high rates of growth posted in Spain in the past few years. Despite the low increase in labour productivity, this allowed the growth rates of unit labour costs (ULCs) to remain relatively moderate, facilitating the nominal stabilisation of the economy.

Growing "margins" with diminishing competitiveness

The recent moderation in unit labour costs (ULC) has nonetheless not been accompanied by an equivalent slowdown in the GDP deflator, which is forecast to see average growth of 4.1% in 2002, one tenth of a point below the average increase in 2001. ULCs, however, are

Graph 3.5

Unit labour costs

% y/y

Spain

EMU

Sources: ECB, INE and BBVA

Graph 3.6

Deflator and ULC

Deflator

ULC

Sources: INE and BBVA

Graph 3.7

Industry, deflator and ULC

Sources: INE and BBVA

Graph 3.8

Market services, deflator and ULC

Sources: INE and BBVA
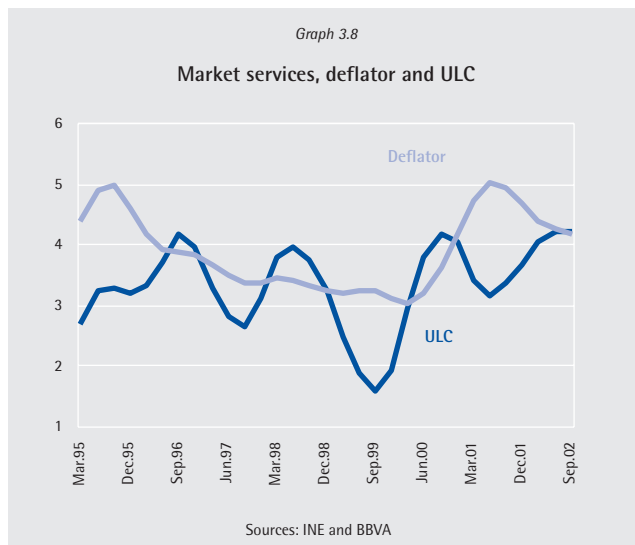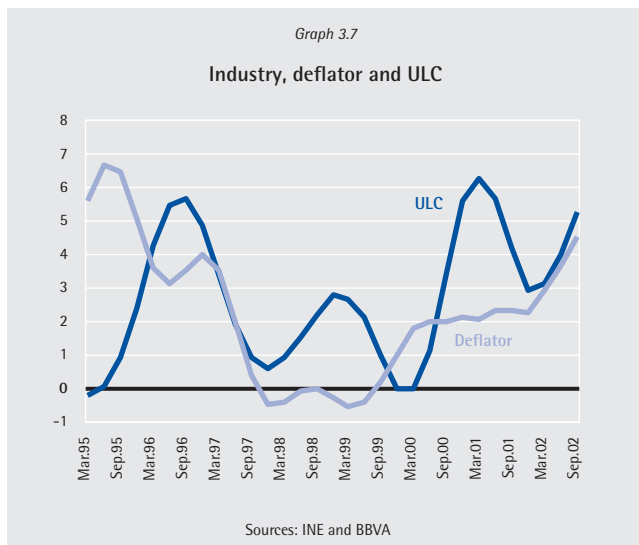
forecast to fall by one percentage point in 2002, from 3.8% in 2001 to 2.8% in 2002. In 2003, this process of rebuilding margins (the differential between labour costs and the deflator) is likely to continue. The deflator is expected to slow by 0.4 points (from 4.1% in 2002 to 3.7% in 2003), the same amount as ULCs (from 2.8% in 2002 to 2.4% in 2003).

This aggregate behaviour is the result of a divergence in the evolution of different areas of activity, with those most exposed to competition such as the industrial sectors going through a phase of margin compression, with ULC levels above those of the deflator since the second half of the year 2000.

On the other hand, market services and construction, which are involved in activities by definition less exposed to competition - with, in addition, an evolution

of domestic demand relatively more positive than that of the economy as a whole - have been able to rebuild margins. Thus, the differential which exists between the margins of the tradeable (industry) and non-tradeable (services) sectors has been increasing, at a faster rate even than warranted by the relatively stronger perform- ance in the past few years of the apparent productivity of labour in the services sector[4] . Additionally, it should be highlighted that the upward trend in margins is very marked in construction, where deflator growth rates above those of ULCs have been registered since the sec- ond half of 1999[5] .

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[4] See "Descomposición de la inflación dual en España", pp. 155-156 of the Informe Económico 2001, BBVA.
[5] 10 quarters, a longer period than the nine quarters of growth in the deflator above that of the ULCs seen between Q284 and Q286.

Import unit value indices

Unit value indices (UVI) of foreign trade have been falling since the middle of 2000. In the case of imports, they registered rates of change in the third quarter of this year close to –4%. Such rates have not been seen since 1991 and seem to be diverging from the evolution shown by price indicators, such as EMU industrial prices, that are highly correlated with the UVIs.

UVI are price indices constructed using customs information to establish a ratio between the value of transactions and the quantity of goods that enter a country. Information on quantities is included either by weight or by recording units transported, so that the UVI is the ratio of both values, the nominal value and the "physical" value of the transactions.

In calculating the indices we have to take account of the structure of foreign trade in a specific year. This base year will serve as a benchmark for the aggregation of the more detailed UVIs, which are those of the "elementary classes" or groupings made up of more or less heterogeneous articles. Significant changes in the relative weights of different goods can therefore bring about variations in the UVI even though the prices of the different products have in fact stayed the same. This behaviour is referred to as the "composition effect", and it can be particularly important amongst capital goods because of the great diversity of these products[1]. However, the chief advantage of the UVIs is that they are obtained directly from the customs data, making costly price surveys unnecessary[2].
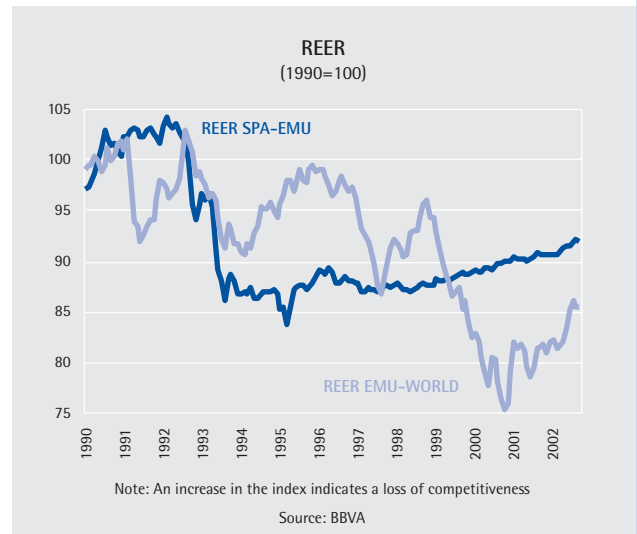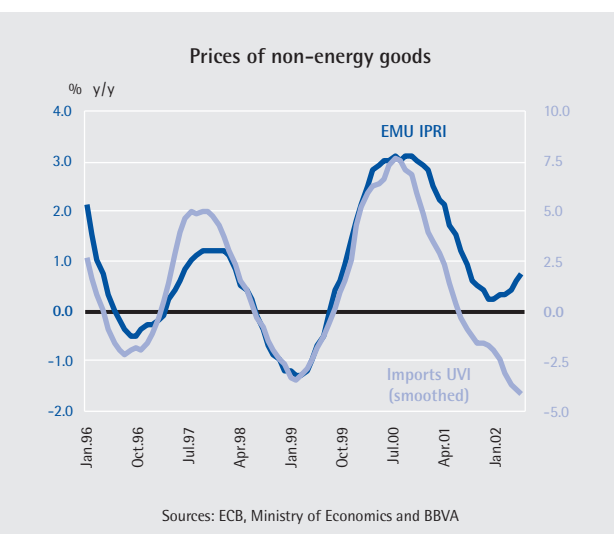
EMU–World decoupling

In order to test the quality of unit value indices with regard to the estimation of price developments, we can compare them with other price indicators. In the case of imports, the "prices" of imported goods should exhibit a high correlation with producer prices in other countries, measured on the basis of the Industrial Price Index (IPRI). The graph below shows the growth of the UVI of non-energy imports and the growth of the IPRI in the EMU, the area from which Spain received 65% of its imports in 2001. From January of that year onwards, the two series have been decoupling at an ever-increasing rate, to such an extent that in 2002 they are even on diverging paths. An analysis by group of products reveals that the differential is widest between consumer goods and non-energy intermediate goods. The gap is even more striking when we take account of the fact that both series are expressed in euros. Thus, if producer prices in EMU are properly represented by the IPRI, the divergent path of the UVI of non-energy imports would be linked to a sharp deceleration of the UVI of non-energy imports from outside the EMU. This information is not available directly, but there is evidence that is compatible with the behaviour just described. Thus, the prices of industrial raw materials denominated in dollars fell by 9% in 2001. Also, the effective exchange rate of the euro against the rest of the world has been appreciating since 2000, in both nominal and real terms.

In sum, it seems that the significant deceleration of the UVIs of non-energy imports is attributable to the appreciation of the effective euro exchange rate at a time when the prices in dollars of non-energy raw materials have also been dropping.

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[1] In this case, added to this problem is the problem of the homogeneous measurement of prices of goods with a high technological component.

[2] For a comprehensive analysis of this question see Aguado Sánchez, Mª Jesús (2001), "Metodología de los índices de valor unitario de comercio exterior Base 1995", Department of Economic Policy of the Ministry of Economics.

Prices of non-energy goods

Sources: ECB, Ministry of Economics and BBVA

REER
(1990=100)

Note: An increase in the index indicates a loss of competitiveness

Source: BBVA

4. The public sector

Neutral fiscal policy in 2003

The 2003 State Budget Draft is the first designed under the new General Law on Fiscal Stability. The entry into force of this law, which stipulates the drawing up and execution of balanced budgets, coincides with a phase of slow economic growth in Spain (below potential) and with the easing of fiscal targets within the European Union (EU).

Against this backdrop, the Fiscal Stability Law has been sharply criticised because of the limits it places on the operation of the automatic stabilisers. This criticism comes at a time when the different cyclical position of the Spanish economy relative to the euro area means that the monetary policy stance of the ECB is more expansionary that Spain would require. In such a scenario, an expansionary fiscal policy will only serve to worsen one of the main problems confronting the Spanish economy at present: the high rate of inflation. Fiscal policy should therefore help to create a neutral policy-mix in 2003. However, under the growth scenario of the 2003 State Budget Draft (3% GDP growth), a balanced budget target would be compatible with a position of structural balance. This means that the fiscal policy stance implicit in the 2003 State Budget Draft is neutral and hence that the policy-mix will continue to be expansionary in 2003. This stance will be maintained even if the economy grows by around 2.5% (BBVA's forecast) and the cyclical component of the deficit increases to 0.6% of GDP owing to the operation of the automatic stabilisers. As a result, there will probably be no further progress with the structural component of the deficit in 2003, which seems to suggest that the effort at structural deficit adjustment is likely to have taken place in 2002 and not in 2003.

Unlike in 2002, when fiscal pressure will stay at around 2001 levels (35.6% of GDP, according to preliminary Ministry of Finance data), in 2003 fiscal pressure will fall slightly as a result of the IRPF personal income tax reform.

A balanced budget is still the target

Eurostat has recently revised the deficit figures of the public sector. According to the latest data, the public deficit was 0.6% of GDP in 2000, compared with the 0.3% figure published initially, and 0.1% in 2001, instead of the balanced budget announced previously. This revision is largely due to the non-compliance of the autonomous regions with the targets set out in the Sta-

bility and Growth Programme (0.2 tenths of a point in 2000 and 0.1 in 2001).

In 2002, the fiscal year will again post a deficit because of the overshoots by both the central administration and the autonomous regions from their balanced budget targets.

Public sector budget outturn in 2002

State deficit likely to be above 0.5% of GDP

In contrast to 2001, when, at the time of the presentation of the 2002 State Budget Draft, the government took the opportunity to revise up that year's State deficit projection (to 0.5% of GDP, from an initial projection of 0.3%), the 2002 deficit target has been left at 0.5% of GDP. This despite the fact that the economic slowdown is proving much more intense than envisaged in the 2002 State Budget Draft, as is being reflected in a number of budget headings.

Even though the entry into force of the new regional financing system is affecting the seasonality of the budgetary path, implying that caution must be exercised when making monthly comparisons of the budget outturn in 2001 and 2002, the evolution of total tax revenues (State and the part transferred to the autonomous regions) in the first ten months of the year reflects the weakening in domestic demand. Specifically, indirect tax receipts grew by 2.5% year-on-year over this period (4.7% when adjusted for the vehicle registration tax transferred to the autonomous regions), compared with a rate of growth close to 8% in the first half of the year. This sharp slowdown will lead to a significant revenue undershoot from the initial projection, as is already being reflected in the budget projection presented by the Ministry of Finance for 2002 in the 2003 State Budget Draft. A comparison of this budget projection and the initial budget for 2002, in homogeneous terms[1], reveals that the economic slowdown is having a significant impact on tax revenue, especially when revenue is adjusted for the effect of one-off factors (Law 24/2001 on the tax treatment of re-invested extraordinary profits). For the third year running, the revenue shortfall will be concentrated in VAT and Special Tax receipts, which, according to the budget projection, will be around 1.15 billion euros (0.2% of GDP) under budget. The govern-

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[1] The 2002 State Budget was designed as if only the five ordinary regime autonomous regions that had assumed responsibility for health care in September 2001 participated in the basket of taxes approved with the new financing system. In contrast, the budget projection for 2002 offers both the total revenue figures (State plus autonomous regions) and State revenue figures excluding the basket transferred to all the autonomous regions, not only to the five autonomous regions that had assumed health care in September of 2001. Therefore, to calculate the revenue undershoots forecast by the government with respect to its initial budget, it is necessary to construct a budget for 2002 that is comparable with the published budget projection.

Table 4.1. Total non-financial revenue (State and autonomous regions) in 2002: initial budget and budget projection

Millions of euros	Budget* (1)	2002 Budget/ 2001 Outturn %	Ministry of Finance budget projection (2)	(2)/2001 Outturn %	BBVA Budget projection (3)	(3)/2001 Outturn %
Direct taxes	63,594.3	5.5	66,065.8	9.6	64,684.1	7.3
IRPF	42,477.8	2.6	44,531.1	7.6	43,455.1	5.0
Corporation tax	18,982.4	10.3	19,703.0	14.5	19,444.9	13.0
Indirect taxes	55,592.1	7.1	54,227.5	4.5	53,587.4	3.2
VAT	37,338.6	7.7	36,161.0	4.3	36,195.7	4.4
Excise duties	16,382.6	6.5	16,100.1	4.7	15,529.3	1.0
Special taxes	2,883.2	20.6	3,040.1	27.2	2,748.5	15.0
Current transfers	4,192.1	−29.7	4,852.5	−18.6	5,365.2	−10.0
Stamp duty	4,418.6	−28.4	4,225.2	−31.5	4,419.0	−28.4
Real investment sales	108.2	−6.0	89.0	−22.7	106.3	−7.7
Capital Transf.	1,444.7	−1.2	1,471.2	0.6	1,445.1	−1.2
Total revenue	132,233.2	3.1	133,971.3	4.4	132,355.6	3.2
Tax revenue	119,186.4	6.2	120,293.3	7.2	118,271.5	5.4

* Constructed on the basis of the 2002 State Budget

Sources: Ministry of Finance and BBVA

ment nonetheless expects total indirect taxes to grow by around 4.5% year-on-year, an optimistic figure in view of the fall-off in private consumption expected in the final quarter of the year. This performance stands in marked contrast to that observed in direct taxes, which grew at an annual rate of 9.9% in the first ten months of the year. This increase shows that both IRPF and corporation tax receipts are posting better-than-expected performances; in the former case, because of the under-estimation of this tax heading in the budget and the impact of inflation (made worse by the fact that neither the IRPF tax schedule nor allowances are adjusted for inflation) and, in the latter case, because of the change in the tax treatment of re-invested extraordinary profits. Concerning this last, the reduction of the tax rate is more than offset in revenue terms by early payment of the tax, which is expected to raise, in net terms, around 1.7 billion euros of revenue (0.25% of GDP). Accordingly, the budget projection for direct taxes envisages a growth rate of 9.6%. As for the other revenue headings, the most noteworthy developments were the increase in receipts from EU transfers and the decline in receipts from Bank of Spain profits. Overall, according to the budget projection for revenue in 2002 contained in the 2003 State Budget Draft, the government expects total revenue to exceed budgeted revenue by around 1.74 billion euros (0.25% of GDP), of which 1.1 billion euros (0.16% of GDP) are tax receipts. After correcting for the impact of the new tax regulations noted above, however, this overshoot becomes a revenue shortfall of close to 600 million euros.

