

Situación Spain

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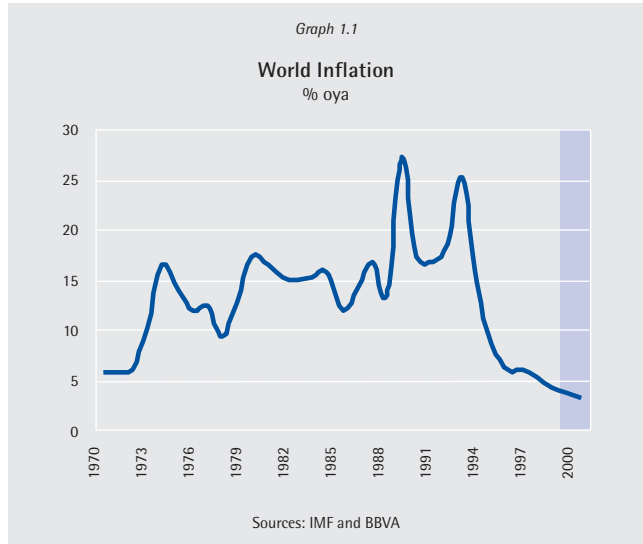
1. International environment

Slower world growth

There has been a succession of downgrades to projections of world growth for 2001 in recent months. Our current forecast projects GDP growth of about 3%, a sharp reduction from the 4.9% pace of advance observed in 2000. However, it is important to recall, that, with the strongest growth since 1984 and record world trade, 2000 was an exceptional year. The current slowdown is thus no more than a return to the average growth rate of the past 20 years, and cannot be described as a global recession.

It is important to note, moreover, that on this occasion it is the industrial countries that lie behind the slowdown. The current situation is therefore different from events in 1998. The growth slowdown from 4.3% in 1997 to 2.8% in 1998 was the result of a marked slowing in the developing countries in the wake of the crisis in South-east Asia and the Russian debt default. The emerging countries grew at that time at a similar rate to the industrial countries, at around 3%, which, in terms of GDP per capita, implied a negative growth differential for the developing countries for the first time since the 1980s. In 2001, the protagonists of the slowdown are the OECD countries. Consequently, the developing countries are registering a positive growth differential, which is contributing to international stability.

This deceleration in world output has also come along with a reduction in inflation. In fact, after falling to 4.2% in 2000, its lowest rate of increase since 1969, inflation is expected to slow further in 2001, to 3.6%. For the first time, higher oil prices have not led to an increase in world inflation. This reflects, on one side, the efforts being made by developing countries to reduce inflation. Structural reforms and the enhanced credibility of economic policies have allowed these countries to reduce inflation, from 15% in 1995, to an estimated 5% rate for 2001. On the other, it highlights the fact that, in the industrial coun-



tries as a whole, the deceleration is not the result of supply factors, as it has not come along with any significant rebound in inflation rates. Even though inflation expectations have deteriorated markedly over recent months, in response to oil price developments in particular, our forecast for 2001 is 2.5%. This is the same rate as last year and near the 2% average rate of inflation recorded since 1995.

Divergence between the USA and EMU in 2002

In the industrial countries, GDP growth in 2001 is forecast at 1.9%, just under half last year's growth rate. The United States and EMU are expected to grow at close to 2%, Japan at below 1%, and the South-east Asian countries at close to 3.8% (half 2000's growth rate).

In sum, none of the leading economies seems likely to record growth above 2%. In the United States, GDP growth of 2.5% in the first quarter masks a slowdown in capital goods investment and capital imports which looks set to continue in the coming months. After weak second and third quarters, output could begin to pick up towards the end of the year, underpinned by the aggressive rate lowering and tax cuts. In fact, the improvement in financial indicators and the rebound in long-term bond yields are anticipating such a recovery scenario and suggest that further lowering of interest rates will probably not be required in the coming months.

In Europe, the deterioration in industrial confidence, which has consistently come in below expectations in recent months, suggests that growth will be nearer 2% than the 2.5% rate we began to forecast last October. In this case, the unwinding of the positive demand shocks that propelled European growth in 2000 to its highest levels of the decade and the negative effect of supply shocks, mainly from oil, are contributing to slow the

Table 1.1. Growth forecasts

	1999	2000	2001	2002
OECD	3.4	4.2	1.9	3.0
UD	4.2	5.0	1.8	3.5
EMU	2.5	3.4	2.0	2.5
UK	2.3	3.0	2.3	2.4
Japan	0.8	1.7	0.6	1.3
Developing countries	3.6	5.5	4.4	5.1
Latin America	0.0	4.3	2.6	3.6
Transition countries	2.6	5.8	3.8	4.2
WORLD	3.5	4.9	3.0	3.9

Sources: IMF and BBVA

economy. It is these internal factors, not the impact of the U.S. slowdown, that are having the greatest effect on the European economy.

A positive growth differential in favour of Europe therefore seems unlikely in 2001. More significant, however, is the outlook for 2002. Growth in the United States is expected to pick up to near potential, at some 3.5%. In EMU, where scope for demand policies is limited and supply problems exist, GDP is also expected to grow at near-potential rates in 2002, at around 2.5%. This means that, following several months in which growth in the two economies is going to converge, 2002 will again see a growth differential in favour of the U.S. economy.

In Japan, the economy's structural problems have been compounded by political uncertainty in recent months. There is almost no scope for demand policy actions. Interest rates have returned to zero after a shift in the Bank of Japan's monetary policy in March. In addition, given the level of public debt – 130% of GDP – there is little leeway for further fiscal policy stimulus. In the medium term, it is to be hoped that a change of government will make it possible to advance with the structural reforms that need to be tackled, giving priority to the financial sector. In the short term, the way out of the current predicament is a depreciation of the yen to boost the external sector and "import" inflation. Such a move is constrained, however, by the risk of problems relating to competitiveness in neighbouring Asian economies and a further widening in the already high U.S. trade deficit with Japan. In view of the continuing uncertainty, growth is expected to slow to around 0.6% in 2001.

Disparate inflation trends

The course of trend inflation has differed in the United States and EMU in recent months. In the European economy, in addition to pressure from higher food prices, there have been second-round effects from oil, that is, the pass-through of higher energy costs to industrial goods prices. As a result, underlying inflation has already rebounded from 1.3% in September 2000 to rates over 2% in the spring of 2001. This is the highest rate of underlying inflation observed since 1996. Given the inertia shown by inflation shocks in EMU (see article "A Macroeconomic Model for EMU"), the latest rise in the price of oil reduces the likelihood of the underlying rate falling much below 2%, the ECB's price ceiling, in the short term. In this context, having cut rates by a quarter point in May, the ECB has little scope for further interest rates cuts. Weaker activity will nonetheless likely lead to a further one-quarter-of-a-point cut in rates, to 4.25%.

Table 1.2. Inflation forecasts

	1999	2000	2001	2002
OECD	1.9	2.5	2.5	2.0
US	2.2	3.4	3.0	2.4
EMU	1.1	2.3	2.6	1.9
UK	2.3	2.1	2.0	2.3
Japan	-0.3	-0.6	-0.3	-0.1
Developing countries	6.0	5.8	5.1	4.8
Latin America	8.8	8.0	6.2	5.5
Transition countries	45.4	20.3	15.0	10.1
WORLD	5.2	4.2	3.6	3.0

Sources: IMF and BBVA

In the United States, with a more flexible economy, there has been no rise in underlying inflation in recent months. Prices of non-energy industrial goods are expected to rise by 0.6% in 2001, exactly the same rate as has been observed since 1997. In EMU, in contrast, the prices of such goods are likely to rise by 1.4% in 2001, double the rate of increase observed in previous years. It must not be forgotten, however, that the main risk in the coming months is still an increase in inflation. In a future context of economic recovery, and bearing in mind the substantial lowering accumulated by interest rates and the rise in oil and electricity prices – in the midst of the crisis in the sector – this risk could prompt the Federal Reserve to hike interest rates.

The euro returns to lows

The difference in expectations between the United States and EMU has pulled down the European currency to its lows of six months ago. Overall, the behaviour of the euro is reflecting: i) a stronger growth outlook in the United States than in EMU for 2002; ii) a more pronounced worsening in expectations of inflation in Europe, which depreciates the euro because of purchasing power parity; iii) doubts about the ECB's credibility and its communication policy; and iv) a widening of long-term interest rate differentials between the United States and EMU. Despite the fact that, for the first time since 1994, short-term rates in the United States are lower than in Europe, investment in the U.S. economy still yields higher returns in the medium term. In addition, downward pressure has been exerted on the euro by the reduction in the weighting of the European area in the financial market benchmark index, the MSCI (Morgan Stanley Capital international) index. This sparked a transfer of funds out of euros and into sterling and the dollar at the end of May. In the coming months, a best-case scenario for the euro would be a recovery to a range of 0.87–0.90, consistent with the path of economic fundamentals.

2. The real economy

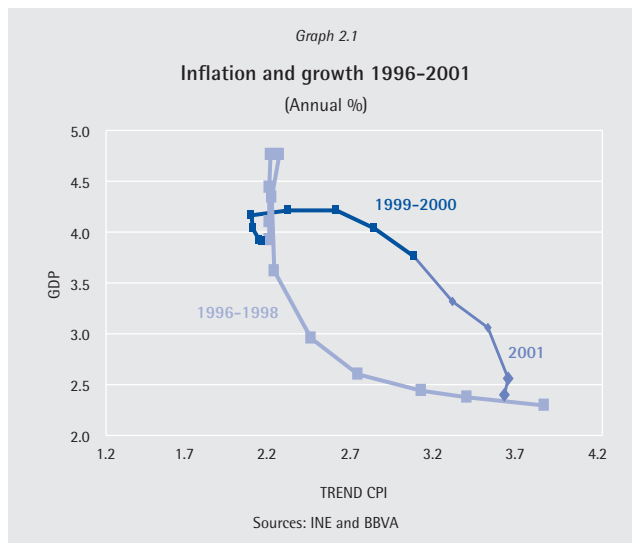
Deceleration with inflation

If one had to sum up the outlook for Spain's economy in 2001, perhaps the most fitting description would be "deceleration with inflation". The economic expansion has been characterised by rising growth and falling inflation since 1996. But a gradual reversal of this trend started in mid-2000 for growth and a year earlier for BBVA trend inflation.

GDP is expected to grow by 2.8% in 2001, 1.3 percentage points less than average growth in the past two years, but still higher than the estimated growth rate of potential output of 2.6%¹. Inflation, meanwhile, will probably be 0.3 points higher in 2001 than in 2000, at an average rate of 3.7%. As a result, the inflation differential with EMU as a whole is expected to rise to 1.2 percentage points, from 1.1 percentage points the previous year. Despite the deceleration in activity, real convergence between Spain's economy and EMU will continue. The growth gap will still be positive, and is even likely to be higher in 2001 than in 2000 (up from 0.7 to 0.8 percentage points of GDP growth).

In the course of 2000, the Spanish economy sustained growth rates of GDP of around 4%, though there were increasing signs of deceleration from the second quarter of the year on. Growth in domestic spending – both

¹ See Patry Tello, "What is the potential output of the Spanish economy?", Situación Spain, February 2001, BBVA Research Department.



consumption and investment – began to slow as the factors that propelled its advance in previous years unwound: namely, lower real interest rates, euro depreciation, a positive commodity shock and wage moderation, as well as the stimulus to household disposable income delivered by the 1999 fiscal reform. Only the depreciation of the euro has continued to "add" growth through higher exports to third countries. The cost, however, has been seen in higher inflation and a reduction in sales within EMU caused by the appreciation of Spain's real effective exchange rate versus the euro area as a whole. That is, as a result of a continuing loss of competitiveness.

A change in the sign of the commodity shock as energy costs moved up was therefore all that was needed to bring

Table 2.1

Trend-cycle data % oya	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 others	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
Domestic demand	5.7	5.6	5.5	5.4	5.1	4.5	3.8	3.3	2.8	2.7	2.8	2.7	4.1	2.7
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
Net trade (*)	-1.8	-1.6	-1.4	-1.2	-0.8	-0.3	0.2	0.5	0.4	0.3	-0.2	-0.3	-0.1	0.0
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	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) Industry and energy

Sources: INE and BBVA

about a deterioration in households' disposable income, expectations and real spending. This process has been reinforced by weaker employment growth and a loss of purchasing power in wages, at a time when the household saving rate is also running at record lows, and needs to rise as a precaution.

Slower growth in domestic spending was partly offset by a smaller external sector drag on growth. Exports sustained very stable rates of growth in 2000, at around 11%, while imports slowed in line with the weakening in domestic activity.

All of the factors outlined above are, by definition, transitory, and have no permanent effect either on growth or the capacity of supply to cope with accelerations in demand without generating inflationary tensions. In order to increase the economy's growth capacity there is a need for greater flexibility in goods, services and factor markets to make room for a permanent increase in productivity. In this regard, parliament approved Royal Decree of 2 March 2001 on Reform of the Labour Market (see Box in this chapter). This decree follows the same pattern as the previous reforms that only affect types of hiring, and more far-reaching changes are left outside its scope. In this regard, it has just been announced that the social partners are to start conversations on the reform of collective wage bargaining. An agreement that serves to strengthen wage negotiations at a company level, instead of provincial or regional settlements, and which eases the path towards settlements, curtailing the "ultra-activity" of wage pacts, would be a significant advance in the reform of the labour market. And wages growth would be better adapted to the circumstances of individual firms as a result.

Weaker expectations

The government and different international agencies (the OECD and IMF) updated their forecasts for the Spanish economy between April and May, relative to those announced six months earlier. Projections for growth in 2001 have been revised down across the board. The reduction ranges from 0.3 points in the case of the European Commission (from 3.5% to 3.2%) to 0.6 points for the OECD (from 3.5% to 2.9%).

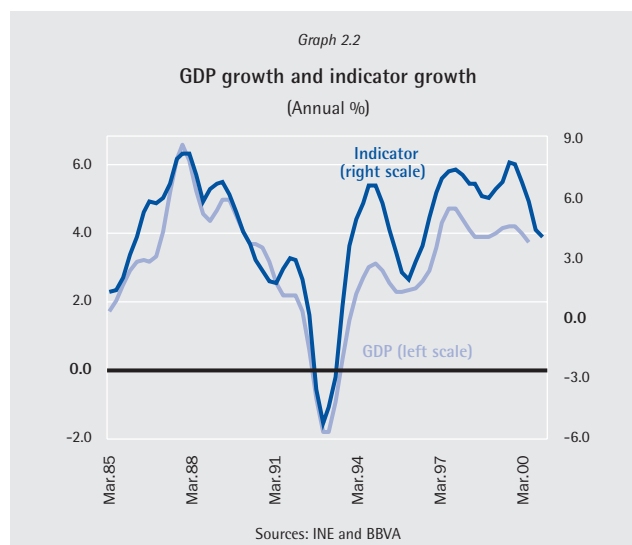
All the revisions project a reduction in the contribution of domestic demand to growth (both in consumption and investment) and envisage an improvement in the performance of the external sector. This result is compatible with the slowdown expected in export growth, since goods and services imports will also decline.

BBVA revised down its growth forecast from 3.2% to 2.8% in January past as a result of the deterioration that existed in expectations for investment - mainly in equipment - and household consumption spending. The decline in import volumes, particularly in capital goods imports, and the deterioration in indicators of household expectations and spending, in a scenario of higher inflation and unwinding of the transitory factors that propelled growth in the previous years, led us to project a faster deceleration in 2000 than initially anticipated, to a growth rate of GDP just above potential.

No turnaround in activity

An aggregation of several series whose rates of growth track the GDP cycle in a single indicator suggests that the Spanish economy is likely to slow for at least the first three quarters of 2001. Thereafter, confidence in the statistical forecasts for the variables considered diminishes, and so a number of hypotheses about the behaviour of exogenous variables have to be incorporated to build a scenario for the next period. The outlook for growth in other economies, the price of oil, the exchange rate of the euro and the path of wage bargaining therefore have to be coherent with the pattern of GDP and its components.

To do this, we elaborated an indicator consisting of five variables whose movements track those of GDP. These are calendar-adjusted IPI, the volume of non-energy imports, electricity consumption, social security registrations and the number of air passengers. All are monthly series, with sufficient observations to allow statistical analysis (extraction of trends and production of univariate forecasts), and show a degree of correlation with the benchmark series (GDP).



We aggregated the trend signal of these five series into a single indicator, allowing too for the different correlation of each with the business cycle. The result of this exercise is displayed in Graph 2.2. It can be seen that, except for early in 1992, the GDP cycle and the indicator have tended to move in phase. It is important to note that the extraction of the trend of a series using its "gross" data requires the production of forecasts, such that the accuracy of the latter determines the accuracy of the former. The information available for the above series up to March 2001 allows us to affirm that there will be no increase in annual GDP growth rates during the first three quarters of 2001. For the latter part of the year, given existing expectations for exogenous variables such as oil and the international environment, the prospect of a progressive slowdown in growth remains unchanged.

