
Productive investment in the recent cycle

1. INTRODUCTION

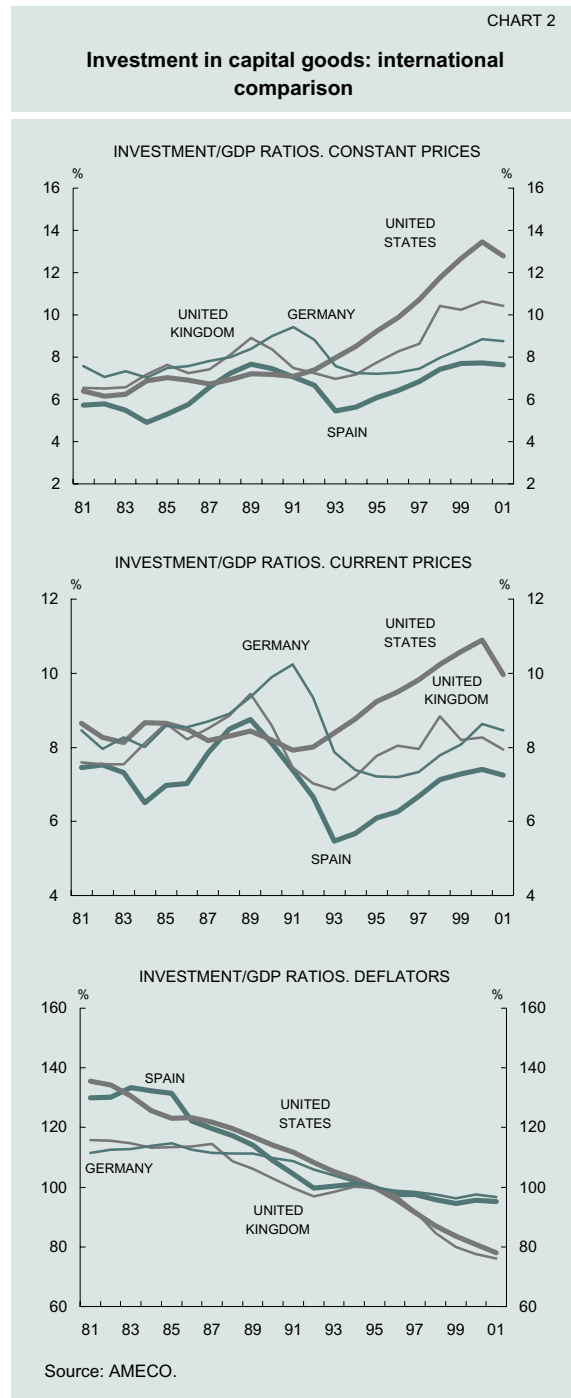
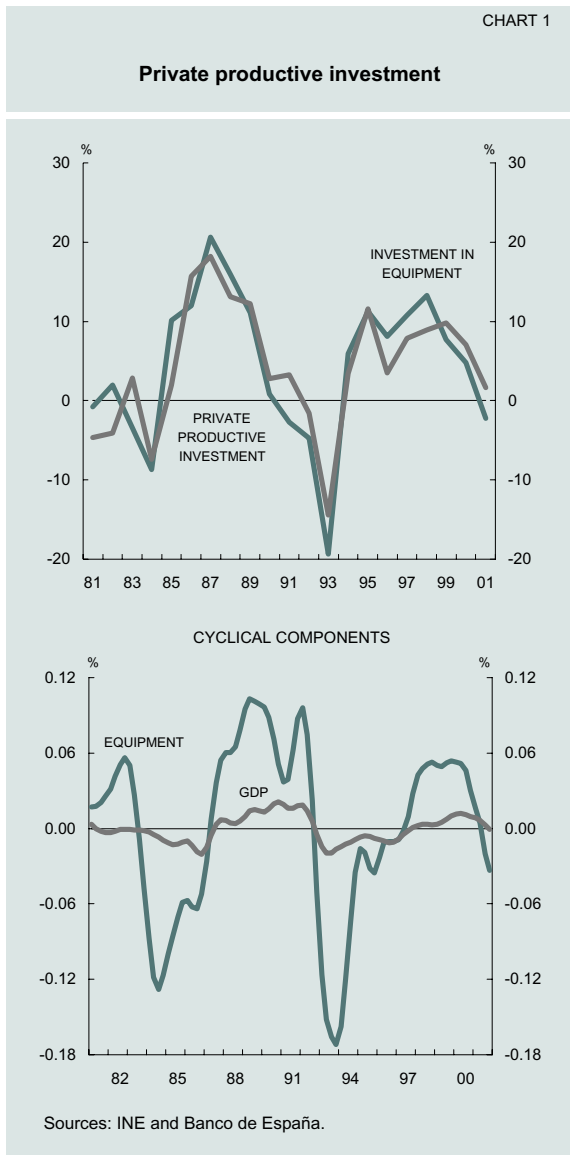
This article analyses various factors that help understand the behaviour of productive investment in the recent expansionary cycle and its premature slowdown as from the year 2000. Firstly, this behaviour is described, comparing it with that of the previous cycle and with that observed in other advanced economies, while relating it to the habitual determinants of investment. Next, there is a discussion of some investment-related measurement problems, which may partly explain the trend observed. And finally, the potential influence exerted by specific events in recent years – such as the strong increase in foreign investment flows and the climate of heightened uncertainty accompanying recent developments in the international economy – is analysed.