However, the evolution of the revenue figures in the first ten months of the year and the perception that the Spanish economy has still to touch bottom lead us to be more pessimistic about the evolution of revenue in the final quarter of the year and, as a consequence, about projected revenue for 2002. In contrast to the government's estimate, we expect total tax revenue to be some 2.0 billion euros (0.3% of GDP) lower than the figure presented in the budget projection. The deterioration in corporate earnings (the pre-tax results of companies in the Madrid stock market index fell by 0.4% in the first half of 2002, compared with an increase of 7.7% in the first quarter), slower job creation and the weakness of private consumption (1.4% growth, as against 2% in the first half of the year) suggest that revenue will finally be around 0.2 points lower than envisaged in the budget projection. Total tax receipts are therefore expected to increase by 5.4% in 2002, compared with the 7.2% growth forecast by the Ministry of Finance, and total revenue by 3.1%, instead of 4.4%. Consequently, if spending is in line with that budgeted by the government, the State deficit would overshoot the 2002 target by 0.2 points.

For its part, the evolution of spending has been affected, like that of revenue, by the gradual introduction of the new regional financing system. The transfer of health care and social services responsibilities affects both direct transfers from the State to the autonomous regions and to the social security system and transfers from the latter to the autonomous

BBVA

regions. This introduces a break in the homogeneity of the expenditure series. This break becomes apparent when we compare the evolution of State payments in the first nine months of 2002 with that observed in the same period of the previous year. Indeed, in cash-balance terms, State spending shows a decline of 13% year-on-year over this period, while current transfers (the most affected by the new regional financing system) were down by 24.6%. Two factors – the seasonality of spending and the gradual assumption of health care responsibilities by the autonomous regions – impede the detection of anomalous behaviour in the evolution of transfers, as well as possible departures from those initially budgeted. In spite of this, many of the modifications to credit approved in the first nine months of the year are concentrated in spending headings unaffected by the regional financing system. In concrete, final credit intended for interest payments is 1.117 billion euros (0.15% of GDP) above that budgeted initially (28% of a total 3.972 billion euros of budget appropriations). This overshoot in current spending is not translating into a slower pace of execution of real investment. In the first nine months of the year, assumed obligations represented 47% of total credit, compared with 42.5% a year earlier. This fact suggests that, unless the fiscal target is at risk, there will most likely be no significant deferment of capital operations at the close of the year. Such a development would be counterproductive bearing in mind that Spain's capital stock lags behind that of the European Union.

Lower projected revenue and the overshoot accumulated in some spending headings suggest, however, that there is a risk of the 0.5%-of-GDP State deficit target for 2002 being missed. Despite this, the primary surplus in cash-balance terms should remain stable at around 2% of GDP, whereas the budget projection released by the Ministry of Finance foresees an increase of 0.2 points. In National Accounts terms, however, the primary surplus seems likely to increase, in keeping with the budget outturn data for the first nine months of the year: these show a primary surplus of 3.2% of GDP, compared with 2.8% in the same period of the previous year. It is important to recall that these figures are affected by the new regional financing system. Though this need not have an effect on the annual financial balance of each institutional sector (State and autonomous regions), some distortion of the monthly figures is likely.

It will not be possible to compensate for the overshoot expected in the State deficit with cash not converted from pesetas to euros, since Eurostat has sanc-

Table 4.2. State: cash-balance deficit in 2002

	2002 State Budget Euros mn	2003 State Budget Draft budget projection* Euros mn	BBVA budget projection Euros mn
Deficit	–3,674.9	–3,649.2	–5,230.7
%/GDP	–0.5	–0.5	–0.8
Primary surplus	14,06.1	15,420.8	13,839.3
%/GDP	2.0	2.2	2.0

* The spending budget projection is that released to the mass media by the Ministry of Finance

Sources: Ministry of Finance and BBVA

tioned its use to reduce the stock of debt but not the deficit. At the end of August, total non-converted cash in Spain amounted to 2.195 billion euros (0.3% of GDP).

Social Security system: a good performance but not enough to compensate

In contrast to 2001, when the Social Security system registered a surplus of 0.8% of GDP, 0.3 points higher than initially projected, such a large overshoot is not expected in 2002. The evolution of both revenue and spending points in this direction. As regards revenue, while the increase in social security contributions will be faster than forecast, at around 4.7% instead of 1.6% as expected (both growth rates are calculated in relation to the end of 2001), in absolute terms it is well below that registered the previous year. While, in 2002, 2 billion euros in additional revenues (0.3% of GDP) were expected from social security contributions, this figure amounted to around 4 billion (0.6% of GDP) in 2001.

Despite the positive revenue performance, a number of spending headings are accumulating considerable overshoots, while others will generate commitments before the end of the year. Among the former are the funds allocated to cover temporary disability, which are growing by 12.3% (against a forecast drop of 3.3%). For the year as a whole, this could lead to an overshoot in excess of 600 million euros (0.1% of GDP). Notable among the second is the payment to pensioners to compensate for inflation overshooting the 2% target. November inflation could come in at 3.8%, producing an overshoot of 1.8 percentage points (after 0.7 percentage points in 2001). This would mean that, for contributory pensions alone, pensioners would have to be paid an amount around 1.1 billion euros in the year 2002 (0.2% of GDP). The Social Security system should register a surplus close to 0.4% of GDP in 2002, a substantial surplus but not enough to offset the overshoots in the State deficit.

Table 4.3. Budget outturn: Social Security non–financial expenditure					
Millions of euros	Programmed 2002	Executed Jan-Apr 2002	Degree of execution (%)	Executed Jan-Jul 2002	Degree of execution (%)
FINANCIAL BENEFITS	**67,503.4**	**19,254.5**	**28.5**	**38,287.7**	**56.7**
– Pensions	57,985.8	16,329.6	28.2	32,858.8	56.7
. contributory	56,357.1	15,841.4	28.1	31,813.4	56.4
. non-contributory	1,891.1	488.2	25.8	1,045.4	55.3
– Temporary disability	5,731.2	1,195.3	20.9	3,266.8	57.0
HEALTH CARE	12,188.5	2,522.0	20.7	3,762.5	30.9
SOCIAL SERVICES	639.1	164.7	25.8	336.3	52.6
TREAS., INFOR. AND OTHERS	5,446.8	322.7	5.9	648.4	11.9
TOTAL	**85,777.8**	**22,263.9**	**26.0**	**43,034.8**	**50.2**

Source: Ministry of Labour and Social Affairs

General government deficit again in 2002: 0.3% of GDP

The outlook for the general government is further weakened by the evolution of expenditure on unemployment benefits as the negative performance of the labour market makes itself felt. In fact, up until the month of August, more than 90% of funds budgeted for this item for the whole of the year had been used. This development is also related to the assignment to 2002 of 471 million euros of benefits corresponding to 2001.

To the foregoing must be added, first, the fact that the autonomous regions depend to a greater extent than in the past on the cyclical situation of the economy because of the increased share of tax receipts in their total revenue and the share of State transfers, with guaranteed minimum increases. As a result, it is to be expected that the evolution will be worse than initially foreseen. And, second, the fact that the autonomous regions have missed the balanced budget target in the last two years, when they had fewer spending responsibilities. In fact, according to the Ministry of Finance, the autonomous regions have been responsible for the lion's share of the upward revisions to the deficit figures in 2000 and 2001. Consequently, the likelihood of balance in 2002 in the accounts of the overall public sector is low.

2003 State Budget Draft: optimistic macroeconomic scenario

As was the case with the 2002 State Budget Draft, the macroeconomic scenario on which the revenue and spending figures for 2003 are based merits the description of optimistic. In fact, the macroeconomic forecasts of the government for 2003 have the same biases as those in 2002. On the one hand, a rapid recovery in the Spanish economy is expected, given that GDP growth is forecast to return to above-potential levels (3% against the 2.5% forecast by BBVA), as well as a significant slowdown in inflation in the shape of a fall in the GDP deflator of 0.7 percentage points to 2.8% in 2003, compared with the 3.7% estimated by BBVA. In addition, the 2003 State Budget Draft has been drawn up on the basis of optimistic premises for the evolution of salaries, which are seen maintaining the growth rate of the previous year (3.5%) despite the positive inflation surprises of the past few years.

The foundations for the recovery in the economy are the reform of IRPF personal income tax, which will drive private consumption, an improvement in business expectations fuelled equally by the improving domestic and international environments and a slight slowdown in construction. With all of this, the government expects that domestic demand will grow by 3.1% in 2003 (one point above that forecast for 2002), while the external sector is expected to make a negative contribution (0.2 percentage points).

The main difference lies in the evolution of domestic demand. Firstly, it seems difficult to imagine that private consumption can register growth close to 2.9% despite the push given by the reform of the IRPF (about 0.3 percentage points). The deterioration in the labour market, the high level of household debt due to house purchases in the past few years, and the loss in wealth due to the fall in the stock market do not allow for such a rapid and strong recovery in private consumption as forecast in the macroeconomic scenario contained in the 2003 State Budget Draft. The situation as regards investment is somewhat similar. The deterioration in corporate earnings, and the slow and slight recovery in the major Western economies, point more to a delay in investment plans in 2003 rather than an acceleration. Finally, growth in public works, which could maintain a high level in the first part of the year, initially as a result of the electoral cycle, is unlikely to be

Table 4.4. Macroeconomic data						
			FORECASTS BBVA		2003 State Budget	
	2000	2001	2002	2003	2002	2003
GDP and components (% constant prices)						
Consumption	4.2	2.6	2.0	2.6	2.2	2.9
Households (1)	3.9	2.5	1.7	2.4	1.9	2.9
General government	5.0	3.1	3.1	3.0	3.0	3.0
GFCF	5.7	3.2	1.3	2.9	1.7	3.8
Capital goods	5.1	0.3	-2.3	2.0	-1.8	3.2
Construction	6.2	5.8	4.4	3.6	4.7	4.3
Inventories(*)	-0.1	0.0	0.1	0.0	0.0	0.0
Domestic demand	4.4	2.8	1.9	2.7	2.1	3.1
Exports	10.1	3.4	1.0	3.9	-0.6	4.0
Imports	10.6	3.5	0.9	4.5	-0.6	4.4
Net external balance(*)	**-0.3**	**-0.1**	**0.0**	**-0.3**	**0.0**	**-0.2**
GDP (mp)	4.2	2.7	1.9	2.5	2.2	3.0
Nominal GDP (%)	7.8	6.9	6.1	6.2	5.7	5.8
Prices and costs (% y/y)						
GDP deflator	3.5	4.2	4.1	3.7	3.5	2.8
Household consumption	3.2	3.3	3.6	3.1	3.5	3.1
Employee remuneration	3.7	4.1	3.5	3.7	3.4	3.5
Labour market (EPA and National Account)						
Employment (National Account): % y/y	3.4	2.4	1.3	1.2	1.1	1.8
Annual change ('000s)	499.7	359.3	201.7	188.6	175.5	282.4
Unemployment rate (EPA)	13.9	10.5	11.4	11.3	11.3	11.0

* Contribution to GDP growth
Sources: INE, BBVA and Ministry of Finance

sustained during the rest of the year. The decision not to use the German model in 2003 (some 1.9 billion euros in 2002, 0.3% of GDP), and the problems involved in bringing the private sector on board, could result in public works growing somewhat less than forecast by the government.

As regards the external sector, even taking into account the possibility of a more optimistic evolution in domestic demand and world trade contained in the 2003 Draft State Budget, in net terms the negative contribution to growth is very similar in 2003 under both scenarios.

With respect to prices, despite the differences in perceptions of the behaviour of domestic demand, and similar expectations regarding the evolution of oil prices ($25), the GDP deflator grows by almost one point less in the scenario forecast by the government, 2.8% and 3.7% respectively. It is this dissimilarity in perceptions of the inflation situation in the Spanish economy that explains why the forecast for nominal GDP growth in the 2003 State Budget Draft is lower, 5.8% year-on-year against 6.2% for BBVA. Therefore, inflation in 2003 will drive tax collections.

Lastly, the optimism regarding real GDP growth is reflected in job creation expectations: 282,400 full-time new jobs, 100,000 more than forecast by BBVA. If the unemployment rate does not drop to 11% as forecast by the government, but instead comes in at around

11.3% as forecast by BBVA, then growth in unemployment costs will be higher than that implicit in the budget. In 2002, the forecasting error[2] made meant that in August contributory benefits paid by INEM had already taken up 90.3% of what was budgeted for the full year.

Therefore, to the extent that this optimistic scenario has served as the basis for the estimation of revenues and spending contained in the budget for the year 2003, and that the budget projection for the year 2002 forecast by government are skewed upwards for revenue and downwards for spending, the probability that there will be departures from the figures budgeted for 2003 is far from negligible.

As in 2002, a series of factors make assessment of the 2003 State Budget Draft difficult

As has already been mentioned, the design of the budget for 2003 has been addressed under the framework of the General Law on Fiscal Stability (LGEP). This requires balanced accounts to be presented for the consolidated budget of the State, Autonomous Entities, the Social Security system and other Entities. Although this obligation should be fulfilled in National Accounts terms, the information presented in the 2003 State Budget

[2] The government estimated that the unemployment rate in 2002 would be 11.5%, a figure which in terms of the new EPA labour survey is just under 10%, below the 11.7% average with which the year is likely to close.

Draft is in cash terms, which makes it difficult to draw conclusions as to whether the budget presented is conducive to achieving the objective it sets down. This fact takes on particular relevance in 2003, since the Treasury plans to eliminate or reduce the initial zero-coupon period in bond issues, which will lead to significant differences in interest costs when accounted for according to cash or amount-due criteria since the volume of debt maturities is very high (72.8 billion euros in 2003 against 50 billion euros in 2002). In fact, according to the 2003 State Budget Draft, the difference could be as high as 2.753 billion euros (0.4% of GDP). With all of this, the 1.2%-of-GDP cash deficit of the State presented is equivalent to a deficit of 0.5% in National Accounts terms, and therefore, a cash-balance deficit of 0.7% in the consolidated budget is equivalent to a balanced budget in National Accounts terms. Added to this is the fact that the revenue and spending figures are affected by the application of the new regional financing system since January to all of the autonomous regions[3], the second reform of the IRPF, and by the new model for local financing.

The IRPF reform, as with the previous reform, will have a negative impact on receipts, which according to official figures will come in at around 2.451 billion euros (0.3% of GDP)[4]. The regional financing system in place since the start of the year makes comparisons both for revenue[5] and spending invalid in the sub-sector of State and Social Security which are the areas affected under

the 2003 State Budget Draft. Although the draft gives homogenous aggregate revenue figures in cash-balance terms for 2003 and the budget projection for 2002, that is, for the State and the part of the budget transferred to the autonomous regions, this is not the case for the aggregate spending headings, which makes the task of evaluating the budget difficult. As regards local financing, the design of the 2003 State Budget Draft was in place before approval of the final model (see Box on "Local financing: from the roof down") even though financing of Local Entities accounts for almost 10% of State spending budgeted for 2003. According to provisional estimates, the modification of the Tax on Economic Activity (IAE) will reduce revenues of Local Entities by about 900 million euros, an amount which will largely be made up for from the new contingency fund.

Given that the Ministry of Finance has not provided homogeneous figures for either revenue or spending for the consolidated budget of the State, Autonomous Entities, the Social Security system and other Entities for 2002 and 2003, we have tried to draw up homogenous series based on the information available. The break in the series as a result of the new financing system for the autonomous regions is apparent when one compares the figures for the 2002 and 2003 State Budgets. According to these figures, budgeted tax revenues register a fall of 4.8% in 2003 with respect to the 2002 budget and increase 1% with respect to the government's budget outturn forecast for this year. The lack of homogeneity is also apparent regarding developments in payments of the consolidated budget, given that current operations, excluding the contingency fund, only grow 2.3% in the 2003 budget with respect to that of 2002. To evaluate the 2003 State Budge Draft requires adjusting the figures for 2002 at least for the impact of

[3] Even though 2002 was the first year of application of the new regional financing system, there was a period of transition lasting throughout the first quarter of the year to allow the assumption of health care responsibilities by those ordinary regime autonomous regions that at December of 2001 had still not done so.
[4] The reform did not affect the percentage of the personal income tax schedule transferred to the autonomous regions.
[5] Of those taxes for which the revenue transfer was linked to the assumption of health care responsibilities.

