

# Situación Spain

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February 2001

- Growth: goodbye 3%
- Inflation: towards 3%
- Zero deficit: “you are the 1”
- What is the potential output of the Spanish economy?



Closing date: 23 February, 2001

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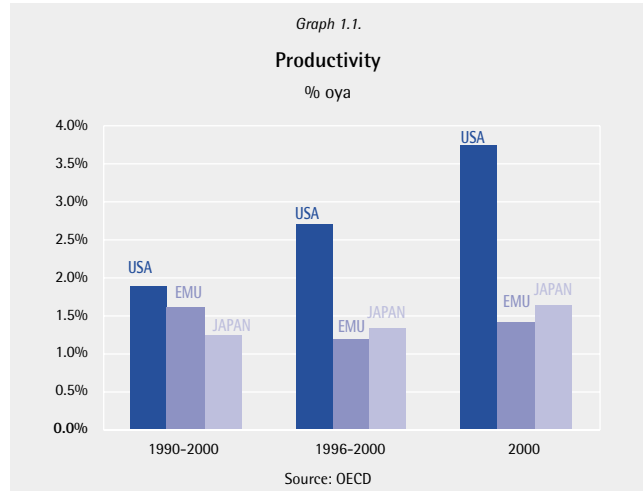
# 1. International environment

## Different shocks: different room for manoeuvre

The key change in the international environment in the latter part of 2000 and early 2001 has been the signs of deceleration in the U.S. economy. Contrary to expectations, oil does not seem to have been the main catalyst of this loss of momentum in activity. The dominant factor has thus not been a supply shock, common to all the industrial economies but with asymmetrical effects as occurs in an oil shock, but rather a demand shock, specific to the United States and linked to a marked tightening in financial conditions. This, coupled with the low cyclical correlation between Europe and the United States, and the modest degree of openness of both areas to trade, leaves the Economic and Monetary Union (EMU) immersed in its own problems. While the EMU would seem to have avoided any build-up in demand disturbances in recent months, it has barely advanced in the resolution of its supply problems. As a result, activity in the euro area is likely to slow gradually to the rate of growth of potential output. In Japan, the major supply problems that have built up over the past decade will be hard to remedy in a context of slow progress in restructuring of both financial and non-financial firms.

The three major world economies are thus faced with different problems. An indication of this is the widely differing behaviour of productivity, as approximated by the difference between the growth rate of activity and that of employment. In effect, productivity in the United States grew by 3.7% on average in 2000, a rate of advance double the growth rate of this variable in EMU and Japan, where it only reached 1.4% and 1.6%, respectively. Besides, the latter economy has been destroying employment since 1998. In the second half of the 1990s, productivity growth in the United States was 2.7%, compared with only 1.2% in EMU and 1.3% in Japan.

The fact that the major economies are faced with different shocks has significant implications for the effectiveness of demand policies. This will be greatest in the United States, very limited in EMU and practically zero in Japan. In addition to the varying effectiveness of demand policies, the room for manoeuvre of demand policies also differs widely in the three economies. It is high in the United States, where the degree of monetary restriction accumulated in the past few years provides substantial leeway for the Federal Reserve. And the Fed has already begun to use this leeway, lowering the funds rate by 100 basis points in January of this year. A change of this magnitude in the space of one month had not been seen since 1984.



The Fed will now probably wait before moving interest rates again, and, given the favourable response of the financial markets to the movements already made, it is reasonable to assume that a quarter of a point will be enough to complete the current easing cycle. With regard to fiscal policy, a projected structural surplus in the United States of 2.0% in 2001 means that the reduction in taxes expected in the first half of the year is more likely to be judged to be permanent. Conversely, the cuts in direct taxes implemented in the leading European countries will deliver no such stimulus. This is because the starting point is a structural deficit of 1%, and so they are unlikely to be seen as long-lasting. In addition, with several countries due to hold elections in the coming months, they may be linked to the political cycle.

In Japan, the scope for fiscal policy action is even more limited. With a budget deficit including the social security surplus already running at 7% of GDP, it is impossible to continue to apply the expansionary fiscal policy of recent years, which has resulted in a depreciation of the yen. As regards monetary policy, in an effort to inject liquidity into the economy, discount interest rates have been cut from 0.5% to 0.35%. Yet the effectiveness of this measure may be limited in a context of weak financial institutions.

Growth in the OECD countries overall is expected to drop back to 2.5% in 2001, after a 4.2% pace of advance last year. World growth in 2001 is therefore projected to slow by one percentage point, to 3.6%.

### A V-shaped recovery in the United States

The diagnosis of a demand shock in the U.S. economy, coupled with the productivity gains seen in recent years and aggressive Federal Reserve action, should make room for a V-shaped recovery in the United States. Indeed, the

Fed easing has already prompted a turning point in the financial indicators, which is where the first "V" should become visible. From there, it will pass into expectations – the second "V" – and finally into real indicators, the economy's third and final "V". In this context, the second half of the year could be better than the first, heralding an upturn in U.S. activity, from 2.5% in 2001, to 3.5% in 2002. Accordingly, despite the ailing Japanese economy and the slow, but steady, weakening in activity in Europe, GDP growth in the OECD countries is projected to rise by almost 0.5 of a point in 2002, to stand at 2.9%, while world growth is expected to return to rates around 4.0%.

Latin America will probably grow at similar rates to those of last year, though growth should be more even across countries. The negative impact of trade contagion from the U.S. slowdown will be easily offset by the positive financial effect.

### Europe carries on at its own pace

One of the dominant issues in the current economic situation has been the possibility that the U.S. slowdown could have a significant negative impact on other economies. In this respect, various factors must be borne in mind. First of all, the deceleration in the United States can be attributed to a specific demand shock. Secondly, the transmission channels of the situation in the U.S. economy are very diverse and, specifically in the case of Europe, of limited magnitude.

In effect, the real correlation between both economies is small. A deceleration in activity of two percentage points in the United States translates into an impact of barely 0.3 points in Europe, and this shows up after a lag of four quarters. It is not easy to argue, therefore, that the expected growth slowdown in Europe in 2001 is linked to the deceleration in the United States, and still less, using the reverse argument, predict an acceleration in activity in 2002.

Table 1.1. Growth forecasts

	1999	2000	2001	2002
OECD	3.4	4.2	2.5	2.9
US	4.2	5.0	2.5	3.5
EMU	2.5	3.4	2.5	2.2
UK	2.3	3.0	2.3	2.2
Japan	0.8	1.5	1.2	1.5
Developing countries	3.4	5.2	5.2	5.5
Latin America	0.0	4.2	3.9	4.3
Transition countries	2.4	4.8	4.1	3.9
World	3.4	4.6	3.6	4.0

Sources: IMF and BBVA

The European economy shows significant rigidities in its goods and factor markets. The end of wage moderation and the measures to cut indirect taxes in response to increases in the price of oil in 2000 – which prolong their negative effects – are not positive developments. As a result, following exceptional growth in 2000, the EMU economy is expected to slow by around one percentage point in 2001, to 2.5%, and then fall back further to 2.2% in 2002: that is, to near the growth rate of potential output.

Even though inflation is expected to ease back gradually, to below the ECB's 2% ceiling by year-end, the lingering uncertainties about the European economy (wage developments, the behaviour of the euro) provide little room for a lowering of interest rates. These will likely see a downward adjustment of only 25 basis points, to 4.5%, probably in the second quarter of 2001. Nonetheless, the combined effect of a euro exchange rate holding up around 0.90 to the dollar, and the expected decline in oil prices, should allow inflation to end the year below this level.

### The euro: with a ceiling, but no floor

The evolution of the productivity differential between the United States and EMU has been one of the key factors underlying the behaviour of the European currency. It has brought about a decline in the long-run value of the euro – obtained by adjusting purchasing power parity for this productivity differential – so that it now stands at around parity. Moreover, with a gradual slowing in activity in EMU and a V-shaped recovery in the United States, the correction of the cumulative productivity differential between the United States and EMU will be relatively modest in scale and confined to the first half of 2001. That is, EMU will at most succeed in reducing the productivity and growth differentials accumulated with the United States since 1995 for only a few months, which leaves little room for euro appreciation in the short term. Consequently, though transitory rises in the euro's exchange rate are not ruled out, it is expected to return to around 0.90 to the dollar by year-end.

Table 1.2. Inflation forecasts

	1999	2000	2001	2002
OECD	1,4	2,2	2,1	1,8
US	2,2	3,4	2,8	2,4
EMU	1,1	2,3	2,1	1,7
UK	2,3	2,1	2,2	2,4
Japan	-0,3	-0,6	-0,1	0,0
Developing countries	6,9	6,3	5,1	4,7
Latin America	9,3	7,7	6,2	5,4
Transition countries	41,8	18,3	12,4	11,2
World	5,5	4,6	3,8	3,4

Sources: IMF and BBVA

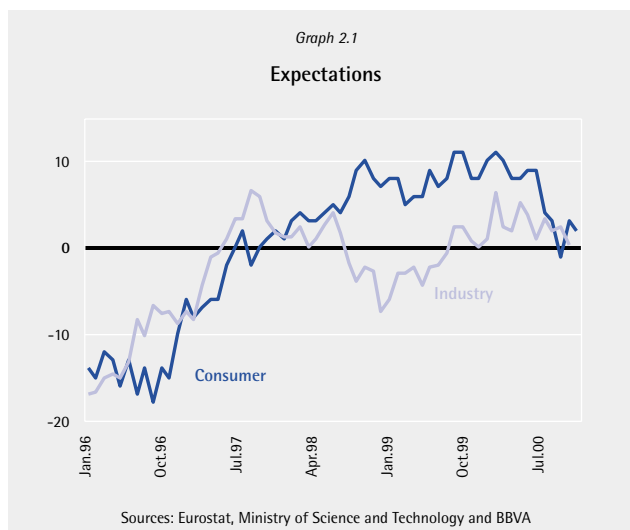
## 2. The real economy

### Towards potential output growth

The Spanish economy grew at an average annual rate of 4.1% between 1998 and 2000, that is, 1.5 percentage points above the growth rate of potential output. This exceptional performance has been reflected in a widening of the growth differential with EMU as a whole, from 1.0% in 1996, to 1.4% per year on average in the period 1997-2000. It has also shown up in the form of significant increases in employment, though there has been a worsening in inflation and a widening of the external imbalance. The inflation differential for tradeable goods between Spain and the euro area as a whole increased from 0.2 percentage points in 1997 to 1.2 points in 2000. Over the same period, the non-energy trade deficit rose from the equivalent of 1.7% of GDP to 4.3%.

Following an increase in GDP of over 4% in the first half of 2000, last summer saw the start of a phase of deceleration, reflected in smaller rises in household consumption expenditure and capital goods investment. The fall-off in domestic consumption is being partially offset by an improving external sector as a consequence of both buoyant exports and slower growth in imports.

The deceleration in Spain's economy is the result of the unwinding of a number of factors, both domestic and external, that have been driving the expansion. Chief among the former are the decline in interest rates and the depreciation in the real effective exchange rate as a consequence of expectations of entry into EMU, the wage



moderation prevailing to a greater or lesser degree since 1997 and, finally, the fiscal stimulus to household consumption associated with the reduction in personal income tax. Among the external factors that have fuelled growth are commodity prices, with negative annual rates of growth between early 1998 and the third quarter of 1999, and record growth in world trade.

In 2000, the growth differential between Spain and EMU as a whole fell to 0.7 of a point as a result of a loss of momentum in the domestic factors driving Spain's economy, since overall growth in EMU was 3.4%, almost one percentage point higher than in 1999. In addition to the gradual unwinding of these factors, there has been a further deterioration arising from the sustained increases registered by energy prices. These have diminished household and corporate disposable income, pushed up

Table 2.1

Trend-cycle data Annual rates	1999				2000				2001				Annual average	
	1Q99	2Q99	3Q99	4Q99	1Q00	2Q00	3Q00	4Q00	1Q01	2Q01	3Q01	4Q01	2000	2001
Household final consumption (1)	4.3	4.6	4.9	5.1	5.0	4.5	3.7	2.8	2.7	2.8	3.0	3.1	4.0	2.9
Public final consumption	3.3	3.1	2.8	2.5	2.4	2.5	2.8	2.9	2.9	2.9	2.9	2.9	2.6	2.9
Gross fixed capital formation	10.6	9.2	8.2	7.7	7.3	6.6	5.3	4.4	3.1	2.4	2.1	1.6	5.9	2.3
Capital goods and other products	9.7	8.4	8.3	8.7	8.3	6.6	4.0	2.5	1.5	1.0	0.5	-1.0	5.3	0.5
Construction	11.3	10.0	8.2	6.8	6.5	6.6	6.4	6.0	4.5	3.7	3.6	3.9	6.4	3.9
Inventories (*)	0.2	0.2	0.2	0.1	-0.1	-0.2	-0.2	0.1	0.0	0.0	0.0	0.0	-0.1	0.0
<b>Domestic demand (*)</b>	<b>5.7</b>	<b>5.6</b>	<b>5.5</b>	<b>5.4</b>	<b>5.1</b>	<b>4.5</b>	<b>3.8</b>	<b>3.3</b>	<b>2.8</b>	<b>2.7</b>	<b>2.8</b>	<b>2.7</b>	<b>4.1</b>	<b>2.7</b>
Exports	4.4	5.6	7.3	9.1	10.6	11.0	11.0	10.4	9.6	8.6	8.0	7.0	10.8	8.3
Imports	10.9	11.3	12.2	13.0	12.9	11.4	9.5	8.2	7.6	7.2	8.3	7.7	10.4	7.7
<b>Net exports (*)</b>	<b>-1.8</b>	<b>-1.6</b>	<b>-1.4</b>	<b>-1.2</b>	<b>-0.8</b>	<b>-0.3</b>	<b>0.2</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>-0.2</b>	<b>-0.3</b>	<b>-0.1</b>	<b>0.0</b>
GDP at market prices	3.9	3.9	4.0	4.2	4.2	4.2	4.1	3.8	3.3	3.1	2.6	2.4	4.1	2.8
Agriculture and fishing	-4.0	-3.8	-2.7	-1.6	-0.3	1.3	2.4	2.5	1.5	-0.3	-1.9	-2.4	1.5	-0.8
Industry (2)	2.6	2.5	3.0	3.9	4.8	5.3	5.3	4.9	4.3	3.8	3.6	3.6	5.1	3.8
Construction	10.6	9.6	7.9	6.7	6.4	6.6	6.3	6.0	4.8	3.9	3.1	1.7	6.3	3.4
Services sector	3.8	4.0	4.0	4.0	3.8	3.7	3.6	3.5	3.3	2.7	2.4	2.1	3.6	2.6
Market services	4.4	4.6	4.6	4.5	4.2	4.0	3.9	3.8	3.6	2.9	2.6	2.3	4.0	2.9
Non-market services	1.9	1.9	2.0	2.1	2.3	2.5	2.6	2.6	2.2	1.8	1.6	1.4	2.5	1.8
Net tax on products	7.1	7.0	7.2	7.2	6.2	4.7	2.8	1.6	1.7	2.1	3.0	3.4	3.8	2.5

(\*) Contribution to GDP growth; (1) Includes NPISH

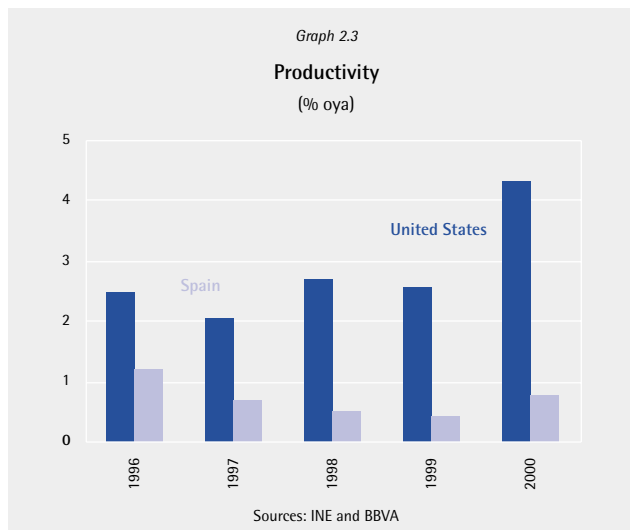
(2) Includes energy

Sources: INE and BBVA

inflation and brought about a deterioration in the expectations of the economic agents. Added to all this is a weakening in wage moderation as the increases in energy prices have passed through (to date only partially) into collectively bargained wages.

