

2 THE IMPACT OF THE FINANCIAL CRISIS ON THE SPANISH ECONOMY

The impact of the financial crisis on the Spanish economy

The international financial crisis and its consequences for the global economy have radically altered the scenario for the Spanish economy. The crisis, whose source and development are analysed in detail in other chapters in this *Annual Report*, has entailed a series of financial and macroeconomic shocks which have superimposed themselves on the process of adjustment that had already begun domestically to correct the main imbalances that had built up during the 1995-2006 expansion. The correction of these imbalances, which essentially turn on a high concentration of financial and real resources in the real estate sector and excess indebtedness, remains a crucial condition for exiting the crisis. The strong contraction in domestic demand is causing a rapid reduction in the external deficit and in the weight of the construction sector, but at a very high cost in terms of economic activity and employment. This form of adjustment evidences the patent need to substantially improve productivity levels and the working of the markets for goods, services and production factors so as to increase competitiveness in the Spanish economy, particularly in view of the far-reaching deterioration of the external environment, and to thus lay once again the foundations for sustained economic growth.

This chapter delves deeper into the analysis of the main channels through which the international economic and financial crisis is affecting the adjustment that began in the Spanish economy in late 2006. In this regard, the first section briefly reviews the nature of the imbalances that triggered the adjustment and the dynamics arising from the correction of the imbalances, initially in the absence of external shocks. The following section addresses the main additional contractionary impulses induced by the crisis: a reduction in wealth, stemming from the loss of value of household financial and real estate assets; revised disposable income growth expectations, which are now less favourable; and tighter credit conditions, as a result both of the increase in the costs of financing spending decisions and of greater difficulties in obtaining funds with which to finance such decisions. Finally, the main transmission mechanisms of the shocks are characterised, focusing on those which involve the behaviour of consumption and employment, as it is developments in these variables which, at the end of the day, will foreseeably most influence the scale of the crisis beleaguering the Spanish economy. The role these mechanisms play is very important for properly understanding the challenges that economic agents and economic policy will face in such adverse circumstances.

1 Background: the imbalances and their correction

The financial crisis affected the Spanish economy when a process of adjustment was beginning, following a long expansion...

During the expansion of the Spanish economy, a series of interdependent imbalances built up, which may essentially be condensed into two categories: burgeoning household and corporate debt which, as it was not sufficiently offset by greater public-sector saving, translated into sizeable recourse to foreign saving; and the excessive weight of the real estate sector, in terms of the concentration of productive resources in this sector (much higher than that observed in other countries) and of the substantial materialisation of household wealth in real estate assets.

Throughout the 1999-2006 period, demand in the Spanish economy showed forceful momentum: domestic demand grew at an average annual rate of 4.7%, with respective increases in consumption, investment in capital goods and investment in construction of 4.2%, 5.5% and 6.7%. Set against this growth in spending, supply also increased significantly, but at a lesser pace: output expanded at an average annual rate of 3.8%, driven by intense job creation underpinned by the dynamism of immigration and the rise in the participation rate of female nationals. Conversely, there were scant gains in productivity during this period.

This imbalance between spending and output growth gave rise, first, to growing external debt and, further, to pressure on prices that contributed to maintaining the positive inflation differential with the euro area countries and, therefore, an appreciation of the real exchange rate and a loss in the competitiveness of Spanish goods.

... driven by an increase in spending fuelled by growing household and corporate debt...

Unlike in other previous expansions, the resort to financing was not chiefly by the public sector, which reduced its debt throughout the period. It was rather Spanish households and firms that swiftly increased their rates of debt, taking advantage of the ready access to credit in a setting marked by very low risk premia and accommodating monetary conditions, with nominal – and, no doubt, real – interest rates below what demand conditions in Spain would have warranted.¹

In turn, the expansion entailed strong growth in the employment rate, which improved expectations of higher growth disposable income and, therefore, further boosted the demand for credit. This was likewise propelled by the growing dynamism of the real estate market and the surge in house prices.

As a result the Spanish economy, which needed virtually no foreign funding in 1996 (net financial transactions with the rest of the world actually registered a surplus of 0.8% of GDP at the end of the year), recorded net borrowing of 9.7% of GDP (11.1% for non-financial corporations and 2.7% of households), despite the fact that general government net lending stood at 2.2% of GDP. In 2008, total net borrowing from the rest of the world stood at 9.1% of GDP.

... which is not compatible with “realistic” paths for borrowing costs and economic growth

The rate of increase of Spanish household and corporate debt was excessive, even in such a favourable setting as that described. From both an individual and overall perspective, the increase in debt is warranted if the future growth in income allows payments to be met without it being necessary to subsequently adjust the planned path of spending. In this respect, the results available drawing on the simulations of various versions of intertemporal substitution models of consumption especially designed to identify debt determinants suggest that, for this condition to hold, the increase in liabilities observed during the period 1995-2005 would require Spanish per capita income to grow at a rate of over 2% over the next ten years.² The simple extrapolation of the interest rates and income growth rates observed over the past decade would give an increase in the Spanish economy’s rate of indebtedness (the external debt/GDP ratio) some 8 pp below that actually recorded.³

The looseness of financial conditions also prompted an excessive concentration of productive resources in the real estate sector...

By its very nature, the real estate sector is particularly sensitive to financial conditions. House-building involves a lengthy production process and is usually carried out through property developments encompassing a large number of units, which is why it is greatly influenced by the availability of financing. As housing is a durable good with a considerable weight in the household budget, the usual means of access to a house is through taking out a mortgage loan. This means that changes in lending standards directly affect both supply (developers, builders) and demand (households, in the main) in the real estate market, causing considerable variations in the number of transactions and in prices.

Most new household debt was thus directed at house purchases, in the same way that a significant portion of credit to companies was earmarked for real estate development. The number of real estate transactions grew exponentially (to 955,000 in 2006), while the con-

1. See J. Andrés, S. Hurtado, E. Ortega and C. Thomas, *Spain in the Euro: a General Equilibrium Analysis*, Working Paper, Banco de España, forthcoming. 2. See *Annual Report*, 2006, Box 2.2. 3. See Á. Estrada, J. F. Jimeno and J. L. Malo de Molina (2009), *The Spanish economy in EMU: the first ten years*, Occasional Papers, no. 0901, Banco de España.

struction of new houses rose substantially, meaning that the stock of housing increased at an average annual rate of 2.7% between 1995 and 2007 (from 18.3 to 25.1 million), encouraged too by the rising trend of prices and by expectations of property appreciation. Between 1990-1998 and 1999-2007, the weight of residential investment in GDP increased by almost 2 pp from 5% to 6.8%, it rose in the United States from 4.4% to 4.8%, and it held steady in the euro area as a whole at around 5.5%. The increase in the weight of the construction sector was also notable in terms of employment: in 2007 it accounted for 13.2% of total employment, 2.7 pp up on the 1999 figure. In the United States this percentage edged up from 7.1% to 8% over the same period. Significantly, however, at play in Spain are idiosyncratic factors such as demographic dynamics, the country's attractiveness as a tourist destination and a greater need to improve our infrastructures, as befits an economy immersed in a convergence process.

... and rapid growth in house prices, which was not sustainable

The buoyancy of activity was accompanied by a rapid increase in house prices, which climbed from an average rate of 1% between 1995 and 1997 to 18% between 2003 and 2004. The average annual increase between 1995 and 2007 stood at 10%. Consequently, the ratio of house prices to gross household income almost doubled in this period from 3.8 to 7. As early as 2003, some studies were already warning that this growth in real estate prices was excessive. For example, Ayuso and Restoy (2003) indicated that the overvaluation of house prices might, at end-2002, be standing at between 20% and 30%. More recent estimates drawn from stylised macroeconomic models broaden this range somewhat, reducing the lower limit and increasing the upper one.⁴

Also, the weight of real estate assets in household wealth rose to very high levels

The strong investment in housing and the prolonged and sharp growth of real estate prices also led real estate wealth to increase significantly. On EFF (Spanish Survey of Household Finances) data, in just three years, from 2002 to 2005, the increase was at an average annual rate of 18% in real terms. Of these 18 points, around 15 were the result of the increase in house prices, while the remainder resulted from the accumulation of new properties. Around 40% of households who owned properties in 2002 saw their value increase by over 75% in real terms. 23% of those who did not own properties other than their main dwelling in 2002 did so by 2005, meaning that the proportion of households with other properties, apart from the main dwelling, rose from 30.1% to 34.5%, while that of owner-occupiers in the principal residence held approximately stable (81.9% in 2002 and 81.3% in 2005).⁵ In 2002, 61% of households owning a second residence used it for vacation or other purposes. This percentage had fallen to 55.9% in 2005, suggesting that the motive behind a significant portion of real estate transactions during this period was not the direct use of housing as a durable consumer good.