Table 4.5. Consolidated budget of the State, Autonomous Entities, the Social Security system and Other Entities

Millions of euros	2002 initial budget (1)	2001 Government budget projection (2)	2002 BBVA budget projectionCorrected % annual (3)	2003 State Budget Draft (4)	(4)/(1) %	(4)/(2) %	(4)/(3) %
Revenue	203,739	200,668	195,974	206,034	1.1	2.7	5.1
Tax revenue	96,858	91,275	87,632	92,230	-4.8	1.0	5.2
Social security contributions	83,583	85,391	85,648	90,028	7.7	5.4	5.1
Other	23,299	24,003	22,695	23,777	2.1	-0.9	4.8
Expenditure	204,059	199,670	197,031	211,458	3.6	5.9	7.3
Interest	17,842	19,070	19,070	19,764	10.8	3.6	3.6
Capital spending	16,036	14,383	15,793	16,735	4.4	16.4	6.0
Ex-interest	170,182	166,217	162,168	174,959	2.8	5.3	7.9
Cash-balance deficit	-320	998	-1,057	-5,424			
%/GDP	0.0	0.1	-0.2	-0.7			
Primary surplus	17,522	20,068	18,013	14,340			
%/GDP	2.5	2.9	2.6	2.0			

Sources: Ministry of Finance and BBVA

the new financing system for the autonomous regions. In order to do this, it is assumed that this new model is applied in its entirety to all of the autonomous regions from January 2002. The most important figures in the consolidated budget for the year 2003 and the comparison of these with the initial budget for 2002, along with the budget projection forecast by the Ministry of Finance for 2002, and the adjusted figures compiled by BBVA, are presented in Table 5. The results obtained in comparing the budget for 2002 as it is presented in the 2003 State Budget Draft are very different from those that emerge from the comparison with the homogeneous budget.

Optimistic collections

The tax revenues are upwardly skewed because of the underestimation of the revenue loss stemming from the IRPF reform, and because of the overestimation of the budgeted revenue implied in the macroeconomic scenario of the 2003 State Budget Draft.

As regards revenues, the budgeted figure for 2003 implies that tax collections increase by 5.2% in 2001, slightly below the nominal growth of the economy (6.2% according to BBVA, and 5.8% according to the government) despite the revenue loss associated with the IRPF reform. According to the estimates of the Ministry of Finance, even taking into account the positive impact implied by the reform in the collection of other taxes (VAT, corporation tax, IRPF and social security contributions), which total 549 million euros (0.1% GDP), the IRPF reform means that the government will take in 2.451 billion euros (0.34% of GDP) less than would have been taken in without the reform. This cost, although it is 76% below that estimated for the 1999 reform, could be underestimated since it is based on the implied effect on consumption, and therefore on optimistic levels

regarding VAT. Since the cut in tax rates does not affect the part of the budget transferred to the autonomous regions, the impact on collections will basically affect the resources of the State (see Table 6). Leaving the impact of the reform on other tax components aside, both the forecast growth for corporation tax (8.5% with respect to BBVA's budget outturn forecast for 2002) and the forecast for VAT (8.2% with respect to BBVA's budget outturn forecast) are very optimistic. The first is based on a significant recovery in corporate earnings and the second on a sizeable increase in consumption. As regards social security contributions, the growth figure is slightly optimistic, although compatible with a job creation scenario below that included in the 2003 State Budget Draft and higher salaried employee remuneration. As a whole, fiscal pressure will probably fall by about a tenth of a percentage point in 2003.

Added to this, unlike in previous years in which the revenue figure included in the budgets was below that compatible with economic growth forecast by the government, in 2003 tax revenues are fairly realistic, which means there is no cushion for spending overshoots in excess of the contingency fund. This evaluation is based on the historic elasticities of the different revenue headings to nominal GDP, taking into account the regulatory changes which will affect collections in 2003 (the reform of the IRPF, maintenance of the rates for special taxes, and the updating of current taxes and the creation of new ones). However, given that nominal GDP growth will come in above the official forecast, the shortfall from the budgeted figure will be less than would be the case if the economy were to grow by 5.8%[6].

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[6] Using the historical elasticities of tax receipts to GDP, we find that a one-point deceleration can reduce revenue, in the absence of regulatory changes, by around 1.2 billion euros, the equivalent of 0.2% of GDP.

Table 4.6. State revenue budget							
Millions of euros	2002 State Budget (1)	2002 Ministry of Finance budget projection (2)	2002 BBVA homogeneous budget projection (3)	2003 State Budget Draft (4)	(4)/(1) %	(4)/(2) %	(4)/(3) %
Direct taxes	52,084.0	53,999.1	52,908.9	55,217.9	6.0	2.3	4.4
IRPF	30,967.5	32,464.4	31,679.9	32,217.2	4.0	-0.8	1.7
Corporation tax	18,982.4	19,703.0	19,444.9	21,089.9	11.1	7.0	8.5
Indirect taxes	45,488.8	37,275.7	34,722.7	37,741.3	-17.0	1.2	8.7
VAT	30,266.4	24,976.6	23,780.6	25,741.9	-14.9	3.1	8.2
Excise duties	13,170.0	10,332.7	9,122.5	9,880.1	-25.0	-4.4	8.3
Other	13,046.8	13,678.0	14,084.1	12,736.5	-2.4	-6.9	-9.6
Total revenue	110,619.6	104,952.8	101,715.7	105,695.7	-4.5	0.7	3.9

Sources: Ministry of Finance and BBVA

Reform of the wealth tax, an important step in the right direction

During the passage of the IRPF reform bill through parliament a number of amendments were introduced which affect the treatment of income from work (stock options) as well as capital income (rentals and insurance policies). Amongst these, the most important was the 10% reduction in the taxable limit of joint IRPF and wealth tax declarations, to 60% of the IRPF tax base from 70%, and the elimination of the mandatory minimum 20% payment of the tax liability for the wealth tax. From the point of view that the wealth tax discourages saving and as such lowers the stock of capital and the potential growth of the economy, this measure has to be seen in a positive light, although steps should be taken towards the complete elimination of this tax.

Current spending (ex-interest) growing above nominal GDP despite insufficient funding for a number of expenditure headings

As regards spending, despite the transfer of responsibilities for spending headings which repeatedly register growth levels above those budgeted (health care) to the autonomous regions[7], the 2003 State Budget Draft envisages growth in consolidated spending of 5.9% in 2003 with respect to the government's budget outturn forecast for 2002. When compared with BBVA's corrected budget outturn forecast, this figure rises to 7.3%. This increase is mainly explained by the increase in current spending (7.4% according to BBVA), which rises to 7.9% when forecast interest payments are excluded. This rise is well above that of the nominal growth of the economy, which confirms the downside resistance of a significant part of spending. Despite this growth, a number of spending headings could be skewed downwards. Amongst these, the following should be mentioned: i) spending on active personnel could grow more than forecast after the agreement reached with the unions for 2002 and 2003; ii) contributory pensions, which increase by only 3.2% with respect to the budget outturn forecast for 2002 that includes the compensation paid to pensioners for the inflation overshoot, and despite an increase in pensions for widows (313 million euros, or 0.04% of GDP); iii) spending for temporary disability, given that after a number of years of growth levels above 10%, there is a budgeted fall of 0.4% in 2003 in the absence of regulatory changes; and iv) funds set aside for unemployment benefits, which could fall short if one takes into account both the counter-reform and less favourable developments in the labour market than those forecast by the government (the number of reg-

istered unemployed with INEM at the end of 2003 could come in at 200,000 above the number registered at the end of 2002). To this must be added the impact of the sinking of the Prestige on the budget. The Accompanying Law includes assistance for those directly affected worth 10.8 million euros, an insignificant amount compared with initial estimates of the impact of the catastrophe (1-3 billion euros). Although funds from the European Union could be used to finance part of the costs (around 30%), the impact on the budget balance in 2003 will be significant.

Investment effort is transferred to the corporate public sector

The budgeted increase in current spending has brought about a certain slowdown in the State's direct participation in public works projects (see Table 7). This is reflected in the fact that in 2003 the State will not resort to the use of the German model to finance public investment. In 2002, projects financed using this method totalled 1.900 billion euros. Next year, however, this money will go towards paying debts contracted previously under this system. This means that a growing part of public investment is being channelled through public sector entities (AENA, GIF). Specifically, AENA will invest 2.205 billion euros in infrastructure without any financial assistance from the State, which indicates that part of the required funding could be obtained though taking on debt, which in some cases would be guaranteed by the State. In this sense, the 2003 State Budget Draft allows public companies and organisations to take on debt of 6.445 billion euros, 6.6% above that permitted in 2002. In the specific case of AENA, this amount totals 1.457 billion euros, an increase of 18.2%. In fact, if the investment effort of the state public sector, including the corporate public sector, is taken into account, forecast investment in the 2003 State Budget Draft increases 12.9% year-on-year in 2003 with respect to the initial forecast for 2002. The debt policy also extends, as has been the norm, to RTVE, which at the end of 2003 could have an accumulated debt of 6.000 billion euros (the State is considering assuming this debt next year as part of a restructuring plan).

As a whole, given the transfer of spending responsibilities with a tendency to overshoot initial forecasts to the autonomous regions (health care), and the low level of cyclical sensitivity of those spending responsibilities still in the hands of the State, no overshooting in non-financial spending of the State is expected, with the exception of the area of interest-rate payments and the impact of the new regional financing system. However, overshoots in these areas could be defrayed from contributions from the contingency fund (2.290 billion euros, 0.3%

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[7] In 1995, State spending represented 66% of total public sector spending, compared with 59% in 2001.

Table 4.7. State expenditure budget							
Millions of euros	2002 State Budget (1)	2002 Ministry of Finance budget projection (2)	2002 BBVA homogeneous budget projection (3)	2003 State Budget Draft (4)	(4)/(1) %	(4)/(2) %	(4)/(3) %
Current operations	100,471.3	96,431.0	93,283.3	100,374.2	–0.1	4.1	7.6
Financial spending	17,736.0	19,070.0	19,070.0	19,671.7	10.9	3.2	3.2
Current transfers	62,889.9	57,038.0	53,890.3	57,485.0	–8.6	0.8	6.7
Contingency fund				2,290.3			
Capital operations	13,823.2	12,171.0	13,663.1	14,142.6	2.3	16.2	3.5
Total spending	114,294.5	108,602.0	106,946.4	114,516.8	0.2	5.4	7.1
Total spending ex-contingency fund				112,226.5	–1.8	3.3	4.9
Total spending ex-interest	132,030.4	127,672.0	126,016.4	134,188.5	1.6	5.1	6.5
Deficit	–3,674.9	–3,649.2	–5,230.7	–8,821.1			
%/GDP	–0.5	–0.5	–0.8	–1.2			
Primary surplus	14,061.1	15,420.8	13,839.3	10,850.6			
%/GDP	2.0	2.2	2.0	1.5			

Sources: Ministry of Finance and BBVA

of GDP), which represent 2% of total budgeted non-financial spending[8]. However, given that the financing of the cost of the sinking of the Prestige will be met from the above-mentioned fund, spending in 2003 in all probability will be above the budgeted figure. Alongside this, the main risk of spending overshooting budgeted levels is centred on financial benefits covered by the Social Security system and INEM unemployment benefits.

Public sector deficit in 2003: 0.6% of GDP

As a result, the risk of failing to meet the balanced-budget target projected for central government lies both with the State and the Social Security system. Firstly, the probability that the tax collections of the State come in below budget, and that spending is above forecast is not insignificant. The rationale behind this argument lies in a weaker recovery in the economy than that foreseen in the 2003 State Budget Draft, a greater revenue loss due to the IRPF reform, and a meagre endowment of the contingency fund. Secondly, Social Security spending has been underestimated both as regards funds set aside for contributory pensions as well as those for

temporary disability. As a result, there is no margin in 2003 for the Social Security system to compensate budget overshoots at the level of the State with respect to its target (-0.5% of GDP).

Added to this, given the greater cyclical sensitivity of their revenues and the absence of legislative changes which guarantee control of spending headings which have been ceded to them, it will be difficult for the autonomous regions to achieve a balanced budget (the deficit in 2001 was at least 0.4% of GDP). Given all of this, the public sector deficit in 2003 will rise again, reaching about 0.6% of GDP.

And the rate of decrease in general government debt will slow

The revision of the deficit data for 2000 and 2001 carried out by Eurostat had little effect on public debt, which was revised to 57.1% of GDP in 2001 from 57.2% and to 60.5% in 2002 (from 60.6%). According to the government, next year the State will issue net debt worth 6.545 billion euros. The need to finance a swollen deficit will result in issue levels being higher in the end run. Despite this, the State debt-to-GDP ratio should continue to fall in 2003, by just under one point.

[8] In the period 1992–2001, final appropriations exceeded initial appropriations by on average 1% of GDP.

Local financing: from the roof down

The reform of Regulatory Law 39/1988 on Local Treasuries (LRHL) in theory completes the change in the financing model of the Territorial Administrations begun with the reform of the financing of the autonomous regions, which came into effect in 2002. This reform of local financing, which is in the process of being approved, enjoys a high level of consensus after the recent signing of the agreement between the Spanish Federation of Municipalities and Provinces and the central government[1] . It sets out as its objective an integrated reform of the revenues of local treasuries, looking to improve financial sufficiency, and fiscal co-responsibility and stability, as well as fulfilling one of the electoral undertakings of the government: the elimination of the Tax on Economic Activities (IAE) for most taxpayers. However, the new system of financing fails to correct some of the basic problems of local funding and the imprecision regarding jurisdictions in the current system remains, which inevitably leads to its instability. This last aspect gives rise to particular concern since the failure to delimit areas of responsibility transforms spending requirements into a subjective reality and therefore inflates them.

The current financing system and its problems

The local financing system is established in Law 39/1988, which saw important amendments in 1998 through the Law Accompanying the State Budget. As a result, although there were no significant changes to the basic taxation characteristics, we can still consider this to constitute a transitional period in local financing which began in 1999 and will end in 2003, given that the reform which is currently in the process of being passed will not come into complete effect until the year 2004.

The current system of local financing is characterised by the use of multiple sources of funding. It is different from the Anglo-Saxon model, in which local financing is basically dependent on taxes on property, or the Nordic model which is based on taxes on income, or the Central European model where most revenue comes from the territories' share of taxes imposed at higher levels of the administration. The Spanish local financing model, in contrast, is characterised by a mixture of all of the above sources of revenue, similar to the systems used by other Latin countries. Thus, in funding Spanish local treasuries specific local taxes have a significant weight, particularly the taxation of property and economic activity (see table below). However, transfers also play an important role, and these have been growing in line with nominal GDP, with a guaranteed floor determined by the level of inflation.

With regard to specific local taxes, these take the form of three compulsory taxes and three of a voluntary nature. The compulsory ones are the Tax on Real Estate (IBI), the Tax on Economic Activities (IAE) and the Tax on Mechanically-Driven Vehicles (ITVM). Local administrations are free to decide whether or not to levy the Construction Tax, the Tax on Installations and Building Sites and the Tax on the Increase in Value of Urban Land. With respect to all of these taxes, state legislation sets minimum and maximum levels depending on the size of the municipality, and the local administrations can decide what rate they want to set for each tax within these limits. As a result of this arrangement, the IBI accounted for practically a third of these fiscal revenues in 2000 and the IAE about 20%. The combined financing resources over which local administrations have jurisdiction, that is to say, the above taxes plus tariffs and current income, accounted for 66% of their funding requirements in 2000. The second significant source of financing for the local administrations comes from their Share of the Revenues of the State[2] , an unconditional transfer which is calculated on the basis of population (with increasing coefficients on a scaled system in relation to size), the capacity of the local administration to generate its own taxes, and the demands made on this capacity.

As a whole, this system allows for a relatively significant degree of fiscal co-responsibility, which has clearly been brought into play as can be seen in the disparities that exist regarding fiscal burdens amongst the different municipalities, but without this having undermined budgetary stability. Overall, the local entities manage about 15% of the resources of the Public Administration, including the Social Security system. Their debt, however, represents only a little more than 3% of total Spanish public debt, and they have managed to develop a small fund-raising ability in the past six years, which proves that fiscal co-responsibility, if controlled, need not lead to a wider fiscal deficit. It is true that the system governing the local administrations is more rigid in that it obliges them to use capital raised exclusively for capital spending, that debt taken on in the form of loans has to be for a specific purpose, that their budgets have to be approved based on the principle of positive net savings, and that they require authorisation from the Finance Minister to take on debt if their outstanding debt position is above 110% of liquid current revenues in the previous tax period. Added to this is the fact that in 2003, they will be obliged to comply with the General Law on Budgetary Stability, which requires all local entities to draw up budgets in accordance with their funding abilities as laid down in the ESA-95.