All these factors, both on the supply and demand side, that have sustained high growth rates in the past, are transitory in nature, and have no permanent effect on output. An increase in the potential output of the economy will require the application of structural reforms and greater flexibility in product and factor markets in order to clear the way for a significant rise in productivity. Productivity growth in Spain's economy is lower than in the European Union as a whole and the United States. During the years 1996-2000, average productivity growth in Spain was 0.7%, 0.4 percentage points less than in EMU as a whole and 2.1 points less than in the United States.

In this regard, the most significant reforms have been those carried out in the labour market (the latest in 1994 and 1997). Chief among the successive legislative changes are a new type of permanent contract with lower redundancy payments for certain groups of workers, and the extension of the aspects covered by collective bargaining, limiting the "ultra-activity" of wage settlements. These reforms were of limited scope, and renewed impetus is required to progress with the elimination of the segmentation in the labour market between permanent and temporary employees. In this regard, the employment-promoting permanent contract, which is set to expire in May 2001, was only a first step, since its application was restricted to certain groups of workers. As regards the different types of contract, a reform of the current part-time permanent contract, which is too rigid in all aspects relating to the distribution of working time, would also be a positive development. It is also essential to examine the structure of collective wage bargaining, avoiding a "cascade"

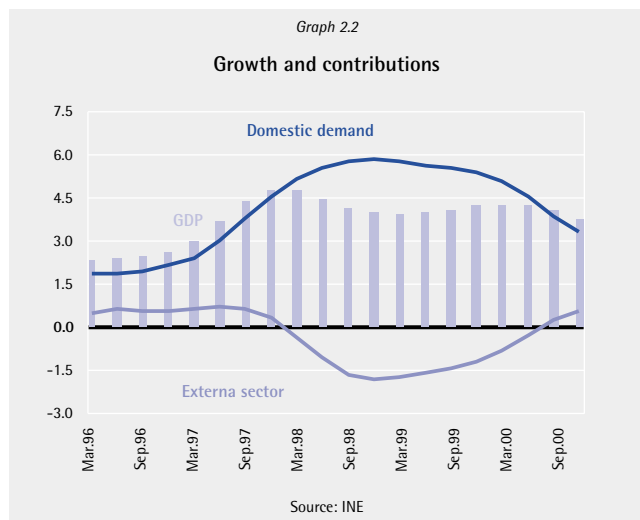


settlement scheme, which reduces the importance of firm-level circumstances in determining the cost of labour, distancing it from productivity developments.

### More balanced growth in 2001

GDP growth in Spain's economy is expected to come in at 2.8% in 2001, a figure very close to the average growth rate of the past 30 years (3.0%) and near the rate of growth of potential output (2.6%). As a result, the surplus demand that is present will be practically cancelled out, thereby helping to ease price tensions and narrow the steadily-increasing external deficit. The rate of growth of employment is expected to slow, however, from 4.8% to 2.4%. And the unemployment rate will continue to fall as a result of a smaller increase in the labour force.

Real wages, measured as the increase in collective agreements (including the effect of inflation-adjustment clauses) less inflation, rose by 0.2% in 2000, below the average annual rise observed in the period 1997-1999<sup>1</sup>. In 2001, growth in real wages is not projected to exceed 0.5%-0.6%, which implies a partial pass-through to wages of the increases in inflation caused by higher energy prices.



<sup>1</sup> If real wages are measured as the difference between compensation per employee (National Accounts) and the household consumption expenditure deflator, a similar result is obtained.

Table 2.2: Improving imbalances

	2000	2001 (f)
Inflation (December)	4.0%	2.8%
External sector (*)	-0.1%	0.0%
Trade balance (% GDP)	-7.1%	-7.0%
Non-energy (% GDP)	-4.5%	-4.2%
Current account (% GDP)	-3.2%	-3.0%
Unemployment rate (% labour force)	14.1%	13.2%
Public debt (% GDP)	61.1%	58.9%

(\*) Contribution to GDP growth  
Source: INE, Finance Ministry, Customs and BBVA

### Sagging household consumption

Household final consumption spending in 2001 is expected to remain on the downward trend initiated in the middle of last year. After posting an average increase of 4.0% in 2000, growth will probably slow to 2.9%, the lowest increase of the last four years (in 1996 it rose by 2.2%), but closer to a sustainable level of growth. In the period since 1995, the increase in real financial wealth and the decline in real interest rates have enabled household consumption growth to outstrip the rate of increase of real disposable income. This, in turn, has meant that households' net financial saving has fallen to record lows (0.3% of GDP in the four quarters between Q399 and Q300, almost one percentage point less than in all of 1999).

In 2001, consumption growth will not be driven by either real interest rates or financial wealth, which will see weaker growth than in 2000. In addition, household disposable income is expected to slow further as a consequence of both weaker job creation and the unwinding of the effects of the personal income tax reform.

### The enigma of investment

Within the overall picture of slowing activity, developments in capital goods investment are subject to greater uncertainty than those of consumption, given the divergence shown by a number of indicators. Thus, while industrial production of capital goods accelerated in the final quarter of 2000 on the back of strong foreign sales, imports of these goods have been slowing, and posted contractions in November and December. Expectations are also bright, as reflected in ever-increasing rates of capacity utilization and strengthening order books in the latter part of 2000. All this stands in marked contrast to the deceleration in capital investment shown by Quarterly

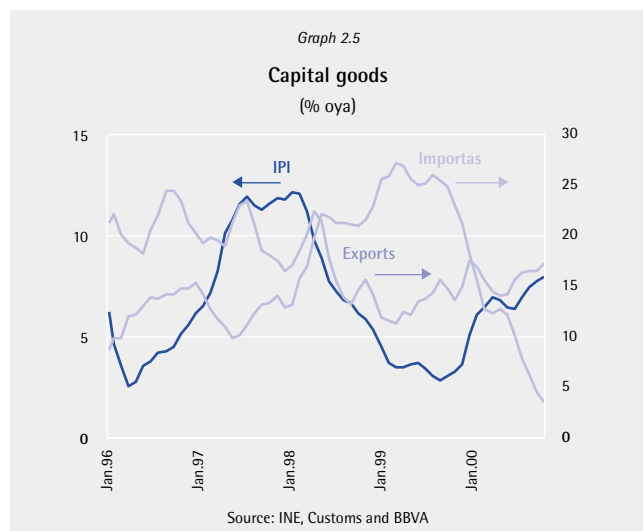
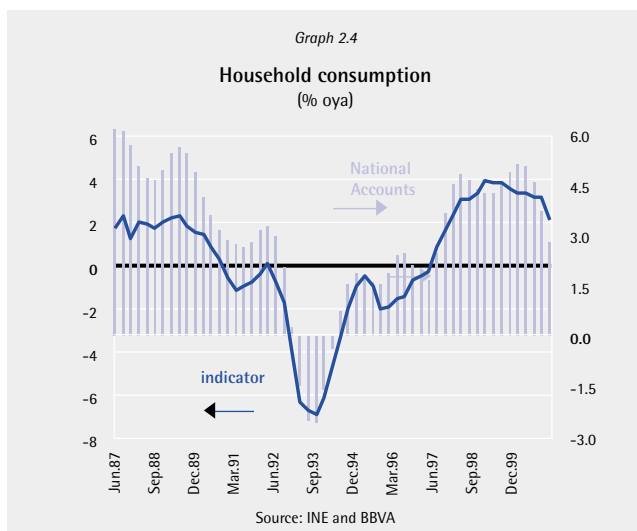
National Accounts data and the outlook for activity in Spain's main trading partners. In addition, the rapid increase in the level of indebtedness of non-financial firms means that investment plans are more vulnerable to the worsening demand outlook.

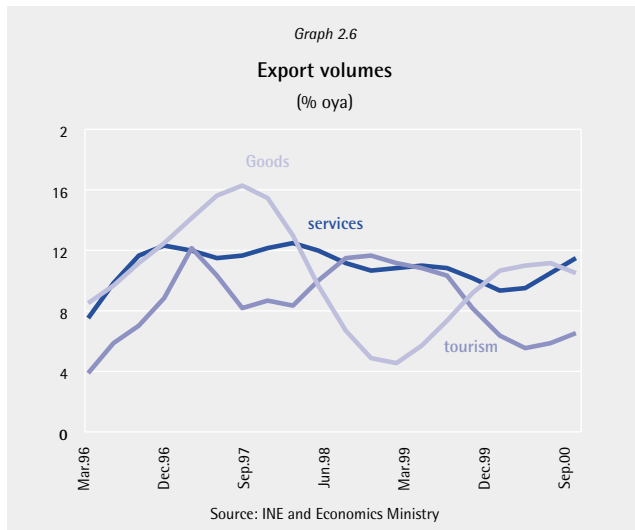
When examining the slowdown in domestic investment, it is important to bear in mind the considerable overseas investment push made by the Spanish economy (5.9% of GDP in 1999, rising to 8.6% between January and November of last year). Investments today will translate into future net inward income flows, and serve to contribute towards an increase in Spain's national income.

Investment in construction grew by 6.4% in 2000, down 2.6 percentage points from the previous year. Compared with previous cycles, the weakening in construction is proving to be less pronounced. The fall-off in growth in the sector is helping to ease cost tensions, however, and will have beneficial effects in the medium and long term. In 2001, average growth in construction is projected at 3.9%, a weaker performance in the first half of the year being followed by some improvement in the second half. The loss of momentum in residential building, which is expected to post slower growth than construction overall, will be partially offset by an increase in civil engineering works. The execution of the latter will depend to some extent on the public-sector revenue performance.

### A less-negative external sector

There was an external sector drag on growth of 0.1 percentage points in 2000, 1.4 points less than in 1999. This improvement reflects the combined effect of sustained increases in goods exports and a deceleration in goods and services imports. This behaviour is basically the result of a virtual doubling in world trade in 2000 compared





with 1999. In addition, the euro depreciated vis-à-vis the dollar by 14%, improving the competitiveness of Spanish exports relative to non-EMU countries and masking the problem of Spain's steady loss of competitiveness relative to the euro area countries as a whole. This will become visible in 2001, however, in so far as the euro checks its depreciation.

In contrast to goods exports, services exports were not slowing at the end of 2000 as a result of the contribution of tourism services. Despite this, the contribution of tourism to GDP growth fell from the 0.5-percentage-point yearly contribution seen in the period 1997-1999 to only 0.3 points in 2000. For 2001, a further fall is expected due to the weaker outlook in Spain's major tourism markets.

In 2001, growth in exports of goods and services is projected to slow by 2.5 percentage points, to 8.3%, as a consequence of weaker growth in world trade and a loss of competitiveness in the Spanish economy due to the continuing inflation differential with EMU countries and the stability of the euro/dollar exchange rate.

Imports will slow in line with weaker growth in activity, especially in investment and private consumption. Imports of goods and services are therefore projected to grow by 7.7% in 2001, a 3.4-percentage-point decline from the previous year.

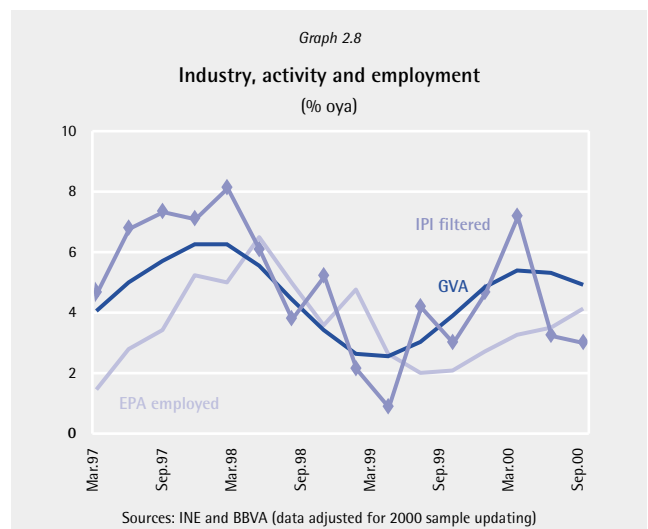
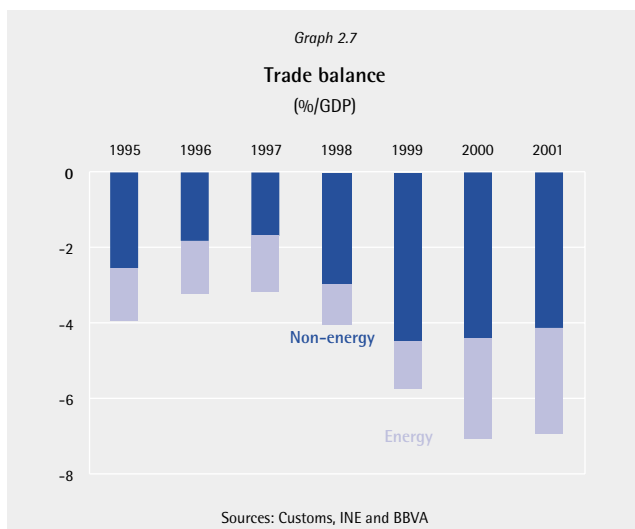
### Growth in employment is slowing steadily

The EPA labour force survey recorded in Q400 the first fall in employment since the final quarter of 1994<sup>2</sup>. This result is to a large extent attributable to a decline in employment in the services sector, which accounts for more than 60% of EPA employment. Within this sector, there were falls in all market-oriented activities, except for transportation and communications. This performance is consistent with the slowdown in the retail sales index, and lower vehicle registrations and hotel occupancy rates.

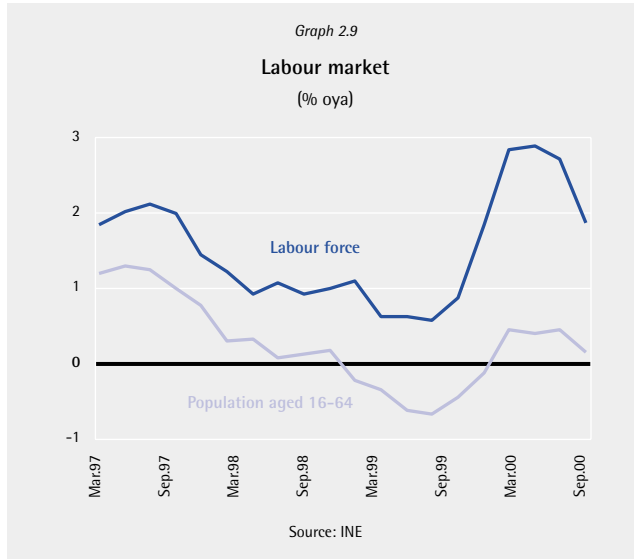
In the industrial sector, however, there was an acceleration in employment growth in all the main categories of output (except for falls in electricity and gas), which contrasts with the slowdown in activity in the sector, as reflected in both gross value added and industrial production. In addition, according to the IPI, oil refining and production of transportation equipment and machinery are the only activities whose growth rates are holding up.