In sum, real estate wealth as a proportion of total Spanish household wealth increased from 78.7% to 80% between 2002 and 2005. On estimates based on aggregate data, this ratio might have increased even more (by around 3 pp) over the last three years. In any event, Spanish households' concentration of wealth in real estate assets is high compared with other countries. Taking as a reference countries with data comparable to those of the EFF, Italy's ratio can be seen to be around 75%, while in the United States it rose from 36.7% to 43.4% between 2001 and 2004.⁶

4. See J. Ayuso and F. Restoy (2003), *House prices and rents: an equilibrium asset pricing approach*, Working Paper no. 0304, Banco de España; IMF (2008), *Economic Outlook*, April, and Á. Estrada, J. F. Jimeno and J. L. Malo de Molina (2009), *The Spanish economy in EMU: the first ten years*, Occasional Papers, no. 0901, Banco de España. 5. See O. Bover, *The dynamics of household income and wealth: results from the panel of the Spanish Survey of Household Finances (EFF) 2002-2005*, Occasional Papers no. 0810, Banco de España. 6. See O. Bover, C. Martínez-Carrascal and P. Veilla (2005), "The wealth of Spanish households: a microeconomic comparison with the United States, Italy and the United Kingdom", *Economic Bulletin*, July, Banco de España.

The mechanisms for redressing these imbalances were insufficient...

Efforts to contain and redress these imbalances were not sufficiently intense as to prevent their excessive build-up. First, interest rates, set by the single monetary policy on the basis of the needs of the euro area as a whole, proved lower than what the Spanish economy, given its inflation and the intensity of growth in spending, would have needed. Further, fiscal policy, though it enabled surpluses to be attained which led to a rapid reduction in debt, did not sufficiently offset the increase in private-sector indebtedness and did not anticipate in full the consequences that the adjustment of the economy might have on the State budget. Moreover, from a medium and long-term perspective, the public finances position was not a comfortable one once spending arising from population ageing, which will begin to be more evident within a decade, was taken into account. The regulation of land-use and of real estate development policies coupled with the insufficient correction of the favourable tax treatment of owner-occupied housing did not help either in redressing the sizeable build-up of productive resources in the construction sector and of wealth in real estate assets. Finally, the measures aimed at boosting productivity gains and greater labour mobility, so that the necessary reallocation of employment from the construction sector towards other industries might be less costly, were adopted belatedly when the cycle was already maturing.

and the adjustment is taking the form of a sharp decline in activity...

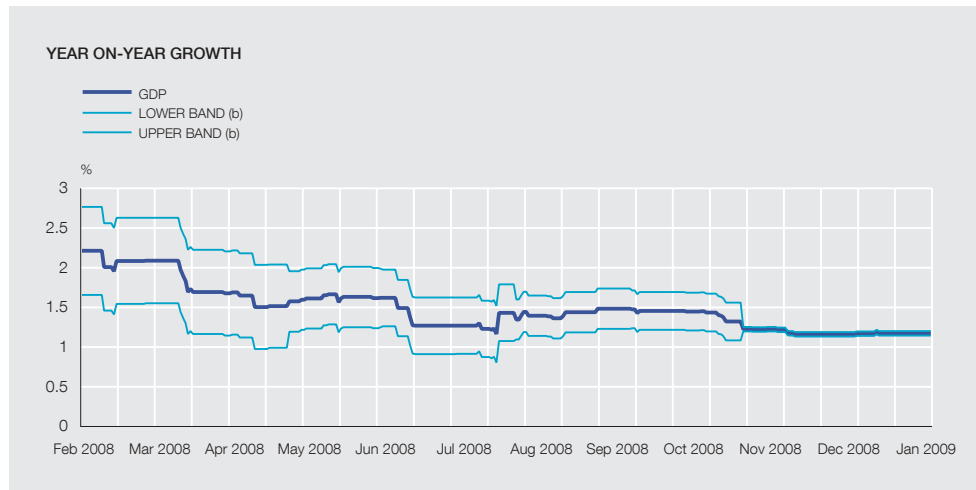
The lowering of the debt rates of households and non-financial corporations and the real estate adjustment are taking the form of a sharp reduction in demand, which is translating into a rapid improvement in the inflation differential with the euro area and in the external deficit, and into acute job destruction, particularly in the construction sector. Such rapid reabsorption of the imbalances should not however be interpreted as a durable correction thereof; this will only be achieved once a competitive position is successfully entrenched which provides for a greater contribution of the external sector to GDP growth in normal cyclical conditions, and for job creation in other sectors that absorb the surplus labour that built up in real estate activities. Should this not come about, the Spanish economy would end up simply replacing its external deficit with a domestic imbalance characterised by an excessively high unemployment rate and a level of GDP below potential.

...meaning that the challenges posed by the correction of the imbalances are still present...

The adjustments the Spanish economy must make to set more balanced foundations in place and to resume sustainable growth against the background of euro area stability requirements thus remain necessary. Euro area membership offers significant protection, without which all adjustments would have been deeper and more painful. But within the euro area, productivity and the response of production costs to the conditions prevailing in the markets are decisive factors for attaining and maintaining a competitive position. Accordingly, the intensity of the adjustment turns basically on the ability to reverse the losses on competitiveness through growth in productivity, on the moderation of business margins and of labour costs, and on the flexibility of the labour market in being able to absorb the sectoral reallocation of employment.

However, improving productivity and containing margins and costs entails major difficulties. As regards productivity, the measures to permanently raise its growth rates need, in order to be fully effective, a long period of time. As to containing costs and margins, it will be difficult to make significant progress unless the structural problems in the working of certain markets, derived from regulations that do not sufficiently promote competition and flexibility, are tackled more forcefully.

Turning to the real estate adjustment, an oversized sector is always costly to redress, as a reallocation of productive resources is needed. In this case, given the intensive use of labour in the production of real estate, the costs of the adjustment will also depend crucially on the capacity of the labour market flexibly to accommodate this reallocation process and thus avert excessive and lasting growth in the unemployment rate.



SOURCE: Banco de España.

- a. GDP in real terms.
b. 95% confidence bands.

2 The consequences of the financial crisis

During the first phase of the international financial crisis, the economic slowdown was moderate...

In the second half of 2007 and the first half of 2008, the soundness of the Spanish financial system and the Eurosystem's rapid response to the liquidity tensions allowed the effects of the first wave of the crisis to be cushioned, so that the path of deceleration on which Spanish economic activity had already embarked did not steepen significantly. The average GDP growth rate in the four quarters following mid-2007 was 1 pp down on the related average for the 1999-2007 period (2.8% against 3.8%), while in the case of household consumption and of gross fixed capital formation, the differences were 1.8 pp and 3.6 pp, respectively. Only in the construction sector, where the slowdown had already begun in 2006 Q4, was the growth differential between both periods particularly marked (almost 6 pp). Chart 2.1 offers estimates of the year-on-year growth rate of GDP provided by a real-time forecasting model of the Spanish economy over the course of 2008. This illustrates that the conjunctural indicators did not begin to anticipate until late March the strong slowdown that would ultimately take place, more clearly so from late June.⁷

To properly assess the slowdown seen until mid-2008, it should be borne in mind that, aside from the start of the financial crisis, interest rates had held on an upward course since late 2005, although they still remained at moderate levels. The strong increase in oil and commodity prices should also be recalled, as it only turned around from 2008 Q3, although the effect of these increases on activity in Western economies was generally less than in previous episodes of strong rises.⁸ In short, the slowdown under way to mid-2008 did not appear to depart from a path of relative gradualism.

...but amplification mechanisms have been set in train as it has heightened...

From September 2008, the international financial crisis worsened. The serious solvency problems of international financial institutions spread, having appeared in previous months to be concentrated, with few exceptions, in US investment banks and in commercial banks excessively geared to highly complex securitisation formulas via special vehicles. The bank-

7. This real-time forecasting model of the Spanish economy is designed in a similar fashion to the EUROSTING. See M. Camacho and G. Pérez-Quirós, *Introducing the EURO-STING: Short-Term Indicator of Euro Area Growth*, Working Paper no. 0807, Banco de España. 8. See A. Nakov (2008), "Una modelización de equilibrio general de las fluctuaciones del precio del petróleo", *Boletín Económico*, January, Banco de España.

ruptcy of Lehman Brothers and the AIG debacle seriously exacerbated the situation of uncertainty and the crisis in confidence. As Chart 1.1 shows, stock market prices fell sharply and their volatility increased substantially, far exceeding the figures hitherto attained. Risk premia on corporate bonds also grew strongly, and the information from various available surveys shows that credit standards tightened further. Against this background of turmoil on capital markets, there was an across-the-board increase in financial intermediation costs. This in itself has an adverse effect on activity, similar to those stemming from a decline in productivity, since as the user cost of capital increases, productive investment falls.