However, the current system is not without its problems. What stands out in the way the system has been conceived is the lack of delimitation of responsibilities the local entities have to meet and the way in which this leads to increasing spending needs. Added to this is the existence of areas of financing (in the PIE and fiscal burden of taxes) which are not related to the local entities legal responsibilities as defined by the Law of the Foundations of Local Governance, and the fact the system leaves the autonomous regions out of the equation when it comes to local financing, despite the fact Spain has a federal structure. In addition, the system, as is the case with the autonomous regions, incorporates peculiar solutions within the general framework, such as the coefficients based on sections of the population or taking into account the number of **teaching units** for calculating the PIE. As regards specific local taxes, the criticism lodged against them is that they do not take into account the ability to pay nor the current economic situation. For example, the IBI, which is based on the property registry, is levied at the same rate on a specific property regardless of

[1] Agreement signed November 21 and available at www.femp.es.
[2] Although the PICA, or participation in the revenues of the autonomous regions, has a larger share of capital transfers, it has a much lower share than the PIE (participation in the revenues of the State).

whether the owner is paying a mortgage on it or not. Also, the IAE, which is on a censual basis, is levied on productive capacity rather than the ability to pay.

More complex taxes, less co-responsibility and risk of instability

The new system introduces changes basically in the structure of local taxes and the weight these will have in local financing. Because of its repercussions, the key change is the elimination of the IAE for 92% of taxpayers (individuals and legal entities with net business revenues of under 1 million euros), and changes to the tax for the rest of taxpayers. Specifically, the system whereby the number of workers is used as the deciding variable to determine the tax base is replaced by the amount of net revenues as the variable which, according to the Law, better reflects the ability to pay. Of the companies still subject to the tax, a minimum and maximum multiplier coefficient of 1.29 and 1.35 times will be applied depending on turnover, which means that receipts from this tax will fall by only 900 million euros from the current level of 1.8 billion, without taking into account the increase in revenues from the inclusion of a rubric for mobile telephony, which up until now has been exempt. In addition, the possibility is introduced of applying a number of allowances in the tax, such as the amount of square metres set aside for social services in the company, the use of collective transport, or activities which favour the environment.

The second change applies to the IBI, where the ceilings on tax rates have been raised. A considerable amount of allowances against the tax (for large families, or the nature of the use to which a property is put) have also been introduced, along with the possibility of raising tax rates for unoccupied residential buildings. These measures, as in the case of the IAE, open up the possibility of applying a re-distributive fiscal policy on the revenue side for the local administrations, something regarded as an achievement by the state. However, this could result in greater difficulties when it comes to drawing up local budgets because of the media impact implied by the possibility of allowing deductions, considerably increase the costs of managing the taxes, and bring on board complications, which in the case of other taxes such as personal income tax tend to be avoided. Beyond the fact that a re-distributive policy should be on the spending side rather than on the revenue side, if such a practice is put into place on the local level, it could lead to significant inequalities between identical individuals, above all if the different fund-generating abilities of local administrations of different sizes are taken into account.

In addition, the new law modifies the PIE (by eliminating the number of **teaching units**, something that should be considered positive), which will now be called the Sufficiency Fund, separating the PIE for large cities (>75,000 inhabitants and provincial capitals) into two parts: on the one hand, the transfer of part of personal income tax collections (also for tourist municipalities of more than 20,000 inhabitants), as well as part of VAT and harmonised special tax receipts, but without regulatory control over these, and on the other the Sufficiency Fund in itself strictly speaking, which is to be distributed as in the case of other municipalities, but which in practice acts as an adjustment item allowing financial needs to be met. For the rest of the municipalities the Sufficiency Fund is distributed in the base year on the basis of population, which in this case does coincide with the division of responsibilities included in the Law of the Foundations of Local Governance, as well as fiscal capacity and tax-raising efforts. However, the definition of the last two variables shows certain inconsistencies, such as defining fiscal capacity as a function of collections from the tax. The changes in this section of the law are supplemented by a modification in the evolution index. Rather than using nominal GDP, the base now used will be ITEn (the evolution index of the Tax Revenues of the Central Government), which raises a series of questions. On one hand, the local authorities will not be compensated for changes to the Tax Revenues of the State that affect the ITEn, such as the forthcoming reform of IRPF personal income tax. On the other hand, the use of the ITEn means that neither developments in social security contributions nor in Corporate Taxation are taken into account, the two tax rubrics that have shown the most positive developments in the past few years. These have given an upward push to the development of the ITAE, which gives rise to the idea of a slower future increase of the ITEn than the ITAE, which in turn would mean slower growth in the Sufficiency Fund. The fact that a time horizon for this model does not exist, alongside the starting inequalities deriving from the large size of the sections of the population, put the stability of the system at risk.

All things being considered, the new local financing system brings about greater transparency regarding transfers and matches the fiscal capacity of the local administrations more closely to the responsibilities which come under their jurisdiction. However, the reform does not improve the level of fiscal co-responsibility by eliminating part of the revenues from specific local taxes and replacing them with transfers. Above all, it still fails to define the limit of responsibilities which have to be met with the resources available.

Revenue headings		
Year 2002 (distribution)		
	Councils	Total local authorities
1. Direct taxes	27.4	28.0
2. Indirect taxes	4.0	13.2
3. Excise duties	16.3	13.1
4. Current transfers	26.9	24.6
5. Stamp duty	2.3	1.8
Current operations	**76.9**	**80.8**
6. Real investment sales	5.2	3.9
7. Capital transfers	9.0	6.8
Capital operations	**14.2**	**10.7**
Non-financial operations	**91.1**	**91.5**
8. Financial assets	0.4	0.6
9. Financial liabilities	8.5	8.0
Financial operations	**8.9**	**8.6**
Total revenue	100.0	100.0
Total revenue (€ mn)	32,313.9	45,151.4

Source: Budgets of the local govertnments. Directore General of coordination with Territorial Tax Authorities. 2001

# 5. The Financial System

Further credit expansion

Despite the slowdown in economic growth, private sector credit has remained growing at very high rates during the first nine months of the year.

Credit to the private sector is still growing much faster than its real average growth rate of 5% over the past thirty years, the current expansion being the longest during this period. As a result, the ratio of private sector credit to GDP rose by 27 percentage points between 1997 and the first half of this year, to stand at 99%.

Although this is a comparable ratio to those of the industrial economies, what is striking in the Spanish case is the speed with which indebtedness has converged to European levels. This trend was initially the result of both cyclical and structural factors, but these are now beginning to weaken.
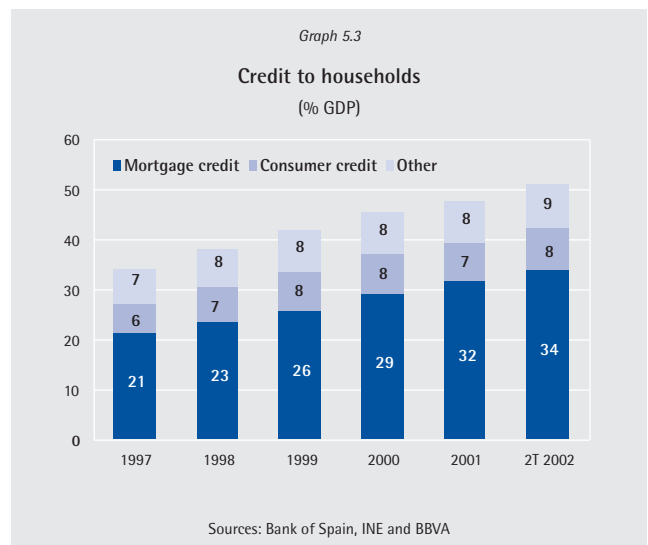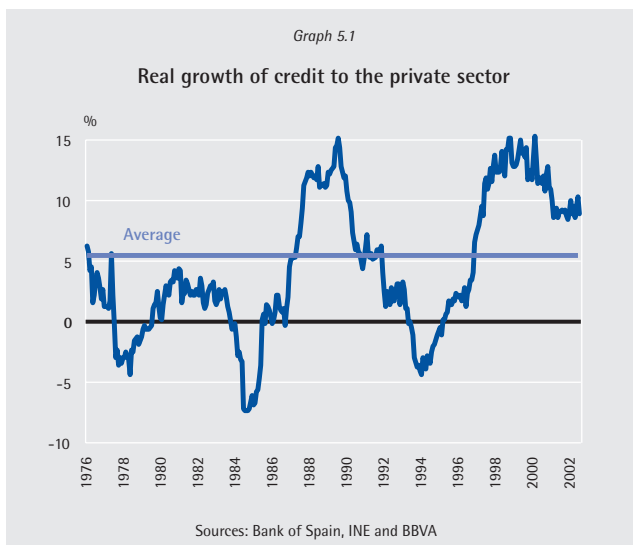
As Graph 5.3 shows, credit to households amounted to 50% of GDP in the first half of 2002. Demand for mortgage credit is the main reason for this continuing strong growth. In nominal terms, mortgage-backed credit has risen at an average rate of 19% so far this year, but the trend is upwards, and rates have reached 20% in recent months.
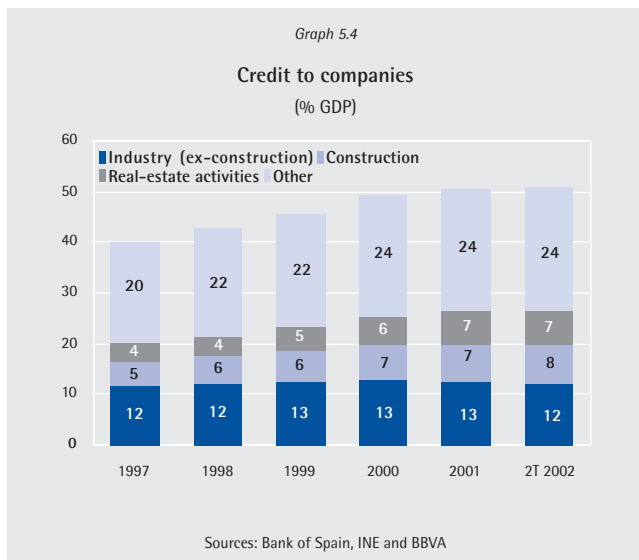
Part of the acceleration is due to the increase in house prices. When mortgage lending is deflated by the average price of housing, it is found that credit for house purchases has been slowing down, in real terms, since the middle of last year. With this adjustment, in June of this year growth would only have been 0.7%.

Graph 5.2

Credit for house purchases

(deflated by price of housing)

Sources: Bank of Spain, INE and BBVA
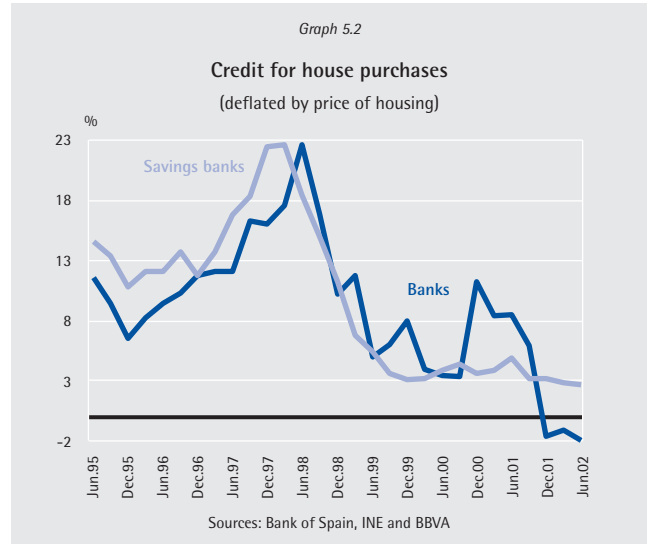
Following the slowdown observed last year, consumer credit picked up during the first quarter of the year. While this contrasts with the fall-off in consumption over the same period, it is important to bear in mind the impact on this macroeconomic variable of the "euro effect", which probably led to spending decisions being brought forward in the latter part of 2001 and during the first quarter of this year. Another factor that may lie behind the acceleration is the rise in house prices, the resulting increase in wealth allowing households to increase their indebtedness.

Other credit to households has also continued to grow strongly. As a percentage of GDP, however, it can be seen that neither consumer credit nor other credit has increased significantly during the current expansion, whereas mortgage credit has increased by 13 percentage points since 1997. The growth of credit as a proportion of GDP in the last six years is therefore essentially an expansion in mortgage credit.

Graph 5.1

Real growth of credit to the private sector

Sources: Bank of Spain, INE and BBVA

Graph 5.3

Credit to households

(% GDP)

Sources: Bank of Spain, INE and BBVA

Graph 5.4

Credit to companies

(% GDP)

Sources: Bank of Spain, INE and BBVA

Graph 5.5

Credit growth by autonomous governments regions

Sources: Bank of Spain and BBVA

Credit to non-financial companies has also grown strongly in terms of GDP (11 percentage points between 1997 and June of 2002). The sectors most closely linked to housing have experienced the highest growth rates, with companies in the real-estate sector registering the biggest expansion in credit. The increase in credit to the construction sector and in credit to companies engaged in real-estate activities accounts for 57% of the increase in total credit for productive activities as a proportion of GDP.

In view of the continuing strong credit growth, a pertinent question is whether the expansion in this variable is occurring with the same intensity in the various types of financial institution and in the different autonomous governments regions (CC.AA.).

The geographical distribution of credit

An analysis of the geographical distribution of credit for the period 1997-2001 shows that the expansion has taken place across all the autonomous governments regions. The average growth rate of credit ranges from 11% in Asturias to 20% in the Canary Islands, rates, in any case, much higher than the 7% average nominal growth rate of the Spanish economy over this period.

The main differences apparent relate to the pattern of the expansion and its intensity. Thus, the autonomous governments regions with the largest industrial base (Madrid, Catalonia and the Basque Country) are the ones which have recorded the slowest credit growth over the five years analysed. The reason for this is the relatively slower expansion of credit to industry compared with credit to households, which is of greater importance in other regions.
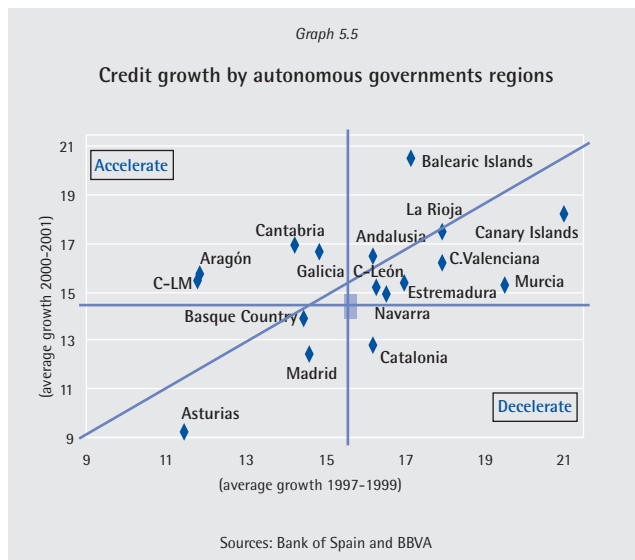
As shown in Graph 5.5, with the exception of Catalonia, in all the autonomous governments regions with above-average growth in the early years of the expansion (1997-1999), growth was also above average in the last two years. The number of autonomous governments regions in which credit growth has accelerated in the most recent period is nonetheless lower than the number of regions in which the expansion has slowed.

The institutional distribution of credit

In order to analyse the distribution of credit by type of institution and by size, we have used the non-consolidated balance-sheet data of the institutions for the period between December 2000 and August 2002, sorting three groups on the basis of the on-balance sheet credit portfolio. Only institutions with credit portfolios over 1 billion euros were included[1].
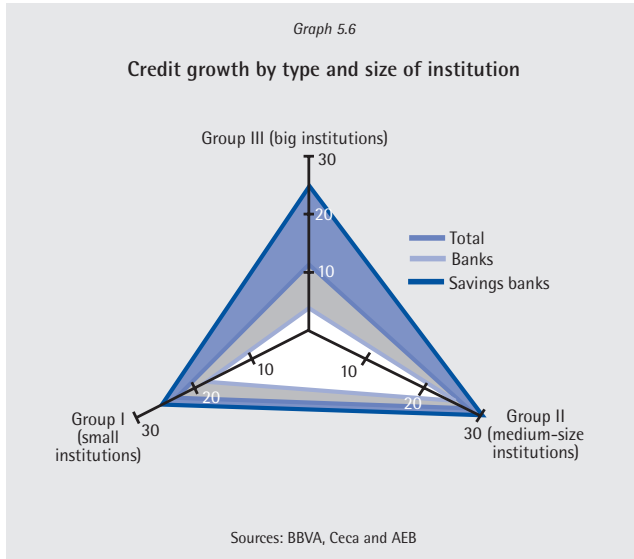
First of all, an analysis of the distribution of credit by size of financial institution reveals that, in general, it has been the medium-sized institutions that have re-

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[1] Institutions with credit portfolios under 1 billion euros were excluded because of the distortions that could be introduced as banks disappear, new banks enter the market, etc.