The labour force fell by 0.2% in the final quarter of 2000, the first such decline since early 1999. The population older than 16 is growing more and more slowly, though rates of growth are very stable: 0.4% year-on-year in 2000, 0.1 points down from the previous year, and 0.2 points below the rate of growth in 1998. Consequently, the decline in the labour force in Q400 was the result of a combination of slower growth in the population aged 16-64 (the

<sup>2</sup> This analysis is still valid even after correcting for increases in the survey's employment levels stemming from the improvements made to the survey: census change in 1995-96, questionnaire renewal in 1999 and sample update in 2000.







potentially active population, which also has a greater variance than the over-16 population) and something of a "reluctance" to join the labour force in view of the weaker outlook for economic growth.

In sum, the factors contributing to the significant increase in employment in Spain (robust economic growth and the

positive impact of shallow legislative reforms in the labour market) continue to weaken. The unemployment rate is expected to fall further, however, as the increase in the labour force in 2001 will be lower than that in employment. Entry and exit flows to activity will continue to be propitious to a reduction in the unemployment rate, but there will be little improvement in the rate of employment in Spain's economy.

The EPA survey is expected to show employment growth of 2.4% in 2001. Growth in the labour force is projected at 1.3% - despite the anticipated stagnation of the population aged 16-64 - owing to lower numbers of workers dropping out of the labour force from early retirements and the greater relative number of young people entering the market. As a result of these developments, the unemployment rate is projected to end the year at 13.2%, 0.9 percentage points below year-earlier levels.

In National Accounts terms, employment is expected to grow by 1.8%, which would give an increase in productivity of 1.0% in 2001, 0.2 points up on the previous year. Using the EPA data, the increase in productivity would be 0.4%, 0.5 points higher than in 2000.

### Income from foreign direct investment and GDP

The Spanish economy has over the past few years become one of the leading international investors. In particular, Spain is now the biggest investor in Latin America not only in relation to its GDP, but also in terms of absolute values. This investment process will in the future give rise to a revenue stream from the income accruing to Spanish firms abroad, which, though not reflected in Spain's gross domestic product (GDP), will nonetheless translate into an increase in gross national product (GNP) and hence in the income of domestic residents. GDP measures the sum of value added generated in the domestic economy over a specified time period. GNP, for its part, corresponds to the value added by domestically-owned factors of production over the same period. Hence, GNP is equal to GDP plus net payments to the factors of production effected by the rest of the world.

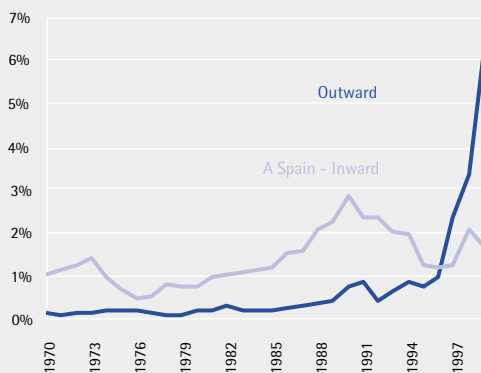
Spain has traditionally been a net recipient of foreign direct investment. Consequently, the income paid out to overseas investors exceeds that received by the domestic economy, which means that GDP is around 1%-1.5% higher than GNP<sup>1</sup>. This does not imply that there has not been a significant increase in income from overseas. In fact, income generated abroad amounted to 2.7% of GDP in 1998<sup>2</sup>, compared with only 1.3% in 1986. But this increase was offset by the rise in income paid out to the rest of the world, from 2.2% to 4.3% over the same period. The recent overseas investment drive of the Spanish economy will result in the growth rate of inflows of income exceeding that of outflows, leading to a net positive income flow at some future stage. Over the past four years, the Spanish economy has gone from being a net recipient of investment (-0.3% of GDP in 1996), to become a net exporter of capital (4.5% of GDP in 1999). If the rate of net investment seen in the past three years is sustained - outflows amounting to 3.9% of Spain's GDP and inflows of 1.6% of GDP from the rest of the world (in the first eleven months of 2000, Spanish outward investment rose to 8.6% of GDP and inward investment was 4.2%) - the capital invested overseas by Spain in the period since 1970 will exceed foreign inward investment within 8 years. As a result, it seems reasonable to assume that the income from overseas will at that point exceed payments to the rest of the world. Thus, for example, the significant investment process undertaken by the United States up to the 1950s allowed net income obtained from abroad to increase from 0.47% of GDP at the end of the Second World War to 1.3% of GDP at the end of the 1970s.

When assessing the future welfare gains for individuals deriving from economic growth, it should therefore be borne in mind that, thanks to the considerable overseas investment effort of Spanish firms, the increase in the economy's income will be higher than that indicated by GDP growth. The higher the growth rate of GNP, the greater this additional cushion will be. In addition, the diversification of the sources of income, as income received from abroad increases, will mean that the volatility of individuals' income will diminish, smoothing the cyclical component associated with the evolution of GDP.

<sup>1</sup> Depending on whether it is estimated using ESA 95 or ESA 79.

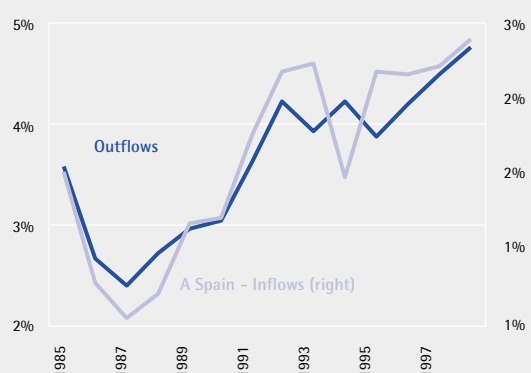
<sup>2</sup> ESA 79 data are used so that the evolution of income can be analysed. After 1998, ESA 95 data are used.

Foreign direct investment (% of GDP)



Source: Bank of Spain

Rest-of-world income (% of GDP)



Source: INE

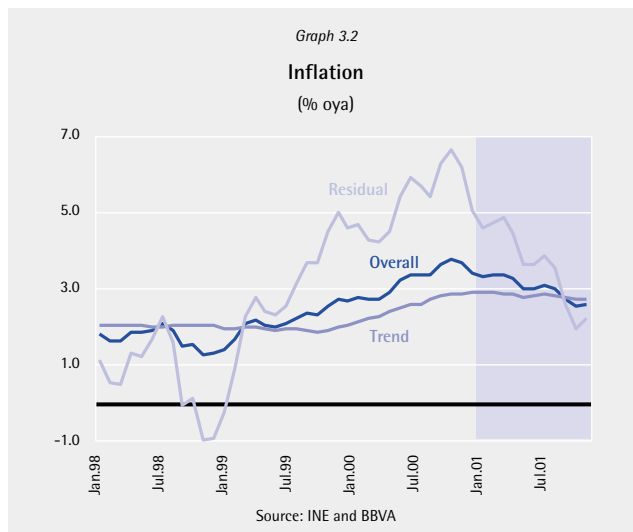
### 3. Prices and wages

#### Lower surplus pressure, lower inflation

The annual rate of increase in CPI inflation closed the year 2000 at 4.0%, the highest rate since December 1995 (except for November's 4.1% reading). BBVA Trend CPI<sup>1</sup> inflation ended 2000 at an annual rate of 3.1%, one percentage point up from December of the previous year.

The rebound in prices from late-1998 onwards is the result of various factors<sup>2</sup>. The first of these is persisting surplus demand, which accounts for one percentage point of the 2.1-point acceleration in prices between the final quarter of 1998 and the third quarter of 2000. Another 0.8 points is the result of an increase in imported inflation associated with rising dollar prices for commodities in general, and for crude oil in particular. The depreciation of the euro exchange rate accounts for a further 0.5 points, while the inertia of the process seems to have subtracted 0.2 percentage points, leaving the total increase at the 2.1 percentage points already mentioned.

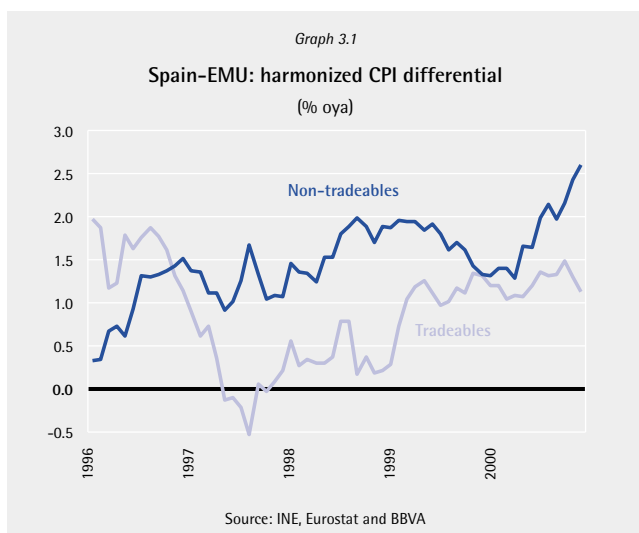
The rate of increase of Spanish inflation has been higher than that registered in EMU as a whole, giving an average differential in 2000 of 1.3 percentage points. This differential rose steadily throughout 2000 for non-tradeable goods (services), from 1.3% in January, to 2.6% in December. But in 2000 the differential also widened for non-energy industrial goods, leading to a situation of double inflation, which if sustained over time will bring about a further deterioration in the Spanish economy's competitiveness versus EMU as a whole. In addition, if the scenario projected for the euro's exchange rate in 2001 materialises, this would be the first year in which the gain in competitiveness of EMU versus the rest of



the world would fail to mask the steady loss in competitiveness of Spain against EMU as a whole.

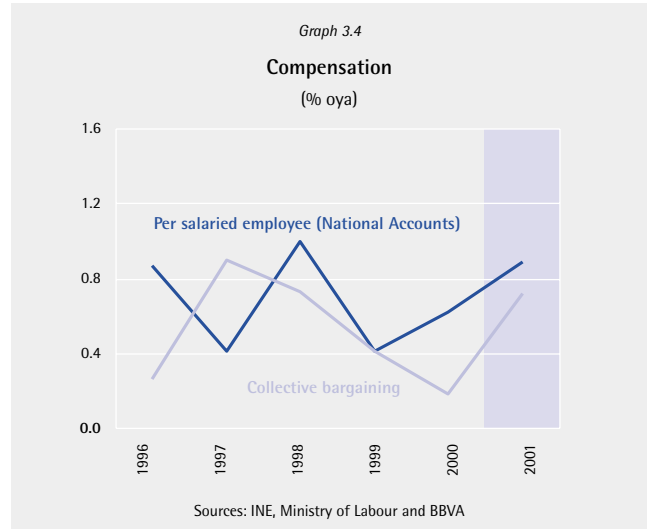
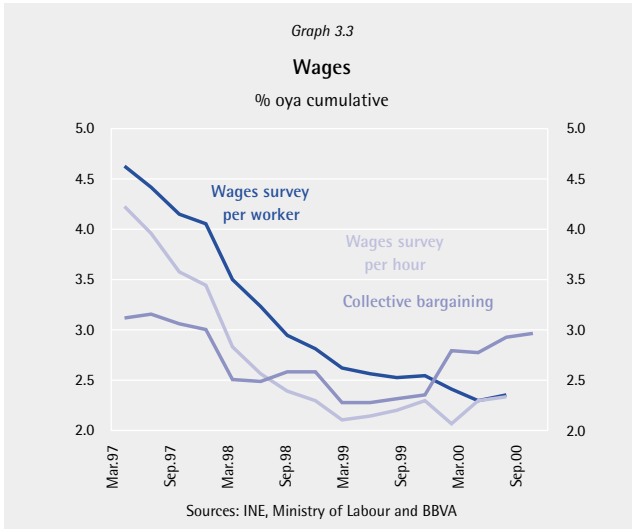
Forecasts of inflation developments in the course of 2001 must be consistent with international energy price developments, the euro's exchange rate and the greater or lesser demand pressure on capacity, as well as the behaviour of wages and margins. Three of these elements are expected to record a more favourable performance in 2001 than the year before. The euro is likely to have the same average annual exchange rate as in 2000, when it lost 14% of its value against the dollar. With regard to energy prices, the price of Brent crude oil is expected to fall back gradually from current levels (US\$28 a barrel in February) to US\$24 a barrel by year-end. Finally, the deceleration taking place in the Spanish economy since mid-2000 will contribute to stave off any increase in price tensions, especially in the services sector. Overall, CPI inflation is expected to close the year 2001 at 2.8%, with an average annual rate of 3.3%.

More stable indices such as IPSEBENE or BBVA Trend CPI will probably register slight increases from current levels and then begin to slow from the middle of the year onwards. Improvements in these indices are much smaller when the energy component is stripped out, and a greater weight is given to the effects of price tensions still existing in pre-consumption stages of the productive process. Thus, for instance, producer prices of non-food consumer goods accelerated by 0.5 points between June and December of last year, from 1.4%, to 1.9%, an upward



<sup>1</sup> A measure of underlying inflation in the economy after stripping out the more erratic (energy, non-processed food, tobacco, olive oil, tourism services) and regulated components (university education, post and communication).

<sup>2</sup> See Box "Determinants of Spanish inflation: the role of demand pressures", Situación Spain, October 2000.



movement that could still show up in the CPI of non-energy industrial goods over the next three or four months.

A further source of uncertainty in the short term that must not be overlooked is the variations in relative prices caused by the mad cow crisis. While not affecting the price scenario expected in the medium term, they do imply an upside risk to price developments expected in the short term. In addition, the re-weighting undertaken by the INE in the large national groups of the CPI basket (see Box in this chapter) adds a number of additional uncertainties to the modelling of forecasts.

**Greater wage pressure? – in part**

Of the factors cited above, the greatest uncertainty surrounds the behaviour of wages. It is essential that the economic agents do not attempt to factor into their incomes increases in prices that are, in part at least, the result of transitory rises in energy prices.

The wage settlements negotiated in 2000 show an average cumulative rise in wages of 2.97%, 0.6 points more than in 1999, and a rise of 0.9 points when inflation-adjustment clauses are included for both periods. These clauses have gradually acquired more importance in collective wage bargaining, given that inflation targets were again missed in 2000. Thus, while approximately half of workers had such clauses in 1998, this proportion rose in 2000 to affect almost 75% of workers with collective wage agreements (that is, approximately 60% of salaried-employee Social Security registrations). The impact of this wage indexation to inflation is dampened, however, because only 40% of workers with inflation-adjustment clauses have a guarantee covering all of the loss of purchasing power registered.

As regards real compensation, the outlook for 2001 is for an acceleration in real wage costs to around 0.9%, a faster rate than the one registered in 1999 and 2000.

### Changes in the CPI weights

The present Consumer Price Index in Spain includes the prices of a basket of goods and services elaborated on the basis of the Household Spending Survey of 1991-92 (HSS 91-92), a study of the structure of household spending. In the intervening period, however, the products available, their quality, and consumers' tastes and purchasing power have changed, so that the spending structure based on the HSS 91-92 no longer corresponds to reality, neither in terms of products consumed nor their relative importance. Starting in 1997, the INE (National Statistics Institute) has been producing the Continuous Household Spending Survey, which examines the CPI basket every quarter. This information makes it possible to adjust the relative importance of the groups of goods and services used to calculate the CPI, and to include new products in the index, making it more representative. This work, which began in 2000 and is continuing in 2001, is part of the harmonization process for consumer price indices in the European Union as a whole.