... prompting a perceived loss in wealth...

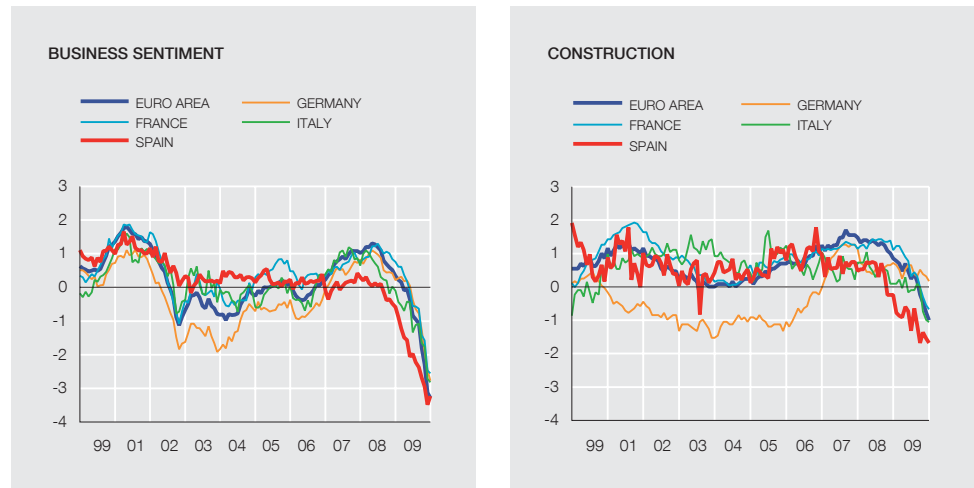
One of the main consequences of these extraordinary events has been the loss in wealth. On one hand, financial asset prices have fallen considerably. And on the other, the tightening of credit standards has exerted further pressure in favour of a swifter correction of real estate asset prices which, in normal conditions, would usually follow a relatively slow pattern of adjustment.

The effects of this fall in wealth on activity are amplified in situations such as the present, in which uncertainty hinders asset valuation and the lack of confidence about agents' solvency becomes widespread. These conditions lead households to increase precautionary saving, and firms to maintain their working capital and to postpone new investment projects. And, in turn, the reduction in the value of the collateral that households and firms can offer to obtain credit with which to finance their decisions leads banks to demand greater guarantees in exchange for the risks they assume. Spending, therefore, is further constrained and financial conditions thus become an amplifying mechanism of the original shock that caused the initial decline in wealth. This phenomenon is what is known as the "financial accelerator" in the literature on the propagation of economic fluctuations. Indeed, according to the empirical evidence available in this field, shocks with a financial origin and the above-mentioned financial acceleration mechanism explain a significant portion of past fluctuations in GDP, inflation, consumption and investment, both in the euro area and in the United States. In particular, it has played an especially important role in amplifying monetary shocks, which move prices and output in the same direction.⁹

... a drastic change in household and business expectations...

The crisis has not only altered agents' expectations about the future returns on their financial and real estate assets; it has also affected their outlook in respect of future earnings. Chart 2.2 shows that the economic sentiment indicators fell back fairly markedly from mid-2007, a trend which intensified during 2008. This decline came about in a similar fashion in Spain and in the euro area as a whole. Thus, between June 2007 and December 2008, the economic sentiment indicator posted a fall of 35.1 points in Spain (42.1 points in the euro area). The pattern was very similar in the other confidence indicators, except that for the construction sector. That said, consumer confidence fell somewhat more in Spain in this period (by 33 points, compared with 28 points in the euro area as a whole). In the construction sector, where the confidence indicator trended more unevenly (owing to Germany in particular), the decline in confidence has also been higher in Spain than in the other countries. This slump in confidence reflects lesser expectations of household disposable income growth associated with the adverse behaviour of employment and, perhaps, with the potential repercussions of the tax costs of the crisis. However, there might also be a component of temporary overreaction to the spate of bad news stemming from the international financial crisis.

9. See L. Christiano, R. Motto and M. Rostagno (2008), *Financial Factors in Business Cycles*, mimeo.



SOURCE: European Commission.

a. Normalised data.

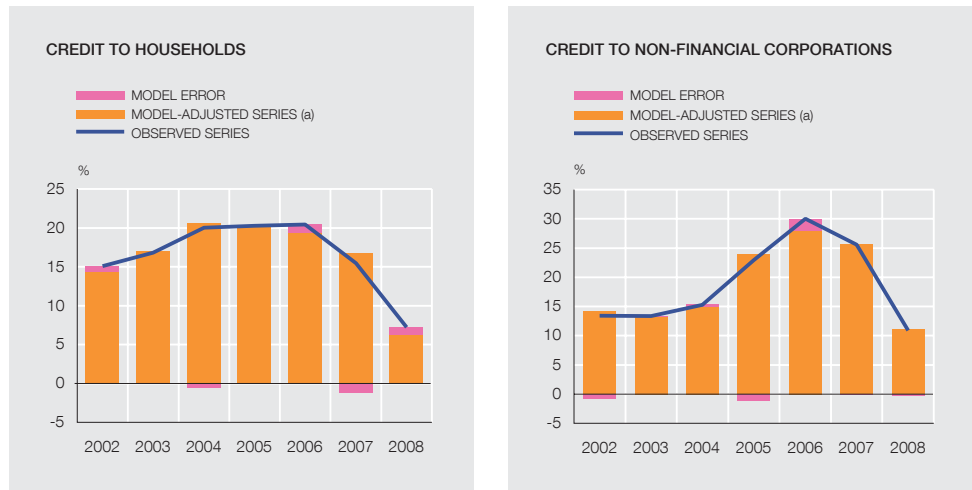
... with significant effects on the demand for credit...

Household credit, which was growing at a rate of over 20% during the final quarters of the expansion, fell to a year-on-year rate of around 5% in late 2008. The slowdown was even sharper at non-financial corporations, especially in the case of construction and real estate activities. In addition, the indicator of bank financing to companies, which takes into account the volume of funds available through open credit lines along with the credit on balance sheets, was less buoyant. Less favourable expectations about growth in the medium and long run, diminished prospects of an appreciation in real estate wealth (the principal collateral of households and of certain firms when it comes to requesting a loan), the turnaround in interest rates at the end of 2005 and the levels of debt reached have made for a progressive tempering of private agents' demand for credit.

... and on supply, affected also by other factors related to the crisis...

But the behaviour of credit has also been affected by cyclical factors on the supply side. Hence, given the current and foreseeable weakening in economic activity, financial intermediaries have lowered their estimates of borrowers' ability to pay and they have reassessed upwards the risks associated with funded projects, which has translated into a tightening of their credit standards. Compounding this negative cyclical impulse to the supply of credit in the current setting have been other impulses more directly linked to the financial crisis, such as the across-the-board re-pricing of risk, the diminished international availability of funds and market pressures on financial institutions' capital ratios in an environment of growing mistrust.

Chart 2.3 shows that the key cyclical determinants of the behaviour of credit (interest rates, wealth, the unemployment rate and the GDP growth rate), which influence both the demand for and supply of credit, provide for a reasonable explanation of the course of this variable during 2008. As Box 2.1 illustrates, information from surveys of financial institutions, which allow for a more in-depth analysis of the role played by the various supply and demand factors underlying the observed course of credit, also tends to confirm the importance of these cyclical factors. In particular, the information indicates that it is financial institutions' expectations about economic developments, and not so much potential problems concerning the availability of funds or the level of capitalisation, that best explain the contraction in the supply of credit over the past year.



SOURCE: Banco de España.

a. Drawn from the equations presented in *The determinants of household credit in Spain* [Nieto (2007)] and in *Una aproximación a los determinantes de la financiación de las sociedades no financieras en España* [Marqués et al. (2005)], re-estimated with information to 2008 Q2.