Table 5.1. Credit Growth by institutions and by size

	Outstanding Credit (billion euro)	Total	Banks	Saving Banks
		% average growth (*)		
Group I	Between 1–12	23.6	18.7	25.7
Group II	Between 13–39	27.6	25.8	30.1
Group III	Between 40–100	11.6	3.9	25.1

(*) Average growth between December 2000 and August 2002
Source: AEB, CECA and BBVA

Graph 5.6

Credit growth by type and size of institution

Sources: BBVA, Ceca and AEB

Graph 5.7

Non performing loans

Source: Bank of Spain

corded the biggest increase in credit portfolios over the past three years (28%), followed by small institutions (24%), and at a considerable distance from the large institutions (12%).

A break-down of the total between banks and savings banks shows that the latter have recorded much faster credit growth than the banks. Thus, while banks' on-balance sheet credit to the private sector increased by 12% on average between 1997 and August 2002, savings bank lending rose by some 18%, allowing them to increase their market share by 8%.

As Graph 5.6 shows, savings banks have registered stronger credit growth for all sizes of institution. However, the difference is most pronounced for the largest financial institutions, that is, in Group III. Thus, while the big savings banks have recorded an increase in credit of some 25% on average in the past two and a half years, the big banks have only increased their credit investment by 3.9%.

The reason for this difference is that the period analysed coincides with the implementation of the big-bank mergers, which led to a large-scale restructuring and the resulting closure of branches. Conversely, in the case of the savings banks, this period has been one of steady geographical expansion. Between December 2000 and June of this year, the big banks have closed 1,626 branches in Spain, whereas the savings banks have opened 669 branches.

Increased credit risk

The steady expansion in credit in a less benign economic environment than two years ago has exposed a number of weaknesses, some of which are already becoming visible. The volume of doubtful loans is growing at its fastest rates since the middle of 1994. The non performing
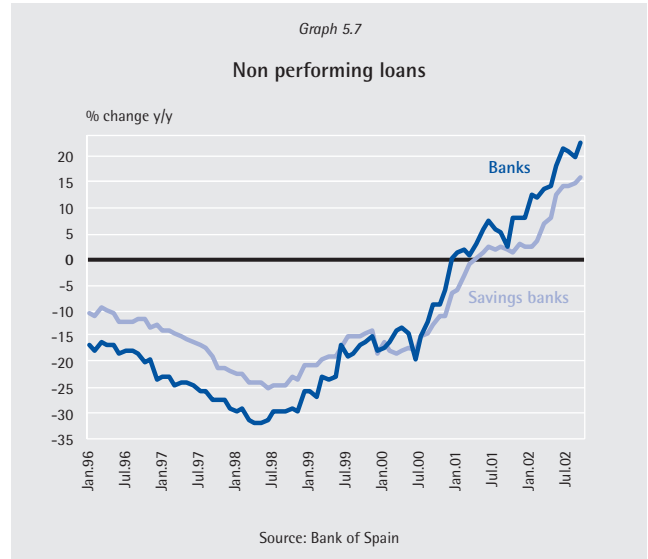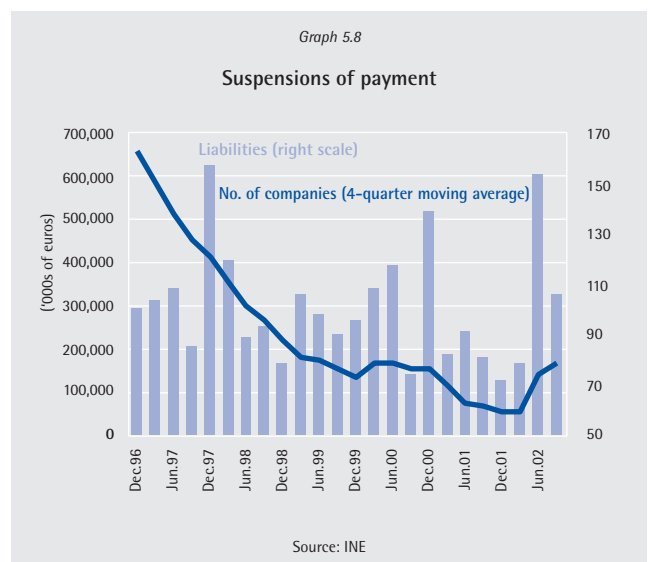
loans ratio, on the other hand, remains muted as a result of the strong growth in credit discussed earlier, and stood at 1.25% at the end of September.
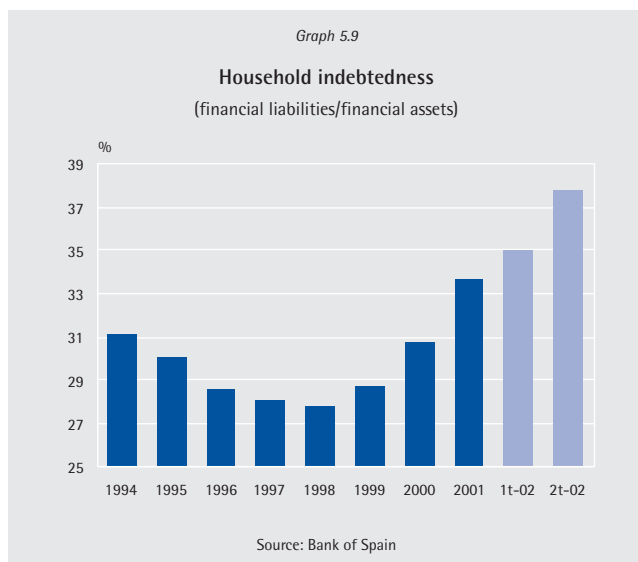
Part of this deterioration in credit quality is a reflection of the increase in bankruptcies and suspension of payments by Spanish companies. As shown in Graph 5.9, the liabilities declared in suspension of payments amounted to over 600 million euros in the second quarter of 2002, double the average since 1997.

The main latent risk facing the financial institutions is nonetheless the increasing vulnerability of households' net financial situation, as a result of both their increasing liabilities and the composition of their assets.

Household indebtedness, measured as financial liabilities as a percentage of total financial assets, rose from 28% in 1998 to 38% in the first half of 2002. And, in all

Graph 5.8

Suspensions of payment

Source: INE

Graph 5.9

Household indebtedness
(financial liabilities/financial assets)

%

Source: Bank of Spain

centage of disposable income and GDP. However, as reported in a recent Bank of Spain study[2], practically 100% of the gross saving of Spanish households is devoted to making debt-service payments. In other words, there has been virtually no saving in 2000 and 2001 other than that allocated to the repayment of loans.

Moreover, the increased exposure of households' financial wealth to the markets has increased the volatility of debt ratios[3].

In sum, although none of these variables are, in principle, expected to deteriorate significantly, it is important to note that the capacity of households to absorb new debt is now more limited than in the past. The increased volatility of their net financial situation is also affecting expectations of future wealth. These factors may help to moderate the growth of credit in Spain.

likelihood, it will have risen to over 40% in the third quarter of the year.

At the end of 2001, Spanish households had converged to the EMU average in the main ratios of debt as a per-

[2] Maza, L.A. and Del Río, A, "Una estimación de la carga financiera de los hogares españoles", Boletín Económico (Mayo 2002), Banco de España.
[3] For an analysis of the impact of the stock market slump on households' financial wealth see Box "What is the Cost of the Stock Market Setback for Spanish Households?" in this issue of Situación Spain.

Table 5.2. Financial variables
(% y/y, unless otherwise indicated)

	2000*	2001*	jul.02	ago.02	sep.02	oct.02	Stock (Bn euros)
Sight and saving deposits	5.7	14.4	12.2	13.6	11.3	12.4	268
Term deposits	24.7	12.6	10.6	10.1	9.2	10.9	214
Net assets of investment funds	-11.2	-2.9	-2.6	-1.1	0.1	-0.8	171
Net assets of pension funds	19.8	15.8	—	—	8.58	–	43
Credit to private sector	17.3	11.7	13.3	14.3	12.9	14.1	691
Non performing loans ratio (credit institutions)	1.24	1.22	1.24	1.25	1.25	1.23	n.a.

* year-end
Sources: Bank of Spain and Inverco

How much has the stock market fall cost Spanish households?

In a similar fashion to what happened in other developed financial systems, the exposure of Spanish households to equities increased during the 1990s. The proportion of financial savings of Spanish households in stocks went from 15% in 1994 to 31% by the end of 2000 only to fall back to 24% in the middle of 2002. In this way, the financial wealth situation, and therefore the spending and savings decisions of households, have become more dependent on developments in the financial markets. This box attempts to quantify the latent losses in the equity portfolios of households as a result of the downward trend in stock market prices in the past two years, a trend that was particularly marked in the third quarter of 2002.

It should be pointed out that not all of the stocks held by households are listed on stock markets. In fact, the majority of shares in the portfolios of Spanish households comprise holdings in the capital of non-listed companies (63% of the equity portfolio at the end of June). Given that the valuation of such stocks is not directly affected by the volatility of stock market indexes, they have been left out of this analysis[1].

The exposure of households to the performance of share prices is not limited to direct holdings of listed stocks in the equity markets. In fact, the acquisition of holdings in equity investment funds has been another form of saving widely used to diversify risk and start a gradual internationalisation of financial saving. Thus, at the end of September, international equity funds represented 8% of total investment funds net asset value, compared with 6% for domestic equity funds. According to the Financial Accounts of the Bank of Spain, households hold approximately 78% of total investment fund net asset value. This is the percentage that will be used in this exercise to calculate the change in the financial wealth of households in this instrument based on information from the Spanish Association of Collective Investment Institutions and Pension Funds (Inverco).

Therefore, the exposure of households to the equity market can be defined as their direct holdings in listed shares plus the value of their investment in investment funds (FIM), which comprise national equity FIM, balanced-equity FIM, international equity FIM, and international balanced-equity FIM. Finally, quantifying the wealth cost of the fall in the stock market is not independent of the reference starting point taken for the analysis. In this exercise the end of 2000 has been chosen as the starting point. The reason is that in this year, as is known, the strong upward movement in share prices observed since 1997 came to a halt[2].

According to this definition, the direct exposure of Spanish households to the stock market accounted for 11% of their financial assets in the second quarter of 2002, against 14% at the end of 2000. Regarding the value of listed shares, we only have information available up to the second quarter of 2002, so a projection has been made for prices for the third quarter on the assumption portfolios developed in line with the capitalisation of the IBEX-35, that is, there are no net

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[1] In fact, the procedure the Bank of Spain uses in its Financial Accounts to value the non-listed shares issued by non-financial companies is based on discounted flows of estimated recurrent profits. This methodology is based on a fundamental valuation system, as opposed to listed shares, whose valuation is usually approximated by the evolution of the stock market capitalization or the benchmark equity index.

[2] The choice of this reference point implies a downwardly biased calculation, given that the highs of market indexes and the maximum balance of listed shares held by households took place in the second and third quarter of 2000, respectively.

Exposure of households to equities
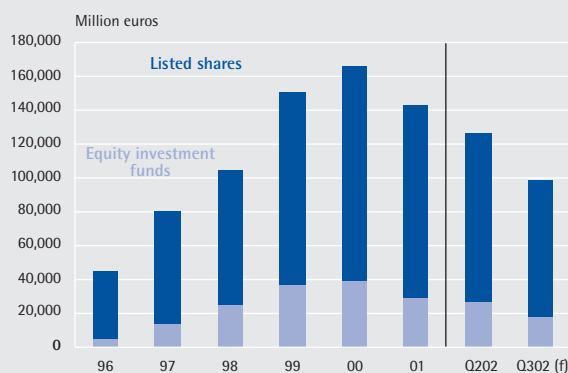
Sources: Bank of Spain, Inverco and BBVA

Breakdown of the financial wealth of Spanish households
Q2 2002
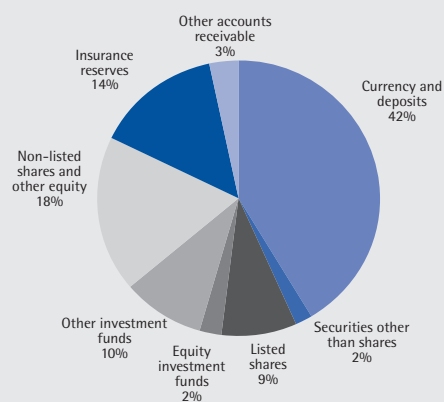
Source: Bank of Spain and BBVA

purchases or sales. The capitalisation of the main reference index in the Spanish stock market fell 19% in the third quarter, the period for which this calculation is being made. However, equity prices recovered part of the ground lost in October, during which capitalisation rose 13%.

On the basis of all these assumptions, the exposure of Spanish households to the stock market at the end of September was 98.8 billion euros. This figure represents a drop of 67.0 billion euros since the end of 2000, 45.8 billion of which is accounted for by direct holdings of listed shares and 21.2 in equity investment fund holdings. In this way, the exposure of Spanish households to equities has gone back to levels similar to those seen in 1998.

However, as has been pointed out, these estimates do not take into account the impact on portfolios of net purchases or sales carried out throughout this period. As a result, the calculations do not reflect only the loss of the value of investments. The exposure to equities may have fallen (increased) simply because households have divested (invested) in this type of financial asset. The result of this divestment may have been a capital gain or loss depending on when the investment was made[3]. For this reason, the study goes on to separate out the change that has taken place in the exposure of Spanish households to equities into a size effect and a price effect. In this way, taking the end of 2000 as the starting point, we have proceeded to calculate the direct cost of the fall in share prices on the exposure of households to this type of financial asset.

The direct impact of the evolution of the stock market on direct holdings of shares is obtained by subtracting net acquisitions of new shares from the change in the stock of holdings. Net acquisitions are based on the information of the Financial Accounts of the Bank of Spain. The calculation shows that the latent losses directly attributable to the fall in the stock market in the period that stretches from the end of 2000 to the third quarter of 2002 total 40.1 billion euros.

To calculate the size effect in equity investment funds, information from Inverco on net subscriptions for each category of fund has been used. In this case, the fall in the net asset value attributable to factors unrelated to investment or divestment decisions totals 17.2 billion euros. However, the liquid value of the funds includes the fees charged by fund managers, which means that this effect needs to be factored out to obtain a more precise measure of the impact of the fall in the stock market. Assuming that fees represent around 2% of the equity funds managed[4], the above figure would fall to 15.7 billion euros.

To sum up, adjusting for net sales and purchases, and fees in the case of investment funds, it can be concluded that the latent accumulated capital losses in the equity portfolios of Spanish households since the end of 2000 total 55.8 billion euros. This amounts to almost 5% of the financial wealth of households at the end of that year, 12.5% of gross disposable income, and 14% of the private consumption of Spanish households.

[3] It is very difficult to make an assessment of this aspect, as it would mean making assumptions regarding the period the investments were held and the stocks in which these investments were made.

[4] From June 2000, the maximum management fee of the FIM allowed by law was 2.25% of the value of the investment. The heterogeneity of the structure of commissions makes the analysis of this effect difficult. However, about 40% of the equity funds in 2001 bore management fees of 2% or more of the value of the investment. Also, some of the funds with lower commissions have higher subscription or withdrawal fees, so that 2% is considered a reasonable assumption.