Slowing consumption and household income growth

Even though short-term indicators of household spending and expectations (confidence, retail sales, car registrations) have slowed or halted the decline observed late in the year 2000, household spending growth is expected to continue to trend downwards as it has done since the middle of last year (from an average 4% rate in 2000, to 2.9% this year, the lowest since 1996).

Although the figures are as yet unavailable, all the indications are that households' lending capacity continued to decline in 2000. The Bank of Spain's financial accounts confirm the deterioration in households' financial situation observed in the second half of the 1990s. Thus, net financial saving represented 6.3% of GDP in 1995, but only 0.1% in 2000, one percentage less than in 1999.

The buoyancy of private consumption in 2000 (7.7% in nominal terms), the pace of advance of which again outstripped disposable income growth (7% year-on-year), and an increase in residential investment lie behind the weakening in households' lending capacity. This may give an indication as to the performance of private consumption in 2001. The weaker growth expected in real disposable income (as a result of both higher inflation and slower growth in nominal incomes), the stalling of growth in net financial wealth (following considerable gains in the period 1995-1999) and record low saving rates suggest that growth in private consumption will slow in 2001.

Two of the key factors contributing to slower growth in disposable income are weaker job creation and worsening expectations of corporate earnings. As households are net

Table 2.2. Household and NPISH income account

(annual %)	1997	1998	1999	2000	2001
Employee remuneration	6.3	7.2	7.2	8.2	6.8
Gross disposable household income (GDHI)	4.7	5.7	6.5	7.0	6.5
(real)	2.8	3.9	4.2	3.5	2.9
Final spending	5.6	6.6	7.3	7.7	6.6
Gross household saving (%/GDHI)	13.4	12.7	12.0	11.4	11.3
Net lend. (+) or net borrow. (-) (%/GDP)	4.2	3.1	1.9	1.0	1.2
Net financial saving (%/GDP)	4.4	2.7	1.1	0.1	

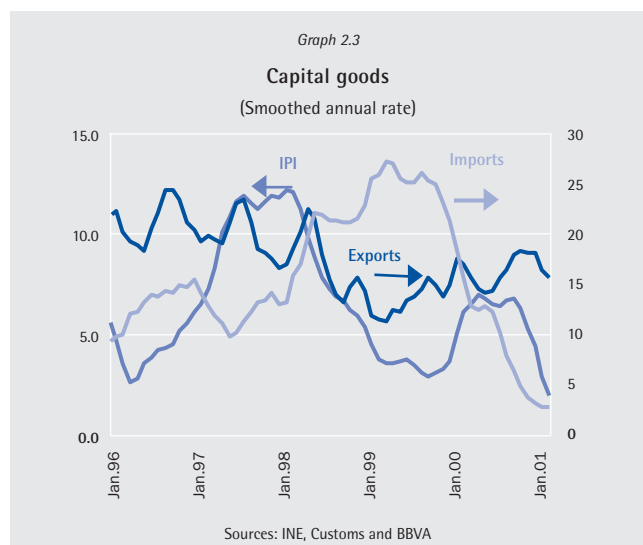
Note: shaded area is BBVA forecast
Sources: Bank of Spain, INE and BBVA

lenders, the reduction in interest rates has a net positive effect on their financial situation. This effect is now smaller than in the past, however, because the lending position is not so high and households' asset portfolios are very different (shares and other stock holdings represented 47% of total household assets in 2000, compared with 28% in 1995).

Investment in equipment has slowed to a trickle

After a positive end to 2000, the short-term indicators of investment in equipment have weakened in the early part of 2001. This is the case in both industrial production and exports. Moreover, the initial IPI data releases for the end of 2000 were revised sharply downwards, strengthening the current declining trend.

Industrial expectations, as reflected in the Industrial Climate Index, were negative in the first quarter of 2001 as a result of falling order books, most notably in the domestic market and for capital goods in particular. The level of capacity utilization in the capital goods industry fell by



four points between the second quarter of 2000 and the first quarter of 2001, from 83.1% to 79.1%.

In view of the behaviour of short-term economic indicators, and the more muted impact of factors that drive investment growth (expectations of activity and companies' financial situation) in 2000, growth in capital goods investment is expected to decelerate further in 2001, to an average rate of 0.5%.

With regard to investment in construction, the leading activity indicators show a slight deceleration in the sector, most notably in residential building. The execution of civil engineering works already tendered is going ahead at a robust pace, however, and the healthy state of order books for public works mean that the outlook of construction companies with regard to developments in the sector is positive. Nonetheless, a loss of momentum is likely in the course of the year, and investment in construction is expected to record an average growth rate of 3.9%.

External sector: lower imports

In 2001, growth in goods and services exports slowed by 2.5 percentage points, to 8.3%, in response to weaker growth in world trade (down from 6.4% in 2000 to 6%) and a loss of competitiveness in the Spanish economy linked to the continuing inflation differential with EMU countries. For their part, imports decelerated because of the weakening of growth in activity. Goods and services imports are expected to expand by 7.7% in 2001, down 3.4 percentage points from the previous year.

The figures for foreign goods trade in the first quarter of 2001 confirm a scenario of slowing import and export growth. Growth in foreign sales of goods is even weaker in capital goods, which were robust up to the end of 2000.

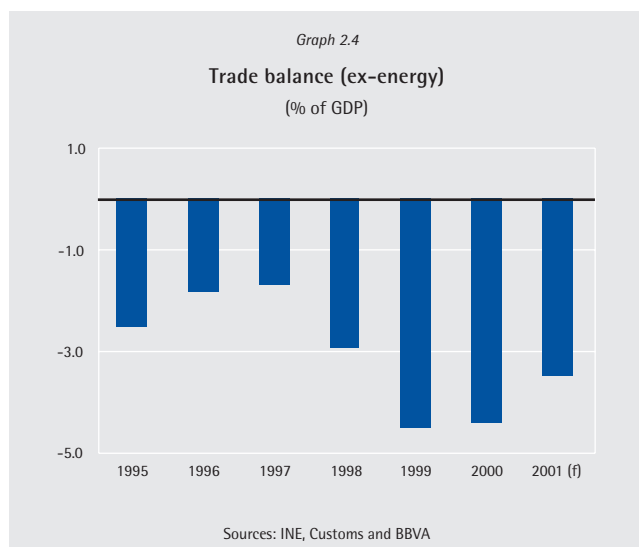


Table 2.3. Economy's income account

	1997	1998	1999	2000	2001
Gross disposable income (% annual)	6.0	6.6	6.6	7.6	6.0
Gross national saving (%/GDP)	22.6	22.6	22.3	22.5	22.3
Net lend. (+) or net borrow. (-) (%/GDP)	1.6	0.5	-1.1	-2.2	-1.9

Note: 2001 forecasts
Sources: Bank of Spain, INE and BBVA

Goods imports are also continuing to slow, except in the case of purchases of food products.

Reflecting these developments, the trade deficit should narrow in 2001, both in absolute terms and as a proportion of GDP. After an imbalance of some 7.1% of GDP in 2000, the trade deficit will probably come in to around 6% in 2001.

The current account deficit is expected to narrow in 2001 on the back of this correction in the trade deficit. In addition, the surplus on capital account is likely to remain steady in terms of GDP, largely reflecting capital transfers between Spain and EMU, should make room for a reduction of the Spanish economy's financing requirements in 2001, to under 2% of GDP, as against 2.2% in 2000. There will be contributions to this correction across all sectors of the economy.

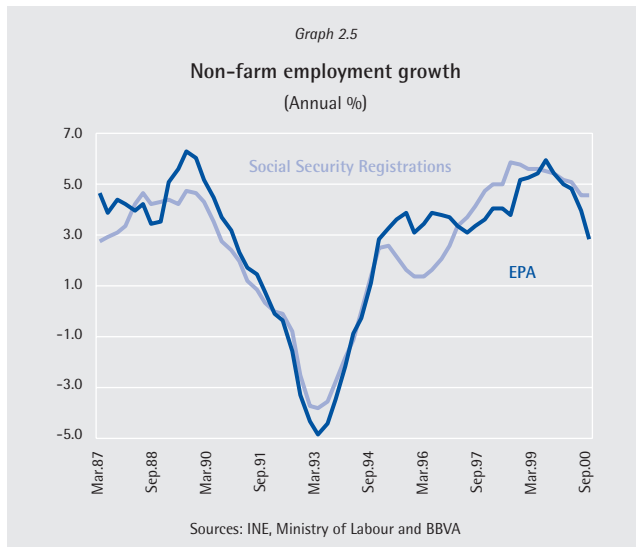
Domestic saving will nonetheless still be insufficient to finance all of the investment in the Spanish economy. Evidence for this is provided by balance of payments data to February, which show that the economy had a lending capacity equivalent to 0.04% of GDP, largely because of the timing of EU transfers. In the same period of 2000, there was a financing requirement of 0.06%.

Slowing employment and activity

According to EPA labour survey data, there have been no net employment gains in the Spanish economy since the summer months of last year. The 12-month growth rate of employment fell by almost two percentage points between the first quarters of 2000 and 2001: from 4.7% to 2.8%. Taking non-farm activities together, the figures are 5.4% and 2.8%, respectively.

The deceleration in non-farm activity has resulted in a similar performance in employment, though relatively much more pronounced in employment in construction and services. If this is reflected in the Quarterly National Accounts data, the deterioration in the apparent productivity of labour could come to a halt, at least in those two sectors.

Regarding the non-farm sectors, only construction registered an increase in employment in the first quarter of



2001, whereas employment in services as a whole has been falling since the final quarter of 2000. However, the deceleration in employment growth measured by the EPA survey is more pronounced than that shown by social security registrations. This phenomenon is particularly marked in the services sector. The growing divergence between social security registrations and the EPA results (corrected for the updating of the sample carried out in the first quarter of 2000) could be connected with high levels of registration by immigrant workers. Such workers are likely to be under-recorded in the Population Census and Municipal Censuses (from which the EPA survey is produced). Thus, the number of foreigners registered in the social security system has risen by almost 130% since the end of 1998, whereas the number of foreign workers in the EPA survey has grown by only 76%. Foreigners accounted for 3.4% of total social security registrations in April 2001, double the share of this population group in the EPA employed labour force in the first quarter of 2001.

**Table 2.4. Foreigners in Spain
(% share of total)**

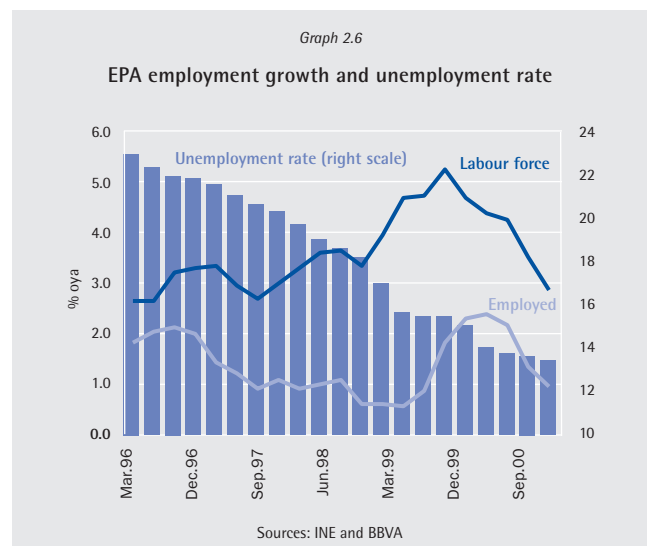
	Dec.98	Apr.01	Rate of increase (%)
Social security registrations	1.7	3.4	128.6
EPA employed	1.1	1.7	75.5

Sources: INE, Ministry of Labour and BBVA

In agriculture, employment has recorded a net positive rate of growth over the past two quarters. A surprising increase of some 6% in the first quarter of 2001 from the previous quarter reflects positive developments in winter harvests (mainly, olives and citrus fruit) and the advance in gross value added (GVA) in the sector as a whole linked to good meteorological conditions in 2000. In that year, annual growth in GVA in agriculture rose from -0.3% to 2.5% between the first and final quarters.

The labour force fell by 0.2% in the first quarter of 2001 despite the fact that the population aged 16 and over is posting positive and highly stable growth rates of around 0.4% per year. The decline registered may therefore have been the result of a fall in the rate of growth of the population aged 16-64 - the potentially active population - from 0.4% in Q300 to 0.1% in Q400 (the latest data available) and a degree of "discouragement" in labour market incorporations in response to weaker expectations for economic growth.

Growth in EPA employment is projected at 2.3% in 2001. The labour force is expected to grow by 1%, half the rate of increase registered in 2000 (corrected for the updating of the sample carried out by the INE). The unemployment rate should nonetheless be 1.1 percentage points lower than in 2000, at some 13%. This fall will reflect low growth in the labour force, not job creation, however.



A small step in labour market reform

A much-needed hiring reform

The government approved on March 2, with a largely unmodified original text, the Royal Decree on Urgent Measures for Reform of the Labour Market, which was then passed by parliament in May. The law was fast-tracked through parliament because the permanent employment-promoting contract, one of the major features of the 1997 reform, was set to drop out of force on May 16. This contract lowered the cost of unfair dismissal owing to objective causes (organisational, production-related and financial) from 45 days per year worked with a maximum of 42 monthly payments for the ordinary permanent contract to 33 days per year worked with a maximum of 24 monthly payments. This contract and social security contribution incentives for the conversion of fixed-term contracts to permanent contracts meant that, in 2000, 8.8% of contracts signed were permanent, more than double the figure for 1996. Of this percentage, 4.6 points were the result of types of hiring introduced by the May 1997 reform. As a result, temporary employees as a proportion of total wage-earners fell by 1.6 percentage points between 1997 and 2000, the outcome of a 3.8-point decline in the private sector and a 3.9-point increase in the public sector (see table below).

However, there has been no further reduction in unfair dismissal costs for permanent contracts (792 days, compared with an average of 517 days in the EU) and the segmentation that exists between "expensive" and "cheap" permanent contracts - ordinary contracts and contracts benefiting from all social security contribution incentives - has not been erased. The latter could amount to around 1% of 2000 GDP in the period 1997-2001.

In addition to making permanent hiring cheaper, the cost of fixed-term hiring has been increased by introducing compensation for termination of the contract (8 days per year worked is a very low cost bearing in mind the very short average length of contracts signed in Spain¹) and allowing a limit to be placed on the use of such contracts in collective bargaining. In addition, the maximum length of temporary contracts (the most frequently used) has been reduced to 12 months.

With regard to part-time hiring, the government has removed the ceiling in force (77% of the full working day) for the establishment of part-time contracts. The distribution of working time has also been made more flexible, so that it is now more adaptable to companies' needs. The 1998 regulation relating to overtime and social protection for this type of contract has been retained. With these changes, an increase in part-time hiring is probable, especially as the use of such contracts is much lower than in other EMU countries. The latter is particularly striking in view of the marked seasonal nature of a number of labour-intensive services.

Much remains to be done in the labour market

Improving the employment rate, which is crucial to allow real convergence by the Spanish economy, depends upon the labour demand-supply match, for which legal changes in hiring are only a part of the reforms possible. More flexible wage setting is required. One that is more attuned to productivity developments in companies. This makes it essential to reform the structure of collective bargaining, eliminating the regional, provincial and sectoral level of bargaining. This level currently affects the majority of workers with collective agreements and systematically registers the biggest wage increases, irrespective of the situation of firms. Moreover, the current system whereby agreements are of unlimited duration when no agreement has been reached on their renewal (the so-called "ultra-activity" of collective bargaining) also needs to be restricted. Another possible measure worth considering is for collective bargaining to define more precisely the causes of dismissal and even the size of compensation. In sum, the issue at stake is to increase the importance of firm-level collective bargaining, leaving the negotiation of more general aspects to the sectoral level.

Labour market policies also need to foster the geographical and functional mobility of workers and step up training and participation in the labour market, thereby increasing the activity rate of the Spanish economy and hence its potential output.

¹ Of the 3.4 million contracts signed in the first quarter of 2001 in Spain, 1.3 million have a duration below 3 months. Almost 1 million more are contracts for specific work or services without any set duration.