... shaping a scenario in which the adjustment of debt and of the real estate expansion must be made under particularly difficult conditions

The international financial and economic crisis has drastically curtailed the possibility of external demand playing a compensatory role in the necessary containment of domestic demand, and it has brought further contractionary impulses to bear which have intensified the decline in activity and job destruction. These additional negative impulses have been operative through a reduction in wealth and a tightening of credit access conditions, which have depressed the demand for consumption and investment, adding severity to the loss of dynamism in activity. In a few short months, there has been a shift from a scenario of deceleration based on a gradual correction of spending and of house prices, which had some degree of support in fiscal policy and in external demand, to another scenario marked by: a grave deterioration in agents' confidence and a tightening of credit conditions which are more severely weighing on spending decisions; a global recession, which limits the capacity of external demand to offset, at least in part, lower domestic demand; and a substantial change in the public-sector budgetary position, as a result of the increased spending the crisis entails and of a proportionately greater moderation in public revenue than in GDP as a consequence of a significant fall-off in direct and indirect taxes, in particular those associated with real estate activity, which had during the 1998-2006 period led to a cumulative increase in revenue of around 2 pp of GDP.¹⁰

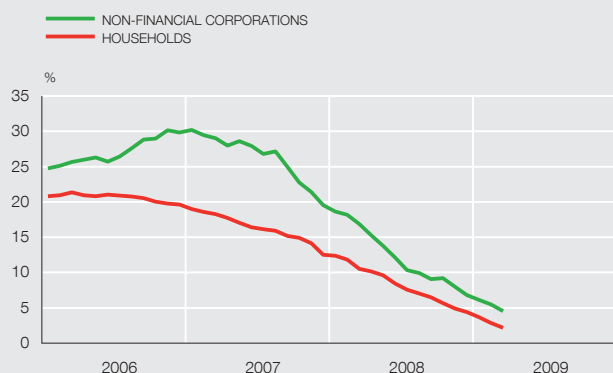
The recession also has effects on productivity that run in both directions. On one hand, the destruction of less productive jobs and the sectoral reallocation of employment tend to generate productivity gains in the short run. On the other, it cannot be ruled out that, in the medium and long term, the economic crisis will have an adverse effect. This is because companies and the general government sector may be forced to cut R + D spending to a greater extent than other current expenditure, while the increase in risk premia and the tightening of credit standards may check those investment projects potentially more beneficial to productivity growth, which are in general those that have most risk associated with them.

10. See F. De Castro, Á. Estrada, P. Hernández de Cos and F. Martí (2008), "Una aproximación al componente transitorio del saldo público en España", *Boletín Económico*, June, Banco de España, pp. 71-81.

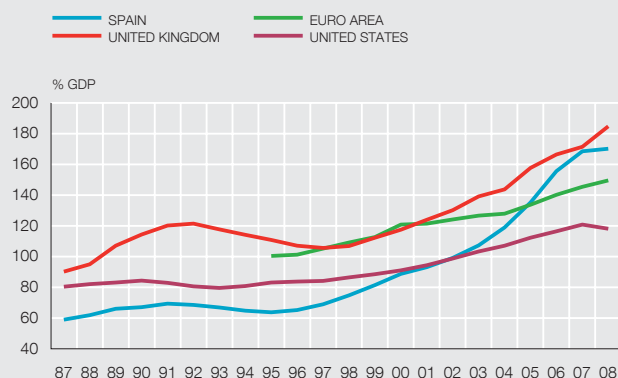
Credit granted by financial institutions to households and firms has slowed rapidly over the past year, and has therefore continued on the moderating slope on which it embarked in late 2006 (see Panel 1).

Specifically, the year-on-year growth rate of bank lending to households declined from end-2007 to December 2008 by 8 pp to 4%, while lending to companies did so by 13 pp, to somewhat less than

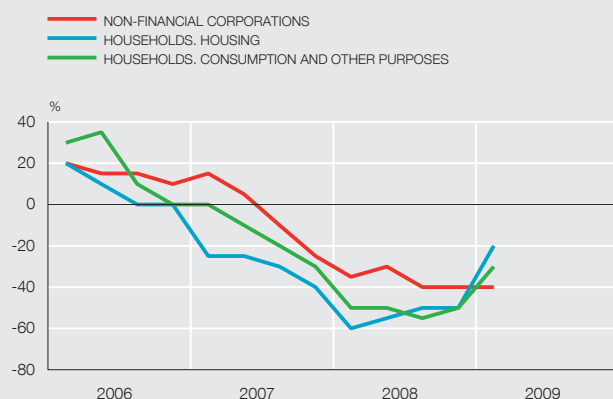
1 CREDIT GROWTH. YEAR-ON-YEAR RATES



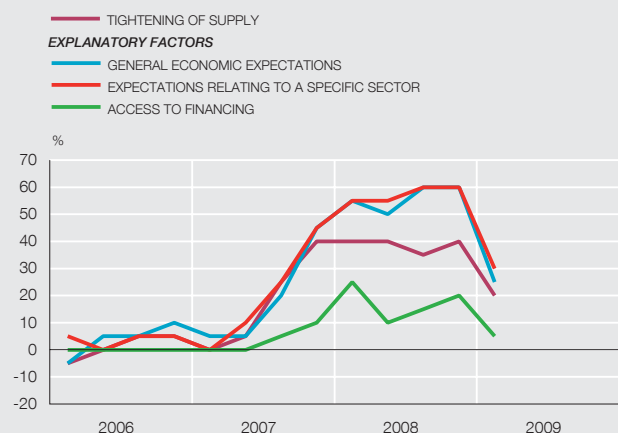
2 CREDIT TO THE NON-FINANCIAL PRIVATE SECTOR AS A % OF GDP



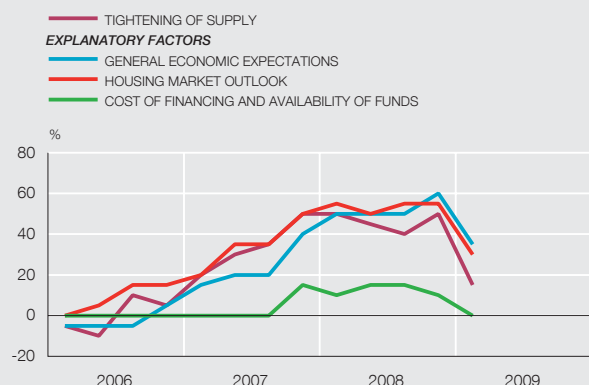
3 CHANGE IN THE DEMAND FOR CREDIT (a)



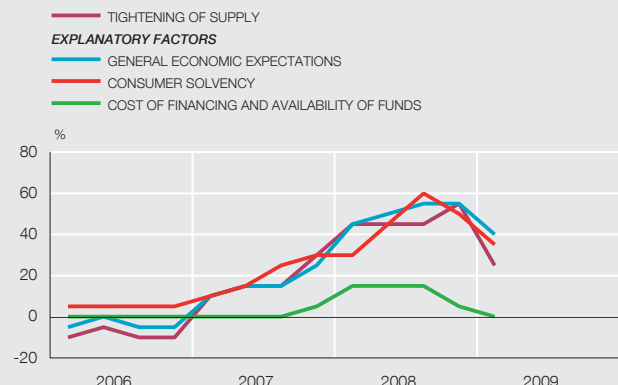
4 TIGHTENING OF CREDIT SUPPLY. COMPANIES (b)



5 TIGHTENING OF CREDIT SUPPLY. HOUSEHOLDS. HOUSING (b)



6 TIGHTENING OF CREDIT SUPPLY. HOUSEHOLDS. CONSUMPTION AND OTHER PURPOSES (b)



SOURCE: Banco de España.

a. Indicator = % of institutions that indicate a considerable increase x 1 + % of institutions that indicate some increase x 1/2 - % of institutions that indicate some decrease x 1/2 - % of institutions that indicate a considerable decrease x 1.
 b. Indicator = % of institutions that have considerably tightened standards x 1 + % of institutions that have tightened standards to some extent x 1/2 - % of institutions that have relaxed standards to some extent x 1/2 - % of institutions that have considerably relaxed standards x 1.

7%. The indicator of bank financing to companies obtained by adding to balance sheet loans the volume of funds drawable through open credit lines, which better proxies developments in the supply of credit to this sector, evidenced a lesser pace of increase (below 2%) at the close of last year.¹ In 2009 to date, the pattern of diminished buoyancy of borrowed funds raised by the private sector has continued.

For a proper assessment of these developments, it should be borne in mind that credit is highly procyclical. In particular, during the upturn it tends to increase rapidly, since both those demanding and supplying funds usually form optimistic expectations about the generation of future income by demanders, while the opposite occurs in recessionary phases. Suppliers and demanders alike tend to be more lax in their assessment of the risks associated with this future income. When, as at present, the downside of the cycle begins, these same forces act in the opposite direction, meaning that the growth of bank financing is checked.