Change in direct holdings of listed shares of Spanish households

Million euros
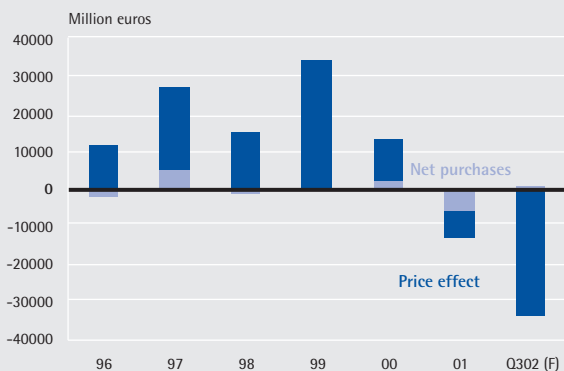
Sources: Bank of Spain and BBVA

Change in the stock of equity investment funds

Millions euros
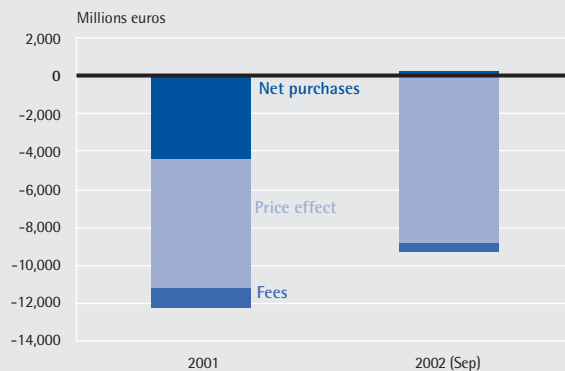
Sources: Inverco and BBVA

What is the probability of recession in the Spanish economy?

Manuel Balmaseda, Julián Cubero and Patrocinio Tello

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1. Introduction

The transitory nature of some of the factors that have contributed to drive growth over recent years (interest rate convergence with the core countries in the EMU and the "euro effect") and the uncertainty about the intensity and duration of the slowdown in the Spanish economy point to the possibility of the Spanish economy entering a recession in the not too distant.

Activity indicators (coincident and leading), which group together a broad set of variables that show a strong correlation with the business cycle, allow us to assess the cyclical position of the economy and its likely future path. Any signal from such indicators pointing to a significant weakening in activity should alert us to the danger of a recession. However, as recession predictors the signals from these indicators usually come too late, as they group together a large number of variables with different forecasting power. In addition, the recessionary signals emanating from the different variables could compensate one another, additionally reducing their forecasting power. The inclusion of a large number of variables poses another problem. They can be costly and slow to update, depending on the frequency with which the data are published.

An alternative approach is to estimate recession probabilities using individual data series. As they incorporate expectations about the future path of activity, the financial variables are, *a priori*, good candidates (better than real variables) as predictors of the onset of a recession at medium-term horizons (more than two quarters). In particular, 3-month interest rates, for time horizons between two and four quarters, and 10-year bond yields, for longer horizons, are the best indicators of the onset of a recession. On this basis, the probability estimated of an imminent recession is relatively low.

In this article, we select the variables that have most anticipated recessions in the Spanish economy and with the highest probability in the past. Then we estimate the probability these variables attach to the Spanish economy entering a recession in the imme-

diate future. To this end, the article is organised as follows. First of all, we define what is meant by recession and identify the recessionary periods that have gripped the Spanish economy in the past twenty years. Secondly, we construct an activity index for the Spanish economy, the IA-BBVA, based on a broad set of variables. Next, following Estrella and Mishkin (1995), we present the econometric model used to evaluate the recession forecasting power of the variables and discuss the results. In the following section we present a modified version of the Estrella and Mishkin model, in which the probability of a recession at any given moment is conditioned on the state of the economy at the time of forecasting. As potential predictors of the probability of a recession we use both the IA-BBVA index and other real and financial variables, among which the most noteworthy are interest rates and the slope of the yield curve. We then report the recession probability estimates for the selected indicators at each forecasting horizon. The final section concludes.

2. Definition of recession

In Spain no recession dating consensus exists and hence the onset and end of the recessionary periods have not been defined. In this paper, we define recession according to the evolution of gross domestic product (GDP), since this is the most representative activity indicator and therefore the benchmark reflecting both the productive capacity of the economy across all sectors and the aggregate demand of all of the economic agents.

There are several alternative definitions of "recession" based on GDP depending on the degree of rigour that is required. A negative "output gap" means that GDP is running below its long-term trend, so that positive rates of growth are compatible with recessions. On the other hand, a recession can also be defined as a negative rate of growth, that is, as a fall in the level of GDP. In terms of this second definition, an economy is normally considered to be in recession when its GDP registers negative growth for two consecutive quarters. This has been the case for the Spanish economy

Graph 1

GDP growth
% y/y

* Shaded area, BBVA's definition of recession
Source: INE and BBVA
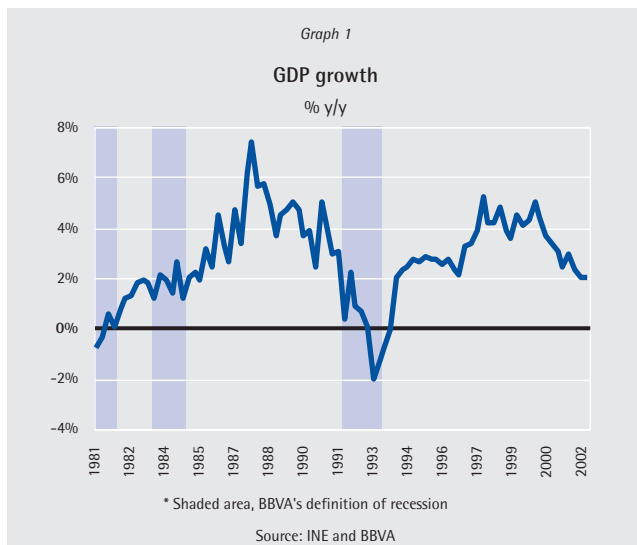
in 11% of the quarters since 1980. On the basis of this definition, data availability limitations would allow only two recessions to be identified in the Spanish economy since 1980. The first period running from the second quarter of 1980 to the first quarter of 1981 and another from the second quarter of 1992 to the first quarter of 1993.

To mitigate this data limitation problem, we shall consider that the economy is in recession if it experiences two consecutive quarters of annualised quarterly growth below 1% (0.25% quarter-on-quarter), or three non-consecutive quarters out of four. This takes in 22.5% of the available sample. This modified definition of recession yields for analysis 20 recessionary periods, compared with only 8 if a negative growth rate is the definition used. Graph 1 presents GDP growth and the recessionary periods experienced by the Spanish economy since 1980 on the basis of the definition used in this paper.

3. An activity index for the Spanish economy

Activity indices synthesise the information furnished by the various records or surveys available on spending, activity, prices and expectations. This "simplification" exploits the existence of a relatively stable relationship between the different economic variables. In particular, the economic magnitudes tend to move together, whether in a pro-cyclical or counter-cyclical fashion, making it possible to combine them into a single activity index.

We follow the methodology put forward by Stock and Watson (1999) to devise an activity index (IA-BBVA) based on factorial models. This indicator synthesises in

a single index the information contained in a large number of economic variables that are representative of activity, spending and expectations. The elaboration of the indicator involves the aggregation of the chosen set of series by applying a weighted average. The weight with which each series contributes to the IA-BBVA is estimated using principal components methods that allow us to capture the largest independent contribution (orthogonal) of the different indicators used. This corresponds to the extraction from the set of series used of common factors for all the series, the "state of the economy", obtained by weighting each series according to the percentage that it explains independently of the overall variability of all of the series.

• *Elaboration of the index*

The series have been chosen on the basis of availability, frequency (monthly) and sample length, which has to span at least the period of time for which the benchmark series (GDP) exists. This means that series must be available prior to the first quarter of 1980, the point in time after which Quarterly National Accounts data compiled using ESA-95 methodology become available[1].

On this basis, we use 21 series that are representative of activity, employment, spending and the expectations of the economic agents. The activity index constructed only includes real magnitudes. In principle, the financial variables could also contribute additional information to the "state of the economy". We have opted to leave them out of the index because one of the aims of the exercise is to test the recession forecasting power of the financial variables in contrast to activity indices. The inclusion of financial variables in our index would contaminate the results[2].

Prior to constructing the activity index, each of the original variables was deseasonalized. Then, the data series were transformed to make them stationary. In practice, this means that trending variables were measured as growth rates, whereas non-trending variables were not transformed. The resulting series were then de-meaned and standardised to have unit variance.

Finally, we elaborate the IA-BBVA index as the two first principal components of the 21 data series. To do so, they are aggregated using weights, corresponding to the first two autovectors (those with the greatest ex-

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[1] Thus, for instance, all of the qualitative series of the European Commission, which capture the sentiments of industrial companies, households and wholesalers/retailers, for Spain only go back as far as 1986.
[2] The financial variables do not seem to provide independent additional information to that contained in the real variables in the United States, so that excluding them should not have a significant influence on the IA-BBVA.

Graph 2

Growth and cyclical indicator

% y/y

Source: INE and BBVA
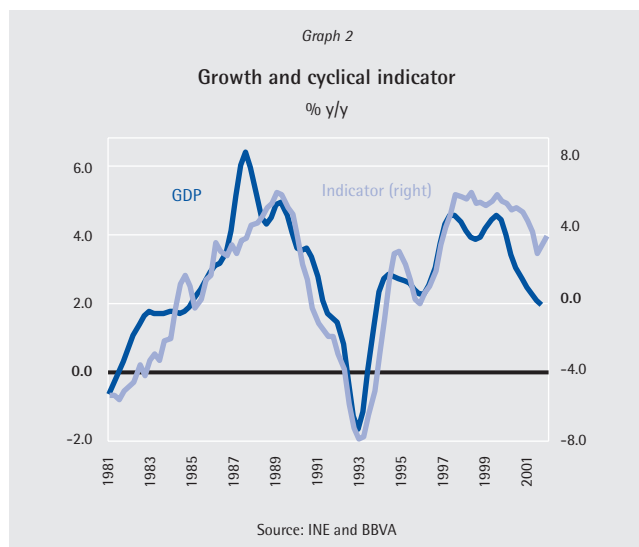
planatory power of the combined variation of all of the series), which are assumed to be representative of the situation of the "state of the economy". These components account for 41.6% of the combined variability of all of the series.

- *Properties of the activity index*

As we have noted, GDP is the benchmark signal for evaluating the reliability of the indicator. Graph 2 shows the degree of fit between GDP growth and the IA-BBVA.

Constructed in this way, the IA-BBVA index is coincident with GDP, both of them synthesising the information provided by a broader set of indicators. The contemporaneous correlation of the growth rate of the index with that of GDP, corrected for seasonality and the irregular component, is 0.80. Also, given that the IA-BBVA does not include any agricultural or public-sector activity indicators, the correlation with GDP excluding these activities is higher (0.83).

The strong contemporaneous cyclical correlation with GDP growth, the variable used as a benchmark to define the recessionary periods, suggests that the IA-BBVA index should be a good contemporaneous recession pre-

Table 1. Correlation of quarterly rates				
IA-BBVA and GDP (t+k)				
k=2	k=1	k=0	k=−1	k=−2
0.66	0.75	0.80	0.79	0.76
IA-BBVA and GDP non-farm and non-public (t+k)				
k=2	k=1	k=0	k=−1	k=−2
0.65	0.75	0.83	0.83	0.80

Source: BBVA

dictor when compared with the rest of the indicators considered, both real and financial. We will show this in the next section.

4. Recession prediction model

We follow the seminal paper of Estrella and Mishkin (1995) in using a probit model, a standard econometric model with a dummy dependent variable, to predict the probability of a recession. Using a set of variables, the probit model estimates the probability of predicting a recession k quarters hence. Broadly speaking, when this probability is above 50%, the risk of the economy going into recession is considered to be high, although this yardstick decreases as the forecasting horizon increases.

Let R_t be the dependent variable "recession" such that

$R_t = 1$ if the economy is in recession in period t, and

$R_t = 0$ otherwise

The probability of recession at time t, with a forecasting horizon of k periods, is given by the equation:

(1) $\quad Prob\ (R_t=1) = F\ (c_0 + c_1\ X_{t-k})$,

where $F(.)$ is the cumulative normal density function, and X is the set of explanatory variables used to predict the recession. The baseline model includes only a constant, c_0, with no additional explanatory variables ($c_1 = 0$), which implies a constant probability of the economy being in recession in any given period (16%). The constant probability model will be used to test the contribution of the various indicators to the forecasting power of the model. These indicators should show a higher probability when the economy is in recession and a lower probability when it is not.

As a measure of the goodness of fit of the model estimated, Estrella and Mishkin (1995) propose a *pseudo R^2*. The statistic is calculated as

$$pseudo\text{-}R^2 = 1 - (L_u / L_c)^{\wedge}\ (-2/n\ L_c).$$

where L_u is the log-likelihood of the model that includes the indicator, L_c is the log-likelihood of the nested model that only contains a constant, and n is the number of observations[3].

We estimate the model for different variables to see which of them is the most accurate and earliest predictor of a recession in the Spanish economy. The set of variables considered includes both real variables, which, in principle, show a strong correlation with the economic cycle, and financial series - proposed in a number

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[3] For more details see Estrella and Mishkin (1995).

of papers for the United States - which, by their nature, anticipate the future path of activity. Among the first, we have considered the IA-BBVA index estimated above, capacity utilisation, inflation (measured by the GDP deflator), industrial confidence, corporate bankruptcies and suspensions of payments, the real effective exchange rate (REER) and house prices. As regards the financial variables, we have used the 10-year bond rates, the market 3-month interbank rate, the slope of the yield curve, the Madrid stock market general index, a monetary aggregate (M3[4]), the non-performing loan to GDP ratio (NPL ratio), total financial system credit and its components, credit to households and companies and credit for house purchases. The slope of the yield curve as the spread between long-term Treasury bond interest rates and 1-year interbank rates since there is no interest rate series long enough for short-term public debt. Although the latter is higher than Treasury instruments for the same terms because of the increased credit risk of the debtors, they experienced a similar evolution over the period for which information is available[5].

After Spain entered the Economic and Monetary Union (EMU), short-term interest rates began to be determined by the economic conditions of the Euro area as a whole, rather than by the cyclical position of the Spanish economy. Similarly, the long-term interest rates of EMU countries only include a small differential with those of Germany, with no distinction being made amongst the economic prospects of each of the countries. Because of this, a good replacement for the slope of the yield curve would be the spread between State and corporate debt. This spread would tend to widen in response to expectations of a recession on concerns about companies' financial solvency. However, the lack of data precludes an evaluation of the predictive power of corporate spreads.

We also look at the leading activity indicator produced by the OECD for the Spanish economy. Since this variable leads the evolution of GDP, it should, in principle, be a powerful predictor of recessions.

Table 2 reports the *pseudo-R²* given by the estimation of the probit model at different forecasting time horizons - coincident, one quarter, two quarters, one year and one year and a half – for the indicators used[6].

Firstly it is worth stressing that, because it incorporates a large number of activity indicators, the IA-BBVA is a powerful predictor of recessions in the very short term, contemporaneously or one quarter ahead. Nonetheless, since it combines the information contained in a lot of variables, with diverse forecasting power as to the probability of a recession, there are frequently compensations amongst the signals given by the different indicators comprising it, thereby reducing the forecasting power of the aggregate indicator. Industrial confidence

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[4] The launch of EMU caused a break in the M3 series. In order to have a long enough series, we have reconstructed backwards the series published by the Bank of Spain, in accordance with the ECB's definition, on the basis of the old series augmented with FIAMM funds.

[5] The correlation coefficient since information became available (1987) between the spread on 10-year bonds and 1-year bills and that of 10-year bonds and 1-year interbank rates is 0.82%.

[6] The model was estimated using quarterly data for the period 1980-Q1/2002-Q2 (89 observations).

Table 2. Pseudo-R² of the Estrella and Mishkin model

	Forecasting horizon (quarters)				
	k=0	k=1	k=2	k=4	k=6
	Pseudo-R²	*Pseudo-R²*	*Pseudo-R²*	*Pseudo-R²*	*Pseudo-R²*
IA-BBVA	**0.2440**	**0.2160**	0.1747	0.1418	0.0983
OECD leading indicator	0.0250	0.0449	0.0323	0.0220	0.0561
Industrial confidence index	**0.3615**	**0.3108**	**0.2588**	0.1608	0.1147
GDP deflator	0.0459	0.0550	0.0716	0.0930	0.1134
House prices	0.1175	0.1021	0.0479	0.0058	0.0104
REER	0.0016	0.0009	0.0264	0.0253	0.0064
Real M3	0.0008	0.0046	0.0054	0.0000	0.0000
Bankruptcies and suspensions	**0.3657**	**0.3197**	**0.2606**	0.1325	0.0460
10-year interest rates	0.1565	0.1681	0.1545	0.1461	**0.1662**
3-month interest rates	0.1806	**0.2246**	**0.2282**	**0.2213**	0.1584
Slope of yield curve (10y–1y)	0.1469	0.1868	**0.2367**	**0.1803**	0.0720
Credit to households and companies	0.0466	0.1027	0.0560	0.0531	0.0423
NPL ratio	0.1123	0.0776	0.0450	0.0056	0.0061
Madrid stock market index	0.0008	0.0020	0.0105	0.0149	0.0385

Source: BBVA

and the number of bankruptcies and suspensions of payments, both components of the IA-BBVA, are better recession predictors on their own than the IA-BBVA elaborated[7].