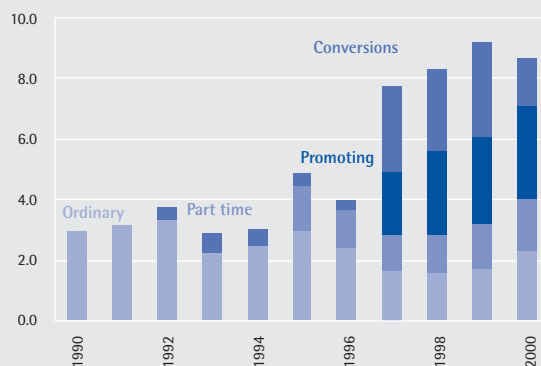
Ratio of temporary to permanent workers

	Total	Private sector	Public sector
1997	33.56	38.83	16.21
1998	33.05	37.31	17.89
1999	32.81	36.29	19.55
2000	31.97	35.00	20.07
2000-1997	-1.60	-3.83	3.86

Sources: INE, Ministry of Labour and BBVA

Permanent contracts

% of total



Sources: INEM, Bank of Spain and BBVA

3. Prices and wages

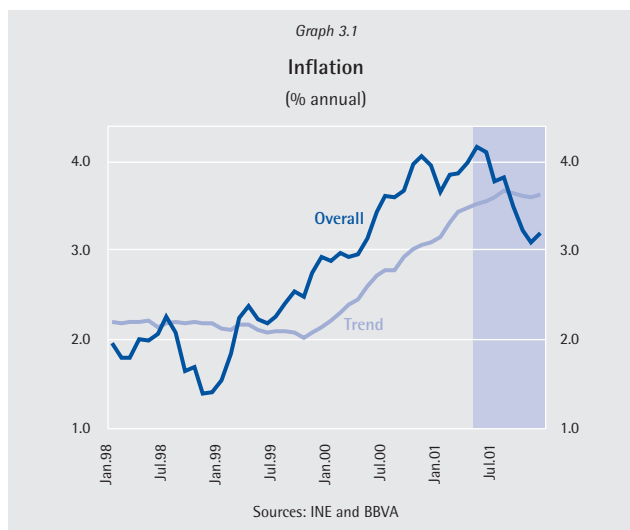
Pressure from energy, food and wages

In the course of the first four months of 2001, inflation expectations have risen in the Spanish economy as a consequence of negative developments in food prices, wages and energy costs. The only improvement has been lower expectations for the inflationary effect of excessive demand growth in view of the slowdown in economic growth.

The decline in oil prices in dollar terms expected for 2001 has not materialised. In fact, price swings have some weeks sent Brent crude up to around US\$28 a barrel. To the aforementioned must be added a greater-than-expected depreciation of the euro at the end of last year. The average exchange rate in the first quarter was US\$0.92 to the euro, instead of 0.95 as estimated. As a result of these developments, the supply shock associated with higher fuel costs is proving to be more protracted than was anticipated at the end of 2000.

Drawing on the information available to January past, the annual rate of CPI inflation was expected to end 2001 at just under 3%. We now project end-year inflation at 3.2%. This, despite our scenario assuming a fall in crude oil prices from current levels (from US\$28 a barrel for Brent in May to around US\$24 at the end of 2001) and no increase in import costs as a result of the euro exchange rate (steady depreciation below 90 cents to the euro).

Faster rates of increase of prices in the early part of 2001 have been registered in both the more stable components of the index - non-energy industrial goods and services (excluding services with government-fixed prices) - and in residual CPI inflation (energy and fresh food).

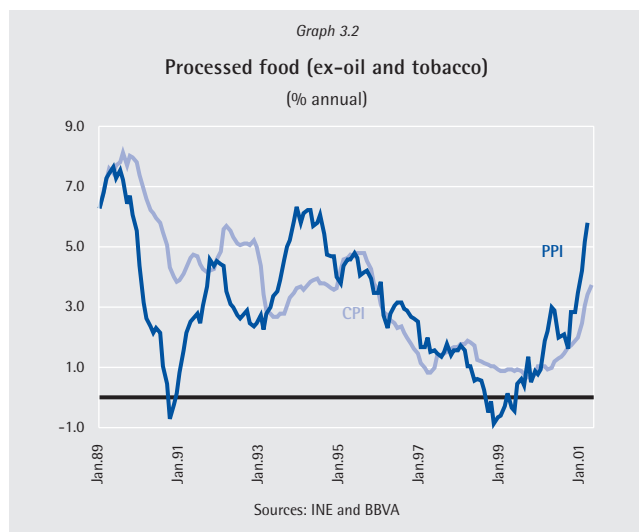


The rate of inflation rose by 0.3 percentage points in the first four months of the year, from 3.7% to 4.0%, the same as the IPSEBENE index (CPI excluding fresh food and energy), which rose from 3.1% to 3.4%. The BBVA trend CPI accelerated by 0.4 points, to 3.5%. The biggest price variations have been seen in food prices, reflecting changes in consumption as a result of the health scare affecting some meat products. The decline in consumption of meat considered unsafe has pushed up the prices of alternative products both at the consumer and producer level. The latter are reflecting upward pressure from higher meat processing costs and increased demand for vegetable-based fodder. Thus, PPI inflation for food products rose from 0.7% to 3.8% year-on-year between October 2000 and March 2001. The meat component of the index surged from 10.6% to 16.7% over the same period. The latest information suggests that the level and make-up of meat consumption is returning to that observed prior to the end of 2000. It is important to recall, however, that food prices have been trending upwards since the beginning of 2000, so

Table 3.1. Inflation: data and forecasts

(% annual)	Overall CPI			IPSEBENE			Residual CPI			Trend CPI		
	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001
January	1.5	2.9	3.7	2.2	2.3	3.1	-0.2	4.9	5.0	2.1	2.2	3.1
February	1.8	3.0	3.8	2.3	2.2	3.2	1.0	5.0	5.3	2.1	2.3	3.3
March	2.2	2.9	3.9	2.5	2.2	3.3	2.4	4.6	5.1	2.2	2.4	3.4
April	2.4	3.0	4.0	2.5	2.2	3.4	3.0	4.5	5.3	2.2	2.4	3.5
May	2.2	3.1	4.2	2.5	2.3	3.6	2.6	4.8	5.9	2.1	2.6	3.5
June	2.2	3.4	4.1	2.5	2.3	3.7	2.5	5.7	5.6	2.1	2.7	3.6
July	2.2	3.6	3.8	2.5	2.5	3.7	2.7	6.2	4.1	2.1	2.8	3.6
August	2.4	3.6	3.8	2.4	2.7	3.8	3.4	6.1	4.0	2.1	2.8	3.7
September	2.5	3.7	3.5	2.3	2.7	3.6	4.0	6.0	2.8	2.1	2.9	3.6
October	2.5	4.0	3.2	2.3	2.8	3.5	3.9	6.9	1.9	2.0	3.0	3.6
November	2.7	4.1	3.1	2.3	2.9	3.4	4.8	7.1	1.4	2.1	3.1	3.6
December	2.9	4.0	3.2	2.4	3.0	3.5	5.4	6.6	1.7	2.1	3.1	3.6
Average	2.3	3.4	3.7	2.4	2.5	3.5	3.0	5.7	4.0	2.1	2.7	3.5

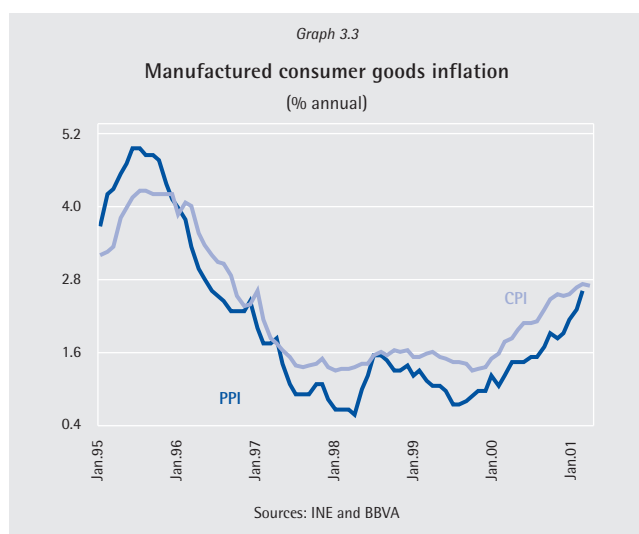
Sources: INE and BBVA (forecasts)



that an early end to this process seems unlikely. The price tensions deriving from the failure to reach a fishing agreement with Morocco and rising demand for milk products are expected to continue in the coming months.

Manufactured goods: second-round effects from crude

The prices of non-food manufactured goods have also accelerated in recent months, to a rate of 2.7% in April, 0.9 percentage points higher than a year earlier. This performance is the result of rising cost pressures as higher energy costs pass into other input prices: the so-called second-round effects of higher oil prices in 2000. Given the stickiness of manufactured goods prices, this process is unlikely to come to an end in the short term. The moderating effect on manufactured goods inflation of the slowdown in activity will not make itself felt until after the summer months. Evidence for the impact of weaker activity on prices is provided by the decline in the rates of increase of intermediate goods producer prices since June of last year. With a smaller or larger time lag, this will



eventually pass into factory-gate prices of consumer goods and, finally, into consumer prices of non-energy industrial goods.

All that said, CPI inflation is expected to end the year at an annual rate of 3.2%, with an average annual rate of 3.7%, 0.3 percentage points higher than in 2000. Less erratic indices than the CPI, such as IPSEBENE or BBVA trend, are expected to record very small increases from current levels around 3.5% year-on-year in the coming months. The gradual easing in demand pressure on production capacity as the Spanish economy decelerates will allow the main upward factor in the development of inflation in the past few years to diminish in the second half of the year.

The inflation differential with EMU continues to rise

Inflation in EMU as a whole is expected to be 2.5% in 2001, 0.2 points higher than the previous year. Consequently, Spain's inflation differential with the euro area will probably widen from 1.1 percentage points in 2000 to 1.2 points in 2001. This widening of the differential is due to the combined effect of bigger gaps in services inflation (estimated at 1.8 percentage points in 2001, the same as in 2000, but up from 1.2 points in 1997) and in traded goods (ex-energy) inflation (projected at 1.5 points in 2001).

Table 3.2. Spain and EMU: inflation differential

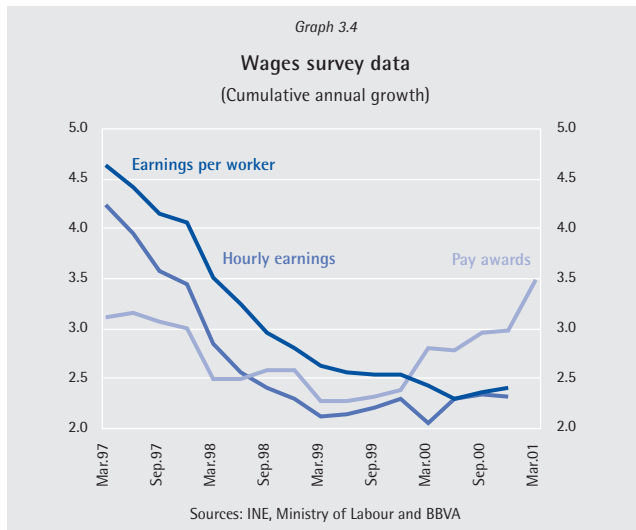
(Percentage points)	1997	1998	1999	2000	2001
Total	0.3	0.7	1.1	1.1	1.2
Fresh food	0.2	0.2	1.1	2.1	2.2
Processed food	-2.1	-0.3	1.7	-0.3	0.4
Industrial goods	1.0	0.6	0.9	1.3	1.3
Ind. gds (ex-energy)	0.2	0.4	1.1	1.2	1.5
Services	1.2	1.6	1.7	1.8	1.8

Source: INE, Eurostat and BBVA

With a fixed nominal exchange rate, the accumulation of a positive inflation differential with our main trading partners entails a continued appreciation of the real effective exchange rate and a resulting loss of competitiveness in Spanish exports. The depreciation of the euro and buoyant growth in world trade in the past two years have contributed to mask this problem, which will show up in terms of weaker activity and employment as both these positive factors weaken or unwind.

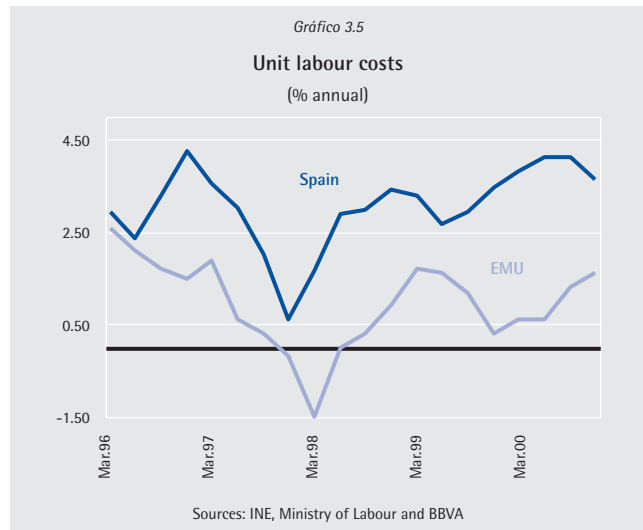
Greater wage pressure

While the weaker outlook for demand growth can be expected to have a moderating effect on inflation, this will be offset by stronger wages growth.



In the first three months of the year, almost 4 million salaried employees had collectively-bargained wage settlements, approximately 40% of the total number of wage-earners with collective agreements in 2000. These wage settlements show an average pay award for this year of 3.5%, 0.5 percentage points higher than in December of last year (0.1 points less when the upward impact of inflation-adjustment clauses on 2000 settlements is included).

Wage indexation to inflation, which in the first three months of the year affected approximately 70% of salaried employees with collectively-bargained wages, is in-



strumental in making permanent shocks which, by definition, ought not to be, such as, for instance, those deriving from higher energy costs. Unless the loss in national income associated with the higher cost of imported energy is accepted, rigid economies experience an increase in wage tensions. The upward bias in wage setting makes adjustment in companies more difficult in situations in which activity is slowing. In the absence of sufficient productivity growth to compensate for larger increases in employee remuneration, the burden of adjustment will fall on operating margins, which in the long run can lead to greater costs in terms of lower activity and employment.

4. The public sector

Regional government slippage from budget plans in 2000

The deficit of the public sector as a whole was 0.3% of GDP in 2000, well below the 0.8% forecast initially and down from 1.2% in 1999 (revised up from 1.1% after the inclusion that year of 70 billion pesetas of compensation to pensioners arising from the inflation overshoot in 1999 and originally budgeted in fiscal year 2000). The good fiscal performance, which was partly due to stronger economic growth (4.1% year-on-year, instead of 3.7% as forecast) did not reach all elements of the general government. The State (central) government and, in particular, the social security system saw better-than-expected performances in 2000 (a deficit of 0.6% of GDP and a surplus of 0.5%, respectively, compared with a projected deficit of 0.7% and surplus of 0.1% in the updated Stability Programme). In contrast, the deficit of the general government was 0.2 percentage points higher than targeted, at 0.3% of GDP, interrupting the deficit adjustment path observed since 1995. This shows that in order to secure a sustainable fiscal balance fiscal policies need to be coordinated at the different levels of government. The evidence confirms, therefore, the importance of both the Fiscal Stability Law¹, which restricts the existence of a deficit to exceptional economic circumstances, and the new regional financing model, which needs to enhance the fiscal co-responsibility of regional governments and guarantee sufficient resources for the regions. To this end, the new regional financing model, which is to take effect in 2002, should address the following questions: i) the transfer of a basket of taxes – VAT and special taxes – with some regulatory capacity for the latter; ii) the suppression of the guarantee scheme under which the State government ensures a minimum rate of growth in tax revenue; iii) the creation of a more permanent arrangement (not renewable every 5 years as at present); iv) integration in the financing of health care (this represents around 40% of the total expenditure of the regional governments); and v) greater transparency to allow the degree of compliance of each regional government with its commitments to be monitored and to safeguard against the proliferation of off-budgetary mechanisms (the creation of companies not consolidated in the budget) to get round the restrictions placed on deficit performances.

A surplus of 1% of GDP in National Accounts terms in the first four months of the year does not ensure compliance with the projected State government target for 2001

In National Accounts terms, the State government accumulated a surplus of 0.95% of GDP in the first four months

of 2001, slightly less than the 1.1% of GDP surplus registered in the same period of the previous year. This implies that to attain the projected budget target for 2001 – that is, the reduction of the State government deficit to 0.3% of GDP, from 0.6% in 2000 – budget execution would need to be stricter than from April 2000 onwards (increases in credits exceeded 550 billion pesetas between May and December). The reduction in terms of GDP of the cumulative primary surplus over the same period, to 1.6% of GDP from 1.8% in 2000, also points in the same direction. The weakening in the State government accounts is largely attributable to slower revenue growth. In the first four months of the year, revenue rose by only 4.5% (compared with 8.7% in the same period of 2000) owing to a loss of momentum in indirect taxes. Growth in expenditures, meanwhile, was faster, at 5.5% (compared with 7.9% in Q100), because of transfers to other levels of government and capital spending.