To set the latest credit developments in context, it is worth recalling their notable dynamism between 1996 and 2005. In that period the credit-to-GDP ratio, which started in 1995 from a low value compared with other developed economies, exceeded average euro area levels, although it did not match the figures in economies such as the United Kingdom (see Panel 2). The high growth rates of loans during this stage should be understood as a temporary phase of adaptation of the Spanish economy to the new environment of greater macroeconomic stability and of low interest rates as a result of Spanish euro area membership. That said, the accommodating financing conditions on international financial markets during this period were also a contributing factor. Subsequently, the progressive rise in the cost of private-sector debt following the change in monetary policy stance initiated in late 2005 and lower expectations of house price appreciation had tended to reduce private-sector demand for borrowed funds, and a period of diminished momentum in this variable began. More recently, the Spanish economy's cyclical position and the international financial crisis have accentuated the slowing profile of credit, affecting both the supply of and demand for funds.

To make a correct diagnosis of the factors behind the latest credit developments, a distinction should be drawn between supply-side and demand-side elements, though this is a highly complex exercise. A useful tool to this end is the Bank Lending Survey (BLS), which is conducted in coordination with the euro area countries. Quarterly, the survey asks participating banks (10 in Spain's case) directly about changes in the demand for and supply of financing during the reference period and about the explanatory factors behind these develop-

ments.² Although the replies to the questionnaire are qualitative, they may prove very useful for identifying certain trends.

The results of the BLS conducted in 2008 confirm that the sharp slowdown in loans to households and firms last year could be explained both by demand-side and supply-side factors (see Panels 3 to 6). The diminished dynamism of the demand for financing would be linked both to lower expectations about income growth, further to the turnaround in the business cycle, and to changes in the prospect of certain assets appreciating (real estate, in particular, the price of which fell by 3.2% in 2008 according to figures from the Spanish Ministry of Housing). Also, the rise in the cost of financing for much of the year would have contributed to checking applications for funds.

According to the BLS, the tightening of the criteria used by banks to approve new loans was due mainly to the progressive deterioration of banks' expectations about economic developments in general and the housing market in particular. It was also due to banks' perception of borrowers' diminished solvency (see Panels 4 to 6). In this respect, it should be recalled that the doubtful assets ratio of other resident sectors (which includes, in addition to households and firms, financial institutions other than those of the system) rose from 0.9% in 2007 to 3.4% at the end of 2008.

Credit institutions' problems in gaining access to international funding markets, to which they had resorted to fund part of the growth of their assets, would also have contributed – along with the attendant high costs – to reducing the supply of loans, albeit to a lesser extent than the foregoing factors, according to the BLS. The relative weight of factors relating to banks' capitalisation levels would also have been comparatively less.

The latest BLS (April 2009) reveals that both the pace at which credit standards were tightening and at which applications for funds were declining began to be checked in 2009 Q1, although both the supply of and demand for credit had continued falling. According to banks' expectations, these same trends should continue over the following quarter.

In short, the results of the BLS suggest that the factors linked to the deterioration of the macroeconomic outlook played a substantial role in the decline of both the supply of and demand for bank financing during 2008. The international financial crisis coupled with high private-sector debt have undoubtedly contributed to the ongoing intensity of the adjustment of both variables to the change in the business cycle.

1. For more details, see Box 6 of the "Quarterly report on the Spanish economy", *Economic Bulletin*, January 2009, Banco de España.

2. For more details on the content of this Survey, see J. Martínez and L. Á. Maza (2003), "Resultados de la Encuesta sobre Préstamos Bancarios en España", *Boletín Económico*, May, Banco de España; and for the latest data, J. Martínez (2009), "Resultados de la Encuesta sobre Préstamos Bancarios en España: abril 2009", *Boletín Económico*, April, Banco de España.

3 Crisis transmission mechanisms: the impact on consumption and employment

The acceleration in the adjustment of the real estate market...

The real estate adjustment, which began in mid-2006, quickened during 2008. Housing starts, which peaked at a total of 760,000 in 2006, fell to 360,000, with open-market housing accounting for this reduction almost in its entirety. As regards transactions, these fell from 955,000 in 2006 to 565,000 in 2008. As a result, investment in housing dipped from 9.4% of GDP in 2006 to 7.2% in 2008 Q4, while total investment in construction fell by a similar amount (2.4 pp), declining from 18% of GDP in 2006 to 15.6% of GDP.¹¹

House prices, too, have embarked on a phase of correction of the strong rises previously accumulated: the price index compiled by the Spanish Ministry of Housing posted a year-on-year reduction of 3.2% for open-market housing at end-2008. The new INE statistic, which offers a more refined estimate of these prices, gave a figure of 5.4% for this contraction. Significantly, both statistical sources tend to record the changes in prices with some delay. In the case of the INE statistic, which is based on information provided by the public deeds of transactions, second-hand house prices are likely to reflect the changes more promptly, as there is a lesser interval in this case between the time of the transaction and that of the signing of the related deed. At end-2008, the year-on-year decline in second-hand property prices was, according to this source, 10.7%.

... has adversely affected household wealth

Household wealth encompasses, on one hand, the value of financial and real estate assets accumulated at each moment in time. In mid-2007, before the initial episodes of the international crisis broke, the respective ratios of real estate assets, financial assets and debt to Spanish household gross disposable income were 8.45, 2.90 and 1.38, giving financial and real estate wealth (net of debt) of 9.96 times such income. Only one year later, these ratios had fallen in 2008 Q3 to 8.17 (real estate wealth), 2.45 (financial wealth) 1.37 (debt) and 9.3 (total wealth net of debt).

However, as regards the value of real estate wealth, the estimates indicated are based on the statistics available on the real estate market, with which it is difficult to accurately estimate the decline during 2008, and it is likely that the indicators habitually used are underestimating it. Firstly, the stock of owner-occupied housing may be growing less than what the information available on housing starts would indicate. If the historical relationship between both variables holds, the stock of housing may be expected to have increased by approximately 3% during 2008, reflecting the high number of housing starts in 2006; but it is likely that, in a scenario marked by low activity in the real estate market, the lead time for the production of housing will have lengthened, raising the proportion of starts that have not yet become household property. Taking as a reference the reduction (practically 33%) in the number of real estate transactions, the quantity effect might have boosted household real estate wealth by 2%. Secondly, as previously indicated, the overall indices of house prices, owing to the way in which they are constructed and given the current sluggish conditions in the housing market, capture actual developments with something of a lag. Against this background, the fall in second-hand housing prices might be more representative of the loss in value of household-owned real estate assets. Thus, taking the reduction in the foregoing prices at 10.7%, according to INE, the estimated loss in real estate wealth recorded during 2008 would be 8.7%. As regards financial wealth, which poses fewer estimation problems, the related decrease would be 12.1%, reflecting above all the decline in the value of stock market assets.

Wealth also comprises the expected present value of the income flows household foresee having in the future, which is known as "human wealth". Accordingly, changes in expectations

11. These ratios to GDP are in current prices.

about these flows have a direct impact on total household wealth, which is all the greater the lower the discount rate applied to these future flows and the longer the related life cycle for saving-related decision-making.

The reduction in real estate wealth feeds through to consumption through various channels...

The effects of the changes in wealth and consumption depend on several factors, such as the interest rate, risk aversion and individuals' life horizon, the type of wealth in question and its distribution among different population groups, and the source of the change in its value. A particularly interesting case in this connection is that of real estate wealth, since real estate assets, contrary to financial assets, have an intrinsic user value. Consequently, a fall in house prices brings about, on one hand, a decline in household wealth, but, on the other, it also reduces the cost of the residential or accommodation services provided by the dwelling, whereby the end effect on consumption is not in principle evident.