The results obtained are broadly similar to those found by Estrella and Mishkin (1995) for the U.S. economy. The financial variables predict the onset of a recession at horizons over one quarter better than the real variables, with the exception of business confidence two quarters ahead. The slope of the yield curve and the 3-month interest rates are the best predictors at medium time horizons, between two and four quarters.

Short-term interest rates respond rapidly to monetary policy decisions. An interest rate hike by the monetary authority to restrain the economy will cause short-term rates to increase by a similar amount. This monetary restriction will lead to a reduction in the rate of growth of GDP, which, if significant, will result in a recession. On the other hand, a flattening of the yield curve can reflect increases in short-term interest rates, which weaken the momentum of activity in the medium term, or falls in long-term interest rates, anticipating a future deterioration in activity and falling short-term rates at some future stage. The size of this decline will depend on the intensity and duration of the slowdown expected by investors. Therefore, a significant and long-lasting flattening of the slope of the yield curve can be seen as signalling a recession threat.

Consequently, long-term interest rates reflect expectations of a recession earlier than short-term rates. It might therefore be expected that, as the forecasting horizon is lengthened, long-term interest rates should increase their recession forecasting power. This hypothesis is supported by our estimates. At a time horizon of one and a half years, 10-year interest rates make the largest contribution to forecasting the onset of a recession.

In contrast to what might be expected, but in line with the results found for the United States, the stock market is not a good predictive indicator for the onset of a recession. In the case of Spain, the reason for this result may be that the evolution of the stock market is dominated more by external factors (international equity prices, yields on alternative assets) than by factors in-

trinsic to the domestic market (corporate earnings, liquidity, privatisations, greater nominal economic stability) that are more related to the dynamism of the Spanish economy.

With regard to the real variables, in general their predictive ability is lower than that of the financial variables and, as might be expected, weakens significantly as forecasting horizons lengthen. Also, macroeconomic data are generally published with some time lag, which further affects their recession predictive power in real time. The exceptions among the real variables considered, as noted above, are the IA-BBVA, the industrial confidence index and bankruptcies and suspensions of payments, which, in addition to being the best short-term indicators, retain some predictive value at longer time horizons. In particular, industrial confidence, like the financial variables, has a strong expectations component, which explains its forecasting power over the medium term. A large number of bankruptcies and suspensions of payments is a clear sign of an economic crisis. Likewise, a rapid increase in them may be seen as a significant symptom of weakening activity, though the starting point in this case is fundamental.

For its part, the predictive power of inflation increases as forecasting horizons lengthens. This is consistent with the fact that, as economic theory predicts, high rates of inflation maintained for several periods tend to be costly in real terms. In fact, at the present time, the model using inflation as an indicator yields one of the highest probabilities of recession in the immediate future, though this probability is only 12%.

The leading activity indicator for Spain produced by the OECD stands out for its low predictive power, the result obtained being one of the worst amongst all the indicators considered.

To sum up, the estimates obtained using the probit model of Estrella and Mishkin (1995) suggest that the best recession predictors are:

- in the very short term, (up to one quarter), the IA-BBVA, business confidence and bankruptcies and suspensions of payments.

- up to a one-year, the slope of the yield curve and 3-month interbank interest rates.

- in the long term, interest rates on 10-year government debt

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[7] Capacity utilization has a similar forecasting horizon to that of the IA-BBVA, but the predictive ability of the latter is higher.

Amongst the indicators chosen, it is interesting to analyse the accuracy of the predictions obtained using the above models. That is to say, whether the percentage error rate is acceptable, error being understood as the model attributing a high probability to the onset of a recession, which did not occur, or attributing a high probability to the continuation of an expansion instead of which the economy entered a recession, over the forecasting horizon considered. According to the results obtained, in the medium term, the model estimated using short-term interest rates commits errors in 12% of the sample, while that estimated using the slope of the yield curve does so in 16%. This error rate is similar to that of the IA-BBVA at a one-quarter horizon (15% of the observations). In the long-term, 10-year interest rates commit errors in 17% of the sample, a similar percentage to the rest of the indicators.

Table 3. Errors committed by the Estrella and Mishkin model

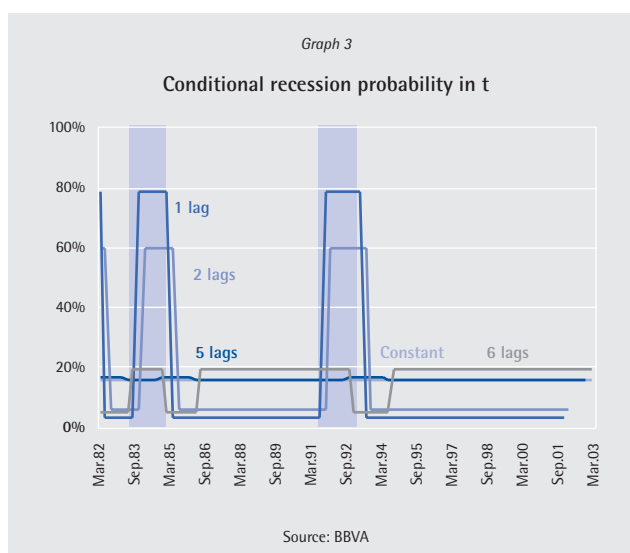|	Forecasting horizon (quarters)				
	k=0	k=1	k=2	k=4	k=6
Baseline	84	84	84	84	84
IA-BBVA	**87**	85	82	80	83
OECD leading indicator	84	84	84	84	84
Industrial confidence index	85	87	82	79	83
GDP deflator	83	83	83	82	82
House prices	87	87	85	84	84
REER	84	84	84	84	84
Real M3	84	84	84	84	84
Bankruptcies and suspensions	**87**	84	80	82	84
10-year interest rates	85	87	85	84	83
3-month interest rates	85	**88**	**88**	**87**	83
Slope of yield curve (10y–1y)	84	84	84	84	83
Credit to households and companies	84	85	84	84	84
NPL ratio	79	82	84	84	84
Madrid stock market index	84	84	84	84	83

Source: BBVA

5. Conditional recession model

The model proposed by Estrella and Mishkin enables us to estimate the unconditional probability, that is, independent of the state of the economy at the time of forecasting, of whether or not the economy is in a recession in a given period. Yet, this probability is not independent of the state of the economy at the time of forecasting. At short horizons, the probability that the economy will be in a recession in the immediate future – 1 or 2 quarters ahead – is greater if activity is in a contractionary phase. As the forecasting horizon is lengthened, the conditional probability falls, to the ex-

tent where it is possible that the probability of a recession in the medium term is greater if the economy is not contracting at the time of forecasting (see Graph 3), something consistent with the average duration of recessionary periods in the Spanish economy. In any case, the recession forecasting power is higher if conditioned on the state of the economy.

The widespread use of ARIMA models in macroeconomic forecasting confirms the role played by past changes in the dependent variable in the estimation of its future changes. In line with Dueker (1997), model (1) is modified to estimate the conditional probability, adding the state of the economy at the time of forecasting as an explanatory variable (R_{t-k}). This yields the modified Estrella and Mishkin model:

$$(2) \qquad Prob\ (R_t=1) = F\ (c_0 + c_1\ X_{t-k} + c_2\ R_{t-k})$$

The improvement resulting from the introduction of the lagged dependent variable shows up in the recession probabilities estimated without incorporating the indicators as explanatory variables, that is to say, evaluating the improvement from the introduction of the lagged variable relative to the model containing only a constant. As shown in Graph 3, the estimated recession probability rises when there is a recession and falls when there is no recession. This graph illustrates how the improvement from the introduction of the lagged state of the economy diminishes as forecasting horizons lengthen. At a one-quarter forecasting horizon the recession probability estimated when there is a recession reaches 80%, whereas this probability falls to 60% at two quarters and to 30% at one year. At the five-quarter horizon, the gain from introducing R_{t-k} practically

Graph 3

Conditional recession probability in t

Source: BBVA

Cuadro 4. Pseudo-R² of the modified Estrella and Mishkin model

Forecasting horizon (quarters)

	k=1	k=2
	Pseudo-R²	Pseudo-R²
IA–BBVA	0.0218	0.0332
OECD leading indicator	0.0267	0.0148
Industrial confidence index	0.0362	0.0698
GDP deflator	0.0046	0.0220
House prices	0.0089	0.0012
REER	0.0003	0.0362
Real M3	0.0270	0.0122
Bankruptcies and suspensions	0.0371	0.0686
10-year interest rates	0.0298	0.0497
3-month interest rates	**0.0681**	**0.1030**
Slope of yield curve (10y–1y)	**0.0528**	**0.1013**
Credit to households and companies	**0.0757**	0.0233
NPL ratio	0.0061	0.0060
Madrid stock market index	0.0001	0.0072

Source: BBVA

disappears, the probability is 17%, compared with a constant probability of 16%[8].

An alternative way to test the inclusion of the lagged dependent variable is to examine the estimated log-likelihoods. Given that the inclusion of R_{t-k} improves the model's fit, likelihoods should be higher than when estimated only with a constant, when it is –35.85. Moreover, likelihoods should increase as forecasting horizons get shorter, confirming that the predictive ability of the lagged variable declines at longer horizons. The gains at one and two quarters are significant, L_c increasing to –16.30 and –25.25, respectively. At longer horizons, four and five quarters in this case, the likelihood reaches –34.54 and –34.59, respectively, which represents very small gains with respect to the model without R_{t-k}. Its inclusion therefore leads to no significant improvement in predictive ability.

Model (2) is estimated for the same indicators as model (1) and for identical forecasting horizons. Table 4 reports the results obtained for all of the variables at short forecasting horizons of one and two quarters. As might be expected, the *pseudo-R²* values estimated are lower than those obtained using the unconditional model[9]. The reason for this is that in the augmented model the *pseudo R²* represents the improvement in forecasting power resulting from a more complete model which now includes the state of the economy in the forecasting period. In the unconditional model, model (1), the *pseudo R²* only shows the improvement in the estimation that results from the inclusion of the indicators chosen in a baseline model that contains only a constant.

As we noted above, the forecasting power of the dependent variable R_{t-k} decreases as forecasting horizons lengthen. Because of this, the *pseudo R²* of the augmented model for the financial variables (see Tables 2 and 4) decreases more significantly, with respect to the *pseudo R²* estimated using the Estrella and Mishkin model, in the short term than in the long term. This confirms that, in the short term, part of the information contained in interest rates is now also being provided by past changes in the dependent variable.

As Table 4 shows, including the state of the economy in the set of available information at the time of forecasting does not change the results obtained for the financial variables using the Estrella and Mishkin model. However, the IA–BBVA and its components, industrial confidence and bankruptcies and suspensions of payments, which previously dominated the short-term financial variables, no longer do so.

This may be due to that their predictive ability is attributable to their strong contemporaneous correlation with GDP growth and to this variable's strong autocorrelation. When the lagged state of the economy is included, the IA–BBVA, confidence and bankruptcies and suspensions of payments lose their influence. On the other hand, although the 3-month interest rates and the slope of the yield curve lose some forecasting power after the inclusion of R_{t-k}, they continue to show the largest gains. Similarly, the contribution of the credit variables to forecasting power also increases in the short term (one quarter).

Table 5. Pseudo-R² of the modified Estrella and Mishkin model

Forecasting horizon (quarters)

	k=4	k=6
	Pseudo-R²	Pseudo-R²
10-year interest rates	0.1164	**0.2654**
3-month interest rates	**0.1894**	0.2450
Slope of yield curve (10y–1y)	0.1481	0.1318
Credit to households and companies	0.0401	0.0576
NPL ratio	0.0012	0.0026
Madrid stock market index	0.0149	0.0415

Source: BBVA

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[8] The forecast probability of not being in a recession when there is no recession is 3% at one quarter, 6% at two quarters, 12% at one year and 16% at five quarters, the same as if we had assumed a constant probability.

[9] In contrast to the previous model, in the calculation of the *pseudo-R²* statistic, L_c is the logarithm of the model that contains the constant and R_{t-k}.

As forecasting horizons lengthen, 10-year Treasury bond rates become better predictors of whether or not the economy is going to be in a recession. This result is consistent with the additional information value as regards long-term economic expectations embodied by 10-year rates. Long term rates capture agents' perception of developments in activity, inflation, public accounts, etc, factors that will ultimately determine the state of the economy. In fact, as shown in Table 2 and 5, 10-year interest rates are the best predictor of the probability of a recession at a one and a half year horizon.

As will be clear from the above, the inclusion of the lagged state of the economy improves the ability of the model to predict its future state. As might be expected, the inclusion of past R_t as an explanatory variable reduces the forecasting error rate of the Estrella and Mishkin model, particularly in the very short term (between 4% and 6% at one quarter using the modified model, compared with between 12% and 18%). At a two-quarter horizon the error rates of the models range from the 15% of industrial confidence to the 11% of the OECD leading indicator, credit and the slope of the yield curve. In all cases, with the exception of 3-month interest rates, this represents a considerable improvement relative to the Estrella and Mishkin model. At the four-quarter forecasting horizon, the forecasting error rate of the financial variables is similar to that of the Estrella and Mishkin model, at around 15% in all of the cases. The most significant improvement at long horizons corresponds to 10-year interest rates, with prediction errors in 9% of the sample, compared with 17% in the Estrella and Mishkin model. These results identify this indicator as being particularly useful, because of both its long forecasting horizon and its fit and low error rate.

6. Estimated recession probability

Having determined which indicators are the best predictors of the state of the economy at different horizons, we examine the recession probabilities estimated by the models, which determines their goodness of fit, as well as the information contained in the indicators about the probability of the Spanish economy entering a recession in the coming quarters. Overall, the indicators show that this probability is very low, at worst 12%, and always under 5% according to the models with the best fit.
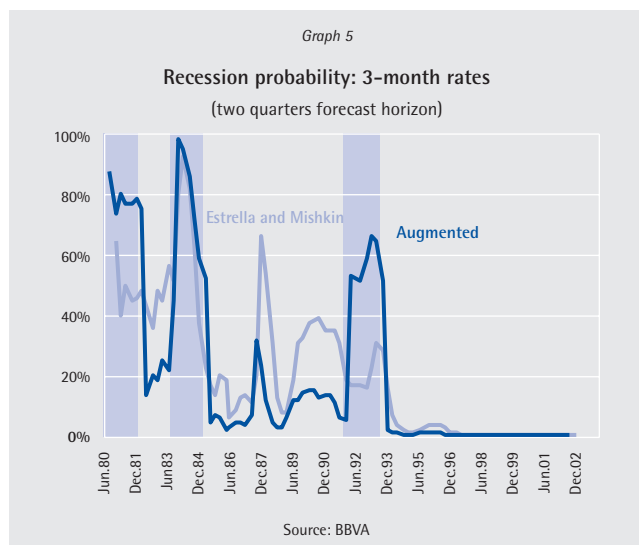
Graph 4

Recession probability: IA-BBVA
(one quarter forecast horizon)

Source: BBVA
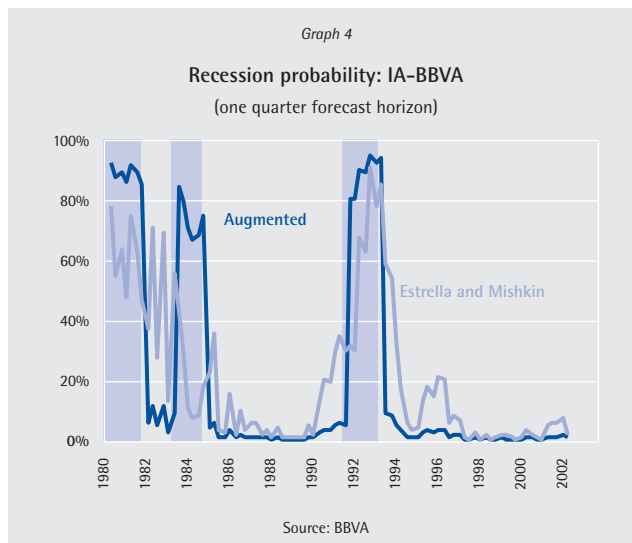
The indicators that show a higher *pseudo R^2* over the short term are the IA-BBVA and business confidence. Graph 4 shows the estimated probability of recession for these indicators both for the Estrella and Mishkin model and the augmented model with the lagged "recession" variable. As can be seen, the augmented model is a better predictor of the probability of recession than the Estrella and Mishkin model although it does so with a lag of one quarter[10]. However, due to its design, since it is not conditioned on the state of the economy, the Estrella and Mishkin model tends to give more volatile probabilities, so that a gradual increase in probability can be observed as the risk of a recession increases. Both models perfectly capture the recession of 1993, although the Estrella and Mishkin model shows how the probability of a recession started to increase at the start of the decade, even though it did not rise above 50% until 1993. At the current moment, both indicators show that the Spanish economy is not in recession and will not be in the next quarter. The probability assigned to this eventuality is about 2% (although in the first quarter of 2002 it reached almost 8%)[11].