2. RECENT DEVELOPMENTS IN PRIVATE PRODUCTIVE INVESTMENT

During the recent expansionary phase of the Spanish economy, the growth rate of productive investment by private-sector corporations was high, though lower than that observed in the expansion in the second half of the eighties. In the period 1996-2001, it is estimated that this aggregate posted annual average growth of 6.5% in real terms compared with 10.7% between 1985 and 1990. The upper panel of Chart 1 tracks private productive investment (PPI) along with investment in capital goods (1) (drawing on Spanish National Accounts), while the lower panel depicts the cyclical components of this aggregate and of GDP, which highlight the lesser relative thrust of investment in the second half of the nineties. It can be seen that PPI began to slow down as early as 2000 and continued to do so, with greater intensity, in 2001, in tow to the weakening of investment in capital goods. Meanwhile, the private non-residential construction component (which is also part of PPI) retained greater buoyancy.

Undoubtedly, the situation of the Spanish economy was, at the onset of this recent cycle, far different from that prevailing in the mid-eighties, when there was a very great need to rebuild the capital stock in the wake of the industrial restructuring process. Conversely, by the mid-nineties, the Spanish economy had already been substantially modernised, narrowing the gap separating it from the more advanced

(1) The course of both variables is very similar, although PPI (estimated on the basis of QNA data) includes private investment in non-residential construction, while investment in equipment (obtained directly from Spanish Accounts) has a small public investment component.



economies. Nonetheless, the economy's capitalisation needs are no less now. The second half of the nineties has seen a substantial technological change associated with the development of information and communications technologies. This has given substantial momentum to investment in the advanced economies. As Chart 2 shows, the intensity of the investment process, measured by the investment ratios, has been very high in terms of GDP in countries such as the United States or the United Kingdom, although it has been lower in Spain than in most of the developed countries whether measured in real or nominal terms. Moreover, the slowdown in investment in Spain, in particular in capital goods, took place ahead of that of the euro area as a whole.