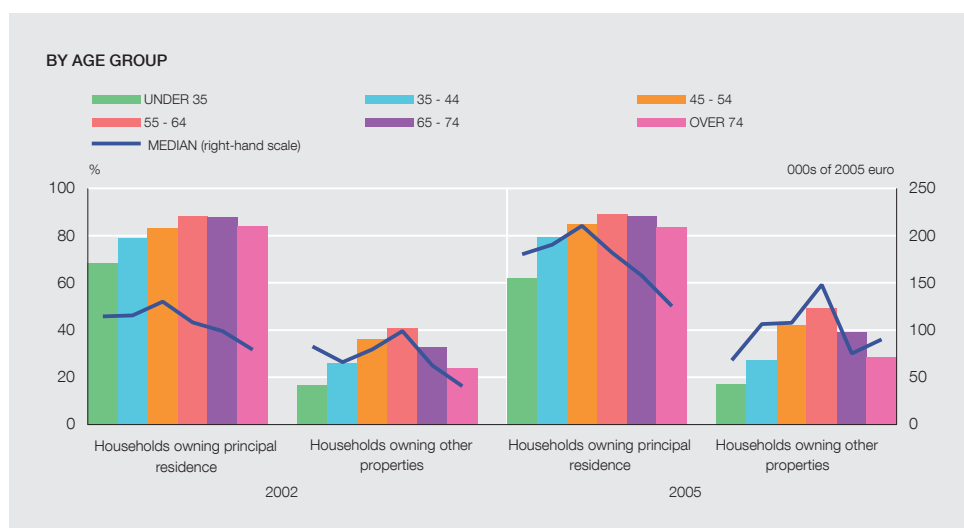
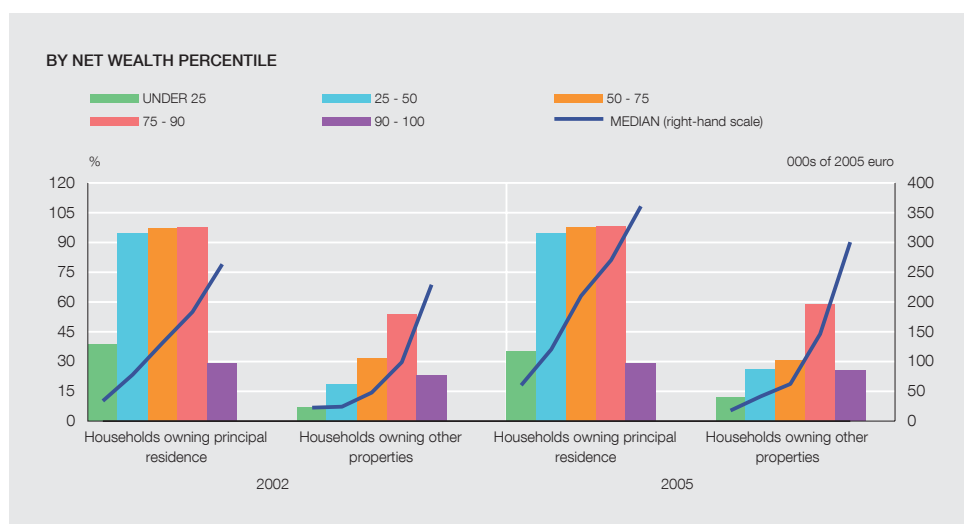
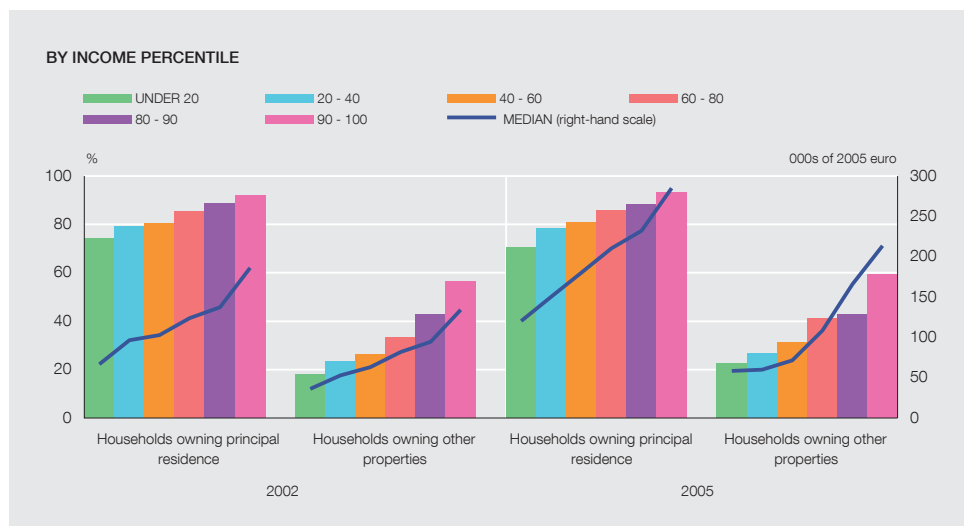
There are, however, other mechanisms through which the fall in house prices might lead to the containment of consumption. Firstly, if a portion of households' precautionary saving were to be deposited in real estate assets, a fall in house prices might lead households to have to offset the related loss of capital by increasing their saving, especially in a setting of high uncertainty as at present, which is conducive to higher saving for this reason. This effect will be all the greater the higher the proportion of the population that owns real estate assets. Secondly, the frequent use of real estate assets as collateral in credit transactions establishes a further link between real estate wealth and household spending. In this connection, the characteristics of the debt associated with real estate wealth also exert their own influence, since the higher the percentage of mortgage loans granted with variable interest rates (more than 90% in Spain's case), the greater the effect on households' gross disposable income of the changes in interest rates that may arise.¹² Finally, since housing is a complementary good to other durable goods (furniture, household electrical appliances, etc.), a decline in the number of real estate transactions, irrespective of how prices behave, feeds through to the consumption of these goods.

...the importance of which depends on the distribution of wealth

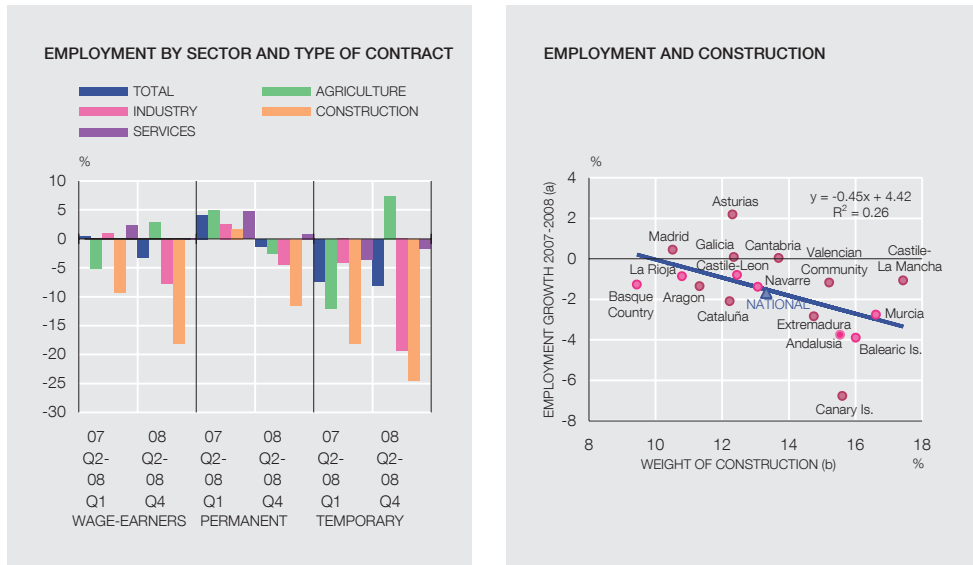
The net effect on consumption of all these channels of transmission for changes in house prices is difficult to estimate, especially when the degree of uncertainty and credit standards are in flux. In Spain's case, and on the latest EFF findings, the households with most real estate wealth are those whose head is between 45 and 64 years of age and who is, therefore, in the "saving" stage of his/her life cycle. And, although the value of real estate wealth grows commensurately with total levels of wealth and income as is to be expected, the population with lower income levels (and, therefore, with a greater marginal propensity to consume) also has real estate assets for a high-value (see Chart 2.4). Accordingly, the conditions are, at least potentially, in place so that a change in real estate wealth may impact consumption to some degree.

According to estimates drawing on microeconomic data, the change in Spanish household consumption induced by a change in real estate wealth (the marginal propensity to consume based on wealth) is approximately 3%, while changes in financial wealth do not cause significant changes in consumption, given the scant weight of financial wealth in Spanish households' asset portfolio.¹³ Nonetheless, these effects vary considerably depending on the type of household. For instance, for those in which the household head is younger than 35 or older

¹². See M. Rubio (2009), *Fixed and Variable-Rate Mortgages, Business Cycles and Monetary Policy*, Working Paper no. 0903, Banco de España. ¹³. See O. Bover (2005), *Wealth effects on consumption: microeconomic estimates from the Spanish Survey of Household Finances*, Working Paper no. 0522, Banco de España. The figure corresponds to a long time horizon, of sufficient length so that spending decisions have adjusted in full to the new conditions.



SOURCE: Spanish Survey of Household Finances.



SOURCE: INE.

- a. Employment growth refers to the annual average rate for the period 2007 Q2-2008 Q4.
- b. The weight of the construction sector is defined as the number of jobs in that sector relative to total employment.

than 74, changes in real estate wealth do not bring about appreciable changes in consumption. Yet for households whose head is aged between 35 and 44, the estimates available indicate that the wealth effect is double that estimated for the population as a whole. Further, estimates based on macroeconomic models – e.g. the Banco de España Quarterly Model (MTBDE) – tend to reduce the marginal propensity to consume based on real estate wealth to around 1.5%, and to raise slightly that relating to financial wealth to 1%.