The final outcome will be the elaboration of a new CPI that is intended to be more flexible and representative of the consumption decisions of the economic agents. However, the drawback will be a break in the time homogeneity of the available data series, requiring the use of linking coefficients for the construction of historical series.

The process will take place in two stages. In the first, which was already applied in the January 2001 index, only the weights of the large national groups have been updated, and there is also a greater disaggregation (from 8 to 12 groups). These new weights applied automatically to the CPI groups (base year = 92) in 2000 would have increased inflation that year from 3.4% to 3.6%. In 1998 and 1999, the effect would also have been an increase in inflation, though in this case only one tenth of a point.

In addition, in this first stage, products whose prices are incorporated in a centralised fashion are weighted by expenditure rather than by the number of units consumed, as had been the case until now for telephone rates. This is a highly significant change in this component of the index, since it will increase the effect of price changes on the CPI. The change in the weight of this heading (from 1.4% to 2.5%) would by itself have doubled its contribution to inflation in 2000: from -0.1 points to 0.2 points.

The second stage of the implementation process for the new system of consumer price indices will involve a complete revision of the process of construction of the CPI, finalising in the creation of a new index (base year = 2001), which will begin to be published in January 2002. The most significant elements of this new index will be:

- The weight of the different components of the CPI will be more dynamic, and will be updated every two years or less, permitting a more rapid revision of the products that constitute the CPI basket.
- A complete re-basing will be carried out every five years, involving a sample revision and the incorporation of methodological improvements.
- Prices will be corrected for improvements in the quality of products, eliminating from the price index the variation attributable to changes in the utility of the good or service. Within this type of adjustment, the hedonic regressions method will be employed for certain groups of products such as household appliances. A priori, the component most affected by this type of adjustment will be non-energy industrial goods CPI, that is, one third of the CPI.
- Sales prices will be included, which will lead to an increase in seasonal fluctuations in the series in certain months (January and July).

#### Weights of special groups (%)

Weights of each component (%)	CPI-92	CPI-92 Jan-01	Difference (pp)
Processed food	17.48	15.79	-1.69
Fresh food	11.88	8.93	-2.95
Industrial goods	40.00	41.24	1.24
Energy	7.12	8.87	1.75
Fuel	4.02	4.91	0.89
Total services	30.64	34.04	3.40
Ex-rent	29.39	31.92	2.54
Tourism services	0.69	1.02	0.33
Post and communication	1.44	2.54	1.09

Sources: INE and BBVA

Annual average growth in 2000 (%)	With old weights	CPI-92 With new weights	Difference (pp)
Total	3.43	3.61	0.18
Energy	13.34	13.22	-0.12
Fresh food	4.18	4.19	0.02
IPSEBENE	2.50	2.60	0.10
Services	3.75	3.57	-0.18
Ind. goods (ex-energy)	2.07	2.23	0.15
Processed food	0.89	1.13	0.24

Sources: INE and BBVA

Fuels: taxation and price level

The retail price of fuels essentially depends on three factors: the price of oil, the exchange rate with the dollar and taxation on oil and gas. Although the importance of the first two is beyond doubt, their level is determined in the respective international markets, and so we will focus our attention on taxation, where indirect taxes are seen to play a key role in Europe. Value added tax (VAT) and the special tax on oil and gas are the most representative types of tax.

In formal terms, the retail price of these products,  $P_{vp}$ , can be written as,

$$P_{vp} = (P_p + t_e)(1 + t_v)$$

where  $P_p$  is the pre-tax production price,  $t_e$  is the specific special tax rate, IE (in monetary units per litre), and  $t_v$  is the corresponding VAT rate.

The reform of indirect taxation in Europe has been governed by the extraordinary advance of the process of economic integration observed over the past few decades. The signing of the Treaty of Rome in 1957, and its primary goal of creating a Common Market, and the subsequent movement towards a single market after the Single Market Act in 1987, made it essential to eliminate, or at least reduce, the distortions deriving from radically different tax systems, and particularly from indirect taxation.

The special tax on oil and gas is one of the most representative indirect taxes, both in terms of revenue collected and its social and political implications. The table below shows the high share of this tax, together with VAT, in the retail price of unleaded petrol in the European Union (between 50% and 80%) and in Spain (60%). However, these international comparisons need to be adjusted for purchasing power parity, and, in this case, Spain's relative position is worse.

In the period since 1986, the legal rate of special taxes on fuels in Spain has increased by 145% in the case of petrol and 308% in the case of diesel. This has clearly been the determining factor in the setting of price levels for these products.

In addition, it should be recalled that the Spanish fuels market was only completely liberalised at the end of 1998. Prices were regulated up to the middle of 1990, when a timid liberalisation process got under way in the petrol sector. From July 1990 onwards, the maximum prices of fuels were set every two weeks depending on the international price of the respective products and the behaviour of the exchange rate versus the dollar. The total liberalisation of the price of diesel, both for vehicles and heating oil, took place in June 1996, and that of petrol in October 1998. The structure of the oil products market in Spain is marked by a three-company oligopoly, one of which has a dominant position in the market. As a result of this situation, competitive strategies to win market share through prices were formerly unworkable, and so changes in VAT and special taxes were fully passed through into final prices.

An analysis of the fuel price series in the absence of the tax reforms undertaken between 1983 and 2000 in VAT and the special tax turns up a spectacular result: fuels could have a similar price today as in the period 1983-1985 if there had been no change in taxation (see graph below)<sup>1</sup>.

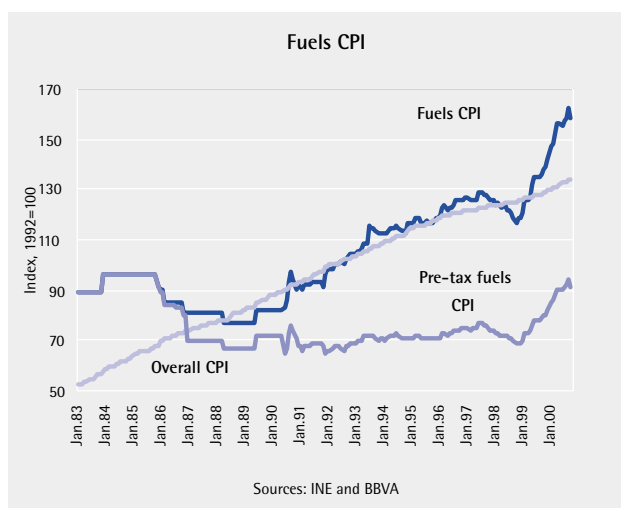
Prices and indirect taxation on oil and gas in the European Union (February 2001)  
(Euros/1000 litres of unleaded petrol)

	Retail price	Specific IE	VAT	Fiscal burden
Belgium	1034.71	507.19	179.58	66.37
Denmark	1096.02	531.93	219.20	68.53
Germany	1053.40	593.10	145.30	70.10
Greece	768.63	300.00	117.25	54.28
<b>Spain</b>	<b>809.84</b>	<b>371.69</b>	<b>111.70</b>	<b>59.69</b>
France	1041.18	563.79	170.63	70.54
Ireland	954.84	372.12	165.72	56.33
Italy	1055.63	520.32	175.94	65.96
Luxembourg	813.21	372.09	87.13	56.47
Holland	1170.99	596.95	186.96	66.94
Austria	917.13	414.41	152.86	61.85
Portugal	912.80	289.30	132.63	46.22
Finland	1092.39	559.70	196.99	69.27
Sweden	1045.26	500.39	209.05	67.87
United Kingdom	1215.16	769.55	180.98	78.22
<b>European Union</b>	<b>998.75</b>	<b>484.17</b>	<b>162.13</b>	<b>63.91</b>

Note: The fiscal burden is defined as the ratio between the total fiscal burden and the retail price.

Sources: European Commission and BBVA

<sup>1</sup> See Izquierdo, J.F.; A. Melguizo and D. Taguas (2001): "Imposición y precios de consumo". Forthcoming in *Papeles de Economía Española*.



## 4. The public sector

### Central government deficit in line with target in 2000

The government has released the State (central) government deficit in cash balance terms for the whole of the year 2000: Pts 404.5 billion, 61.7% down on 1999. This figure, adjusted for capital expenditure normally realised in January, when expenditure in National Accounts terms is imputable to the previous year's budget, is compatible with a projected deficit target for 2000 of 0.7% of GDP (1.1% in 1999).

The available information in cash balance terms confirms that the strong revenue performance in 2000 - at Pts 1007.2 billion, higher than projected in the 2000 State Budget Draft - is attributable to an 8% rise in tax revenue (Pts 550 billion) from the previous year, as against a projected 5% increase in the 2000 Budget Draft, and profits at the Bank of Spain amounting to Pts 434 billion. This is a reflection of, on the one hand, faster GDP growth (4% year-on-year, compared with the 3.7% rate forecast initially) and higher inflation (the GDP deflator rose by 3.5% year-on-year in 2000, instead of 2.0% as expected), and, on the other, the recurring under-estimation of revenue in recent budgets. As regards tax revenue, the most significant aspects were the strong performance of corporation tax receipts reflecting strong growth in corporate earnings, and the slowdown in revenue from VAT and special taxes due to a weakening in private consumption (growth in VAT on domestic transactions was only 1.9% in all of 2000, as against 12.4% in the first six months of the year, while special taxes rose by 4.1% and 5.9% over the same periods, respectively). These taxes are

expected to continue to lose steam in 2001 owing to the weakening expected in private consumption. Expenditure, meanwhile, was Pts 384 billion higher than the budgeted figure in the 2000 Budget Draft. Overshooting occurred in all expenditure headings, with the exception of wages and salaries and capital spending. Interest payments exceeded the projected figure because of the cost of debt exchange operations (around Pts 150 billion). The overshoot in current transfers (Pts 453 billion), meanwhile, is the result of both higher-than-expected transfers to the autonomous governments (up by 39%, instead of 19.7% as budgeted, owing to the transfer of responsibility for education) and extraordinary expenditure (victims of terrorism, the "colza oil" syndrome and NATO peace missions). It is precisely the overshoot in this heading (Pts 453 billion, compared with Pts 396 billion in 1999 and Pts 141 billion in 1998) that evidences the modest progress made in current expenditure control and the considerable volume of funds committed (around 80% of the budget). In addition, the low level of execution of capital operations (58.8% at November 30, as against 62.5% in terms of assumed obligations relative to total credits) accounts for the expenditure undershoot of this heading in cash balance terms from the budgeted figure for 2000. Given that expenditure in January 2001 is imputable to the 2000 State Budget, it is to be expected that there will be an increase in expenditure on capital operations in National Accounts terms. As a result, the State government deficit in National Accounts terms in 2000 is expected to have been in line with the forecast: 0.7% of GDP. Accordingly, the primary surplus in National Accounts terms should remain at a level close to that registered in 1999: 1.9% of GDP.

**Table 4.1**  
Non-financial expenditure

Pts bn.	1999 Outturn	00 Budgeted/ 99 Outturn		2000 Outturn	2000/ 99 Outturn (% oya)
		Budgeted 2000	(% oya)		
Wages and salaries	2978.6	2888.6	-3.0	2705.7	-9.2
Goods and services	436.1	340.0	-22.0	394.6	-9.5
Interest payments	3178.0	2805.9	-11.7	2947.5	-7.3
Current transfers	10809.1	11663.9	7.9	12117.2	12.1
<b>CURRENTS OPERATIONS</b>	<b>17401.8</b>	<b>17698.3</b>	<b>1.7</b>	<b>18165.0</b>	<b>4.4</b>
Investment	956.6	1011.9	5.8	1003.8	4.9
Capital transfers	1062.9	1059.4	-0.3	984.7	-7.4
<b>CAPITAL OPERATIONS</b>	<b>2019.5</b>	<b>2071.3</b>	<b>2.6</b>	<b>1988.5</b>	<b>-1.5</b>
<b>TOTAL</b>	<b>19421.3</b>	<b>19769.6</b>	<b>1.8</b>	<b>20153.5</b>	<b>3.8</b>
Expenses excluding interest	16243.3	16963.8	4.4	17206.0	5.9
Current expenditure ex-interest	14223.8	14892.4	4.7	15217.5	7.0
<b>CASH BALANCE</b>	<b>-1057.3</b>	<b>-1027.9</b>	<b>-2.8</b>	<b>-404.6</b>	<b>-61.7</b>
(%/GDP)	-1.1	-1.0		-0.4	
<b>PRIMARY BALANCE</b>	<b>2120.7</b>	<b>1777.9</b>	<b>-16.2</b>	<b>2542.9</b>	<b>19.9</b>
(%/GDP)	2.3	1.8		2.5	

Source: Ministry of Economics and Finance

**Table 4.2**  
Non-financial revenue

Pts bn.	1999 Revenue	00 Budgeted/ 99 Revenue		2000 Revenue	2000/ 99 Revenue (% oya)
		Budgeted 2000	(% oya)		
Income tax	5109.3	5149.1	0.8	5349.6	4.7
Corporate tax	2435.9	2563.1	5.2	2863.0	17.5
Others	283.0	295.8	4.5	344.8	21.8
<b>DIRECTS TAXES</b>	<b>7827.1</b>	<b>8008.0</b>	<b>2.3</b>	<b>8557.4</b>	<b>9.3</b>
VAT	5113.8	5655.0	10.6	5557.1	8.7
Special taxes	2566.5	2629.9	2.5	2671.6	4.1
Others	270.1	273.0	1.1	303.5	12.4
<b>INDIRECT TAXES</b>	<b>7950.4</b>	<b>8557.9</b>	<b>7.6</b>	<b>8532.2</b>	<b>7.3</b>
EXCISE DUTIES AND OTHER REVENUE	445.9	368.0	-17.5	330.2	-25.9
CURRENT TRANSFERS	718.2	895.2	24.6	992.8	38.2
STAMP DUTY	1113.3	587.6	-47.2	1021.2	-8.3
OTHER REVENUE	309.1	325.0	5.1	315.1	1.9
<b>TOTAL</b>	<b>18364</b>	<b>18742</b>	<b>2.1</b>	<b>19749</b>	<b>7.5</b>
Tax receipts	15777.5	16565.9	5.0	17089.6	8.3

Source: Ministry of Economics and Finance

### Social security system: the improved revenue performance from contributions takes the surplus to 0.5% of GDP in 2000.

Although official sources have announced that the social security system registered a surplus of around Pts384 billion in 2000, the budget outturn for the system is only available until October. On these data, the strong revenue performance of social security contributions (9.9% year-on-year, compared with the 3% increase budgeted) on the back of much higher-than-expected nominal GDP growth (7.7% year-on-year in 2000, instead of the 5.8% rate considered in the 2000 Budget Draft) has offset the rapid growth of a number of expenditure headings. Chief among these are the increase in spending on temporary sick-leave (13.1% year-on-year, compared with a budgeted decline of 4.7%) and spending on contributory pensions, having computed in 2000 the compensation arising from the deviation of inflation from the official target (Pts177 billion). Given that this compensation is consolidated in future pensions, in 2001 the cost of the inflation overshoot amounts to Pts 178 billion (almost 0.2% of GDP). The social security surplus is expected to allow the funds allocated to the Reserve Fund to reach Pts 100 billion at end-2000, and to rise to Pts190 billion at end-2001. With regard to 2001, the fact that budgeted revenue has been underestimated and that part of the cost arising from the deviation of inflation has been allocated to the 2000 State Budget should facilitate the attainment of the 0.2% surplus projected for the social security system.