The information available in cash-balance terms paints a similar picture. Growth in revenue was 3.4%, instead of the 3.6% projected in the 2001 State Budget. However, several factors are working to skew these data upwards: i) the receipts from the employment income withholdings of the regional governments and the social security system; ii) larger profits at the Bank of Spain; and iii) lower corporate tax rebates. In contrast, the different timing of EU transfers is introducing a downward bias. Correcting for these factors (except for corporate tax rebates for which no data are available), the slowdown in revenue growth is seen to be even more pronounced, to around 2.8% year-on-year. As regards tax revenue, of special note were the strong performance of IRPF revenue (up by 11.4%) and the deceleration shown by special taxes (to 0.3% in the first four months of the year from 7.6% in the same period of the previous year, partly because of the tobacco price hike in 2000), and VAT, in response to weaker private consumption. VAT revenue rose by 4.7% in the first four months of 2001, as against 15.9% in the same period of the previous year. While these data are affected by higher rebates in 2001, the gross figures also reflect this weakening (9.1% and 16.7%, respectively). These taxes are likely to continue to lose steam in 2001 because of the weakness expected in domestic demand. With regard to expenditure, growth was higher than expected, at 4.1% year-on-year, instead of 2.7% as budgeted. Current transfers (6% instead of a budgeted 3.4%), particularly to the regional governments (13% instead of 4.7%) and the social security system to fund health care (7.4% instead of 6.3%) explain this overshoot in expenditure from the 2001 State Budget. Neither the evolution of current transfers in terms of assumed obligations in the first three months of the year (4.5% year-on-year) nor in National Accounts terms (5.4% to April) suggest that growth in this heading will

¹ See Situación Spain, February 2001, section "The public sector".

come down towards the 3.4% budgeted rate. The expenditure overshoot shows up more strongly in the evolution of non-interest current spending (-4.4%), which rose by 4.7% instead of the projected rate of 2.9%. The loss of momentum in the Spanish economy and the evident slippage from budget plans of a number of expenditure headings cast doubt on the attainment of the projected deficit target of 0.3% of GDP for the State government, especially in view of the substantial volume of funds already committed (around 80% of the budget). It is also important to recall that the cost of the debt exchange programme scheduled for 2001 (around 1,000 billion pesetas) will push up interest spending by around 150 billion pesetas and that final credits generally exceed initial credits especially in economic downturns (by 820 billion pesetas on average over the period 1997-2000, as against deviations of some 1,760 billion per year on average in the crisis years 1992-1993).

The weaker cyclical position of the Spanish economy and a build-up of exceptional expenditures challenge the fiscal balance target for 2001

Two developments are going to make attainment of the 2001 deficit forecast more difficult. The first is the downward revision of the government's growth forecast, to 3.2%, from the 3.6% rate contained in the 2001 State Budget, basically as a result of the slowdown in domestic demand. Although this revision brings an associated increase in nominal GDP (the inflation-tax), from 6% to 6.7%, receipts are unlikely to be above those budgeted in the 2001 State Budget. This is because nominal economic growth

will in all likelihood finally be around 6% and because State government revenue data are not underestimated in the 2001 State Budget to the same extent as in previous years (in 1998, 1999 and 2000 State government revenue exceeded initially budgeted revenue by some 862.1, 918.9 and 1007.7 billion pesetas, respectively). The sensitivity of Spain's fiscal deficit to the business cycle is estimated at between 0.4%-0.5%. This means that in 2001 the general government account could register a deficit of 0.2%-to-0.3% of GDP unless further measures are taken. The Economics Ministry estimates contained in the updated Stability Programme (2000-2004) suggest just that: a real growth rate of GDP 0.5 points lower than in its baseline scenario (2.8%, instead of 3.2%, in the years 2002-2004) would weaken the general government account by 0.2-0.3 percentage points of GDP. The entry into force of the Fiscal Stability Law in 2002 would place restrictions on any such deterioration.

The second factor is that associated with a series of unforeseen events with adverse consequences for the government accounts, whether through a reduction in revenue or increases in expenditure. On the revenue front, the appeal lodged with the Central Administrative Economic Court by third-generation mobile telephony operators in relation to the new radio spectrum levy (140 billion pesetas in telephony) could defer payment of the tax to the government by up to one year (companies must provide surety for 0.5% of the levy). Conversations between the government and mobile telephony operators have revealed that the government would agree to a consider-

Table 4.1. State government budget outturn

	Jan-Apr 2000 (1) Pts. bn.	Jan-Apr 2001 (2) Pts. bn.	(2)/(1) (% oya)	01 Budget/ 00 outturn (% oya)		Jan-Apr 2000 (1) Pts. bn.	Jan-Apr 2001 (2) Pts. bn.	(2)/(1) (% oya)	01 Budget/ 00 outturn (% oya)
NON-FINANCIAL REVENUE	7454.3	7709.4	3.4	3.6	NON-FINANCIAL EXPENDITURE	7412.0	7712.4	4.1	2.7
Direct taxes	3011.1	3259.7	8.3	5.3	Wages and salaries	842.6	850.2	0.9	2.3
Income tax	2361.8	2631.5	11.4	6.1	Goods and services	155.0	145.0	-6.5	-11.1
Corporate tax	529.7	553.1	4.4	5.6	Interest payments	1700.5	1715.3	0.9	-3.8
Indirect taxes	3607.7	3738.7	3.6	6.9	Current transfers	3952.4	4188.3	6.0	3.4
VAT	2636.3	2759.7	4.7	8.4	CURRENT OPERATIONS	6650.5	6898.8	3.7	1.8
Special taxes	875.9	878.5	0.3	4.0	Investment	447.9	434.8	-2.9	9.1
Excise duties	106.6	141.0	32.3	35.2	Capital transfers	313.6	378.8	20.8	12.5
Current transfers	122.5	124.6	1.7	-3.0	CAPITAL OPERATIONS	761.5	813.6	6.8	10.8
Stamp duty	401.4	417.3	4.0	-39.1	CASH DEF(-)/SURP(+)	42.3	-3.0		
Real invest. sales	4.2	7.1	69.0	-14.1	In Nat. Acc. terms				
Capital transfers	212.7	42.1	-80.2	-14.2	Non-financial revenue	7403.2	7734.6	4.5	
Other revenue	-11.9	-21.1	77.3	0.0	Non-financial expenditure	6363.9	6710.8	5.5	
					NA DEF(-)/SURP(+)	1039.3	1023.8		
					(%/GDP)	1.03	0.96		
					NA PRIMARY SURPLUS (%/GDP)	1.94	1.83		

Source: Ministry of Economics and Finance

able reduction in the levy from 2002 onwards (up to one quarter of the present levy), but not in the payment corresponding to 2001, which has already been included in the 2001 State Budget. As far as expenditure is concerned, the combined impact of the mad cow crisis (the cost of which is estimated at some 100 billion pesetas²) and financial aid to certain sectors as a consequence of the rise in fuel prices has recently been exacerbated by the effects of foot-and-mouth disease (losses in the sector are estimated at 30 billion pesetas) and the failure of the EU and Morocco to reach a fishing agreement. According to calculations released by the Ministry of Agriculture, Fishing and Food, 90 billion pesetas of funds will be required for the restructuring of the Spanish fishing industry. 50 billion of these are to come from the European Commission (EC), with public funds supplying the rest. The impact of these unforeseen shocks on public spending is likely to be in excess of 0.15% of GDP. To this has to be added an estimated increase in pensions spending of some 90 billion pesetas due to the deviation of inflation from the 2% rate that has been applied to adjust pensions. Thus, if, despite the Spanish economy's weaker cyclical position and the accumulation of exceptional payments, fiscal balance is finally achieved in 2001, fiscal policy will have been more restrictive than the government initially projected. On BBVA estimates, if GDP growth is 2.8%, instead of 3.2% as forecast by the government, the structural deficit would fall by around 0.3-0.4 percentage points in 2001. This would be a very positive result, since it would be an important step towards the attainment of a structural fiscal balance, which will help cope with future spending.

Even if the fiscal deficit were corrected in 2001, however, the structural problems that will affect Spain's public accounts in the medium term require the adoption of measures that ensure that fiscal balance, as mandated by the Fiscal Stability Law, is not attained through cut-

backs in spending items that affect the potential output of the economy (R&D, human capital, infrastructure). The reduction in EU structural funds (around 1% of GDP) expected after 2006 as a result of EU enlargement towards the Eastern European countries³, on one side, and demographic pressure (population ageing) on pensions and health care spending, on the other, are going to lead to a considerable increase in the fiscal deficit. Added to this are the much-needed restructuring of RTVE (the state television company will have debts amounting to some 800 billion pesetas by end-2001), full payment of compensation for the "colza oil" syndrome (some 500 billion pesetas, 135 billion of which have been paid so far), the externalisation of labour obligations arising from industrial restructuring plans in the 1980s (1,300 billion pesetas) and the suppression of EC aid for coal production as of 2010 (some 170 billion per year). The impact of these developments on spending raises questions as to the future course of the numerous pluri-annual plans mapped out by the government: the Infrastructure Plan, 2000-2007 (17,000 billion pesetas); ii) the National Hydrological Plan (3,000 billion pesetas); iii) the Info XXI Plan (825 billion pesetas over 3 years); and iv) the Judicial Reform Plan (250 billion pesetas). The government's planned tax cut is neither compatible with the maintenance of these spending programmes nor with a sustainable fiscal balance.

For this reason, the Fiscal Stability Law needs to include measures to ensure that the burden of the spending adjustment does not fall on capital operations; either because, in the short run, economic conditions are unfavourable, or, in the long run, because of the structural factors mentioned above. To safeguard against this, the medium-term goal should be established in terms of a structural fiscal balance, which would allow the automatic stabilisers to work.

² The government has for the moment ruled out the creation of a new tax on the distribution of meat to pay for the cost of the mad cow crisis.

³ In 2006, EU enlargement is expected to increase the per capita income of the regions currently benefiting from Objective 1 funding by 18 points (Spain will receive some 6,500 billion pesetas in 2000-2006 from this source: total structural and cohesion funds will amount to 10,100 billion pesetas). This means that only Andalusia, Extremadura and Galicia would continue to receive Objective 1 funding after 2006.

IRPF: is a flat tax feasible?

Recently the revived debate in Spain concerning IRPF (personal income tax) reform has led to the proposal of a flat-rate tax model. The simplicity of taxation has nonetheless long been a recurrent theme in economic theory. Great Britain adopted the first single-rate income tax with a personal allowance, or flat tax, as early as 1842. This system was abandoned early in the 20th century when it was resolved to seek progressivity through increasingly complex taxes with a larger number of brackets. The result over the years was that ex-ante progressivity translated ex-post into a much more regressive and inequitable tax. According to Spanish Tax Administration data, in 1995 only 20% of taxpayers declared gross income over 3 million pesetas (3.5 million in 2000 pesetas) and only 5.7% declared gross income over 5 million (5.7 million in 2000 pesetas), bearing more than 41% of the total burden of the tax. In addition, the complexity of the tax and problems relating to underlying incentives led to associated adverse effects on both work and saving, and hence on economic growth. Slemrod and Sorum's (1983) assessment of the administrative costs of U.S. income taxes, Hall and Rabushka (1983) and Roemar (1983) revived the debate in Inland Revenue circles about the possibility of adopting a flat-rate tax. In the intervening period, tax authorities in developed countries have initiated a process aimed at the simplification of income tax, reducing the number of tax brackets and allowances and seeking to make the tax more transparent, efficient and equitable, while making it more understandable to the public.

The way in which income taxes have functioned in different developed countries nonetheless seems to have established a number of points: i) excessive marginal rates create work and saving disincentives, and lead to tax shifting, to corporation tax for instance; ii) the complexity of the tax creates inequalities and encourages fraud, and hence increases administrative costs; and iii) allowances end up having regressive effects on the tax, resulting in differentiated tax treatments for similar taxpayers.

It is true that a far-reaching fiscal reform to redress these distortions would have to tackle public finances as a whole, beginning with an analysis of optimal public spending - that is, defining the level of fiscal pressure (sufficiency) - and going on to set out which revenue or spending headings are to reflect the necessary progressivity and solidarity of public policies (equity). It should also comply with the other two taxation principles of efficiency and simplicity. A reform of the IRPF system would thus need to proceed in tandem with at least a change in the inheritance and wealth tax, with adverse effects on saving. Nonetheless, the importance of the IRPF in terms of total public revenue and public opinion, which views this tax as a guarantee of progressivity, is such that it merits a separate discussion.

To win the approval of the majority of the public (though perhaps not getting completely to grips with the overall issue of fiscal pressure) an IRPF reform would need to fulfil the following conditions:

- simplify the tax scale in order to improve transparency and reduce administrative costs;
- leave *ex-ante* revenue unchanged relative to the actual system. This would make possible, ex-post, an increase in net revenue through other channels, via incentive effects on saving and work, reduced fraud incentives and lower collection costs;

**Table 1. Actual scenario
(1995 pesetas)**

Bracket of net tax base	Returns filed (1000s)	%	Tax liability (pts. bn.)	% of tax liability paid by each bracket
1 < 1,000	3,015	21.4	0	0.0
2 1,000-1,250	1,517	10.7	25	0.7
3 1,250-1,500	1,591	11.3	71	1.9
4 1,500-1,750	1,349	9.6	107	2.8
5 1,750-2,000	1,107	7.8	144	3.8
6 2,000-2,500	1,647	11.7	339	8.9
7 2,500-3,000	1,159	8.2	381	10.0
8 3,000-4,000	1,385	9.8	699	18.3
9 4,000-5,500	737	5.2	597	15.7
10 > 5,500	613	4.3	1,452	38.1
Total	14,121	100	3,815	100

Source: BBVA Research Department

**Table 2. Average data per return
(individual tax returns)**

Thousands of 1995 pesetas

Bracket of net tax base	Number of returns filed (1000s)	Tax base	
		Actual scenario (*)	Flat tax (**)
1 < 1,000	2,171	255	1,067
2 1,000-1,250	1,012	780	1,530
3 1,250-1,500	992	1,054	1,754
4 1,500-1,750	786	1,357	1,956
5 1,750-2,000	609	1,661	2,155
6 2,000-2,500	879	2,027	2,498
7 2,500-3,000	639	2,586	2,985
8 3,000-4,000	784	3,267	3,682
9 4,000-5,500	414	4,425	4,813
10 > 5,500	395		

(*) Includes allowances based on the 1999 reform (Law 40/1998), except for the application of a tax-exempt personal and family minimum.

(**) After suppressing allowances, but not the tax-exempt minimum, from the tax base.
Source: BBVA Research Department

- c) ensure that taxpayers currently exempted are not made to pay. This "paretian" criterion is imposed for political and social reasons and to simplify administrative procedures, the cost of which is assumed to rise as the number of taxpayers increases;
- d) avoid worsening to any great extent the progressivity of the present tax system. Evidently, *ceteris paribus*, if the maximum marginal rate is lowered, progressivity is directly affected. Nonetheless, the use of a high tax-exempt minimum makes it possible to reduce or even offset the effects on progressivity. Also, as mentioned earlier, it is progressivity *ex-post* (who actually bears the tax burden) not *ex-ante* (who would pay it in theory) that matters;
- e) have a single marginal rate lower than the average effective rate of corporation tax to avoid tax-shifting incentives towards this alternative tax.

Table 3. Flat tax 1
Flat rate of 27%, tax-exempt minimum of ESP 1.3mn. (*)

Bracket of net tax base	Tax liability Pts. bn. (*)	% of tax liability paid by each bracket
1	0	0.0
2	63	1.6
3	122	3.1
4	139	3.6
5	154	4.0
6	377	9.7
7	422	10.9
8	766	19.7
9	629	16.2
10	1,212	31.2
Total	3,884	100

(*) 1995 pesetas
Source: BBVA Research Department

Is a flat IRPF tax rate complying with these five conditions feasible? Bearing in mind the restrictions arising from the unavailability of a breakdown of IRPF data¹, this is a tricky question to answer. To overcome this drawback, we depart from the structure of the tax base of the tax by income brackets in 1995 and carry out a simulation of tax returns following the 1999 reform. Table 1 presents this "simulation of the actual scenario"; that is, the one that would have been obtained applying to the 1995 tax return data the tax returns based on the 1999 deflated tax scale and allowances.

Having resolved this problem, we undertook an exercise which is, necessarily, a simplified approximation of what could be a flat-rate personal income tax that would allow all the conditions outlined above to be complied with. We suppressed all allowances both from the tax liability and the tax base, with the exception of the introduction of a tax-exempt minimum (or living standard minimum) that is deductible from the tax base. Table 2 presents the changes made in the net tax base of the 1995 brackets in order to allow this exercise to be carried out. One such change is to eliminate all the deductions in force up to the 1999 reform, and to include all the tax allowances introduced by this reform. All the variables are kept in 1995 pesetas, however, as that year corresponds to the last breakdown of the net tax base by income bracket published by the Inland Revenue Service. The final column (also in 1995 data), which is used in the different proposals for a flat-rate tax, reports the net tax base after all allowances have been removed. The tax-exempt minimum is not included here, as it differs in each proposal. This means that the tax base increases substantially in this column. The whole table refers to taxpayers filing individual returns, with no loss of generality.