The wealth effect might have contributed to the slowdown in consumption during the year

In nominal terms, consumption grew by 7.2% in 2007 and by only 3.5% in 2008 (3.7 pp down). Taking the aforementioned estimates of the reduction in wealth recorded during the year (8.7% for real estate wealth and 12.1% for financial wealth) and an intermediate value between the microeconomic and macroeconomic estimates available for the marginal propensities to consume (2.25% for real estate wealth and 0.5% for financial wealth), the resulting decline in consumption stemming from the loss of wealth would be around 1.8 pp (1.7 pp for real estate wealth and 0.1 pp for financial wealth), which might account for around 50% of the decline in the growth rate of consumption observed in 2008.

Employment also fell, and not only in the construction sector...

On EPA (Spanish Labour Force Survey) figures, numbers employed have fallen since 2007 Q2 at an annual average rate of 1.7%. Job destruction has been uneven across the economic sectors. Initially, it originated in the construction sector, where employment declined by 8% between 2007 Q2 and 2008 Q2, and by 14.5% in the second half of 2008, while in industry and employment it held more or less stable in the first half of the year and decreased by 6.5% in the final six months. Conversely, the services sector showed an increase in employment of 2.1% from mid-2007 to mid-2008, and of 0.2% thereafter.

The excessive concentration of resources in the construction sector helps explain the acute job destruction in the Spanish economy in the past year. As Chart 2.5 shows, the decline in employment has been greater in those regions in which the weight of the construction sector in employment was greater, meaning that this factor alone explains 25% of the regional variability in this variable.



SOURCE: ECB.

- a. Year-on-year growth of quarterly GDP and employment series.
 b. Data not seasonally or calendar effect-adjusted.

... confirming, once again, its high cyclical variability in Spain...

The strong job destruction under way highlights once again one of the particular characteristics of the cyclical behaviour of the Spanish economy, namely the high variability of employment. The scale of net job destruction in Spain during 2008 is partly due to the size of the decline in output over the same period. However, in other euro area countries in which the fall in GDP has been comparable, such a sharp contraction in employment has not been seen (Chart 2.6). Whereas in Spain, in the period from 2006 Q1 to 2008 Q4, the 4.4 pp reduction in the rate of change of GDP (from 3.5% to -0.8%) was accompanied by a 5.2 pp decline in employment growth, a very similar economic growth performance (-3.5 pp) in Italy and France entailed a slowdown in employment of only 1.7 pp. In Germany, economic activity varied less (-3.1 pp), but the fall in employment growth (0.6 pp) was proportionately much smaller: the ratios of the decline in employment growth to that in GDP were 0.2, 0.5 and 1.2, respectively, in Germany, France and Spain.

This greater relative amplitude of the employment response in Spain is not a particular phenomenon of this episode of crisis; rather, it reflects a historical pattern. Table 2.1 offers some cyclical indicators of GDP and of employment in the four major euro area countries, for the period 1992 Q1-2008 Q3. As can be seen, the volatility of employment relative to that of GDP (measured by the ratio of standard deviations) is much greater in Spain than in the other large euro area countries. Indeed, Spain is the only one of the four countries where employment fluctuates more than GDP, while in Germany and France the opposite is the case and in Italy both variables display approximately the same volatility. Likewise, the correlation between employment and GDP is also stronger in Spain than in the other countries. In sum, over the past two decades the same fluctuations in GDP increases have prompted employment growth responses in Spain that are proportionately greater than in the other large euro area countries.

... which is due to certain institutional characteristics of the labour market

Behind this high response of employment to cyclical conditions are certain institutional characteristics of the Spanish labour market. Indeed, faced with a contraction in demand, which may lead companies in many cases to downsize their workforce, the actual adjustment of manpower will depend on several factors, such as the perceived duration

	Germany	France	Italy	Spain
VOLATILITY (%)				
Employment (1)	1.0	1.0	1.4	2.3
GDP (2)	1.4	1.2	1.4	1.8
Ratio (1) / (2)	0.8	0.8	1.0	1.3
CORRELATION				
GDP-Employment	0.5	0.7	0.3	0.8

SOURCE: ECB.

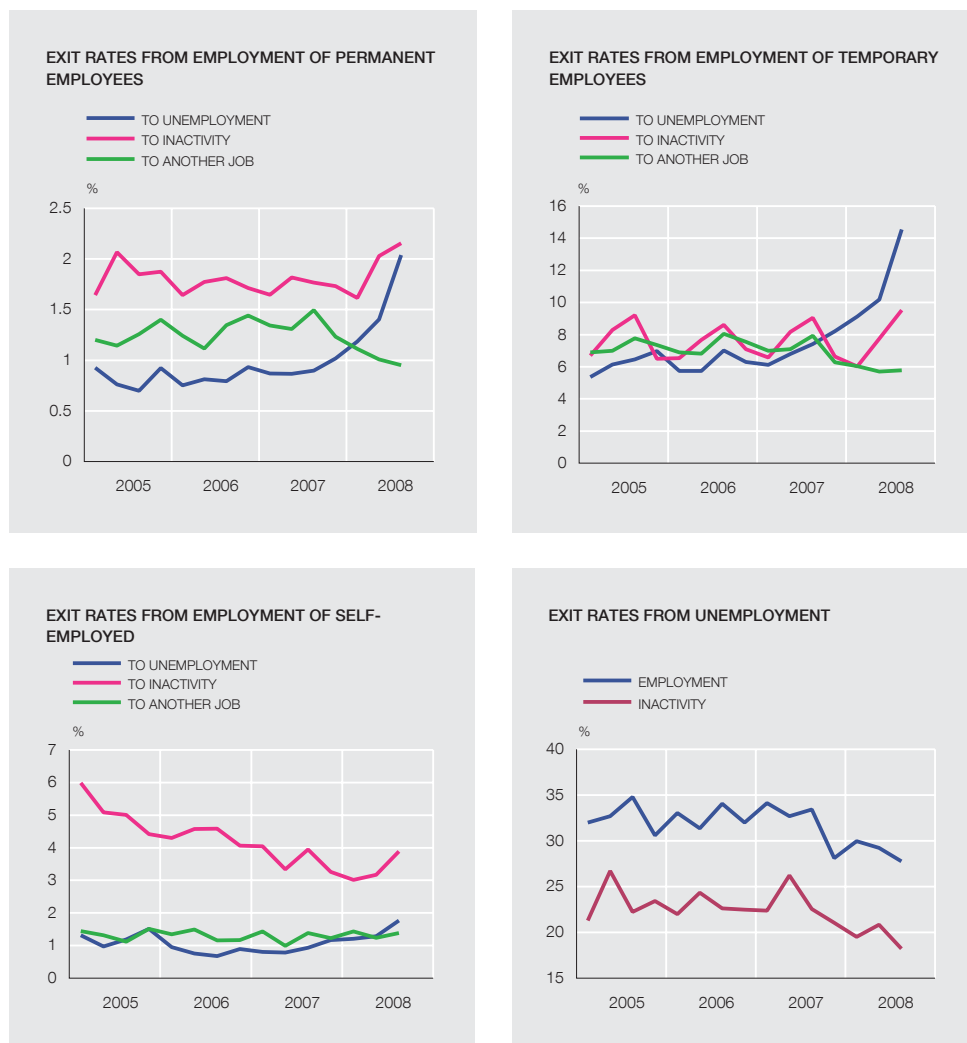
a. Quarterly GDP and employment series; year-on-year growth rates.

of the shock, employment adjustment costs, the possibility of organising production differently and production costs (inter alia, labour costs). In Spain, the structure and content of collective bargaining agreements mean that it is difficult for firms to adjust labour costs when demand falls. The differentiation in adjustment costs brought about by the existence of two types of employment contract (permanent and temporary) leads to the contraction in employment falling in the main on temporary workers. As can be seen in Chart 2.7, which shows labour flow figures from employment (by type of contract) and from unemployment, in the current recession there has been a significant increase in the exit rate from employment to unemployment in the case of temporary workers (from 6% to 14% of employees with this type of contract), which differs greatly from that observed in the case of employees with a permanent contract (whose exit rate edged up from 1% to 2%). As usually also occurs in downturns, exit rates from employment to inactivity have increased, and exit rates from unemployment to employment and inactivity have declined.

To assess the extent to which these institutional characteristics of the Spanish labour market contribute to exacerbating employment volatility, Box 2.2 performs some simulations with a general macroeconomic model with a labour market subject to several types of frictions and calibrated to reproduce the characteristics of the Spanish economy. The results show that the response of employment in the short and medium run to fluctuations in demand is greater in a labour market with two types of contract (temporary and permanent) than in a market with a single type of contract and similar adjustment costs.