The recent surpluses registered by the social security system have had the effect of stifling debate on the renewal of the *Pacto de Toledo*. Indeed, discussions among the social agents (government, trade unions and employers) are focusing on measures that instead of addressing the fundamental issues such as, for instance, the debate on the contributory or non-contributory nature of the basic pension supplements (around one month's revenue in the system: Pts 700 billion) or the strengthening of management and tax collection mechanisms to reduce fraud (temporary sick-leave), actually make matters worse. In this group it is worth mentioning: i) the right to early retirement for all workers with long contribution records (over 35 years); ii) the across-the-board reduction of contributions, iii) the creation of a dependency allowance; and iv) the increase in minimum pensions.

Given the expected increase in public pensions spending because of the impact of demographic trends (according to the European Commission, 17.7% of GDP in 2050, compared with 9.4% at present), the debate needs to focus on measures that can serve to contribute towards a reduction in spending in the future: i) extending the

number of years for calculating the pension base to the whole working life; ii) delaying the age of retirement by providing incentives for workers to stay in the labour market (exempting workers that remain active from payment of social security contributions - both government and employers support this measure); and iii) eliminating the greater relative generosity of special regimes compared with the ordinary regime. In addition, there is a need to promote an increase in both the participation rate and immigration in order not to impair the prospects for growth in the Spanish economy, while at the same time encouraging the changeover towards a mixed pensions system in the future by providing favourable conditions for long-term saving.

### Extraordinary expenditure will hamper the attainment of budget balance in 2001

A rash of unforeseen events in early 2001 that will increase expenditure (the mad cow crisis and the Supreme Court ruling overturning the freeze on civil servants' wages introduced in 1997), along with others likely to reduce revenue (the radio spectrum tax and sanctions from Brussels), will make the attainment of a balanced budget in 2001 more difficult unless offsetting measures are adopted (creation of a special tax or cuts in other spending items). The impact of slower economic growth on revenue will be modest, as lower real GDP growth will be largely compensated for by a higher increase in prices than projected in the 2001 Budget Draft. On provisional estimates by the Ministry of Agriculture, the cost of the mad cow crisis is likely to amount to Pts120 billion in 2001. Of these, Pts60 billion arise from the application of measures approved by the European Union, 70% of which are to be financed by the community budget and 30% by national budgets. Estimates of the cost of the crisis in the early part of the year are skewed downwards, however, since they only include expenditure deriving from the application of the regulations approved by Brussels<sup>1</sup>. No community financing has thus far been made available for the payment of the remaining Pts60 billion. The European Union has already increased funding by an extra Pts161 billion, and no further funds are available to continue to co-finance the crisis (which, according to European Commission sources, could exceed Pts500 billion). This means that the lion's share of the cost of the crisis will fall on national public finances (close to 0.1% of GDP). To prevent this affecting the fiscal balance targeted for 2001, the Spanish government has announced the creation

<sup>1</sup> These funds are intended to cover the cost of slaughtering and testing livestock, and market intervention by the state, but not the cost of destroying animal-based feed, adapting cement companies or the losses already suffered by farmers (more than Pts50 billion) in Spain.



of a tax on the distribution of all kinds of meat. This tax, the duration of which will depend on the gravity of the crisis<sup>2</sup>, could come into force in the second half of 2001. In addition to the difficult question of the mad cow crisis, the situation is further complicated by a Supreme Court ruling reversing the civil-service wages freeze introduced in 1997<sup>3</sup>. There exist certain discrepancies regarding the application of the ruling in relation to whether it applies only to the State civil service and the social security system or also to regional and municipal governments<sup>4</sup>. Should the appeal lodged by the government against the ruling be thrown out, the State will be forced to pay out between Pts360-1000 billion for the debt accumulated up to 2000 (0.1%-to-0.3% of GDP for each year since 1997). In contrast to the mad cow crisis, which has an immediate impact on the budget, the Constitutional Court ruling on the government's appeal may not be known for two or more years, so that the impact on public finances will not be felt in 2001. In addition, even though these are liabilities accrued in previous years, until such time as the payment obligation is assumed, there will be no change to the deficit in National Accounts terms. This means, therefore, that, if the Supreme Court ruling becomes final, in 2003-2004 the surplus projected in the updated Stability Programme for 2000-2004 could be put at risk (the cumulative cost would amount to between 0.7% and 1.5% of GDP).

Exacerbating this unexpected increase in expenditure are, on the one hand, the uncertainty surrounding the collection of the new radio spectrum levy and, on the other, the sanctions imposed by Brussels for irregularities in payments of certain EU farm subsidies. With regard to the former, in 2001 the government expected to raise Pts160 billion for the use of the radio spectrum. Of this, Pts100 billion (0.1% of GDP) correspond to third-generation mobile telephony (UMTS). Telecommunications companies, meanwhile, have declared that they will not be in a position to offer UMTS services until the second half of 2002, instead of in August 2001, the official launch date of the service. This development casts doubt on the levy payment anticipated for use of the spectrum this year. Added to this is a Pts55 billion payment to Brussels (Pts8.1 billion have already been repaid) for irregularities in the concession of farm subsidies, which is to be deducted from EU transfers to Spain (0.05% of GDP).

The impact on the deficit arising from the increase in spending due to the mad cow crisis – it is unsure whether the new tax will be sufficient to finance all of the cost – and the revenue loss stemming from the radio spectrum levy and repayment of EU farm subsidies could be close to 0.25% of GDP. And this figure could rise further if the economy slows at a faster rate than predicted in the 2001 Budget Draft. On Ministry of Economics estimates, a growth

rate 0.5 points below that of its baseline scenario (2.8%, instead of 3.2% in 2002-2004) would bring about a deterioration in the public finances amounting to 0.2-0.3 percentage points of GDP<sup>5</sup>, a deterioration that is capped by the entry into force of the Budgetary Stability Law in 2002.

### **The Budgetary Stability Law: a step in the right direction, but references to the composition of expenditure and fiscal co-responsibility are needed.**

Substantial progress was made in fiscal policy in the second half of the 1990s, with the structural deficit coming down and public debt levels resuming their declining trend. Following the strong decentralisation process in public expenditure that has taken place in Spain (the share of regional and municipal governments in public expenditure is around 35%), budgetary policies need to be coordinated at each level of government in order to assure a position of sustained fiscal balance. With this aim in mind, the government has submitted to parliament a draft Budgetary Stability Law (LEP)<sup>6</sup> that is to be applied at all levels of government (including public corporations, state-owned enterprises and other public bodies or institutions under their control). The LEP, which mandates the drawing-up of budgets in balance or in surplus, except under exceptional circumstances in which the approval of budgetary positions in deficit will be permitted, has drawn sharp criticism on the grounds that it does away with the stabilising role of fiscal policy – of particular importance after the loss of the exchange rate and monetary policy – and violates the financial autonomy of the autonomous regions.

As for the first of these criticisms, the design of a balanced budget is always positive because it contributes to economic stability. Nonetheless, unless measures are adopted that make room for a reduction in current expenditure when economic conditions are unfavourable, there is a risk that the burden of adjustment will fall disproportionately on capital expenditure. The LEP requires the State to establish an annual ceiling on expenditure and allows it to create, within this expenditure ceiling, a contingency fund of 2% of the expenditure ceiling to cope

<sup>2</sup> U.K. government sources estimate the cost of the mad cow crisis at Pts900 billion between 1996 and 2000, most of which has been financed domestically.

<sup>3</sup> Compensation per employee in the public sector registered a rate of growth similar to that of prices in the period 1997-1999: 2.4% on average, according to OECD data.

<sup>4</sup> The ruling states that it affects: "the employees of the State civil service and its autonomous bodies in the social security system and public agencies represented at the general negotiating table and with peculiarities in their statutes, and the employees of the legal system, Post Office, health system and universities." ... "in any case, it is hoped that the present accord will inspire whatever others may be agreed within the scope of negotiations in the autonomous regions and local corporations".

<sup>5</sup> See Box "Updated Stability Programme of Spain (2000-2004): optimistic" in this chapter.

<sup>6</sup> See the document "El Proyecto de Estabilidad Presupuestaria" at [www.minhac.es](http://www.minhac.es).

with non-discretionary and non-budgetary operations. However, the budget outturn in recent years shows that such a fund is insufficient to deal with adverse economic situations. In the period since 1992, final borrowing has exceeded initially-approved borrowing by 7.1%, and since 1997, by 4.4%. In fact, in 2001 the total compensation to pensioners resulting from the deviation of inflation from the official target, coupled with the cost of the mad cow crisis, could amount to around 2% of the borrowing initially approved at the State level, and this would exceed 2.5% (3.7% at a general government level) if compliance with the Supreme Court ruling reversing the 1997 wages freeze in the State civil service is included. Bearing in mind that around 80% of the State budget is committed, and the modest size of the contingency fund, it seems reasonable to assume that in a scenario of economic downturn, compliance with the LEP could translate into cut-backs in spending items that affect the potential output of the economy (R&D, human capital, infrastructure). In so far as the LEP makes no mention of the expenditure breakdown, a balanced budget would be preserved by reducing these expenditure items. To safeguard against this, the medium-term target needs to be set in terms of a structural budget balance, which would make room for the existence of public surpluses and deficits and the operation of automatic stabilisers.

The claim that the LEP "does away with the financial autonomy of the autonomous regions" requires some qualification since: i) it grants the autonomous regions the possibility of incurring a deficit under exceptional circumstances, without this bringing a ban from the

government on their borrowing money, provided that they submit a plan including measures to restore their finances to balance. This leaves the autonomous regions a degree of room for manoeuvre, but makes it necessary to define exactly what is meant by "exceptional circumstances" to prevent this clause from being used as an escape clause; ii) it does not require the autonomous regions to set a ceiling on expenditure, thus granting them the freedom to determine fiscal policy, provided that their regulatory powers are increased in the new regional financing model; and iii) it establishes a sanctions regime for the autonomous regions proportional to their contribution to the excess deficit if Spain breaches the Stability and Growth Pact's 3% of GDP deficit limit, but fails to set out clearly how the regions will be made comply with such sanctions. The increase in the debt levels of autonomous regions (from 5.9% of GDP in 1995 to 6.3% in 1999), together with the rapid growth in state-owned enterprises (in 1999, the number of enterprises making up the regional and municipal corporate sector totalled 1,178, compared with only 485 in 1993), brings to light the need for greater transparency in the autonomous regions' finances in order to allow a closer monitoring of their real financial situation<sup>7</sup> and preclude the proliferation of off-budgetary mechanisms to get round the restrictions placed on deficit performances.

<sup>7</sup> To date, the debt and deficit targets were agreed only by the government and the corresponding autonomous region. From 2002 onwards, in keeping with the LEP, targets will be set by the CPFF and the autonomous regions, which should enhance the system's transparency. A further contribution will come with the creation of a public database in the Ministry of Economics with information on borrowing operations, debt issues, assumption of financial risks and the debt service burden deriving thereof.

### Growth and public expenditure

European integration and the introduction of the euro pose fresh challenges to fiscal policy, which becomes the only instrument available to national governments to cope with asymmetrical shocks. A scenario of budgetary stability in structural terms thus becomes of vital importance to guarantee the sustainability of public finances. However, the following question is also raised: what should be the level of public spending in the Spanish economy?

From a standard viewpoint, the "appropriate level" of public expenditure depends on social preferences. Even assuming that the public sector is less efficient than the private sector, the individuals that make up society may prefer a less efficient, but more egalitarian, economy, leading to a larger public sector, or a more efficient economy with less equality. Nonetheless, the empirical data show that, as the level of income in the developed democratic countries (Europe, the United States and Japan) has risen, there seems to be a greater preference for higher public expenditure (Wagner's hypothesis). In Spain, in particular, as per capita income has risen, there has been a considerable increase in the share of the public sector in the economy<sup>1</sup>.

The objectives of public expenditure have changed in recent years, however. Whereas the goal in the 1960s, 70s and 80s was to attain a greater level of equity, in the 1990s the "Welfare State" has experienced a crisis as a consequence of lower demographic growth, the international environment and the efficiency costs of state intervention. This has forced the public sector to adopt new commitments, more related to the competitiveness and productivity of society. The improvement in infrastructure, R&D, communications, human capital formation, the resolution of long-term unemployment and the creation of new social services, better adapted to an ageing society and larger numbers of women in the labour market, are factors that are making increasing demands on public expenditure. Yet, an increase in the weight of the public sector could, at some stage, be counterproductive for real convergence.

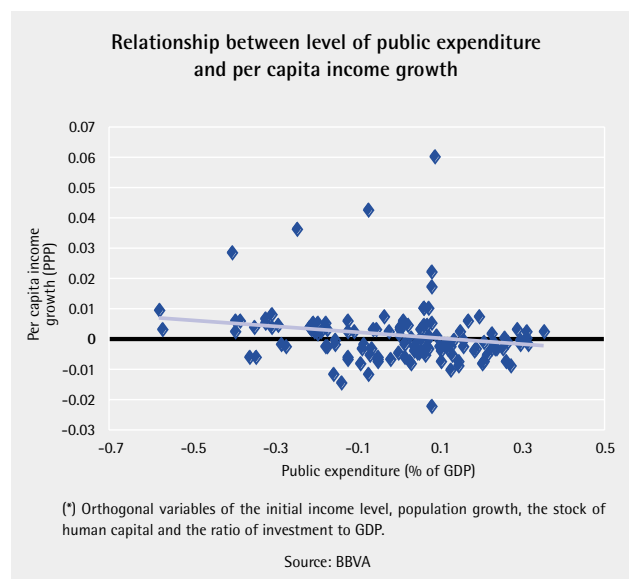
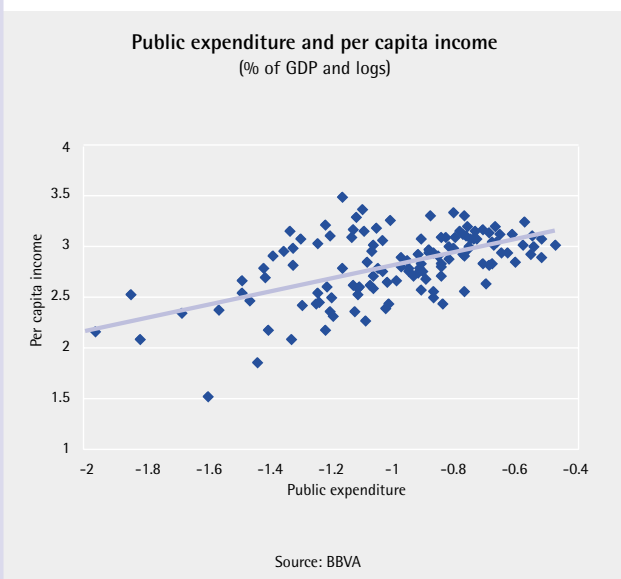
To analyse the impact of public expenditure on growth, we examined the determinants of economic growth, observing what effects they have on public expenditure. To disentangle the effects of the economic cycle, we used averages for five-year periods over the past 35 years from 21 OECD countries. The approach used was to conduct a first analysis of the relationship between economic growth and its determinants: the initial income level, population growth, human capital and the ratio of investment to GDP.

As the graph on the right shows, the relationship between per capita income growth and the level of public expenditure as a percentage of GDP growth is negative and statistically significant. The regression was run using orthogonal variables on the set of determinants for growth cited above.

This result, which is widely found in the empirical literature, should in any case be interpreted with caution, since this approach takes no account of the financing of expenditure nor does it present an analysis by components, even though it is known that not all public expenditure headings have the same impact on efficiency<sup>2</sup>. Public investment and human capital formation clearly have a positive effect on economic growth, and so it seems reasonable that changes in the composition of public expenditure should be designed to strengthen them.

<sup>1</sup> See Box "Budget surplus and the economic cycle", Situación Spain, October 2000.