At a more detailed level, the information available shows that the lesser intensity of the investment process in the years 1996-2000,

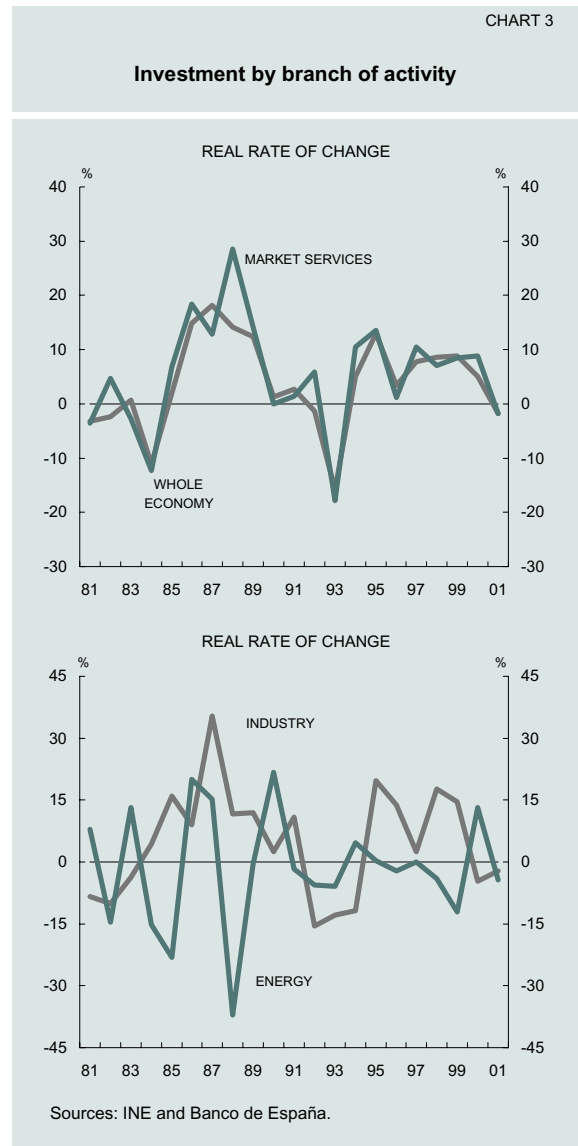
compared with the period 1986-1990, was a feature of both industry and non-financial market services (see Chart 3). However, the deceleration of investment in 2000 began in industry and only spread to services in 2001. According to the disaggregated data of the industrial survey (see Table 1), which are consistent with the information drawn from the Banco de España Central Balance Sheet Data Office (CBBE), most industrial activities, except electronics, saw investment moderate in 2000. In the electricity production and distribution industry, investment ran at a higher rate in 2000 owing to

the need to meet higher than envisaged demand, after several years' lower domestic investment. In services, investment proved more sustained. Indeed, in some capital-intensive activities, such as transport and communications, gross capital formation was more buoyant than in the previous cycle. Nonetheless, in the case of communications, following several years of strong growth in the capital stock, incidents bearing on the new areas under development, such as the delay in UMTS technology, have halted – at least temporarily – the substantial investment initially envisaged.

From the standpoint of its composition by type of good, investment was centred during the initial stage of the recent cycle on capital goods, while non-residential construction was less dynamic and tended to pick up as from 1999, when equipment began to turn. According to the data estimated on the basis of the CBBE information, the strength of investment in IT software and hardware was prominent in this expansionary stage, proving notably more dynamic than other capital components, especially in market services. However, this type of good still accounts for a relatively low proportion of total investment, whereby its buoyancy does not alter the comparatively moderate nature of total investment (see Table 2).

Finally, the CBBE data on company size show that the trend was very similar for all groups over these years, with a significant expansion until 1999 and a heavy decline in 2000 (less markedly so in the case of large corporations) which, foreseeably, will have run into 2001. Until 2000 there was a strong increase in the creation of new companies, mostly small ones, with a significant repercussion on the total investment of non-financial corporations (around 15%). This tendency was broken in 2001 when, according to the data provided by the Mercantile Registry, almost 5% fewer corporations were created than the previous year.

Set against the foregoing results, some of the main conditioning factors of investment decisions had shaped a fairly favourable environment in the second half of the nineties, warranting more expansionary behaviour. Demand pressure proved a considerable force, as shown by the fact that final demand (on National Accounts figures) grew 5% in annual average terms between 1996 and 2001, compared with an average of 5.3% between 1985 and 1990. Further, there was an unprecedented reduction in the user cost of capital in real terms, as can be seen in Chart 4. This reduction in the cost of capital has been linked to the fall in the relative price of capital goods in relation to output, which is shown in the lower panel of Chart 2,



and, essentially, to the forceful cut in interest rates, which stood at historically low levels as the Spanish economy moved towards Monetary Union membership. At the same time, non-financial corporations have attained and sustained high real profit ratios.