¹ The last Tax Administration report to offer disaggregated data by income bracket for each of the IRPF headings corresponds to 1995. In the intervening period, a reform of this tax and five years of robust economic growth may have modified slightly the structure of the tax bases.

Table 4. Flat tax 2.

Flat rate of 22.5%, tax-exempt minimum of ESP 1.1mn. (*)

Bracket of net tax base	Tax liability Pts. bn. (*)	% of tax liability paid by each bracket
1	39	1.0
2	98	2.6
3	147	3.9
4	178	4.7
5	191	5.0
6	409	10.7
7	417	11.0
8	717	18.8
9	566	14.9
10	1,045	27.4
Total	3,808	100

(*) 1995 pesetas
Source: BBVA Research Department

Table 5. Flat tax 3

Flat rate of 31%, tax-exempt minimum of ESP 1.5mn. (*)

Bracket of net tax base	Tax liability Pts. bn. (*)	% of tax liability paid by each bracket
1	0	0.0
2	9	0.2
3	78	2.1
4	111	2.9
5	124	3.3
6	303	8.0
7	393	10.3
8	772	20.3
9	665	17.5
10	1,345	35.4
Total	3,798	100

(*) 1995 pesetas
Source: BBVA Research Department

In the different proposals for a flat-rate tax, the tax-exempt minimum has been applied differently to individual and joint returns (for joint returns, it is 1.6 times the tax-exempt minimum of individual returns), given the impossibility of disaggregating joint returns for each income earner. Also, this tax-exempt minimum does not include allowances relating to the number of children or long-term saving. It is not feasible to factor in an allowance for the latter (even though it is justifiable on economic grounds) in this analysis, since it is not known what changes the last tax reform has wrought in the distribution of saving. In view of the variations observed in the different financial assets, these changes appear to have been of considerable magnitude.

The effect of including the tax-exempt minimum in the tax base or in the tax liability is identical, since minimum in tax liability = minimum in tax base x marginal rate. In this exercise, we apply a single marginal rate to the net tax base.

There are multiple flat rate/tax-exempt minimum combinations allowing compliance with the five conditions (a-e) noted earlier. Three of these are presented in Tables 3, 4 and 5:

1. Flat tax 1: a single marginal rate of 27%, with a tax-exempt minimum of 1.3 million pesetas in 1995 pesetas (equivalent to 1.5 million in 2000 pesetas);
2. Flat tax 2: a single marginal rate of 22.5%, with a tax-exempt minimum of 1.1 million pesetas in 1995 pesetas (1.25 million in 2000 pesetas)²;
3. Flat tax 3: a single marginal rate of 31%, with a tax-exempt minimum of 1.5 million pesetas in 1995 pesetas (1.75 million in 2000 pesetas).

These three very simple alternatives allow all of the above conditions to be complied with, and even reproduce the actual degree of *ex-ante* progressivity, one of the thorniest issues in the tax reform debate.

Although conventional wisdom defines progressivity as "a rising average effective rate as income increases", there is less agreement as to how to measure it. In this case, we measure the change in progressivity from one system to another by means of a Gini index, calculated on the basis of the Lorenz curve displayed in Graph 1³. This curve plots the percentage of the tax liability paid by each income bracket. Along the diagonal there is no progressivity⁴. Each income bracket bears an equal percentage of the tax liability. Progressivity increases as the curve shifts away from the diagonal (towards the right): the proportion of the tax liability paid by higher income brackets rises and vice versa. From the graph, it can be observed that the *ex-ante* progressivity of the proposed "flat tax 1" is only slightly lower than that of the actual scenario⁵. The Gini index measures the area between the diagonal and the curve obtained, allowing us to assess numerically the degree of progressivity. With a proportional tax, the value of the index would be 0. If the whole burden of the tax were borne by a single taxpayer, the index would be equal to 1. The results for the actual scenario and the three alternative flat-rate taxes are reported in Table 6. Progressivity, measured thus, even increases relative to the actual situation under the proposed "flat tax 3".

² This proposal increases the number of people filing returns.

³ The graph shows only the Lorenz curves for the actual scenario and the proposed flat tax 1. Proposal 2 exhibits a somewhat less progressive curve than flat tax 1, and proposal 3 a somewhat more progressive curve than that of the actual scenario.

⁴ It is a Gini index of the distribution of the tax liability, not of income as is habitual.

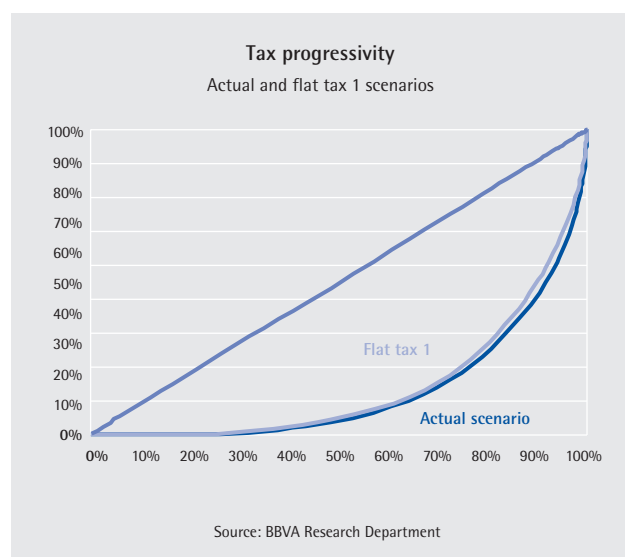
⁵ As noted earlier, *ex-post* progressivity will increase with a flat-rate tax by reducing fraud and eliminating the potential tax evasion incentives in the actual system.

Table 6. Progressivity: GINI indices for different scenarios (tax liability)

Actual scenario	0.67
Flat tax 1	0.60
Flat tax 2	0.53
Flat tax 3	0.68

Source: BBVA Research Department

A higher index value signifies greater progressivity.



Pension reform is put back

The widespread acknowledgement, from both public and private national and international institutions, that population ageing will put considerable pressure on public spending in the medium and long term made it essential for the review of the *Pacto de Toledo* to undertake a far-reaching reform of the public pension system in order to cope with the demographic challenge. Nonetheless, the agreement for the enhancement and development of the social protection system (AMDSPS by its Spanish acronym) signed on April 9 by the government, CCOO (one of the main trade unions) and CEOE (the employers' association) did little to remove the uncertainty surrounding the financial viability of the current public pensions system, transferring to future generations responsibility for the inevitable reform and its costs.

In the absence of deep-seated statutory changes, the sustainability of a pay-as-you-go system such as the Spanish one essentially depends upon the structure of the population. The evolution of the demographic variables in recent years (steadily falling fertility rates, longer life expectancy and modest immigrant flows) has led to a progressive ageing of the population. This process will intensify in the course of this century. By 2050, the number of individuals aged 65 and over is projected to reach around 50% of the working age population, double the present percentage. This will take the ratio of contributors to pensioners to clearly below 1.3, from a present 2.3. That is, today each contributor supports 1.3 pensioners, but will be supporting 2.3 by 2050. According to the latest UNO report, by 2050 Spain will have the oldest population of any country in the world, with an average age of 55.2 years, as against 36.2 for the world as a whole and 46.4 in developed countries.

The impact of the progressive ageing of the population on pension spending is a structural problem that cannot be addressed using short-term measures. Hence, the AMDSPS should have adopted measures geared to a permanent reduction in spending or increase in revenue. The latter would only be possible if average effective contribution rates were increased, and so is incompatible with the prevailing opinion that labour taxation should be reduced, or, failing that, left unchanged. The new agreement should thus aim fundamentally to contain spending on contributory pensions in terms of GDP. To do otherwise would be to transfer to future generations, and part of the present ones, the cost of the inevitable and much-needed reform of the present system.

In this sense, most of the measures adopted in the agreement signed by the social partners not only fail to advance in the right direction, but rather worsen the problem by contributing to raise spending above its present level. First of all, instead of raising the statutory retirement age¹, the group of workers entitled to early requirement has actually been expanded. As of 2002, workers aged 61 and over who have contributed for at least 30 years and have been registered as looking for work for at least 6 months at an INEM labour exchange can claim early retirement. Under the present system, employees had to have contributed prior to January 1, 1967, and for at least 35 years. The effect of this will be to reduce the positive impact on Social Security spending that had been anticipated after the disappearance of the group that started to contribute before 1967 - up to now the only one entitled to early retirement. Also, the percentage by which pensions are reduced for each year of early retirement has been lowered, from 8% to 6% per year, depending on the number of contribution years. All this encourages early retirement, and

will contribute to widen further the gap between the average retirement age and the statutory retirement age for old age pensions, which currently stands at 65. Such incentives should be kept to a minimum. The rise in life expectancy, which is increasing pensions spending per person, and the delay in entering the labour market, which reduces the contribution period, justify the opposite policy: that is, an increase in the statutory retirement age. Although the agreement includes a number of measures to encourage workers to "voluntarily" remain in the labour market after 65, these, as will be discussed below,

Public pensions spending

% of GDP	2000	2050
Austria	14.5	15.1
Belgium	9.3	12.6
Denmark	10.2	13.2
Finland	11.3	16.0
France	12.1	15.8
Germany	10.3	14.6
Ireland	40.6	9.0
Italy	14.2	13.9
Holland	7.9	13.6
Portugal	9.8	14.2
Spain	9.4	17.7
Sweden	9.0	10.0
United Kingdom	5.1	3.9

Source: European Commission (2000)

¹ According to a study published by the General Secretariat of the Social Security system (1995), raising the retirement age to 67 would reduce the deficit by 0.41% by 2030. This rises to 0.91% by 2025 if the statutory retirement age is set at 68 (Hercé and Pérez Díaz, 1995).

have the effect of increasing public spending. Second, the reform scarcely advances towards making the system more equitable (linking pension benefits more closely to contributions), deferring until 2003 the debate on extending to a whole career the number of years taken into account for the calculation of pension benefits. This measure would contribute to slow public pensions spending by reducing the replacement rate, the ratio between the first pension and the last wage, which in Spain is higher than in most EU countries (except for Denmark, Portugal and Greece). Third, the improvement of widow's and orphan's pensions, while positive in itself, may distort the decisions of beneficiaries as to their entering the labour market. The net effect of these measures is negative since they contribute to an increase in spending².

The modest ambition of the agreement, which, except where otherwise indicated for certain measures, will be in force until 2004, is shown by the fact that no decisions are taken regarding issues which are necessary but costly in the short run. The debate on questions such as a lengthening of the reference period for calculating the regulatory base, the resources needed to cover situations related to dependency and the potential benefits of moving towards a mixed pensions system is deferred. Also, little progress has been made with other reforms that would be complementary to reform of the public pensions system, such as a coherent immigration policy and a more comprehensive labour market reform geared to increasing the employment rate.

Nonetheless, the agreement includes a number of measures which, though not enough, do advance in the right direction. One such measure is the obligation to increase the resources of the reserve fund to a minimum of 814 billion pesetas by 2004 (0.8% of GDP) using the social security surpluses. This fund will not suffice to cope with the increase expected in contributory spending, however, which by 2050 is likely to be considerably in excess of 15% of GDP, as against 9% at present³. Leaving open the possibility of a generalised reduction in social security contributions once the reserve fund reaches the size envisaged is a negative move. The agreement also makes headway, though very slowly, in bringing the different regimes into line, beginning with the integration of the Special Agrarian Regime into the Special Regime for Self-employed Workers. It also sets a 12 year deadline by which the supplement to the minimum payment (621 billion pesetas in 2000, or the equivalent of 0.7% of GDP) has to be fully financed from taxes rather than contributions: the annual sum will be set in the State Budget in accordance with one of the recommendations of the *Pacto de Toledo*. Finally, incentives are provided to workers that stay in the labour force beyond age 65, allowing the receipt of both a pension and a wage and exempting employers from contributing to the social security system for such workers. These contribution incentives also apply, with different percentages, to women re-entering the labour market after maternity and workers over 60 (as of 2002), and will be progressively extended to the age of 55. According to government estimates, the cost of the incentives and the larger number of workers entitled to early retirement amounts to 532 billion pesetas over the three-year life of the agreement (177.3 billion per year, or 0.2% of GDP).

The measures approved do not remove the uncertainty surrounding the financial viability of the public pension system, transferring to future generations, and part of the present ones, responsibility for the reform and its costs. Most of the proposals run in the opposite direction to the reforms advocated by the experts and those approved in other European countries. This may be a reflection of the limited impact on public opinion of the debate on the gravity of future pension prospects, partly as a result of the recent transitory surpluses (these will vanish rapidly however in response to demographic pressure and the change in the business cycle) registered by the Social Security contributory system.

² The increase in the age limit for entitlement to an orphan's pension to 21 (to 23 in the case of the loss of both parents) in 1997 raised spending by between 0.03-0.04% of GDP. The impact of the improvement in the widow's pension will also be small (a similar measure approved in 1997 raised spending by around 0.02% of GDP).

³ If the reserve fund is built up only from the surpluses of the contributory pension system, it will tend to shrink rapidly when spending begins to put pressure on the public system. According to some estimates, the reserve fund will peak around 2015 and evaporate rapidly from 2020 onwards. See, "La reforma de las pensiones ante la revisión del Pacto de Toledo", Herce, J. y Alonso, J.

Net replacement ratio

% of net wage

Belgium	62-91
Denmark	48-108
France	73-94
Germany	55-69
Ireland	35-84
Italy	89-94
Holland	37-90
Portugal	95-103
Spain	96-98
Greece	99-132
United Kingdom	39-73

Note: does not include the recent pension reform in Germany

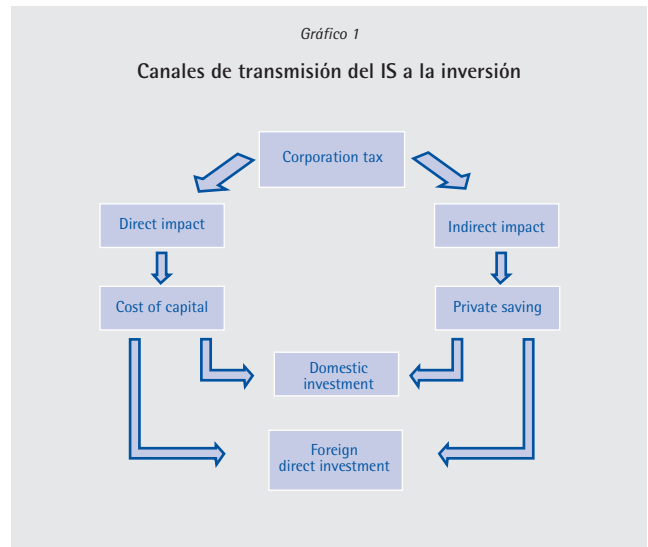
Source: Eurostat (2000)

Corporation tax reform: greater simplicity and neutrality

The importance that economic theory places on the study of corporation tax is not based on reasons connected with tax revenue. Only 7.5% of total tax receipts in OECD countries over the past ten years have been obtained from this source. It is important primarily for the distortions it introduces in corporate decision-making. These distortions affect not only investment plans, their level and location (in terms of assets and geographical areas), but also corporate financing policy (own resources versus borrowing) and, ultimately, dividend policy (retention of profits as against dividend pay-outs). Identifying what the focus of the planned corporation tax reform should be makes it essential therefore to identify the distortions that the tax introduces in Spain.

How does corporation tax affect investment and economic growth?

First, however, we review the existing evidence on how taxes on capital and, in particular, on corporate profits affect investment and, ultimately, economic growth. Most studies suggest that corporation tax can affect investment through two channels. One, direct, because of its impact on the cost of capital, the other, indirect, because of its impact on national saving. As regards the latter channel, empirical research gives contradictory and not very robust results. Most studies find a small, negative relationship between capital taxes (households and firms) and private saving: the elimination of the tax on capital would probably increase private saving by scarcely 0.5% of GDP in 21 OECD countries¹. Focusing on taxes on corporate profits, a reduction in the corporation tax rate which increases corporate saving does not imply, *ceteris paribus*, a rise in private saving of the same magnitude. If households, as the ultimate owners of firms, view the retained earnings of companies as part of their own saving (final household saving = household saving + firms' retained earnings), a cut in corporation tax and hence an increase in company saving would alter households' saving decisions. According to an OECD study (1997)², a \$1 increase in corporate saving increases private saving by only 38 cents. That is, part of the increase in corporate saving is neutralised by lower household saving. Like-



wise, this increase in private saving does not necessarily bring about an increase in the investment of domestic companies in the country where they are located. In an open economy, with integrated financial markets and near perfect capital mobility, interest rates are determined internationally and an increase in national saving can lead to an increase in outward foreign direct investment (FDI). In contrast to the results obtained in the early 1980s³, which found a very statistically significant, positive relationship between national saving and domestic investment, more recent studies⁴ have found that, in OECD countries, just under half of the increase in national savings is invested in the home country and the rest looks for alternative investments overseas. This result is particularly significant in the EMU now that exchange rate risk no longer exists. The conclusion that can be drawn from such studies, therefore, is that the impact on domestic investment of an increase in private saving derived from a lower corporation tax rate may be relatively small. While any increase in saving that does not lead to a rise in investment represents, in the short run, a loan to the rest of the world, in the long run, it necessarily brings about an increase in domestic investment.