<sup>2</sup> The coefficients estimated by Barro (1991 and 1995) for the relationship between public expenditure and per capita income growth are negative. A decline of 6.5 points in the ratio of public expenditure to GDP would be needed to increase the growth rate of per capita income by 0.7 points per year, in view of which the effects seem relatively unimportant.



### Updated Stability Programme of Spain (2000-2004): optimistic

The Treaty of Amsterdam requires EMU member countries to present updated stability programmes annually to the European Commission (before March 1 each year). The objective of this measure is to detect excessive deficit situations and facilitate the supervision and coordination of economic policies in the euro area.

In compliance with the European regulations, the Spanish government approved in the January 19 meeting of the council of ministers the updated Stability Programme of Spain 2000-2004 (SP). This programme presents medium-term prospects for both fiscal deficits and debt-to-GDP ratios and the macroeconomic scenario, as well as the economic policy measures that will keep the programme on track.

While improving SP 1999-2003 by bringing forward the attainment of fiscal balance one year (2001), the SP 2000-2004 recognises that this is entirely due to the favourable financial position of the social security system, as central government balance is put back until 2003 (from 2002) and general government remains on the path expected a year ago.

The fact that first fiscal consolidation and later budget surpluses basically depend on the performance of the accounts of a single general government sub-sector, the social security system, heightens the risk of deviations from the targets announced. Especially, as the stability programme bases the social security surpluses on the strong employment creation projected in 2002-2004 and the favourable impact of measures approved in the re-negotiation (currently taking place) of the *Pacto de Toledo*. With regard to the first factor mentioned, two observations are worth noting. First, the macroeconomic scenario that allows employment to grow at rates of 2.1% on average is too optimistic. The Spanish economy, which is already showing clear signs of slowing (it is expected to grow by 2.8% year-on-year in 2001, after 4.1% in 2000), is unlikely to sustain a rate of growth in excess of potential in the period 2000-2004, given low rates of productivity growth (0.7% on average in 1996-2000) and the lack of concrete progress in liberalisation and improving market flexibility. And, second, the evolution of revenue from social security contributions in terms of GDP has a low correlation with the economic cycle. The fact that contributions have remained stable at around 13.1% of GDP since 1996 confirms that they are acyclic, and hence that substantial improvements in the financial position of the social security system cannot be attributed to higher receipts arising from a favourable macroeconomic scenario, but rather to changes in effective tax rates. It is however true to say that in the short term social security outlays will experience moderate growth rates because of lower numbers entering the pension system from the Spanish Civil War generations, though this is a temporary situation. Finally, the limited social awareness of the need for a far-reaching reform of the current social security system owing to the recent attainment of surpluses (in part because of the transfer of payments formerly financed from contributions, but now from taxes: health care) and the recent build-up of costly political problems mean that there is little reason to believe that forceful measures will be adopted in the revamped *Pacto de Toledo*. The projected increase in funds allocated to the reserve fund<sup>1</sup>, to stand at just over Pts1,000bn in 2004, is thus at the very least optimistic.

In addition to assessing the stability programme's fiscal targets from the standpoint of the different public sector levels, it is also important to analyse the contribution of revenue and expenditure to the attainment of a budget surplus. In contrast to events between 1996 and 2000, when fiscal consolidation (4.7 percentage points of GDP) was based on both an increase in revenue in terms of GDP (1.2 percentage points) and a reduction in expenditure (3.5 points), the surplus forecast for 2004 (0.3% of GDP) will be achieved on the back of an adjustment in expenditure, which reduces its share in GDP by 0.6 points, since fiscal pressure falls as a consequence of the new IRPF reform planned for 2003<sup>2</sup> and the slower economic growth scenario. While this is positive from the point of view of the medium-term consolidation of fiscal balance, a fuller analysis of the different expenditure headings allows some qualification of this view. Public consumption (-0.5 points of GDP) and interest payments (-0.2 points) account for the lion's share of the reduction in current expenditure (-1.1 points). This aspect is of particular significance bearing in mind that the expenditure headings include neither the cost of the mad cow crisis (possibly over Pts120bn), which would increase current transfers in 2001, nor that which could arise if the appeal against the Supreme Court ruling overturning the

civil-service wage freeze in 1997 is rejected (Pts360bn if only the State civil service is affected, and around Pts1,000bn if regional and local governments are included). This would push up public consumption by around 0.1% of GDP per year from 1997 onwards, in the first case, and by around 0.3% in the second. In addition, if this payment finally has to be made, public debt levels will fall by less than targeted in the SP 2000-2004 and hence the debt-service burden will be higher. And, it must not be forgotten that the indemnities for the "Colza oil" syndrome, the RTVE (State Television) debt (Pts795bn at end-2001) and collateral granted to state-owned enterprises and other government corporations are all pending. This, combined with the fact that the Spanish economy is expected to grow at a slower rate than projected in the stability programme<sup>3</sup> in the period under consideration (which will have a negative effect on revenue and increase social benefits), means the attainment of balance is conditional upon the implementation of concrete measures to reduce public expenditure that have not been included in the stability programme. Far-reaching measures will be required, therefore, if the government does not wish to give up the new IRPF reform planned for 2003 or abandon its commitment to substantial investment in infrastructure (Infrastructure Plan 1999-2007). While the ultimate goal of the Budgetary Stability Law (LEP) - to come into force in 2002 - is to guarantee that the public sector does

#### General government accounts

(National Accounts, ESA 95)

% of GDP	1999	2000	2001	2002	2003	2004
Total revenue	40.0	40.4	40.6	40.6	40.4	40.3
Total expenditure	41.1	40.7	40.6	40.4	40.1	40.0
Current expenditure	35.8	35.4	35.1	34.8	34.4	34.2
Interest	3.6	3.3	3.3	3.2	3.2	3.2
Capital expenditure	5.3	5.4	5.5	5.6	5.7	5.7
GFCF	3.4	3.4	3.6	3.7	3.7	3.8
Net lend. (+) or net borrow. (-)						
General gov.	-1.1	-0.3	0.0	0.2	0.3	0.3
Central gov.	-1.1	-0.7	-0.3	-0.1	0.0	0.0
Social security	0.2	0.5	0.3	0.3	0.3	0.3
Regional and local gov.	-0.2	-0.1	0.0	0.0	0.0	0.0
Public debt	63.3	61.1	58.9	56.6	52.8	49.6
Primary surplus	2.5	3.0	3.3	3.4	3.5	3.5
Gross saving	2.9	3.8	4.3	4.6	4.8	5.0

Sources: INE and Ministry of Economics

not fall back into deficit, it does sanction deficits under exceptional circumstances, so that its entry into force does not preclude this possibility.

The SP 2000-2004 could be more ambitious, in particular when compared with the previous updating of the programme. The stronger revenue performance than that forecast a year ago (40.6% of GDP is expected in 2001, as against 40% in the SP 1999-2003) is not used to progress further in fiscal consolidation, but rather to permit higher growth rates in public expenditure (5.8% on average per year in 2001-2004, compared with 5.1% in 2001-2003 as projected in the previous programme). As a result, public expenditure will remain above 40% of GDP in 2004, whereas in the SP 1999-2003 it was forecast to breach this floor in 2002. The increase in expenditure - 0.6 points of GDP above the previous forecast in 2002 and 2003 - is mainly due to higher current expenditure, and especially non-interest expenditure (0.8 points and 0.7 points in 2002 and 2003, respectively). Given that the composition, and not only the level, of expenditure is important, the government needs, first, to specify which expenditure headings are to register the biggest increases, as the impact on economic growth in the medium term is not the same if the increase in expenditure goes on education or investment in R&D as when it is allocated to pensions or interest payments. And, second, how is the increased expenditure to be financed? This upward revision of the expenditure forecasts questions the relative lack of ambition of the SP 2000-2004 even in a macroeconomic scenario such as that forecast by the government in which the Spanish economy continues to grow above potential (3.2% in 2002-2004, compared with potential output growth close to 2.6%) and inflation is subdued (a GDP deflator of 2.5%).

Nonetheless, in order to evaluate whether the SP 2000-2004 can in adverse economic conditions assure fiscal balance year after year as set out in the Budgetary Stability Law, we decompose the budget balance of the stability programme into its cyclical and structural components. In the case of the Spanish economy, a recession could increase the fiscal deficit by between 1% and 1.5% of GDP, so that the minimum structural surplus required to guarantee fiscal balance each year would be 1%-1.5% of GDP. This minimum safety margin will acquire particular importance in the medium and long term because of the considerable rise in expenditure on pensions and health care for demographic reasons. On the basis of the information provided on the expected path of the economy and public sector revenue and expenditure up to 2004 in the SP 2000-2004, and using the traditional methodology employing elasticities<sup>4</sup>, we estimated the structural component of the budget balance contained in the stability programme. According to the data obtained, the structural deficit would unwind at the end of the period if all the forecasts in the SP 2000-2004 materialise. Though a very positive result, this is not sufficient to attain the structural surplus required to secure at least a position of fiscal balance in the public accounts each year. However, it is unlikely that a structural surplus of 1.5% of GDP could be reached in Spain, nor would it be advisable. What is important is that the accounts are in balance over the whole economic cycle and not from year to year. The deficits arising in recessions should be compensated for with surpluses in periods of strong growth. A position of balance in the public accounts in the medium and long term can be attained by simply reaching a structural balance.

Yet, the framework of the SP 2000-2004 may be altered by a series of factors that determine economic and fiscal developments. We thus consider an alternative scenario in which; i) the Spanish economy grows on average in 2002-2004 a little under potential, so that social benefits (unemployment) grow faster than in the stability programme scenario and revenue more slowly; ii) the cost of the Supreme Court ruling on the civil-service wage freeze is included (the scenario considered is the more favourable one in which the ruling only affects the State civil service (0.1% of GDP per year after 1997); iii) interest payments are higher (3.4% of GDP, as against 3.2% in the stability programme) owing to a smaller decline in public debt levels; and iv) given the government's commitment to infrastructure investment, capital expenditure is taken to have a similar share of GDP as in the stability programme. Under these new circumstances, the attainment of structural balance would be considerably more difficult. Though lower - at around 0.6% of GDP - the structural deficit remains high.

For its part, the debt-to-GDP ratio is expected to fall to 49.6% in 2004, implying a reduction of 9.4 percentage points in four years. Given that the bulk of the impact of the decline in interest rates on debt refinancing has already been felt and that the income from outstanding privatizations will be much lower than in 1996-2000 (around 6% of GDP) - when the level of debt fell by 4.5 points - that is a surprising correction.

<sup>1</sup> The expected social security surpluses in the coming years as a result of the moderate increase in outlays due to exceptional factors will allow the reserve fund to continue to swell. As noted in the paper, "La reforma de las pensiones ante la revisión del Pacto de Toledo", Herce, J. and Alonso, J. (La Caixa, nº 19), by 2015 the fund could have accumulated Pts5,700bn (at 2000 pesetas), but this fund would then disappear by 2020 unless allocations are made from outside the system.

<sup>2</sup> According to official sources, the second IRPF reform will probably reduce the tax burden by around Pts375bn (0.3% of GDP), compared with Pts800bn in the 1999 reform.

<sup>3</sup> On the basis of the sensitivity analysis incorporated in the SP 2000-2004, if the Spanish economy were to grow 0.5 points below the baseline scenario, the public accounts would never register a surplus over the time horizon considered.

<sup>4</sup> See Bosca, J., Doménech, R. and Taguas, D. (1999), "La política fiscal en la Unión Económica y Monetaria", Moneda y Crédito, núm. 208, and "Budget surplus and economic cycle", Situación Spain (October 2000), BBVA Research Department.

#### Macroeconomic scenario: 1999-2004

(National Accounts, ESA 95)

GDP AND DEMAND AGGREGATES	1999	2000	2001	Average 2002-04
Private consumption (1)	4.7	4.0	3.4	2.8
Public consumption	2.9	1.2	1.2	1.8
GFCF	8.9	7.0	7.0	5.3
Capital goods	8.7	5.5	8.0	6.2
Construction	9.0	7.9	6.5	4.8
Domestic demand	5.5	4.2	3.9	3.3
Exports	6.6	9.9	8.8	8.4
Imports	11.9	10.5	9.5	8.1
Net exports (contribution to GDP)	-1.5	-0.4	-0.4	-0.1
GDP	4.0	4.0	3.6	3.2
<b>PRICES AND COSTS</b>				
GDP deflator	2.9	2.8	2.3	2.5
Private consumption deflator	2.5	3.2	2.7	2.0
<b>LABOUR MARKET (2)</b>				
Employment (% oya)	3.6	3.0	2.5	2.1
Change in '000s (3)	507.9	438.9	382.8	978.0
<b>OTHER VARIABLES</b>				
Net lend. (+)/net borrow. (-)	-1.1	-2.3	-2.7	-2.8
Unemployment rate (4)	15.9	14.2	12.7	9.5
(1) Includes NPISH				
(2) In terms of full-time equivalent jobs				
(3) Job creation included as average in 2002-2004 is cumulative for the period				
(4) Annual average as % of labour force (EPA). The rate included as average in 2002-2004 corresponds to 2005				
Sources: INE and Ministry of Economics				



# What is the potential output of the Spanish economy?

Patry Tello<sup>(1)</sup>

In order to make an appropriate assessment of the cyclical position of an economy at a given moment, we need a measure of its productive capacity, that is, of the potential level of its output. This level can be defined as the one towards which output will trend in the absence of transitory disturbances (steady state output). The economy tends to grow below potential in economic downturns and faster than potential in periods of expansion. Thus, when the economy is growing faster (slower) than potential a positive (negative) output gap is generated that over time is reflected in the emergence of inflationary pressures. An appropriate measure of the output gap is therefore a very useful tool in economic analysis. This applies to both the short and the long term. In the short term, because the size and persistence of positive (negative) output gaps help to identify whether supply-side (wage and technology shocks) or demand-side (fiscal impulse, expectations, liquidity) variables are dominant in a particular economic upturn (or downturn), and hence help to show whether increases (or decreases) in inflation are permanent or transitory when used in price-determining models (the Phillips curve). And, in the long term, because potential output determines the sustainable non-inflationary pace of economic expansion given the prevailing stock of productive factors.

The output gap is also a very useful tool for the design of an appropriate policy-mix. Specifically, it is used both to evaluate optimal monetary policy decisions (the Taylor Rule) and to estimate the room for manoeuvre in fiscal policy (structural budget balances and fiscal impulse).

In the case of Spain, at a time when the persistence of growth rates close to 4% is being interpreted as a reflection of an increase in the rate of growth of potential output associated with a technology shock and greater market flexibility, an estimate of potential output for the Spanish economy acquires particular importance.

## 1. Alternative methods for estimating potential output

As potential output is a non-observable variable, it must be estimated. The different estimation methods that are found in the literature can be grouped into three large blocks: i) statistical; ii) structural; and iii) mixed. The first estimate potential output by means of a univariate analysis of the actual GDP series. The most widely-used are the

Hodrick-Prescott filter (1980) and Watson's latent variable models (1986). These methods, though simple, have important shortcomings. They are completely ad-hoc approaches to trend/cycle decompositions, and so do not incorporate economic information embodied in macroeconomic variables other than GDP that may be important to distinguish between permanent and transitory shocks. In addition, in the case of the H-P filter, the trend output estimate is sensitive to the information available in the sample period under consideration and is skewed by the value assigned to a smoothing parameter.