3. INVESTMENT MEASUREMENT PROBLEMS

A prior question to the analysis of the conditioning factors of investment concerns its measurement, especially in real terms. As can be seen in the lower panel of Chart 2, in Spain the capital investment deflator, in relation to that of GDP, moved on a declining trend as from the eighties. This continued in the nineties, albeit with less intensity than in previous periods and, above all, less markedly so than in other countries such as the United States or the United

TABLE 1

Non-financial corporations: investment, fixed capital intensity and creation of companies

Rate of change

	Coverage (a)	1996	1997	1998	1999	2000	1996-2000
TANGIBLE GFCF:							
Energy	73.6	9.7	-9.4	-5.8	4.9	21.4	4.1
Industry	33.8	26.5	-0.2	9.1	17.8	-10.2	8.6
Construction	12.7	-54.2	13.5	87.9	72.8	21.0	28.2
Market services	15.8	3.4	-2.1	8.6	23.6	-10.7	4.6
<i>Distributive trade</i>	20.1	-20.5	-7.4	14.5	21.8	-1.5	1.4
<i>Transport and communications</i>	47.6	15.3	-3.2	4.3	20.4	-0.6	7.2
<i>Other market services</i>	5.8	3.2	12.4	17.2	36.4	-50.2	3.8
Total	21.2	9.0	-3.0	7.5	20.1	-3.7	6.0
Small		3.1	-3.3	21.4	48.2	-13.0	11.3
Medium		14.2	5.2	27.5	24.8	-14.6	11.4
Large		8.6	-3.9	4.4	18.4	-1.9	5.1
FIXED ASSETS PER EMPLOYEE:							
Energy		52.7	57.2	59.1	63.4	66.5	59.8
Industry		4.7	5.2	5.3	5.4	5.8	5.3
Construction		1.1	1.1	1.3	1.8	2.5	1.6
Market services		9.1	9.3	8.8	9.2	9.6	9.2
<i>Distributive trade</i>		4.6	4.8	4.8	5.1	5.0	4.9
<i>Transport and communications</i>		17.0	18.2	18.4	18.4	18.1	18.0
<i>Other market services</i>		3.6	3.6	3.3	3.7	4.4	3.7
Total		9.5	10.0	9.7	10.3	10.9	10.1
Small		3.4	3.3	3.5	3.9	4.2	3.7
Medium		4.4	4.6	4.7	4.6	5.0	4.7
Large		10.9	11.4	11.1	11.8	12.2	11.5
NUMBER OF COMPANIES CREATED:							
Industry and energy		-34.6	1.2	3.8	-7.4	0.0	-7.4
Construction		-36.1	-3.0	9.0	7.1	8.7	-2.9
Market services		-13.6	4.4	12.5	-0.9	10.4	2.6
<i>Distributive trade</i>		-17.6	1.1	4.0	-2.9	6.6	-1.8
<i>Transport and communications</i>		-9.4	-2.4	13.0	-5.6	-2.1	-1.3
<i>Other market services</i>		-10.8	7.9	18.7	0.9	14.1	6.2
Total		-21.7	2.8	10.8	-0.5	9.0	0.1
Without dependent employees		-53.1	1.3	20.3	55.1	13.6	7.4
1-50 employees		3.6	3.3	7.4	-44.4	5.3	-5.0
Over 50		8.9	10.8	17.5	1.2	6.1	8.9

Sources: Central de Balances del Banco de España and Dirce.
 (a) Percentage covered by the Central Balance Sheet Data Office in relation to the total estimated by National Accounts for each branch. Coverage in respect of 1998 data (latest year available with this breakdown in National Accounts)

Kingdom. The nineties, indeed, were the years which saw the biggest expansion of investment in goods associated with the new information and communications technologies (ICT) which, as they are products subject to sharp and continuous quality improvements, give rise to pronounced biases in the measurement of changes in their prices and, therefore, in the deflation

of their nominal magnitudes and the calculation of their real magnitudes.