As for the first channel, the cost of capital is a key variable in long-term investment decisions and is the transmission channel of monetary and fiscal policy (tax incentives). Nonetheless, studies do not always find a large statistically significant, negative relationship between investment and the effective corporation tax rate, which takes into account the tax structure of the tax (special taxes, tax credits). This may be attributable to the existence of measurement errors in the cost of capital variable or the omission of variables in the investment function estimated, or to the existence of other factors that may affect investment decisions. These include labour

¹ Masson, P. R., Bayoumi, T. and Samiei, H. (1995): "Saving behavior in industrial and developing countries", IMF.

² Leibfritz, W., Thornton, J. and Bibbee, A. (1997): "Taxation and economic performance". Economics Department Working Papers, No. 176, OECD.

³ Feldstein, M.S. and Horioka, C. (1980): "Domestic saving and international capital flows", Economics Journal, Vol. 90.

⁴ See note 2.

costs, transportation costs, agglomeration benefits, and the possible existence of liquidity restrictions, as well as long run demand expectations and the existence of adjustment costs that prevent firms from permanently reaching an optimal level of stocks, and the presence of monetary illusion or imperfect information. All of these factors can cause firms to place a different weight on the various components of the cost of capital (interest rates, capital goods prices, the rate of change of capital goods, final output prices, etc.). Most studies find the long run elasticity of domestic investment to the cost of capital to range between -0.18 for the United States and -0.45 for the OECD countries. Considering only FDI, the existing literature on taxation and capital movements finds that it is very significantly affected by differences in effective tax rates across countries. If the differences between effective tax rates across countries are considerable and persistent, in a context of free capital circulation, funds would tend to concentrate in countries with lower effective rates, possibly giving rise to an inefficient allocation of capital at a world level.

If the objective of economic policy is to promote investment within the home-country, it is thus better to adopt measures that affect the cost of capital directly (lowering the statutory corporation tax rate, increasing tax credits, limiting the impact of double taxation, compensating losses, etc.) than measures directed at increasing private saving. This is only true, however, as long as a process of competitive tax cuts at an international level does not provoke significant displacement effects among firms, which would initially affect revenue and, in the long run, the economy's potential output and hence per capita income.

Having reviewed the channels along which capital taxation affects growth, noting the role of the effective tax rate on the geographical location of investment, we shall proceed to summarise the main features of the structure of corporation tax in Spain, in order to assess its distortions on corporate decision-making and its relative position vis-à-vis other countries.

⁵ Corporation tax reform in these countries is characterised by: i) the widening of the tax base; ii) cuts in tax rates; and iii) a considerable reduction in tax incentives.

⁶ The 1997 Budget Law lowered the tax rate applicable to small and medium-sized firms with annual turnover under 250 million pesetas from 35% to 30% for the first 15 million pesetas of profits. The urgent measures package of June 2000 subsequently widened its application to small and medium-sized firms with annual turnovers of 500 million pesetas.

⁷ The tax wedges are calculated using the King-Fullerton method, which estimates the pre-tax profitability that an investment must obtain for it to be interesting to a company's shareholders. The data in the table therefore show the degree by which the IRPF and corporation tax systems increase (or decrease) the pre-tax real rate of return that an investment has to reach for it to be attractive, given that the shareholder can obtain a real return of 5% by investing in a deposit. The calculations were carried out using the maximum marginal rate and a rate of inflation of 2%.

Table 1. Marginal effective tax wedge on investment in physical assets, R&D and human capital⁷

	Investment in assets			Intangibles	
	Physical			R&D	Human capital
	Machinery	Buildings	Inventories		
Spain	1.7	2.1	2.2	-1.8	0.8
Germany	1.1	1.7	1.3	0.0	-0.2
France	2.6	4.1	4.8	0.1	0.6
Italy	1.0	1.8	3.1	0.3	0.0
Ireland	1.8	2.1	3.1	0.8	0.8
Portugal	1.5	1.5	2.0	-0.2	-0.3
Norway	1.0	1.2	2.0	0.1	0.0
Denmark	2.2	2.6	3.8	0.6	1.6
Sweden	1.7	2.1	2.5	1.1	1.0
UK	1.7	2.1	3.1	0.8	0.8
USA	1.7	3.0	2.6	-0.2	1.0
Canada	2.5	4.3	5.5	-0.4	-0.7
Japan	1.8	5.1	3.7	0.6	0.5

Note: 1998, except for Spain (1999)
Source: OECD

Corporation tax in Spain: actual situation and reform proposals

The present corporation tax in force in Spain was modified considerably in 1995 (Law 43/1995), following the trends (except for tax incentives, which remained large in Spain) observed in the countries that pioneered reform of this tax (the United States, the United Kingdom and Sweden)⁵. This reform, which came into effect in 1996, enjoyed broad political support and was a step in the right direction because: i) it increased administrative transparency and simplicity (with certain exceptions, the taxable result can be proxied by the result of the profit and loss account); ii) it improved neutrality between different sources of income; iii) it reduced distortions in financing decisions, mitigating the impact of double taxation (as a result FDI outflows from Spain surged to 4.3% of GDP in 1996-2000, compared with 0.5% of GDP on average in 1985-1995), as well as distortions in investment decisions between different assets; and iv) it included measures to support small and medium-sized companies (SMCs). The 1995 reform was subsequently enhanced with measures included in State Budgets⁶ and urgent packages of measures in June 1996 and June 2000. Despite the fact that all of these measures have helped reduce the distortions of corporation tax on corporate decision-making, they have not been eliminated. The existence of tax incentives, on the one side, and a lack of neutrality in the treatment of different sources of financing (own resources versus borrowing), on the other, affect the final choice of investment (some assets are given preferential treatment) and firms' financial structure.

With regard to tax incentives, they are frequently used as economic policy instruments to promote investment⁷. Their use implies a considerable loss of public revenue (699.6 billion pesetas in the 2001 State Budget, or 0.7% of GDP). It is therefore important to ensure that they contribute to the attainment of the objectives for which they were designed: to increase the stock of capital, and ultimately productivity and long run economic growth. The existing empirical evidence finds a positive, though weak, relationship between fiscal incentives and investment⁸. It is also difficult to quantify how much of this effect is attributable to factors other than tax incentives, such as the decline in interest rates, improving expectations, positive externalities, etc. According to the OECD, the Spanish tax system gives a more neutral treatment to investment in different assets (machinery, buildings and inventories) than most industrial countries (see Table 1). In contrast, investment in R&D receives a preferential and much more generous tax treatment than that given to investment in human capital. This fact is particularly significant bearing in mind that the unemployment rate in Spain (13.4% in Q101) is much higher than in the European Union (8.6%). Accordingly, it would be desirable for the planned fiscal reform to improve the tax treatment of investment in training. This would match worker skills more closely to the needs of firms (reinforcing the link between firm and worker and creating disincentives to temporary hiring) and allow a more efficient use of R&D, reinforcing the effectiveness of the generous fiscal incentives for this type of investment.

In addition to deductions for investment, fiscal incentives take the form of reduced tax rates (21.9% of total incentives and 44.4% in the case of SMCs). With the introduction of a special rate for SMCs⁹, the aim was to compensate this sector (90% of Spanish firms have 5 employees or fewer) for the higher administrative and financial costs with which it has to cope. This rate makes corporation tax a progressive tax, and creates tax evasion incentives (under-billing, division of activities) and discourages risk-taking and the setting-up of new projects. Given that the existence of thresholds in the corporation tax has negative effects on the neutrality of the tax, and that they were introduced exclusively

⁸ Multiple investment-promoting tax incentives are available in the corporation tax. They can take the form of tax credits for investment (allowances for investment in R&D and training), reduced tax rates (small and medium-sized firms, the Basque Country and Navarra, cooperatives, the Canary Islands Special Regime, pension funds, foreign securities fund management companies, activities of cultural interest, mutual funds), accelerated amortisations, tax deferrals for newly-created companies, compensation of losses...

⁹ Romero Jordán, D. (1999): "La eficiencia de los incentivos fiscales a la inversión", *Papeles de Trabajo del Instituto de Estudios Fiscales*, nº 12/99.

¹⁰ Small and medium-sized firms have a preferential tax treatment in most EU countries. They enjoy reduced rates in Germany, France, Italy, Spain, Holland, Ireland and the United Kingdom.

¹¹ In Germany, the standard rate is scheduled to come down to 38.6% by 2003 (51.63%/42.8% in 2000), in France to 33.33% (36.66%) in Ireland to 12.5% (24%), in Italy to 39.25% (41.25%) and in Sweden to 20% in 2001 (28%).

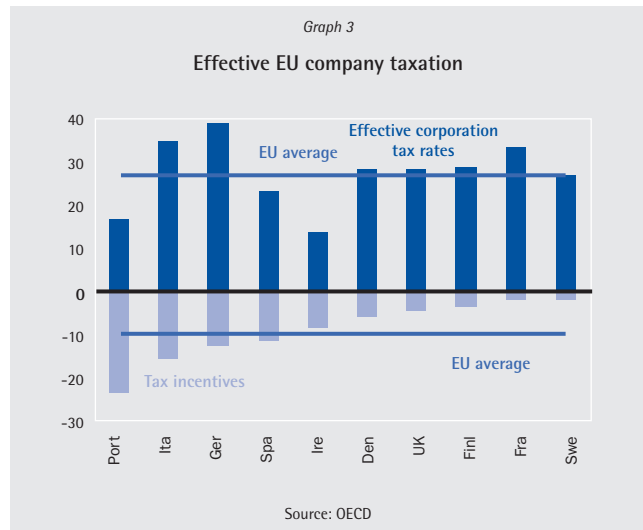
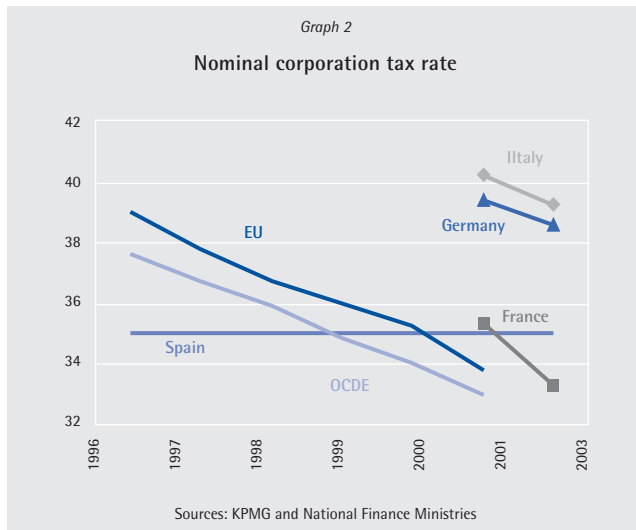
Table 2. 2001 State Budget

	Total (pts. bn.)	(% of total)	SMCs (pts. bn.)	SMCs (% of total)
Total	699.64	100	109.17	15.6
Deductions in tax base	491.01	70.2	98.126	20.0
Special rates	152.885	21.9	48.4	31.7
Deductions in tax liability	208.62	29.8	11.043	5.3
Deductions for investment and job creation:				
Job training	174.621	25.0	7.71	4.4
Job creation	3.68	0.5	0.05	1.4
Environmental protection	0.58	0.1	0.112	19.4
R&D	1.07	0.2	0.247	23.1
Export firms	41.34	5.9	0.34	0.8
	33.62	4.8	0.40	1.2
Tax incent./corp. tax rev.		23.2	3.6	
Forecast corp. tax rev.	3021.9			
Source: Ministry of Finance				

as compensation for costs, this objective could be achieved through structural reforms designed to simplify administrative procedures (a single window) and foment venture capital, which, moreover, would be fiscally neutral. Also, the tax system may not be the most efficient means of supporting small and medium-sized companies, since, in order to benefit from the tax incentives, they have to invest. In this sense, the planned corporation tax reform should be complemented with the measures incorporated in the New Company Statute, the elimination of IAE (the economic activity tax), the phasing out of the module system and the modification of the fiscal transparency regime.

The actual corporation tax also affects the financial structure of firms. First of all, the tax system penalises the distribution of profits as a consequence of double taxation, and thus conditions a firm's dividend policy by discouraging payouts. This hampers, on the one side, the channelling of private saving into more profitable projects and, on the other, penalises start-ups with large investment requirements (UMTS) which cannot be financed from retained profits. Second, the corporation tax penalises financing using own resources (share issues) versus external borrowing (bank loans and issues of bonds and commercial paper), since interest payments are deductible. This asymmetrical treatment of the sources of financing leads to an increase in the ratio of indebtedness of firms and hence weakens their financial capacity to deal with periods of crisis. The corporation tax reform should aim to reduce these distortions, since an improvement in the neutrality of the tax on financial assets (correcting double taxation, for instance) would boost the liquidity of the Spanish stock market and the efficiency of resource allocation.

Tax incentives, the tax base and the nominal tax rate make up the tax structure of corporation tax. In Spain, the stand-



ard corporation tax rate is 35%, above the average rate in the EU since 2001 (33.75%, as against 35.29% in 2000) as a result of cuts in corporation tax in the leading EMU countries (Germany, France, Ireland, Italy and recently Portugal)¹⁰.

At an international level, the liberalisation of capital flows is leading to the harmonisation of the nominal corporation tax rate; the average rate has fallen by 1.54 percentage points between 2000 and 2001 in the EU, notably higher than the reduction of 1.06 percentage points in the OECD countries. In less developed areas, the nominal rate rose over this period (by 0.22 percentage points in Latin America and 0.27 percentage points in the Asia-Pacific area). Nonetheless, as a result of the existence of tax incentives, the effective tax rate, which is the important one for investment decision-making, is lower than the statutory rate. Between 1990 and 1996 (when the statutory rate in Spain was 4 percentage points higher than in the EU), the effective corporation tax rate in Spain was around 11 percentage points below the nominal rate, which represents a fiscal reduction similar to the one existing in the European Union, but well above that of the Northern and Central European countries (with the exception of Belgium). The corporation tax reform approved in the leading EU countries, which is to culminate in 2003, will, in the absence of changes in tax incentives, lead to lower effective rates. If Spanish corporation tax remains unchanged, this implies a weakening of the relative advantage Spanish firms have traditionally had vis-à-vis these countries. As noted earlier, this is particularly important in an environment of unrestricted capital flows and the disappearance of exchange rate risk under EMU. In view of the relatively generous tax incentives in Spain and the distortions they introduce in the allocation of resources, to maintain the favourable tax treatment of firms it would be preferable, from the viewpoint of neutrality, to reduce

the nominal tax rate. Such a measure, while having a negative impact on revenue (for each one-point cut in the tax rate, revenue falls by around 100 billion pesetas), would have a positive effect on growth. Using the QUEST 11 model, the European Commission has carried out simulations to estimate the impact on employment and growth of changes in the tax structure. According to these simulations, a reduction in the corporation tax rate equivalent to 1% of GDP (offset by lower transfers from the central government to households) would bring about a permanent increase of 2.02 percentage points in GDP (3.09 percentage points in the EU) and of 0.39 percentage points in employment (1.06 points). The impact on GDP of a reduction in the corporation tax rate is higher than that which would be obtained with a reduction of similar magnitude in other taxes (VAT or labour taxes), because of its impact on investment. Nonetheless, the impact on employment is much lower because of the substitution effect between capital and labour.

Summary

The reform of corporation tax in Spain should be directed at reducing the distortions generated by the actual system. This implies: improving tax incentives for training (low by international standards); not increasing further the existing differential between the reduced and standard rates, offsetting the higher costs faced by SMCs with structural reforms rather than through the tax system; reducing the existing distortions in financing decisions and maintaining the favourable tax treatment that Spanish firms have traditionally had relative to the EMU with cuts in the standard tax rate and not through larger fiscal incentives. In sum, the reform should aim to: i) simplify the tax; ii) reduce and balance deductions (more training); and iii) lower slightly the standard rate.