Structural estimation methods attempt to overcome these drawbacks by incorporating economic content into the estimate of potential output. This group includes the estimation of a production function<sup>1</sup>, which allows for the restrictions imposed by both the prevailing stock of productive factors (capital and labour) and total factor productivity, and the widely-used Okun's Law, which relates the structural rate of unemployment with potential output. The main shortcoming of this approach is that it does not permit the construction of bands of confidence for the variable estimated. Moreover, in the case of Okun's Law, it is difficult to obtain up-to-date estimates of potential output because changes in the structural rate of unemployment become visible with a lag.

The mixed method for estimating potential output combines the information contained in the GDP and, normally, the inflation time series with economic theory (the Phillips curve and the aggregate demand curve). In the estimation of this model, the non-observable components technique is used, which permits the simultaneous estimation of potential output and maximum-likelihood confidence bands by means of a Kalman filter. In addition, it makes possible gradual and prompt adjustments of the estimate of potential output when the set of information available changes.

Despite its shortcomings, the estimation of a production function has the advantage over other methods of allowing us to obtain the contribution to growth of the different factors of production, as well as long-term projections for potential output based on the forecast trends of its main determinants.

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<sup>1</sup> For a fuller description see "Estimating potential output, output gaps and structural budget balances", OECD (1995).

## 2. Estimation of potential output in Spain

The measurement problems surrounding public-sector productivity make it advisable to estimate the economy's potential output in two stages. First, we estimate a production function for the private sector and calculate the potential output of the private sector. The potential output of the whole economy is then the result of combining the potential output estimated for the private sector and the actual output of the public sector, which is smoothed using the H-P filter.

For the private sector, we estimated a Cobb-Douglas production function with constant returns to scale, with two factors of production, capital (K) and labour (L):

$$(1) \ y_t = \alpha l_t + (1-\alpha) k_t + TFP_t$$

where  $y_t$  is the log difference between real GDP at market prices (ESA 95) and public-sector GDP,  $l_t$  is private-sector employment and  $k_t$  is the stock of private productive capital. Lower case letters denote logs. The coefficients  $\alpha$  and  $(1-\alpha)$  represent the share of income from labour and capital in output, and are estimated at 0.643% and 0.347% in the case of Spain<sup>2</sup>. TFP is total factor productivity, obtained as a residual of equation (1), the Solow residual<sup>3</sup>. Potential output,  $y^*$ , is obtained by substituting potential employment ( $l^*$ ), the actual capital stock ( $k$ ) and trend TFP ( $TFP^*$ ) into the above equation. Potential employment ( $l_t^*$ ) at each time is that which is compatible with the structural rate of unemployment<sup>4</sup> and the trend labour force (a smoothed participation rate multiplied by the working-age population). Given that the potential capital stock is highly correlated with the actual capital stock, we used the latter for estimating the potential output of the private sector. Trend TFP, meanwhile, is calculated by applying an H-P filter to the variable obtained as a residual of equation (1)<sup>5</sup>.

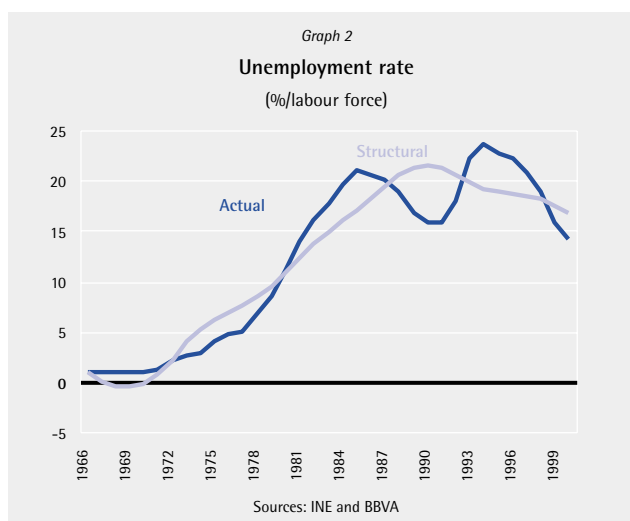
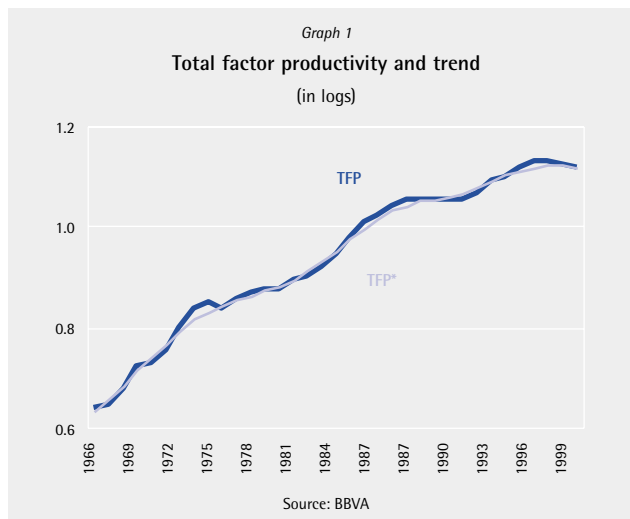
$$(2) \ y_t^* = \alpha l_t^* + (1-\alpha)k_t + TFP_t^*$$

<sup>2</sup> These values are approximately the average of the share of income of labour and capital in the Spanish economy in the past twenty years (1980-2000). OECD estimates for all the industrial countries put the share of income of labour at between 0.65% and 0.75%.

<sup>3</sup> One of the shortcomings of the estimated production function is that it does not allow us to distinguish between increases in productivity associated with technological progress (improvements in information technology lift the productivity of inputs) and those derived from changes in the composition of the factors of production (improvements in the quality of inputs because of a more skilled workforce or advances in computing).

<sup>4</sup> The structural rate of unemployment is obtained by estimating an Okun's Law in which the cyclical component of the economy considered is that given by applying a Hodrick-Prescott filter to the real GDP series. An alternative is to use an estimate of the NAWRU, the non-accelerating wage rate of unemployment, instead of the structural rate of unemployment.

<sup>5</sup> We used the value of  $\lambda = 10$  for annual data proposed by Baxter and King (1999) and by Doménech, R., Gómez, V. and Taguas, D. (1997). The OECD generally uses a value of  $\lambda = 25$ .



Graph 1 depicts estimated TFP and its trend component,  $TFP^*$ . It can be seen that, after rising steadily after 1993, TFP has slowed markedly over the past few years (even more than in the late 1980s). This trend is consistent with the low growth rate of apparent productivity that is discernible in the National Accounts data. Graph 2 shows the estimated structural rate of unemployment and the actual rate of unemployment. As regards the structural rate of unemployment, the fall observed in the period since 1990 may be a reflection of the successive, though shallow, labour market reforms (1994 and 1997), as well as the wage moderation of the past few years.

The results of the estimation of the potential output of the private sector (by equation (2)) are displayed in Table 1<sup>6</sup>.

<sup>6</sup> We estimate the production function using annual data for the period 1968-2000. Accordingly, we constructed a long real GDP series (ESA 95), applying the annual growth rates prior to 1995 under the ESA 79. We also assume that the private sector has the same share in the whole economy under the new methodology as it had under ESA 79. The labour market series were suitably adjusted for the methodological changes introduced to the EPA survey in 1995 and 1996. And, finally, the stock of private productive capital was taken from the MOISEES database.



**Table 1: Potential output growth of private sector and contribution of different factors to growth**

	Private potential GDP	Employment	Capital	Technological progress
1971-1980	3.2	-0.7	2.3	1.6
1981-1990	2.1	-0.5	1.0	1.6
1991-1996	2.9	0.8	1.1	0.9
1997-2000	2.6	0.8	1.6	0.1

Source: BBVA

The advantage of estimating a production function as opposed to alternative methods is that it allows us to analyse the contributions to growth of the factors of production, that is, of the degree of utilization of physical capital, and of employment and total factor productivity. Two clearly differing periods can be identified: 1971-1990 and 1991-2000. Throughout the first, the rate of growth of the potential output of the private sector slowed significantly as a result of an increase in the rate of structural unemployment (20 points between 1971 and 1990) and the slower rate of accumulation of private productive capital. From 1990 onwards, a significant change takes place. The economy's potential growth rate begins to accelerate, initially because of an improving labour market performance (the structural rate of unemployment falls steadily after a peak in 1990) and, later, also because of the contribution of the stock of capital to growth. This, after hitting a low of 0.6% in 1993-1994, begins to rise in line with the recovery in investment. Conversely, TFP slows steadily from the start of the 1990s. This result is compatible with the meagre gain recorded by the apparent productivity of labour in the recent economic expansion (0.7% on average in the period 1996-2000, as against 2.9% in the United States) and the low level of investment in R&D (0.8% of Spain's GDP, only 0.03 percentage points more than in 1994, compared with 2.6%

in the United States, a rise of 0.26 percentage points in the same period)<sup>7</sup>.

Finally, we obtained the potential output for the economy as a whole by combining private-sector potential output and public-sector output, and smoothing with the H-P filter.

$$(3) \text{GDP}_t^* = Y_t^* + Y_t^{\text{public}}$$

**Table 2: Actual and potential GDP**

Annual average growth rate

	Actual	Potential
1971-1980	4.1	3.4
1981-1990	3.0	2.5
1991-1996	1.5	2.9
1997-2000	4.1	2.6

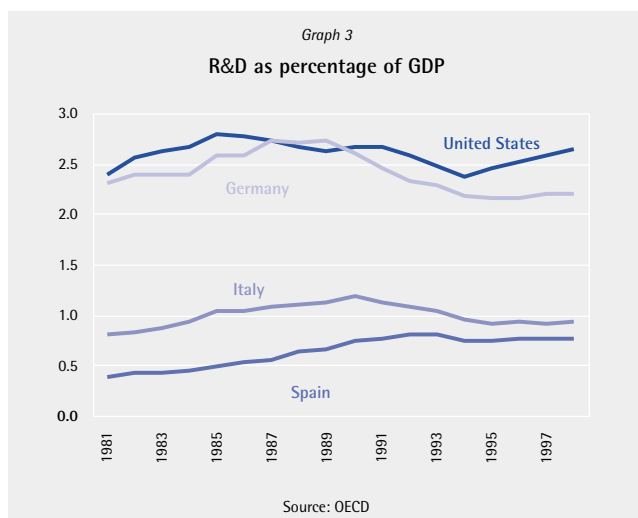
Source: INE and BBVA

Table (2) presents the estimated growth rates of potential output for the Spanish economy ( $Y_t^*$ ) and actual output. The data show that, while the rate of growth of potential output has picked up slightly after the considerable deceleration registered in the 1980s, it remains well below the rate reached at the start of the period under consideration. The continuing high structural rate of unemployment (around 17% in 2000, compared with a 6% rate in the mid-1970s) and the limited advance in productivity, reflecting the existence of entrenched economic rigidities, together with the persistently low rates of growth of capital accumulation, seem to account for the fact that potential output has on average not risen in the second half of the 1990s. Conversely, the rate of growth of potential output in EMU has risen a little over recent years, from 2.0% in 1990-1995, to 2.2% in 1996-2000. Nonetheless, as in Spain, this rate is still lower than the average for the period 1972-1989 (2.5%). In the United States the situation is altogether different. The rate of growth of potential output has risen significantly in recent years, to stand at around 3.5% on average in 1996-2000, higher than the 3.1% average rate recorded in the period 1972-1989<sup>8</sup>.

It seems, therefore, that the increase in potential GDP that has occurred in the United States, as a consequence of the impact of the "New Economy", has not yet taken place in either Spain or the EMU.

<sup>7</sup> See "The Spanish economic "miracle": a macro perspective", Situación Spain (June 2000), BBVA Research Department.

<sup>8</sup> See "EMU: has potential output increased?", Situación Global (October 2000), BBVA Research Department and "Has the growth rate of potential GDP risen in the United States?", Situación Global (June 2000), BBVA.



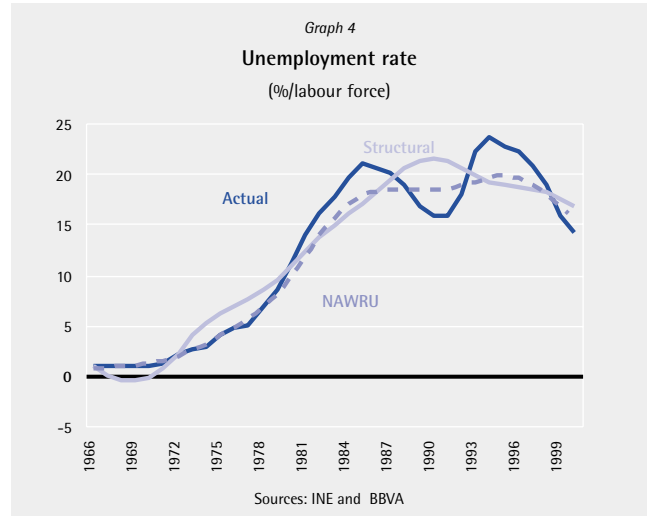
### 3. Comparison with other estimates of Spain's potential output

We have conducted two exercises with a view to assessing the sensitivity of the results to both the methodology employed and the data used in the estimation of the production function. First of all, we re-estimated the above production function: i) substituting the structural rate of unemployment obtained using Okun's Law by an alternative measure of the rigidities prevailing in the labour market, the non-accelerating wage rate of unemployment known as the NAWRU; and ii) considering both the stock of private productive capital and capacity utilization (CU) as a measure of the degree of utilization of capital installed. Second, we compared potential output estimated using the production function with that obtained using other methods (H-P) or by other institutions (OECD and European Commission).

Table 3 below shows that; i) the estimation of potential output is very sensitive to the unemployment variable chosen. The rate of growth of potential output ranges between 2.6% and 3.0% during 1997-2000 depending on whether the structural rate of unemployment or the NAWRU<sup>9</sup> is used, although in both cases it is currently much lower than the rates reached in the 1970s and below actual GDP growth (a positive output gap); and ii) the inclusion or not of capacity utilization in the production function does not significantly alter the results.

When we compare the BBVA Research Department estimate with that obtained by other institutions, or using purely

<sup>9</sup> The NAWRU is calculated as  $U_{NAWRU,t} = U_t - b_t D^2w_t$ , where  $U$  is the actual rate of unemployment,  $w$  is the logarithm of compensation per employee and  $D^2w$  the acceleration in wages. In contrast to the OECD, which calculates the value of  $b$  as proposed by Emeskov (1993), which gives rise to very erratic behaviour for Spain, we used different average values for  $b$  for four periods in line with the shifts observed in the Okun's Law: 1968-1972, 1973-1979, 1980-1984 and 1985-2000.



statistical methods (H-P), it is noteworthy that; i) the differences observed with the OECD<sup>10</sup>, despite having followed the estimation method proposed by that organisation, may derive from either the presence of differences in the variables used (employment adjusted or unadjusted for the EPA effect, the structural rate of unemployment versus NAWRU) or the chosen values of the  $l$  parameter – in this paper  $l = 10$ , compared with  $l = 25$  for the OECD; ii) the slight differences between the results obtained by directly applying an H-P filter to our GDP series with forecasts and those of the European Commission, which also uses an H-P filter, are due to the choice of  $\lambda$  parameter ( $\lambda = 10$  in the first case, and  $\lambda = 100$  in the second), as well as to differences in GDP growth projections for the coming years. It is therefore surprising that the output gap estimated by the European Commission shows a greater correlation with the one estimated using a production function – whether that of the OECD or that of the BBVA Research Department – than with the one obtained using an H-P filter. This confirms the sensitivity of the filter to the value of  $l$  and to the sample period considered, and hence the limitations of this tool.