Some countries, such as the United States, have introduced price adjustment techniques for changes in product quality, based in many cases on the hedonic method. That gives rise to more marked declines in investment deflators

TABLE 2

Contribution of ICT to growth of the capital stock

	1992-1995	1996-2000
RATE OF CHANGE:		
ICT	4.4	10.1
Software	5.9	9.2
Hardware	1.4	11.8
Other capital	0.3	1.4
PERCENTAGE OF FIXED CAPITAL:		
ICT	5.8	9.0
Other capital	94.2	91.0

Source: Hernando and Núñez (2002).

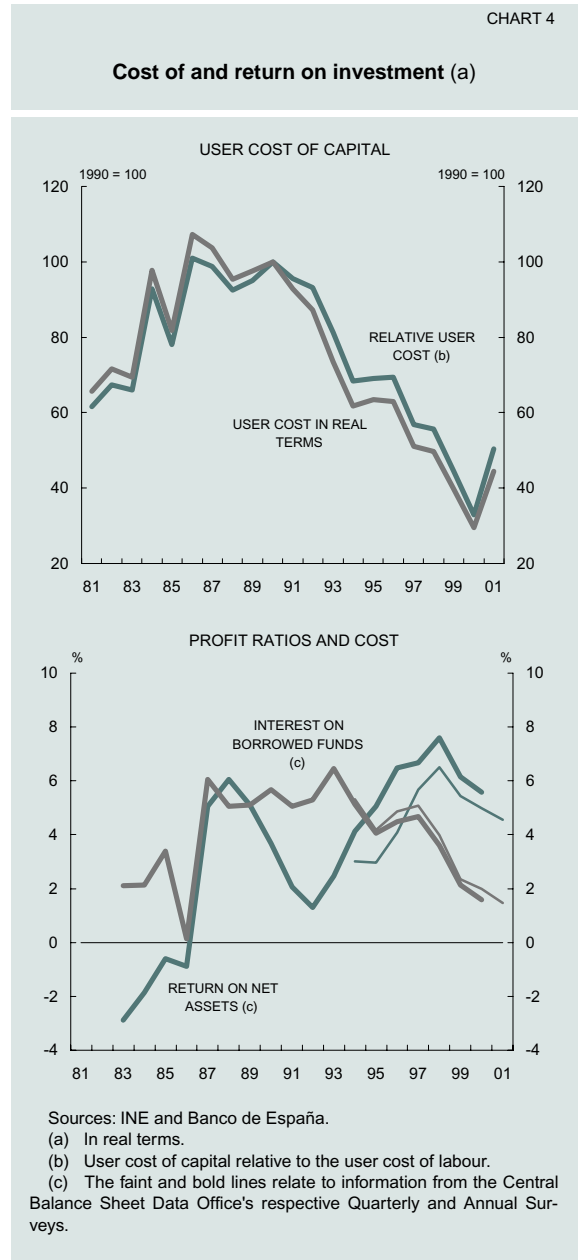
and, for the same nominal expenditure, to a higher estimation of real-terms expenditure. In Spain's case, the use of more traditional techniques for the adjustment of prices for product quality changes in compiling the National Accounts has led to an underestimation of the increase in investment spending, in real terms, by a significant – though not readily quantifiable – amount, as is apparently inferred from the comparative trend of its deflator.

Indeed, research with Spanish data (2) shows the existence of significant biases in the deflators of certain products subject to a marked technical change, such as ICT products, and also – albeit to a lesser degree – in the case of transport equipment. When the Spanish National Accounts investment deflators are adjusted for the biases estimated in the aforementioned research papers, the conclusion is that investment in equipment would have grown in Spain, between 1995 and 1999, by a few percentage points more per year than the original National Accounts estimates.