At a longer forecasting horizon of two to four quarters, the financial variables, particularly 3-month interest rates, emerge as the most appropriate indicators for predicting the start of a recession in the Spanish economy. Over the period of one year the Estrella and Mishkin model and the model conditioned on the state of the economy show very similar results. This is due to the fact that the improvement resulting from the inclusion

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[10] The reason for this is that, as noted above, the impact of the state of the economy at the time of forecasting dominates the information provided by the indicator.
[11] This projection has just been confirmed by data published by INE showing that the Spanish economy grew by 0.8% in the third quarter.

Graph 5

Recession probability: 3-month rates

(two quarters forecast horizon)

Estrella and Mishkin

Augmented

Source: BBVA

Graph 6

Recession probability: 10-year rates

(six quarters forecast horizon)

Source: BBVA

of the lagged "recession" variable practically disappears over this time horizon. Over the period of two quarters, the augmented model fits better the observed probability. However, as noted previously, it minimises the additional information contained in the indicator. That is to say, it conceals false signals that could show periods of stress in the economy.

In particular, the model based on short-term interest rates[12] shows that during the period 1987-1988 the significant increase in interest rates (from 10.5% in December of 1985 to 18.3% in June of 1987) represented a heightened risk that the Spanish economy would go into a recession. Although activity underwent significant fluctuations, GDP growth was relatively strong during the period. Currently, the low levels of interest rates in place since Spain's entry into the European Monetary Union and their subsequent fall mean that this indicator shows a much reduced probability that the Spanish economy will go into recession in the next year.

Finally, at a horizon of a year and a half, the signals with regard to the state of the economy are reduced. 10-year bond interest rates constitute the indicator that offers the highest predictive ability. In any case, over such a long horizon, the signal captured rarely shows a probability of a recession of above 50%. And as such, the limits for determining a recession should be lowered. It can be observed that during the recession of 1993, the most severe the Spanish economy has experienced, the estimated probability of a recession six months beforehand was 49%. In any case, the estimated probability that the Spanish economy goes into recession at the end of the year 2003 is not significant.
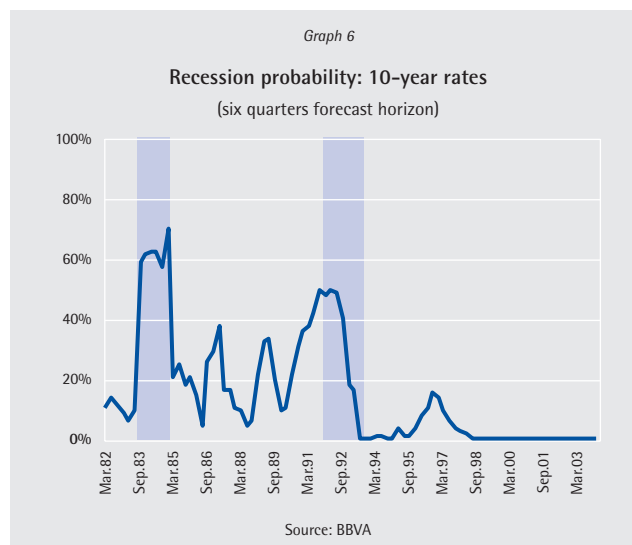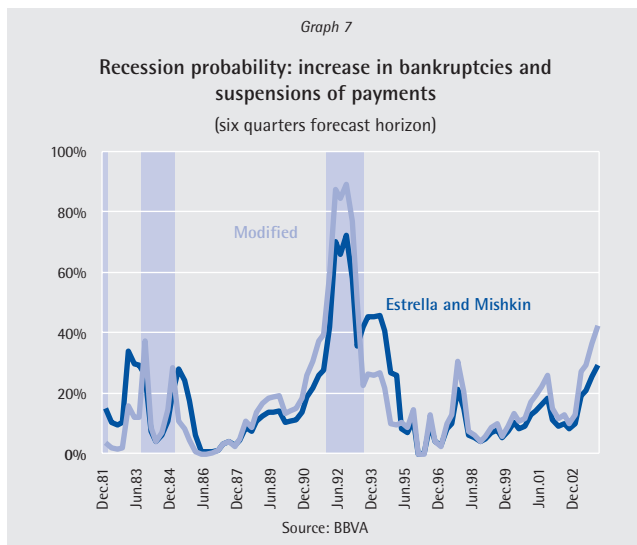
The lower estimated probability of a recession given by interest rates could be the outcome of two factors. On the one hand, since the start of EMU both, short and long-term interest rates, reflect the economic conditions of the Euro area as a whole, placing them at levels that could not be justified by the cyclical situation of the Spanish economy. That is to say, their forecasting ability has been reduced by the fact they are not adjusted to the developments in the economic prospects for Spain. This is particularly true for 3-month interest rates, which are tied to the official rates fixed by the European Central Bank for the Euro area. But this also affects 10-year interest rates, which currently show a small differential with rates in Germany. This development in interest rates started some quarters before the creation of EMU due to the outcome of the process of nominal convergence and as the markets anticipated monetary integration, resulting in the undermining of their predictive ability.

On the other hand, current interest rates, which are set on the basis of developments as a whole within EMU, are particularly lax for the Spanish economy, which gives rise to a lower probability of the Spanish economy going into recession.

The expansionary nature of current financial conditions has led to inflationary pressures in Spain, increasing the inflation differential with the Euro area and a the consequent deterioration of Spanish competitiveness, which eventually will result in a real adjustment in the economy given the impossibility of an exchange-rate adjustment. Within this context, inflation stands out as a good indicator of the probability of a recession over the long term (probably over a year and a half, which is the maximum period considered in this article). In the past, a significant pick-up in inflation would inevitably lead to

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[12] Since it includes short-term rates, the slope of the yield curve shows similar results.

Graph 7

Recession probability: increase in bankruptcies and suspensions of payments

(six quarters forecast horizon)

Source: BBVA

an interest rate hike by the monetary authority, which would in turn lead to an increase in short- and long-term interest rates. These are better predictors of a recession than inflation because of their immediate impact on activity. The absence of a direct response of interest rates to developments in Spanish economic activity within the framework of EMU means that inflation gains ground as a possible predictor of recession.

The decoupling of financial variables, which have best predicted the probability of a recession in the past, from developments in activity in Spain, suggests that models for estimating the probability of a recession using indicators initially rejected should be looked at. In this sense, independently of the forecasting horizon, the vast majority of indicators show probabilities of a recession at the most of around 16%, the unconditional recession probability (estimated without the contribution of indicators)[13].

The only indicator that shows a significant probability of recession is the increase in corporate bankruptcies and suspensions of payments, to stand at around 30% over a horizon of two to six quarters[14]. Although the appropriate indicator is the number of bankruptcies and suspensions of payments, the increase in this figure can predict the start of a crisis in that it indicates a change in trend. However, these results should be looked at with caution since, on the one hand, there is a lack of information on the creation of companies, which implies that the figures on bankruptcies and suspensions of payments are gross, not net. Thus, an economy with a high

level of flexibility would tend to have a high level of bankruptcies and suspensions of payments, but also a greater level of company creation. Nonetheless, the inherent rigidity in the Spanish economy as regards setting up companies means that the pace at which companies fall by the wayside remains quite a reliable indicator. Also, from an economic standpoint, it does not appear a sound argument that an increase in bankruptcies and suspensions of payments could predict a recession with a great deal of anticipation. What is more, given the rigidities of the Spanish economy, it would be expected that bankruptcies and suspensions of payments increase once the economy is already in recession, which would imply that this would be a lagging indicator, or at best a coincident one. Currently, it should be noted that the significant increase in the number of bankruptcies and suspensions of payments in the second quarter of the year took place from a relatively low base, reflecting the long period of expansion of the past few years and a subsequent slowdown.

Despite this, the model, although it does not capture the recession at the start of the 1980s, does clearly signal the one at the start of the 1990s. This recession was marked by an over-appreciation of the peseta and consequent erosion of the competitiveness of Spanish companies. Currently, although the loss of accumulated competitiveness is still below that of the previous period, the maintained inflation differential with our main trading partners in the absence of the possibility of exchange rate adjustment, will continue to undermine the competitive position of companies and lead to a real adjustment in the economy.

The models based on the increase in bankruptcies and suspensions of payments are those which commit fewer forecasting errors over the long term, matching the levels of accuracy of 3-month interest rates at a horizon of one year, 13%, and outperforming all indicators over a horizon of a year and a half, 11% against 16% for credit, with the Estrella and Mishkin model. At the same time, with the modified model, the degree of accuracy is also superior, matching that of 10-year interest rates over a horizon of six quarters, 9%, and outperforming the latter and 3-month interest rates at a horizon of one year, 13% against 15%.

7. Conclusions

In this article a series of variables, both real and financial, have been looked at with respect to their ability to predict economic recessions in Spain. The results obtained are in line with those found in other studies for

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[13] In the long term, the stock market shows a probability of around 25%, though its recession forecasting power is in reality very low.
[14] The maximum probability reached is above 40% one year and a half ahead using the augmented model.

the United States economy. In these, financial variables stand out as the best predictors, in particular as the forecasting horizon increase. Specifically, the slope of the yield curve is the best predictor of a recession at horizons over three quarters in the United States. In the case of Spain, it has also been confirmed that financial variables point out the possibility of the onset of a recession, defined as annualised quarterly growth rates of under 1% for two consecutive quarters or three quarters out of four, earlier than do macroeconomic variables. However, the slope of the yield curve, unlike in the United States, is only the best predictor, alongside 3-month interest rates, of a recession at short horizons of under a year. In the long term, more than a year, 10-year interest rates outperform the yield curve as predictors of the onset of recession.

Furthermore, given that financial variables are available daily and are not subject to subsequent revisions, their value as predictors of recessions and their role in complementing macroeconomic forecasting models is clear. In fact, the developments in financial variables in Spain assign a reduced probability to the start of a recession over a horizon of six quarters (below 12% in all cases, and rarely above 5%).

The differences with the United States and the lower probability that the economy will enter recession could be due in part to the structural change brought about by Spain's EMU membership, which has speeded up the convergence of short-term interest rates and reduced the risk premium implicit in long-term interest rates. The loss of independence in monetary policy, with greater repercussions as regards short-term interest rates, implies that the yield curve in Spain is significantly affected by the cyclical situation within EMU and

not by the Spanish economy. But despite this, the high cyclical correlation between Spain and the Euro area suggests that a recession in the Euro area would eventually spread to Spain. As such, the forecasting power of financial variables as leading indicators of recession in Spain remains intact.

In any case, the fact that financial variables are determined by activity in the Euro area as a whole and not by activity in Spain means that their value as predictors of a recession in the Spanish economy could be questioned. In this sense, the evolution of the rest of the indicators, with the exception of the increase in corporate bankruptcies and suspensions of payments, also does not lead to the conclusion of a high probability of recession over the coming quarters (below the unconditional probability). The highest probability (over 25%) is that estimated on the basis of the increase in bankruptcies and suspensions of payments, which would materialise in a horizon of two to six quarters.

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Spain: Main economic indicators

(% year-on-year change, unless otherwise stated)

	2001	2002 (1)	September	October	November	Latest figure	One year ago	Trend
Industrial production (seasonally-adjusted)	-1.4	-0.1	0.8	2.2		2.2	1.3	+
Business confidence index (net balance)	-5.4	-5.9	-5.5	-5.4	-5.1	-5.1	-9.0	+
CU (3)	79.2	77.4	78.4	80.3	80.3	80.3	78.3	+
Electricity consumption (4)	4.8	3.2	2.0	2.8	3.0	3.0	2.9	+
Cement consumption	9.7	4.5	7.6	4.1	-1.9	-1.9	7.9	-
Car registrations	3.2	-7.8	-4.1	-0.3	-8.7	-8.7	3.0	+
Consumer confidence index (2)	-4	-11	-11	-12	-12	-12	-7	+
CPI (overall)	3.6	3.5	3.5	4.0	3.9	3.9	2.7	=
Producer prices	1.7	0.6	1.1	1.6		1.6	-0.8	+
Wage agreements (5)	3.7	3.0	3.0	3.0		3.0	3.5	=
Money supply (households and NPISH)	6.8	9.2					3.6	=
Domestic private sector credit	13.3	13.1	12.9	14.1		14.1	12.3	-
Social security registrations	3.9	3.1	2.7	3.0	-3.1	-3.1	3.3	=
Registered unemployment (6)	-27.6	89.7	101.7	101.7	105.2	105.2	16.0	+
Unemployment rate (3)	10.5	11.3	11.4			11.4		=
Employment (qtr.) (3)(6)	335.5	330.6	285.3			285.3	378.0	=
Current account balance (7)	-16947.0	-10249.0	-2433.0			-2433.0	-1382.0	-
Trade balance (7)	-43018.8	-28623.8	-4313.8			-4313.8	-4032.2	-
State cash balance (7)	-2884.2	-332.0	-6606.7	86.0	-332.0	-332.0	-393.0	-

(1) Available to date. (2) Balance of replies (%). (3) Quarterly data for quarter ending in month specified. (4) Corrected for calendar effects and temperature. (5) Year-to-date. (6) Year-on-year in '000s. (7) Balance in millions of euros.

International situation: Forecast summary

	Real GDP (% average)				Inflation (% average)			
	2000	2001	2002	2003	2000	2001	2002	2003
US	3.8	0.3	2.3	2.5	3.4	2.8	1.6	2.1
EMU	3.5	1.4	0.8	1.7	2.3	2.5	2.3	2.2
Germany	3.1	0.7	0.4	1.2	1.9	2.5	1.4	1.2
France	4.2	1.8	1.0	2.0	1.7	1.6	1.9	1.8
Spain	4.1	2.7	1.9	2.5	3.4	3.6	3.5	3.2
Italy	2.9	1.8	0.4	1.6	2.6	2.8	2.6	2.6
United Kingdom[1]	3.1	2.1	1.5	2.4	2.1	2.1	2.2	2.5
Japan	2.4	-0.8	-0.2	0.6	-0.8	-0.7	-0.9	-0.3
Asian Countries[2]	7.5	5.3	6.3	6.2	1.9	1.9	1.0	2.4
Latin America[3]	4.1	0.4	-0.5	2.0	8.0	6.4	9.0	10.8

	Fiscal balance (% of GDP)				Current account balance (% of GDP)			
	2000	2001	2002	2003	2000	2001	2002	2003
US	2.4	1.3	-1.5	-2.0	-4.2	-3.9	-4.8	-4.0
EMU[4]	-1.0	-1.5	-2.3	-2.2	-0.9	0.0	0.5	0.2
United Kingdom	4.1	0.9	-1.2	-1.4	-1.9	-1.8	-1.8	-1.5
Japan	-9.5	-8.0	-8.6	-9.0	2.5	2.2	3.2	2.6
Latin America	-2.6	-2.9	-2.4	-2.0	-2.3	-2.5	-1.0	-0.6

[1] R-PIX Inflation.
[2] South Korea, China, Philippines, Hong-Kong, Indonesia, Malasya, Thailand, Singapor and Taiwan.
[3] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.
[4] Public sector, excluding revenues from UMTS.

	Official interest rate (%)				Interest rate 10 years			
	Dec-02	Mar-03	Jun-03	Dec-03	Dec-02	Mar-03	Jun-03	Dec-03
US	1.25	1.25	1.25	1.75	4.05	4.30	4.60	4.90
EMU[5]	2.75	2.75	2.75	3.00	4.40	4.45	4.75	4.90
United Kingdom	4.00	4.00	4.00	4.50	4.55	4.55	4.85	5.00
Japan	0.10	0.10	0.10	0.25	0.98	1.20	1.30	1.40

[5] EMU's 10 year bond rates correspond to Germany's.

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