The Productivity Enigma*

Carmen Hernansanz, Ángel Melguizo and Patry Tello **

1. Introduction

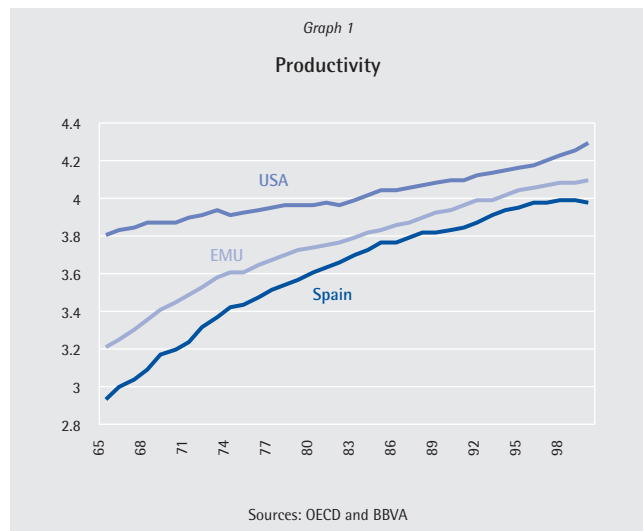
Productivity is the main determinant of the potential growth rate of an economy and, hence, of its long-term performance. The U.S. economy has grown robustly since 1995, at an annual rate of 4% on average. More than half this growth is attributable to productivity, which has risen by 2.4% per year over this period, one percentage point more than in the previous 5 years. A growing number of studies have focused on productivity developments, as a result. The results obtained suggest that a structural change in the behaviour of productivity took place during these years, largely linked to significant technological advances and, to a lesser extent, to the contribution from the other factors of production. A disaggregated analysis of productivity suggests, in turn, that the intensity of this advance has not been the same across all sectors of the economy. Rather, those sectors most closely connected with the new technologies, whether as producers or intensive users, have seen the strongest gains in productivity.

The Spanish economy has also experienced robust growth over this period (3.8% yearly). In contrast to what occurred in the United States, however, productivity has contributed less than one fifth of this economic momentum (0.7 percentage points of growth per year on average). In order to analyse this performance, we examine whether, as occurred in the United States, productivity underwent a structural change in the mid-1990s. An assessment of the contribution of the different factors of production and technological developments to productivity complements this analysis on the one side. Specifically, human capital has an important role to play, while, at the aggregate level, technological progress and physical capital do not seem to have contributed significantly.

On the other, in keeping with studies on the U.S. economy, we evaluate whether the productivity performance in Spain is uniform across all branches of activity and to what extent its sectoral behaviour is linked to the production and use of the new technologies.

* We are grateful to Ángel Estrada and David López-Salido from the Banco de España Research Department for providing the series for the sectoral analysis.

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2. Productivity in Spain, EMU and the United States

The evolution of apparent labour productivity (measured as output per employee) in the United States, the European Monetary Union (EMU) and Spain is presented in Graph 1, and its rate of growth in Graph 2. A number of structural changes in the evolution of productivity since the 1960s seem to be discernible. The first change in Spain (in 1974) reflects the transition to democracy, and the second (1985) the impact of the 1984 labour market reform and the progressive opening of the Spanish economy, which accelerated after entry into the European Community in 1986. The final change is discernible in 1993. Thereafter, like the EMU, though more intensely, Spain experienced a deceleration, or even stagnation, in productivity growth. Quite the contrary to the

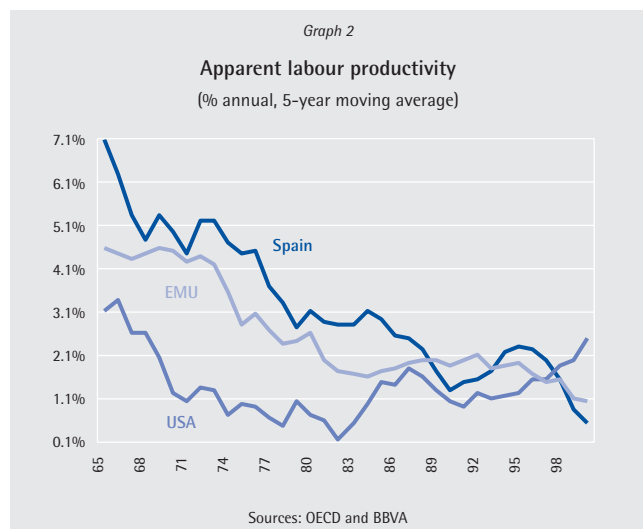


Table 1. Apparent labour productivity
(% annual, period averages)

	Spain	EMU	USA
1961-1970	6.5	4.9	2.3
1971-1980	4.1	2.9	0.9
1981-1990	2.3	1.9	1.3
1991-2000	1.5	1.6	2.0
1995-2000	0.7	1.2	2.4

Note: 1964-1970 for EMU
Sources: OECD and BBVA

United States, where productivity accelerated rapidly from the mid-1990s onwards as a consequence of the new economy. It is therefore safe to say that, in the latest economic expansion, neither Spain nor the EMU have witnessed a positive technology shock in the sense in which it is applied to the United States.

As indicated by Table 1, the productivity growth differential of both Spain and EMU with the United States was positive until 1990, but markedly negative thereafter. That is, the European economy has not only stopped converging in terms of productivity with the United States, but rather the gap is getting wider. This is particularly troubling in the case of Spain, since lower productivity growth than in EMU means that the process of convergence with the euro area has also slowed.

However, if differences in the evolution of productivity persist for a protracted length of time, they cannot be linked to disparate cyclical developments, but rather to structural factors that can weaken competitiveness and hence reduce the rate of growth of potential output.

3. What lies behind the productivity differentials?

The analysis of productivity differentials has so far focused exclusively on the evolution of apparent labour productivity, ignoring developments in other factors of production (capital) and the potential for substitution between them. For the complete picture, it is therefore also necessary to examine the evolution of total factor

Table 2. Total factor productivity (TFP)
(% annual, period averages)

	Spain	EMU	USA
1961-1970	3.25	2.18	1.69
1971-1980	0.99	0.99	0.48
1981-1990	0.83	0.88	0.86
1991-2000	0.10	0.51	1.31
1995-2000	0.17	0.54	1.68

Note: 1964-1970 for EMU
Sources: De la Fuente and Doménech (2000) and BBVA

productivity (TFP), which reflects the technical progress in an economy.

We use a neo-classical growth model to estimate TFP (see methodological annex), obtaining TFP as that part of the growth in apparent labour productivity not explained by the stock of physical capital per employee or the quality of human capital.

Table 2 reports the results obtained for TFP, with average data for 10-year periods. The evolution is similar to the one shown by apparent labour productivity. In both Spain and EMU, TFP decelerates steadily from 1970 onwards, though the slowdown is much more pronounced in Spain in the second half of the 1990s. In 1995-2000, TFP grows at an average rate of 0.17%, below the 0.54% rate observed in EMU. The slower growth rate of TFP in the second half of the 1990s (only France, among the leading EMU countries, shows a clear recovery in TFP in this period), coupled with the acceleration in TFP in the United States, has widened the existing differential between the economic regions considered. These differences reflect the technological gap that the Spanish economy as a whole maintains with EMU and, in particular, as we shall see below, with the United States. At the aggregate level, it is safe to say that neither the Spanish economy nor, to a lesser extent, that of EMU, are benefiting from the supply shock associated with the new economy.

Graph 3 shows the divergence in the evolution of apparent labour productivity and total factor productivity between the United States and Spain. It can be seen that, whereas the growth rate of both TFP and apparent labour productivity have accelerated steadily in the United States in the last ten years, both have trended downwards in Spain (except during the crisis at the beginning of the 1990s).

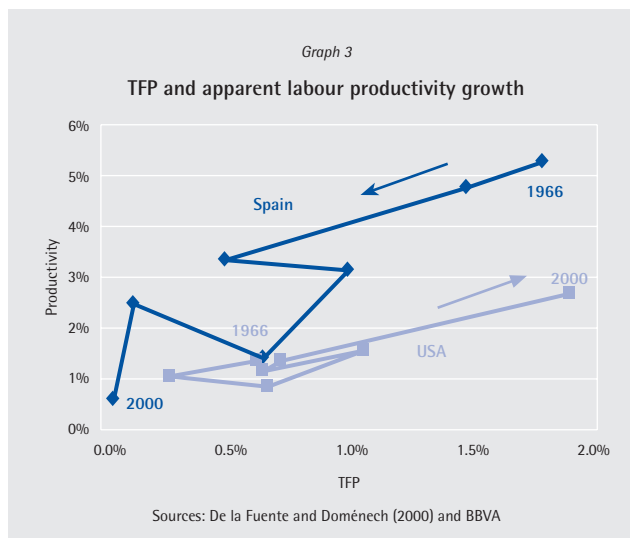


Table 3. Contribution of stock of physical capital per employee to productivity growth
(% annual, period averages)

	Spain	EMU	USA
1961-1970	3.11	2.41	0.43
1971-1980	2.73	1.66	0.26
1981-1990	0.92	0.79	0.37
1991-2000	0.90	0.76	0.56
1995-2000	0.05	0.38	0.61

Note: 1964-1970 for EMU
Sources: De la Fuente and Doménech (2000) and BBVA

Given the divergent behaviour of TFP in the United States, EMU and Spain, it is worth examining whether this has contributed to a greater extent than the stock of factors of production to the existing differences in apparent labour productivity. Tables 3 and 4 report the contributions of the stock of physical and human capital to apparent productivity. The considerable increase in investment in the United States (investment in equipment and software grew by 13.1% on average per year in the period 1995-2000) has led to a significant contribution from the stock of capital per worker to growth in apparent productivity, beginning in the second half of the 1980s. In the 1990s, this contribution exceeds the high points reached in the 1960s. The situation in Spain and EMU could not be more different. Not only have the values observed in the 1970s - much higher in both cases than those of the United States - not been regained, rather the contribution of the stock of physical capital has weakened steadily and in the second half of the 1990s was notably lower than in the United States. The situation is even more negative in Spain, where the contribution of the stock of physical capital to apparent labour productivity growth, reflecting the process of substitution of labour with capital which took place in Spain prior to 1985 and between 1989 and 1993, has stalled during the latest economic expansion. This may be a reflection of, on the one side, the wage moderation of the second half of the 1990s, and, on the other, a modest increase in investment compared with other economic expansions (8.4% year-on-year on average in 1995-2000, as against 13.9% in the second half of the 1980s).

Technical progress and the stock of physical capital have made a modest contribution to apparent labour productivity growth in Spain. The small relative advance is mainly the result of the improvement registered in the quality of human capital. Table 4 shows that in Spain, in contrast to events in EMU and the United States, human capital accounts for almost all of the slight growth in apparent productivity. This is compatible with the increase seen in the percentage of the employed population with a university education.

Table 4. Contribution of stock of human capital to productivity growth
(% annual, period averages)

	Spain	EMU	USA
1961-1970	0.12	0.27	0.19
1971-1980	0.33	0.26	0.19
1981-1990	0.52	0.26	0.11
1991-2000	0.52	0.30	0.15
1995-2000	0.52	0.30	0.15

Note: 1964-1970 for EMU
Sources: De la Fuente and Doménech (2000) and BBVA

Only the contribution of human capital to the productivity of the Spanish economy gives cause for a degree of optimism in the sense that it will allow the new technologies to be used more efficiently.

4. A sectoral analysis of productivity

An analysis of the sources of productivity growth at the aggregate level provides little evidence that the new economy has had a similar impact to that in the United States, where it has raised the growth rate of potential output to 3.5% in 1996-2000, 0.4 percentage points higher than the average in 1972-1989. The stagnation of TFP estimated in the current economic expansion in Spain gives little cause for optimism about the evolution of long-term growth. It is possible that the technology shock in Spain is still in its early stages, however, and that a second phase, involving the diffusion and generalisation of the use of new technologies that would affect the entire production system and lead to an increase in TFP, has yet to begin, but will make itself felt in the coming years. This would explain the absence of evidence of technical progress at the aggregate level.

The most direct and straightforward way to address this question is to carry out a disaggregated analysis by branch of activity. Decisions relating to employment, investment and production are taken at the firm level. Accordingly, a rigorous study of productivity should aspire to the maximum level of disaggregation. If the foundations of the new economy are being laid in Spain, it should be possible to detect significant increases in investment and TFP in certain sectors, both those connected with the production of new technology and those providing services related to its implantation and use. In sum, the stagnation of productivity at the aggregate level could be masking a relatively more favourable performance not only in the sectors producing goods and services connected with the new technologies, but also in the sectors that are using them more intensively. Applied studies available for the United States give the new economy a prominent role in

productivity developments in recent years, estimating that it accounts for up to two thirds of the acceleration in productivity since the third quarter of 1995¹.

The aim of this section is to analyse the role of information and communication technology (ICT) in the evolution of productivity in Spain.

We use time-series data for gross value added per hour since 1980 for non-financial market sectors². A simple econometric test of the temporal evolution of aggregate productivity allows us to estimate significant changes in the growth rate in the same years as determined in the previous section: in the mid-1980s and mid-1990s.

The study focuses on assessing the differences in aggregate productivity developments between two long periods, determined by the most pronounced change estimated for 1995. Accordingly, we examine the deceleration in productivity in the last five years, measured as the difference between the average growth rates in 1995-2000 and those corresponding to 1980-1994. The aggregate productivity of the non-financial market sectors in Spain has experienced a marked deceleration in the last five years, the average growth rate falling by some 2.7 percentage points (to 0.9%, from 3.6% up to 1994). Total factor productivity shows a similar evolution, falling by 2.1 percentage points (to 0.6%, from 2.7%).

In order to gauge the impact of ICT at the sectoral level, we define three groups of industries according to economic activity and the ICT content of their purchases drawing on information from the Input-Output Tables³ for the Spanish economy: producers⁴ (machinery, transportation and communication services and other market services), users⁵ (energy, chemical products, transportation material, paper and publishing, commerce and the hotel trade and transportation services) and less intensive users (agriculture, livestock farming and fishing, metalworking and metal products, nonmetallic minerals, food, beverages and tobacco, textiles, products of various industries and construction).

As a result of the slowdown registered by productivity in Spain's economy, the question raised concerning the con-

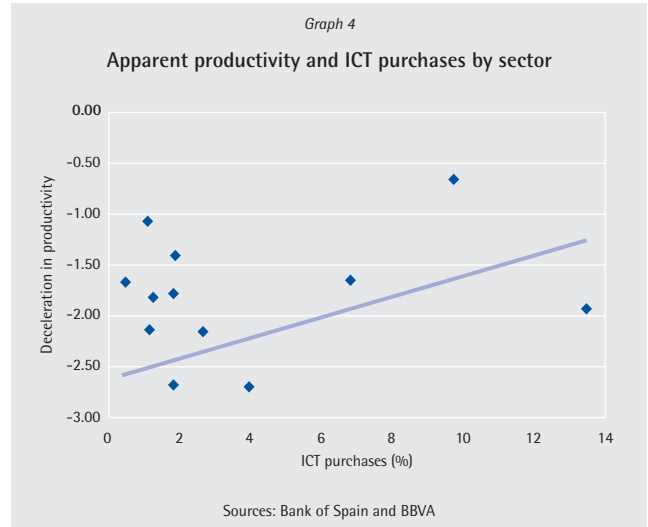
¹ Their contribution to the acceleration in total factor productivity is equally significant. See, among others, the U.S. Department of Commerce (2000), the Council of Economic Advisers (2001), Stiroh (2001a) and Gordon (2001).

² The series used in the applied study are those produced by Estrada and López-Salido (2001a and 2001b).

³ We use the 1996 Input-Output tables, disaggregated into 73 branches of activity (ESA-95), which, because of the availability of the productivity series, are grouped together into 15 (excluding credit institution and insurance services and non-market services).

⁴ The ICT producer branches are identified as: manufacturing of office equipment and computer equipment, manufacturing of electronic goods, manufacturing of radio, television and communications equipment and devices, manufacturing of medical and surgical equipment and precision instruments, optics and watchmaking, post and telecommunications, computing activities, research and development and other business activities.

⁵ The branches mentioned are those that present an above-average percentage of purchases from ICT branches to total purchases, excluding the producers themselves, credit institutions and insurance services and non-market services.

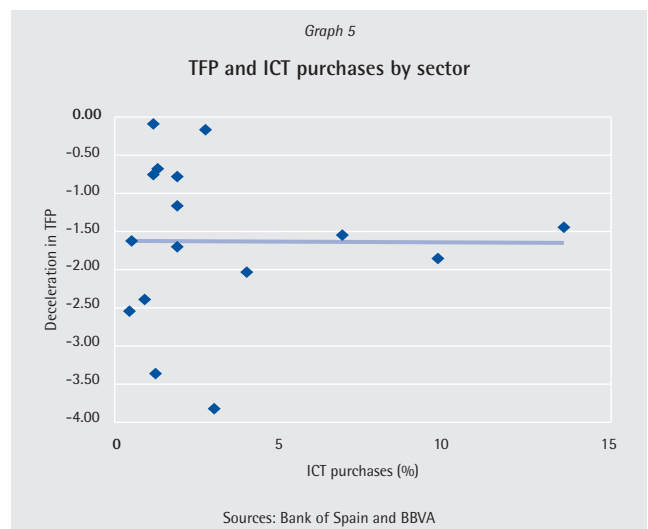


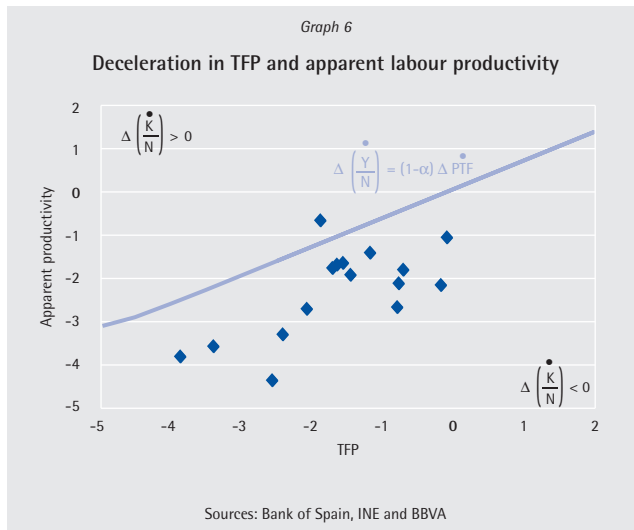
tribution of the new technologies to productivity developments is radically different to that for the United States. Specifically, we have to analyse whether the adoption of new technologies has made it possible to avert, or at least moderate, the deceleration in productivity growth observed at the aggregate level in Spain since 1995.