4. OTHER FACTORS THAT HAVE INFLUENCED THE BEHAVIOUR OF INVESTMENT

Admittedly, the possible under-estimation of the growth of investment in real terms offers an explanation for the low growth of this variable in the second half of the nineties. But comparison with other countries continues to show Spain to have been relatively less dynamic in respect of investment. It should be borne in mind that the measurement problems in many European

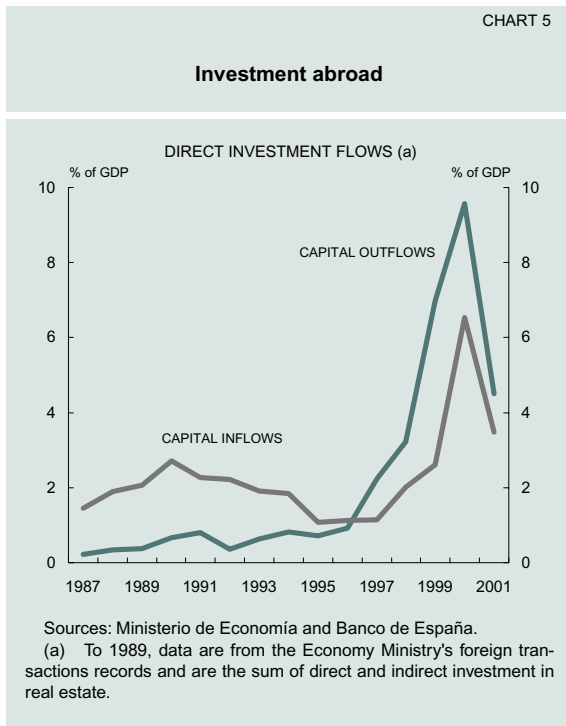
(2) See Bover, Izquierdo and Matea (2002).



countries are similar to those in Spain. Moreover, according to the current-prices comparison offered in Chart 2, Spain's investment ratio continues to be below those of other countries. Analysed below are other factors whose importance in the current context for explaining business investment appears to have increased.

4.1. International dimension of corporations: foreign direct investment

One of the main changes Spanish corporations have undergone in recent years has been their expansion abroad and internationalisation. The sphere of investment decision-making is no longer limited to the domestic market, but has



taken on an international dimension. In this respect, one factor that may have contributed considerably to moderating domestic investment in the recent expansionary phase and to prompting its deceleration in 2000 is its replacement by investment abroad, which offered corporations a more favourable expected return.

As can be seen in Chart 5, during the nineties the Spanish economy became a net foreign investor. Over the last six years, direct investment outflows have come to account for more than half of those intended for investment in capital goods. Specifically, in 2001, investment abroad by Spanish corporations, though down on the peak attained in 2000, accounted for 4.5% of GDP, against 7.2% for investment in equipment. It is true that a sizable portion of this investment has been made by the financial sector, whose weight in domestic investment is limited. But the other corporations involved in international expansion processes are generally very capital-intensive (corporations in the electricity, oil, telephony and aeronautical industries), whereby their expansion strategy may have limited domestic investment resources and plans. Indeed, as the chart shows, resources earmarked for financing investment abroad have been most substantial.

Several factors promoted the international expansion of Spanish corporations during the nineties. These included most notably the ongoing transformation of Latin American economies, which created new investment opportunities via liberalisation, deregulation and corpo-

rate privatisation, accompanied by policies promoting the inflow of foreign investment. Further, Spain enjoyed here advantages derived from its close linguistic and cultural links with these economies. The heightening of foreign investment may also have been favoured by more general developments, such as greater integration of international markets and the process of economic and monetary integration in Europe. It should be borne in mind that, although the significance of these factors may have lessened recently, the investment routed abroad in past years continues to require resources, which condition and limit their availability for domestic investment.