Table 3: Different estimates of potential GDP

Average annual growth rate

	BBVA			H-P	OECD*		European Commission**
	Structural unemployment	NAWRU	CU and structural unemployment		Dec-00	Sep-00	
1971-1980	3.4	3.6	3.6	3.4	nd	4.0	3.5
1981-1990	2.5	2.6	2.4	2.8	2.3	2.2	2.5
1991-1996	2.9	2.3	2.9	2.1	3.0	2.6	2.7
1997-2000	2.6	3.0	2.5	3.4	2.5	3.1	3.2

\* Estimates a Cobb-Douglas production function and  $\lambda = 25$

\*\* Potential output estimated by the European Commission is the result of applying an H-P filter with  $\lambda = 100$  to the real GDP series

Source: BBVA, OECD and European Commission

Nonetheless, the ease and speed of calculation with the filter and its good ability to reflect fluctuations in the cycle (not their intensity) make it a very useful instrument.

#### 4. Spain's potential output over a long-term time horizon

As already mentioned, on the basis of the production function and the forecast trends of its main determinants, that is, of labour, the savings rate and growth in total factor productivity, we can obtain an estimate of the potential output of the Spanish economy for any time horizon. In the long term, and with regard to the labour force, according to the latest population projections published by the INE, the significant decline in Spain's birth rate is expected to bring about a fall in the working-age population from 2005 onwards. These projections are realised assuming an annual quota of 35,000 immigrants. Hence, in the medium and long term, the supply of labour will only grow if there is a rise in the participation rate and a significant increase in the flow of immigrants. The savings rate, a determinant of the rate of capital accumulation, will depend on the financial position of the public sector: the higher the deficit (debt), the lower will be the savings rate<sup>11</sup> and the rate of potential output. The updated Stability Programme of Spain for 2000-2004 projects the attainment of a budget surplus of 0.3% of GDP and a reduction in the stock of public debt to 49.6% of GDP in 2004. However, the continuation of a structural deficit in a more pessimistic scenario than the one considered in the stability programme<sup>12</sup>, the limited funds coming from new privatizations, the petering-out of the benefits derived from the reduction in interest rates and, in particular, the pressure on expenditure stemming from the cost of pensions and health care associated with the inevitable ageing of the population, mean that in the long term neither the fiscal deficit nor public debt is likely to remain at the levels projected. Finally, among the factors affecting input productivity - besides technical progress - are all those elements that improve the quality of the factors of production (education) and clear the way for greater market flexibility (the part-time permanent contract, lower severance payments, performance-related pay...). Hence the importance of carrying through a wide-ranging reform of the labour market, of not delaying changes needed to guarantee the long-term sustainability

of the finances of the pension system, and of adopting measures to encourage saving (these should include a revision of the inheritance and wealth tax).

For this long-term analysis, we have considered a relatively optimistic scenario, so that, in the absence of far-reaching reforms to bolster productivity growth, the estimated growth rate of potential output may be considered high. First, instead of the labour shortage that arises when immigration quotas are held at current levels, we assume that the flow of immigrants is set at 90,000 per year up to 2009, increasing to 150,000 thereafter until 2020 (an average of 120,000 per year over the whole period). In addition, the participation rate is assumed to reach 72.6% in 2020, a higher rate than that observed during the past 40 years (a peak of 67.5% was reached in 1974). Such an increase is only possible if certain groups (women and young people) are encouraged to join the labour force and the age of retirement is delayed. We are therefore assuming that the reform of the labour market and a new *Pacto de Toledo* are going to include measures that will bring the participation rate closer to U.S. standards. Nonetheless, the restrictions imposed by the trend in the working-age population (0.1% under our immigration assumptions, and -0.2% with annual immigration at 35,000) will only allow moderate growth in the labour force, at an average annual rate of 0.6% over the whole period (0.3% with 35,000 immigrants per year). As a result of the labour reform, the structural rate of unemployment falls significantly, to stand at around 7.5% at the end of the period. Second, we assume that the Budgetary Stability Law, which is scheduled to come into force in 2002, will at the very least guarantee a balanced budget, and hence a progressive reduction in the stock of public debt. A decline in the public sector's borrowing requirement will make room for an increase in the national savings rate and thus also in the stock of private productive capital. This is assumed to rise at a rate of 5.9% on average per year during the period 2001-2020, well above the 4.3% rate observed in 1971-2000. Finally, TFP is assumed to continue to trend downwards in line with recent data (see Graph 1).

Table 4 presents the estimates obtained for potential output under the assumptions above (no positive productivity shock associated with the "New Economy" is included). The data show that, even under a very optimistic scenario, the potential output of the Spanish economy will fall slightly further over the next twenty years. This suggests that: i) reform of the labour market is necessary but not sufficient to increase the potential output of the Spanish economy given the labour shortage looming on the horizon; ii) a national pact is needed on immigration

<sup>10</sup> In the December 2000 World Economic Outlook, the OECD considerably modified the estimate of the potential output of the Spanish economy relative to the June 2000 Outlook. The new estimates are very similar to those obtained by the BBVA Research Department.

<sup>11</sup> If Ricardian equivalence holds, the decline in public saving is not compensated for by greater private saving, thus motivating a decline in national saving.

<sup>12</sup> See Box "Updated Stability Programme of Spain" in this issue of Situación Spain.

**Table 4: Actual and potential GDP**

Average annual growth rate

	Actual	Potential
1997-2000	4.1	2.6
2001-2010	*	2.3
2011-2020	*	2.5

\* The economy is considered to grow in 2001-2020 on average at the same rate as potential output in 1997-2000

Source: INE and BBVA

policy in the light of its importance for future growth prospects; iii) the reworked *Pacto de Toledo* should incorporate measures geared to reduce future expenditure and lay the basis for the transition towards a mixed pension system, while encouraging long-term saving in the economy; and iv) investment, both in technology and training, should be given priority in order to increase productivity.

Nonetheless, despite the slight fall in the rate of growth of potential output, limited population growth (around 0.25 under the broader immigration scenario outlined above) should allow per capita potential output to increase throughout the period 2001-2020, though at a slower rate than in the 1990s (2.2% and 2.6%, respectively).

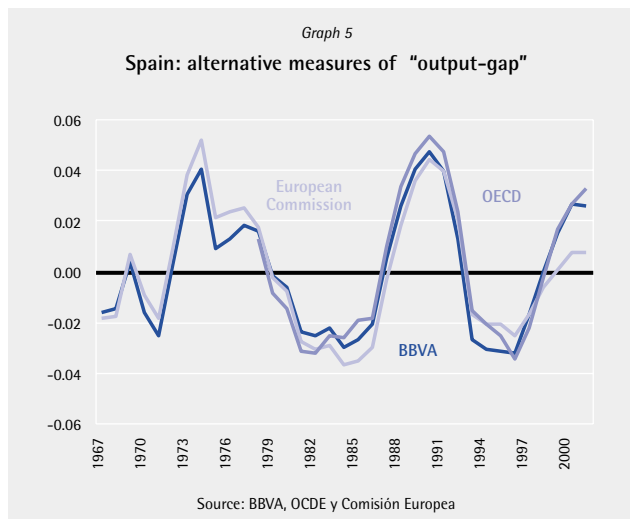
### 5. The cyclical position of the Spanish economy

The estimates of the cyclical component of GDP obtained using the different estimates of potential output considered<sup>13</sup> are displayed in Graph 5.

Overall, the different methods for decomposing GDP into its cyclical and trend components yield an identical classification of the economic upswings and downturns in Spain, there being only slight differences in the intensity of the cycles. It is noteworthy, first, that all the estimates class the recession in the late 1970s and early 1980s as being longer than that of the 1990s. Second, while the OECD and BBVA<sup>14</sup> estimates suggest that the two recessions are of similar intensity, the European Commission finds that the crisis in the 1990s was less profound. Third, there are significant differences with regard to the worst year of the crisis in the 1980s, though a degree of unanimity is discernible in relation to the crisis in the 1990s. Finally, in 2001, with the exception of the OECD, all the estimated

<sup>13</sup> The series have been normalised so that their average for the period 1967-2001 is zero.

<sup>14</sup> The cyclical component of GDP obtained by applying the H-P filter to the real GDP series considered by the BBVA produces shallower recessions and expansions than those derived from the rest of the estimates.



output gaps begin to close, reflecting the slowdown in the Spanish economy that started in the second half of 2000.

The foregoing results show that the determination of the cyclical position of an economy is by no means trivial. The differences observed - especially at the end of the period under consideration - between the estimates obtained using the completely ad-hoc approaches (H-P) and the others that endow the estimate with economic content (production function) mean that caution must be exercised in drawing conclusions about the situation of the Spanish economy solely on basis of the former.

### 6. Conclusions

The decomposition of economic growth into its cyclical and trend components is crucial to determine whether permanent or transitory disturbances are dominant in a particular economic upturn or downturn. A large number of different methods are used to do this in the literature, with sometimes conflicting results. In the case of Spain, when ad-hoc decomposition methods (Hodrick-Prescott filter) are used, it emerges that the rate of growth of potential output has increased in recent years. In contrast, when a production function is estimated not only is the rate of growth of potential output found not to have risen, but rather it is found to have fallen slightly. The immediate implication is that the output gap estimated in the first case is much lower than the one estimated in the second, and hence that the inflationary pressures associated with demand shocks are greater when a production function is used to identify them.

The meagre growth shown by productivity and investment in R&D over recent years, on the one hand, coupled with

the finding that around 50% of the rebound in inflation in 2000 was due to demand pressure, on the other, indicates that the results obtained using the production function are a better reflection of reality. This is no surprise, as, in contrast to univariate methods, the production function incorporates information about the utilization of the factors of production and the economy's technological capacities.

In the long term, the potential output of the Spanish economy is expected to continue to decrease - to stand at around 2.5% - unless sweeping reforms are undertaken not only in the labour market to increase the participation rate of the working-age population, but also in immigration policy (Spain's economy will become increasingly reliant on immigration) and in the public pension system to guarantee sustainable finances and avert a considerable increase in the level of the fiscal deficit and public debt. These reforms will only significantly raise potential output if they translate into gains in productivity. Accordingly, in conjunction with the macroeconomic policies, it is becoming increasingly important to apply microeconomic policies aimed at achieving a more efficient functioning of goods and service markets. Both considerable investment (upgrading of computer systems, creation of new companies, promotion of capital risk) and an adequate supply of human capital (reform of the education system) will be required to allow full advantage to be taken from the new technologies - the government levy established for the use of the radio spectrum is a step in the wrong direction. And it also requires flexible markets (liberalisation) and measures to stimulate the savings rate (elimination of taxes on savings such as the inheritance and wealth tax).

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## Spain: Main economic indicators

(% year-on-year change, unless otherwise stated) - February 2001

	1999	2000(1)	November	December	January	Latest figure	One year ago	Trend
Industrial production (seasonally-adjusted)	2.6	4.4	4.1	1.7		1.7	4.6	-
Business confidence index (net balance)	-2.1	2.5	2.3	0.3		0.3	0.7	-
CU (3)	79.9	80.7	80.3	80.3		80.3	81.2	-
Electricity consumption (4)	5.8	6.9	6.9	3.8	4.9	4.9	7.1	-
Cement consumption	11.7	11.1	10.9	3.9		3.9	10.2	-
Car registrations	17.9	-1.8	-11.5	-20.7	-2.9	-2.9	16.6	-
Consumer confidence index (2)	8.0	2.0	-1.0	3.0	2.0	2.0	8.0	-
CPI (overall)	2.3	3.4	4.1	4.0	3.7	3.7	2.9	=
Producer prices	0.7	5.4	5.7	5.0		5.0	3.8	+
Wage agreements (5)	2.4	3.0	3.0	3.0	3.2	3.2	2.8	+
Money supply (households and NPISH)	1.5	1.5	1.8	2.6		2.6	1.8	=
Domestic private sector credit	18.4	18.2	18.1			18.1	18.4	-
Social security registrations	5.5	5.0	4.8	4.5		4.5	5.5	-
Registered unemployment (6)	-237.9	-94.0	-67.1	-57.4	-49.9	-49.9	-133.7	-
Unemployment rate (3)	15.9	14.1	13.6	13.6		13.6	15.4	-
Employment (qtr.) (3)(6)	612.6	656.2	568.5	568.5		568.5	700.2	-
Current account balance (7)	-12042.5	-15726.6	-993.0			-993.0	-4274.0	-
Trade balance (7)	-27547.0	-32495.0	-2793.0			-2793.0	-2253.0	-
State cash balance (7)	-1057.3	-404.5	121.7	-404.5		-404.5	-1057.3	-

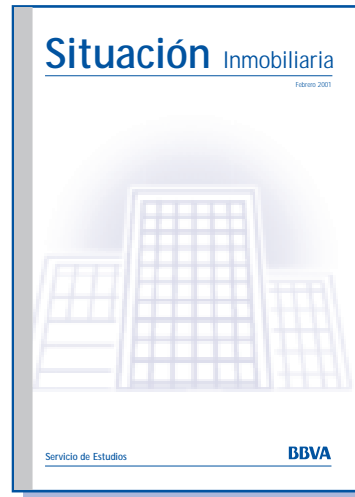
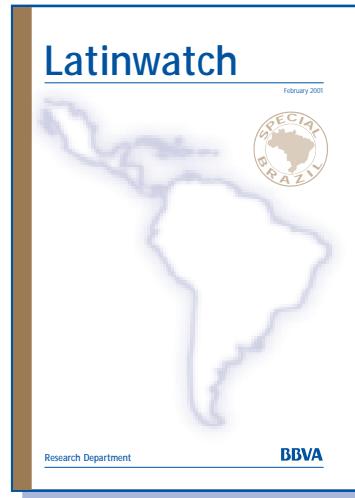
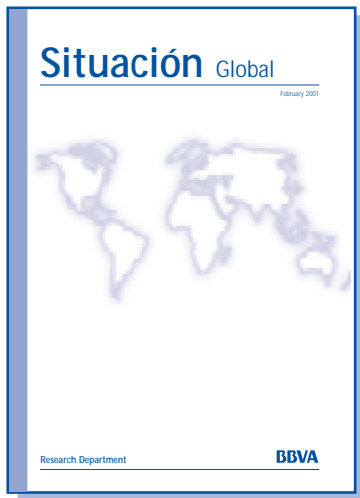
(1) Available to date. (2) Balance of replies (%). (3) Quarterly data for quarter ending in month specified. (4) Corrected for calendar effects and temperature. (5) Year-to-date. (6) Year-on-year in '000s. (7) Balance in millions of euros.

## International situation: Forecast summary

	Real GDP (%)				Inflation (% at year-end)			
	1999	2000	2001	2002	1999	2000	2001	2002
US	4.2	5.0	2.5	3.5	2.2	3.4	2.8	2.4
EMU	2.5	3.4	2.5	2.2	1.1	2.3	2.1	1.7
Japan	0.8	1.5	1.2	1.5	-0.3	-0.6	-0.1	0.0
	Fiscal balance (% of GDP)				Current account balance (% of GDP)			
	1999	2000	2001	2002	1999	2000	2001	2002
US	1.4	2.4	2.5	2.2	-3.6	-4.4	-3.8	-3.8
EMU	-1.3	-0.8	-0.7	-0.3	-0.1	-0.5	-0.5	-0.4
Japan	-9.0	-8.9	-8.5	-8.5	2.5	2.7	3.0	3.0
	Official interest rate (%)*				Exchange rate (vs. \$)*			
	mar-01	jun-01	sep-01	dic-01	mar-01	jun-01	sep-01	dic-01
US	5.50	5.25	5.25	5.25				
EMU	4.75	4.50	4.50	4.50	0.91	0.92	0.92	0.90
Japan	0.35	0.35	0.35	0.35	116	115	118	118

\* End of period

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Register in Madrid: M-31254-2000

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