Graph 4 presents the deceleration in apparent labour productivity (1995-2000 versus 1980-1994) and the percentage of ICT purchases by branch of activity.

A deceleration in productivity is evident across-the-board from 1995 onwards. The use of the new technologies, analysed on the basis of the criterion described above, did little therefore to avert the weak productivity performance. Nonetheless, while the evidence is not robust, the deceleration does seem to have been less pronounced in the producer and intensive user sectors of the new technologies.

A breakdown by components, within the basic neo-classical model (see methodological annex), shows that total





factor productivity accounts for half of the deceleration in apparent labour productivity growth. The other half stems from the slowdown in productive capital per worker⁶.

Graph 5 shows the deceleration in TFP in Spain (1995-2000 versus 1980-1994) and the percentage of ICT purchases by branch of activity.

The zero slope of the straight line reflects a comparable slowdown in TFP across all sectors, irrespective of whether they are producers or users. We can therefore reject the possibility that branches using new technologies intensively have registered a more favourable total factor productivity performance over the last five years.

That is, the smaller deceleration in apparent labour productivity in the technology sectors must be attributable to a less unfavourable evolution of productive capital per employee.

Graph 6 plots the deceleration in apparent labour productivity and total factor productivity, and the line that determines the sign of the contribution of productive capital per employee in each branch (positive if it lies to the left and negative if it lies to the right). All branches of activity, except for transportation and communication services, lie to the right, thus reflecting a deceleration in productive capital per employee between the periods 1995-2000 and 1980-1994. The production branches and, to a lesser extent, intensive users show a slower relative deceleration in this variable, which has the effect of reducing the decline in their apparent productivity. Whether this is due to higher investment or a bigger reduction in payrolls would need to be analysed.

⁶ We use the value for the coefficient α of 0.35 obtained in the previous section. The robustness of this result needs to be tested, however. First, these variables need to be studied at a more disaggregated level. Second, human capital should be incorporated into the basic neo-classical model as an explicatory variable, given the importance noted for it in the previous section. Both are considered to be natural directions for a broadening of this research.

The contribution of the new technologies to productivity can be therefore be classed as modest. There is some slight evidence of a better performance in the producer and user sectors as a result of less unfavourable developments in the stock of productive capital per employee. In contrast, gains in TFP are non-existent.

5. Conclusions

The meagre productivity gains registered by the Spanish economy in the second half of the 1990s contrast with the growth rates observed in previous economic expansions, and particularly with the acceleration seen in the United States. An analysis of the factors governing productivity shows that the differential between Spain and the United States is largely attributable to the contribution of TFP, or technical progress, and to a lesser extent, to capital intensity per employee. This result suggests that, at the aggregate level, the impact of a technology shock similar to the one that seems to have marked the U.S. economic performance at the end of the last decade is not yet visible in Spain. While technical progress, a key variable in the long-term rate of economic growth, is unlikely to take the potential growth rate of the Spanish economy back to the rates seen in the 1960s (3.4% as against 2.6% at present), the finding that the quality of human capital accounts for almost all of the productivity growth in the period 1995-2000 is a positive development. The degree of complementarity between the use of the new technologies and skilled labour will contribute to raise productivity and competitiveness in the Spanish economy when investment in new technologies increases and they diffuse in the economy.

Given that the diffusion and wholesale use of the new technologies are not immediate, the study of aggregate data can mask the real degree of exposure of an economy to the new technologies if the process is still in its infancy (innovation and investment). Our analysis at the sectoral level concludes that the production and intensity of use of the new technologies by the different branches of activity was not enough to avoid the deceleration in productivity. It does however seem to have helped put a brake on it. This conclusion is underpinned by a less-pronounced deceleration in productive capital per worker in the producer and intensive-user sectors of ICT. Conversely, there is no evidence of any positive effects of the new technologies on the deceleration in total factor productivity.

A more precise assessment of Spain's relative position as regards the contribution of ICT to productivity growth would require a greater level of disaggregation. Nonethe-

less, the results obtained hint at a significant technological gap in Spain. This stems from both an insufficient level of investment in technology and the nonexistence of the technical progress that its adoption would bring. The reduction of this digital gap will require a greater investment effort by Spanish firms if they are to emulate the extraordinary productivity performance of the U.S. economy.

References

- Barro, R. J. and Lee, J.W. (1996): "International measures of schooling years and schooling quality", *American Review Papers and Proceedings*, Vol. 86, No. 2 (May), pp. 218-223.
- Bassanini, A., Scarpetta, S. and Visco, I. (2000): "Knowledge, technology and economic growth: recent evidence from OECD countries". OECD Economics Department *Working Paper*, No. 259. (October).
- Council of Economic Advisers (2001): *The Annual Report*.
- De la Fuente, A. and Doménech, R. (2001): "Educational attainment in the OECD, 1960-1995". *Documento de trabajo* D-2001-01 (January), Ministerio de Hacienda. España.
- De la Fuente, A. and Doménech, R. (2000): "Human capital in growth regressions: how much difference does data quality make?". CEPR *Discussion Paper*, No. 2466 (May). Centre for Economic Policy Research.
- Estrada, A. and López-Salido, D. (2001a): "La contribución de los factores productivos al crecimiento económico en España: un análisis desagregado". *Boletín Económico*, February 2001, Banco de España, pp. 47-55.
- Estrada, A. and López-Salido, D. (2001b): "Accounting for Spanish productivity growth using sectoral data: new evidence", forthcoming as *Documento de Trabajo* of Banco de España.
- García, P. and Pérez, M. (2001): "Evolución del empleo: ¿cambio estructural?". *Economistas*, nº87: España 2000. Un balance, pp. 242-251.
- Gordon, R.J. (2001): *Technology and economic performance in the American economy*, April 2001, forthcoming working paper of National Bureau of Economic Research. (available <http://faculty-web.at.northwestern.edu/economics/gordon>).
- Instituto Nacional de Estadística (2001): *Tabla Input-Output 1996*. Contabilidad Nacional de España. Base 1995.
- Mankiw, N.G., Romer, D.H. and Weil, D.N. (1992): "A contribution to the empirics of economic growth". *Quarterly Journal of Economics*, Vol.107, No. 2 (May), pp. 407-437.
- Martín, C. and Velázquez, F.J. (2001): "Series de indicadores de convergencia real para España, el resto de países de la UE y EE.UU.". *Estudios de la Fundación*, nº 9. Fundación de las Cajas de Ahorros Confederadas para la Investigación Económica y Social.
- Stiroh, K.J. (2001a): "Information technology and the U.S. productivity revival: what do the industry data say?". *Staff Reports*, No. 115 (January), Federal Reserve Bank of New York.
- Stiroh, K.J. (2001b): "What drives productivity growth? Federal Reserve Bank of New York *Economic Policy Review*, Vol. 7, No. 1 (March), pp. 37-59.

Tello, P. (2001): "What is the potential output of the Spanish economy?". *Situación Spain*, February 2001, BBVA Research Department, pp. 21-27.

U.S. Department of Commerce (2000): *Digital Economy 2000*.

METHODOLOGICAL ANNEX

In order to decompose the apparent productivity of labour and estimate TFP, we used the neo-classical growth model⁷. The long-term growth rate of productivity and hence of per capita income is determined exclusively by the growth rate of exogenous technical progress (the Solow residual). Supply in the economy is determined by a Cobb-Douglas production function with constant returns to scale and two factors of production, capital (K) and labour (M),

$$(1) Y = K^\alpha (AN)^\beta, \text{ where } \alpha + \beta = 1,$$

where Y is real GDP and A is technical progress. The coefficients α and β represent the participation of income from capital and labour in output. TFP is obtained as a residual of equation (1). Hence, this variable not only reflects technical progress but also omitted variables (quality of human capital, changes in the composition of the stock of physical capital, investment in R&D, new technologies and market imperfections), implying that the neo-classical model may underestimate the contribution of TFP to productivity growth. A broader definition of the factors included in the production function would make it possible to obtain a more accurate measurement of technical progress. The most common extension in the literature is to modify the production function with the contribution of changes in the quality of human capital (education, job training) and in the composition of physical capital (investment in new technologies that improve the production process)⁸.

Considering the significant increase in human capital in the Spanish economy over recent decades (whereas, in 1977, only 21% of the labour force had a secondary school education or higher, by 2000 this percentage had risen to 71%), we have opted, in this exercise, for the neo-classical model augmented with human capital in line with that employed by Mankiw, Romer and Weil (1992).

$$(2) Y = K^\alpha (ANH)^\beta (AN)^{(1-\alpha-\beta)}, \quad \alpha + \beta < 1$$

where H is the stock of human capital.

⁷ See, among others, Stiroh (2001b).

⁸ See Bassanini et al. (2000).

The expression (2) can be re-written as;

$$(3) q = \alpha k + \beta h + (1-\alpha)a,$$

where $q = \ln(Y/N)$, $k = \ln(K/N)$, $a = \ln A$ y $h = \ln H$.

Although economic theory suggests that the accumulation of human capital and apparent labour productivity are positively related, empirical studies give mixed results. De la Fuente and Doménech (2000) show that this result may be due to measurement errors relating to human capital. These authors construct human capital series for a sample of 21 OECD countries⁹. They also estimate the augmented neo-classical growth model, considering, in addition to the stock of human capital, a technology catch-up mechanism (technological diffusion) that also allows for the existence of productivity differentials across countries. The equation estimated by these authors takes the form¹⁰,

$$(4) \Delta q_{it} = \Gamma_0 + \gamma_i + \eta_t + \alpha \Delta k_{it} + \beta \Delta h_{it} + \lambda b_{it} + \varepsilon_{it},$$

where Δ denotes annual growth rates, h is the human capital series reconstructed by De la Fuente and Doménech (2000) that measures the average number of years of schooling of the adult population, b_{it} measures the technological gap between each country and the United States at the start of each sub-period ("Hicks-neutral TFP gap"¹¹), γ_i captures the specific effect of each country, η_t are time dummies, Γ_0 is a constant and λ measures the rate of technological convergence. Equation (4) is estimated using non-linear least squares with five-year means for the period 1960-1990. The results obtained, as reported in Table 5, are consistent with theory. The coefficient α , 0.373, is only slightly higher than in most OECD countries (in the case of Spain, the value of α stands at around 0.347%¹²). The coefficient β , which measures the elasticity of apparent labour productivity to the stock of human capital is positive (0.271%) and statistically significant.

⁹ See De la Fuente and Doménech (2001). The series of average number of years of schooling are a revised version of those constructed by Barro and Lee (1996).

¹⁰ See De la Fuente and Doménech (2000).

¹¹ $b_{it} = (q_{EEUU,t} - \alpha k_{EEUU,t} - \beta h_{EEUU,t}) - (q_{it} - \alpha k_{it} - \beta h_{it})$

¹² See Tello (2001).

Table 5. Estimated production function (in differences)

	With convergence effect
α	0.373 (7.15)
β	0.271 (2.53)
λ	0.068 (6.34)
R ² adjusted	0.809
std error	0.008
country dummies	yes
catch-up effect	yes
time dummies	yes

Note: t ratios in brackets
Source: De la Fuente and Doménech (2000)

The model estimated by De la Fuente and Doménech (2000) makes it possible to decompose apparent labour productivity and analyse how a different stock of factors of production and differences in total factor productivity explain the divergences between Spain and EMU and the United States. To do so, it was necessary to extend the data on the stock of human capital to the year 2000 (they were only available up to 1995), using as indicators the data-base created by Martín and Velázquez (2001).

Using the coefficients estimated by De la Fuente and Doménech, which are assumed to be constant for all the countries considered in the sample¹³, we obtain, using equation (4), the TFP for each country¹⁴,

$$(5) \Delta q_{it} = \alpha \Delta k_{it} + \beta \Delta h_{it} + \Delta TPF_{it},$$

hence,

$$\Delta TPF_{it} = \Gamma_0 + \gamma_i + \eta_t + \lambda b_{it} + \varepsilon_{it} = \Delta q_{it} - \alpha \Delta k_{it} - \beta \Delta h_{it}.$$

¹³ The estimates made by the OECD put the value of λ between 0.35 and 0.25 for all the industrial countries.

¹⁴ In the interests of simplicity, the convergence factor (catch-up effect) is taken to form part of technological progress.

Spain: main economic indicators

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

	2000	2001 (1)	February	March	April	Latest figure	One year ago	Trend
Industrial production (calendar-adjusted)	4.4	-0.8	-1.7	-1.6		-1.6	7.7	-
Business confidence (net balance)	2.5	-2.0	-1.7	-2.0		-2.0	6.7	-
CU (3)	80.7	79.3	79.3	79.3	79.3	79.3	80.5	-
Electricity consumption (4)	6.9	4.7	3.6	6.2	3.2	3.2	8.0	-
Cement consumption	11.1	8.5	1.7	-0.2	19.6	19.6	-4.6	-
Car sales	-1.8	-1.0	-3.6	2.1	-0.2	-0.2	9.3	-
Consumer confidence index (2)	6.8	2.0	2.0	3.0	1.0	1.0	10.0	-
CPI (overall)	3.4	3.8	3.8	3.9	4.0	4.0	2.9	-
Producer prices	5.4	3.6	3.6	3.2	2.8	2.8	5.7	-
Wage pacts (5)	3.0	3.5	3.1	3.5		3.5	2.8	+
Liquid financial assets (households and NPISH)	1.5	1.5	1.8	2.6		2.6	1.8	+
Domestic private sector credit	18.5	18.5	17.0	16.5		16.5	19.6	-
Social security registrations	5.0	4.4	4.5	4.8	4.1	4.1	5.4	-
Registered unemployment (6)	-94.1	-51.2	-60.9	-50.1	-43.8	-43.8	-129.1	-
Unemployment rate (3)	14.1	13.4		13.4		13.4	15.0	-
Employment (quarterly) (3)(6)	656.3	402.9	402.9	402.9		402.9	709.6	-
Current account balance (7)	-18959.0	-1110.0	232.0			232.0	625.0	-
Trade balance (7)	-43042.1	-9035.0	-2869.8	-3210.0		-3210.0	-3469.0	-
Cash balance (8)	-404.5	-3.0	-207.2	-927.3	-3.0	-3.0	42.3	-

(1) Available to date. (2) Balance of responses in %. (3) Quarterly data (for quarter ending in month specified).

(4) Corrected for calendar effects and temperature. (5) Cumulative over the period. (6) Annual change in '000s.

(7) Balance in millions of euros. (8) Cumulative over the period (billions of pesetas).

International situation: Forecast summary

	Real GDP (%)				Inflation (% at year-end)			
	1999	2000	2001	2002	1999	2000	2001	2002
US	4.2	5.0	1.8	3.5	2.2	3.4	3.0	2.4
EMU	2.5	3.4	2.0	2.5	1.1	2.3	2.6	1.9
Japan	0.8	1.7	1.6	1.3	-0.3	-0.6	-0.3	-0.1
	Fiscal balance (% of GDP)				Current account balance (% of GDP)			
	1999	2000	2001	2002	1999	2000	2001	2002
US	1.4	2.4	2.4	2.2	-3.6	-4.4	-3.8	-3.8
EMU	-1.2	-0.7	-0.8	-0.4	-0.1	-0.5	-0.5	-0.6
Japan	-9.0	-8.9	-8.5	-8.5	2.5	2.6	2.4	2.5
	Official interest rate (%)*				Exchange rate (vs. \$)*			
	May-01	Sep-01	Dec-01	Jun-02	May-01	Sep-01	Dec-01	Jun-02
US	4.00	4.00	4.00	4.25				
EMU	4.50	4.25	4.25	4.25	0.85	0.90	0.90	0.88
Japan	0.00	0.00	0.00	0.00	119	122	122	120

* End of periode

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