From the domestic standpoint, investment abroad has been made by corporations belonging to mature industries, which have continued attaining high profits from their national activity but without obtaining sufficiently wide margins to warrant fresh investment on a significant scale. This has been more patent in certain industries – electricity and communications – which had traditionally operated as monopolies, and which have recently been immersed in liberalisation processes. In some of these instances, the incentives for promoting the entry of new competitors have not sufficed to bring about the additional investment that might have been expected.

4.2. Worsening expectations against a background of greater risk and uncertainty

In more general terms, it should be recalled that any new investment will be evaluated in terms of its expected return, adjusted for risk, set against the cost of financing new projects. In this respect, the parameters determining these variables have tended to worsen of late. Profitability expectations have fallen below the actual return on existing investment, while risk and uncertainty have increased notably and so too has the cost of new financing.

Expectations regarding the outlook for activity are an important explanatory factor of investment owing to their influence on the required expected return thereon. As Chart 6 shows, the start of the recent upturn saw a growing firmness of business confidence in industry. This was temporarily curtailed as a result of the emerging market crisis in 1998-99, which gave rise to a drastic change in the world growth outlook. The consequences of this crisis were very limited. But after the interlude of the year 2000, the loss of confidence intensified in 2001 when the fresh deterioration in expectations was exacerbated by a significant increase in uncertain-

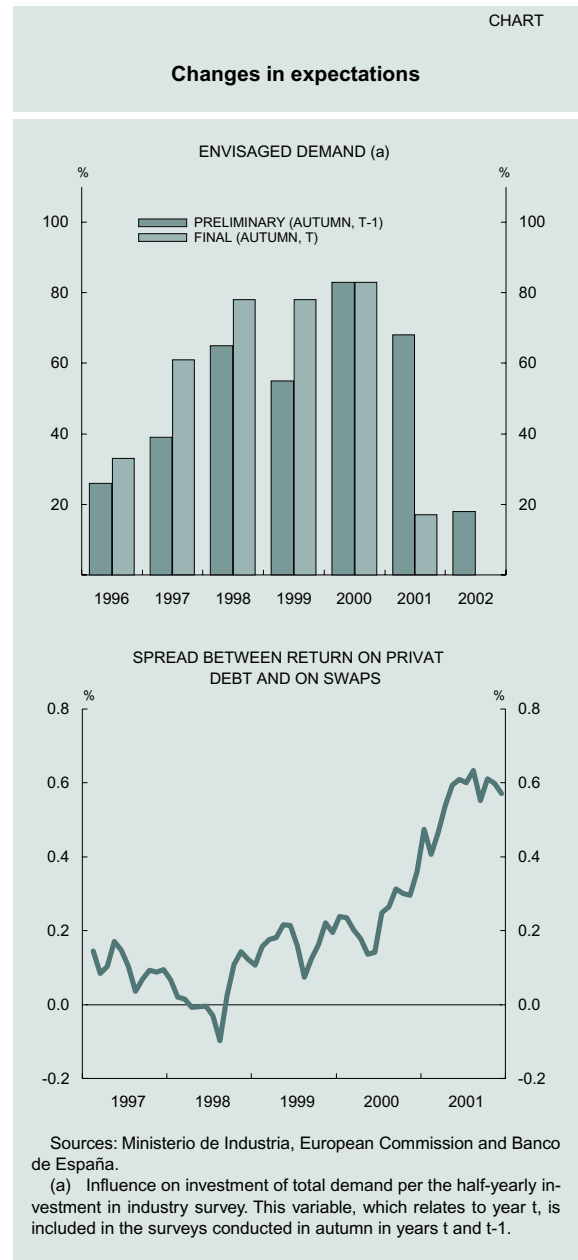
ty, owing to the difficulty of assessing the impact that the Argentine crisis and the September 11 attacks might have on the world economy.

Greater uncertainty, amid slowing aggregate demand, fewer internally generated resources and higher debt ratios, may have led corporations to exercise the so-called *option to wait to invest*. This option is related to the irreversible nature of investment, which immobilises resources over the long run and entails high disengagement costs. Although resort to the *option to wait to invest* is usual at times of cyclical change, on this occasion it may have been strengthened by singular events such as those mentioned above. These have had significant consequences for some specific industries (banking, oil, airlines, tourism), and have contributed to generating a widespread sensation of instability, to delaying expectations of recovery and to deferring decisions on new investment and the creation of companies. These effects appear to have been particularly substantial in 2001. Among the factors having a bearing on the lesser momentum of investment, the results of the half-yearly investment survey of industry for 2001 point to the deterioration of demand, of technical factors and of companies' financial situation, along with the highly adverse influence of other types of more idiosyncratic factors. The data on the creation of new companies discussed in section 2 would likewise denote a significant deterioration in expectations in 2001.

Against the background of a significant increase in risk, the return demanded on investment is higher. Consequently, the high rates of return on installed assets reflected in the CBBE data do not suffice to guarantee investment. Yet in these circumstances, and given the higher level of debt, the cost of borrowed funds for new projects also increases. A broad indicator of how greater risk may have affected the cost of financing is the spread of the return on private debt over that on swaps (see Chart 6), which has widened significantly since the start of 2000. This phenomenon is also apparent in the downgrading of certain major Spanish and European companies' debt by rating agencies.

5. CONCLUSIONS

The relatively moderate growth of productive investment during the 1996-99 upturn (compared with previous cycles) and its premature slowdown as from 2000 do not appear to be related to the favourable behaviour of some of its main determinants, such as the momentum of demand or the low cost of capital, amid financial conditions that are also highly favourable



and high returns on installed capital. Moreover, the need to renew the capital stock has increased following technological advances in the information and communications field, which have led investment in other advanced economies over this same period to expand more in comparative terms.

The difficulties of measuring investment in real terms arising from rapid technological progress mean that, in all likelihood, the growth of investment over the recent period is underestimated in National Accounts figures. As these measurement difficulties are greater now than in the eighties, they may help explain the investment growth differential between both expansionary cycles. However, they do not clarify to the same degree the more moderate trend of

investment in relation to other advanced economies.

Among the potential factors contributing to tempering the rate of productive investment in the second half of the nineties, importance may be attributed to the fact that Spanish corporations have preferred to take advantage of the foreign investment opportunities emerging over this period, having earmarked substantial own and – especially – borrowed funds in this connection. Foreign direct investment in the past six years has accounted for more than half of that assigned to investment in capital goods. At the same time, however, the attractiveness of investment in similar industries in the Spanish economy has not risen by the same degree.

The various international crises disrupting the recent expansionary phase have tended to moderate Spain's growth expectations, generating moreover a climate of uncertainty which heightened in 2001 further to the adverse effects of the September 11th attacks and to the crises in certain economies such as the United States and Argentina. These circumstances acquire greater relevance in a setting of greater openness, in which certain large Spanish corporations that have opted for expansion abroad have been directly affected. Against this backdrop, the cost of financing for new investment projects also appears to have increased, a rise associated with greater uncertainty and with the growing level of Spanish corporations' debt.

The foregoing aspects offer reasons justifying the moderate growth of investment, although no single factor suffices to explain it. Clearly, although the returns obtained by companies on their domestic activities have been – and still are – high, the expected net returns on additional domestic investment have not proven sufficient set against the existence of foreign al-

ternatives deemed more attractive, or against the greater risks associated with the climate of uncertainty in which recent decisions have been taken. In the coming quarters, as the international economy picks up, and – probably – in a less attractive environment for foreign direct investment, it is foreseeable that domestic investment will also progressively recover.

Nonetheless, the analysis conducted in this article suggests that if this recovery is to gain sufficient momentum and provide the Spanish economy with the level and type of capital it requires, then it will also be necessary to enhance the economy's attractiveness as a destination for new projects. In this respect, the crafting of policies promoting labour- and product-market flexibility and efficiency, incentives for investment in human capital and initiatives conducive to the pursuit of business activity and the implementation of new projects will make investment in Spain more attractive, and will further help steer investment towards those industries with most growth potential.

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