Turning to the cyclical behaviour of wages, attention has often focused on the high inertia arising from the wage bargaining model and, in particular, from the presence of indexation clauses, which bring positive but not negative deviations in inflation to bear on the wage increases agreed under collective bargaining.¹⁴ Given the speed and intensity with which the current recession has come about and the sharp decline in inflation, this wage inertia is having particularly adverse effects. During the second half of 2007 and the first six months of 2008, wages continued to grow, driven by optimistic expectations about economic activity and by the indexation of wages applying the inflation deviations of the previous year, prompting a wage rise concurrently with the decline in demand (see Box 2.3).

14. See *Annual Report, 2007*, Box 2.2.



SOURCES: INE and Banco de España.

Exiting the crisis will require labour regulations more favourable to new hires and to the recovery of productivity in the medium and long run...

In short, the employment and wage-determining mechanisms derived from the institutional configuration of the Spanish labour market are tending to amplify the impact of the adverse demand shock associated with the crisis. In these circumstances, measures aimed at checking job destruction and encouraging job creation are needed. To date, however, these measures have focused on increasing hiring subsidies and on extending unemployment protection, without amending the institutional mechanisms that are distorting the incentives to hire and eroding job stability.

Indeed, exiting the crisis will require restoring the confidence of households about their future work income, and that of companies about the profitability of their new investment projects. In both cases, two factors will prove pivotal: first, the conditions under which new labour hires may be made; and second, productivity, which, in the medium and long term, will be what allows higher growth in real wages and in business profits. To achieve a more favourable scenario for new hires and productivity growth, changes in labour legislation are needed that will allow job stability to be squared with companies' capacity to organise their labour resources efficiently.

... in particular, legislation on employment contracts...

In Spain there is a wide range of employment contracts. Alongside permanent contracts, where firing costs are based on the causes behind contract termination and on the result of

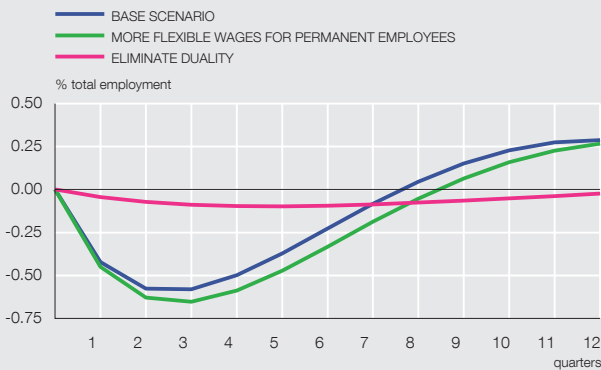
The recent economic literature has highlighted wage rigidity and employment adjustment costs as the main determinants of the response of labour market flows – and, therefore, of fluctuations in employment – to economic shocks.¹ If wages responded flexibly to changes in productivity, then economic fluctuations would cause high wage volatility, but would leave the level of employment relatively unaffected. Conversely, if wages do not adjust readily to changes in productivity,

then there will be notable changes in hiring and firing and, therefore, employment will fluctuate more over the cycle. Evidently, employment adjustment costs reduce employment volatility; higher adjustment costs reduce both new hires and dismissals, with an ambiguous impact, in principle, on the mean level of employment.² However, when employment adjustment costs differ for different population groups,

1. See R. Shimer (2005), “The cyclical behavior of equilibrium unemployment and vacancies”, *American Economic Review*, 95 (1), pp. 25-49, and R. Hall (2005), *Employment fluctuations with equilibrium wage stickiness*, *American Economic Review*, 95 (1), pp. 50-65.

2. See S. Bentolila and G. Bertola (1990), “Firing costs and labour demand: How bad is Eurosclerosis?”, *Review of Economic Studies*, 57 (3), pp 381-402, and A. Cabrales and H. A. Hoppenhayn (1997), *Labour market flexibility and aggregate employment volatility*, *Carnegie-Rochester Series on Public Policy*, 46, pp. 189-228.

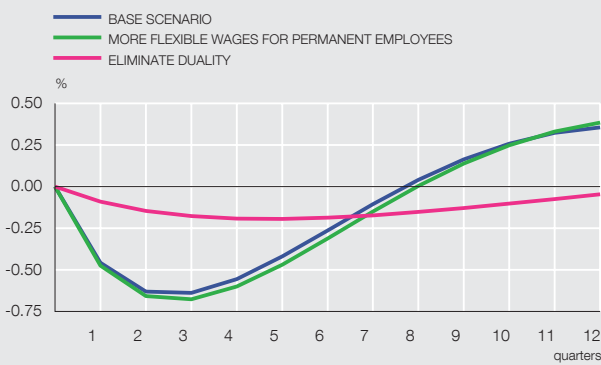
1 TEMPORARY EMPLOYMENT



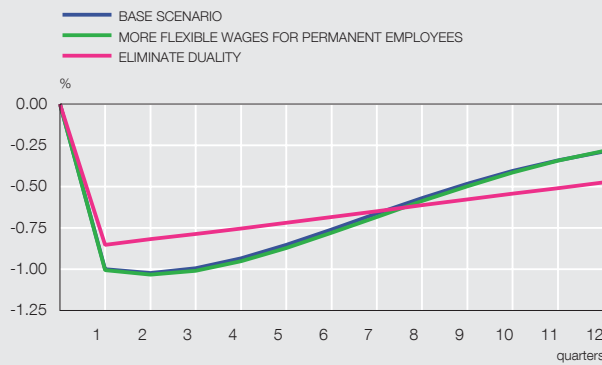
2 PERMANENT EMPLOYMENT



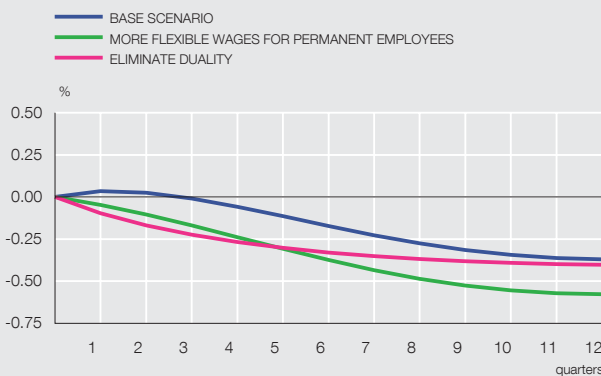
3 TOTAL EMPLOYMENT



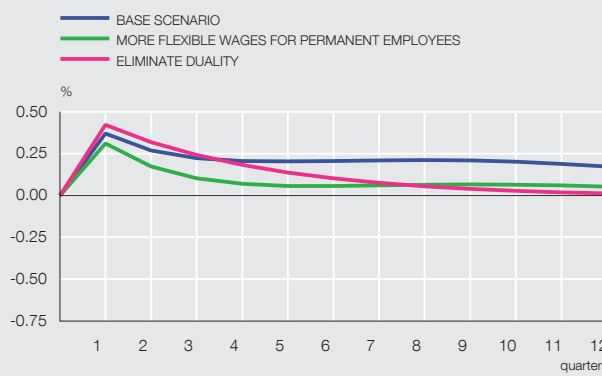
4 OUTPUT



5 AVERAGE WAGES



6 UNIT LABOUR COSTS



SOURCE: Banco de España.

as is the case in Spain, the attendant fluctuations may be greater than in a homogeneous market with equivalent adjustment costs.³

To quantify the impact that wage rigidity and adjustment costs have on employment volatility, several simulation exercises have been performed in a macroeconomic model calibrated to reflect the behaviour of the Spanish labour market. The main ingredients of this model are as follows: i) there are two types of employment contract, permanent and temporary, which give rise to two different dismissal rates; ii) newly hired employees join the firm with no specific experience in their job; iii) in each quarter, an inexperienced employee has a certain probability of gaining experience, thereby increasing his/her productivity in the firm; iv) the cost of hiring depends negatively on the unemployment rate and positively on the number of hires; v) the marginal cost of dismissals is increasing, and is much greater for permanent than for temporary contracts, and vi) wages are determined by bargaining, with greater rigidity and bargaining power in the case of permanent workers.

Under these assumptions, a firm whose employees mostly have permanent contracts will save on hiring costs, and will have a workforce with a greater average productivity. Alternatively, a firm might consider it more advisable to avoid a high proportion of permanent employees in its workforce, either to reduce wage costs, given the relatively high wages of permanent employees, or in anticipation of possible future reductions in demand that would lead it to shed employment and, therefore, to incur high adjustment costs.

Panel 1 shows the response of employment, depicted in its aggregate, temporary and permanent components, to a persistent reduction in productivity, under different scenarios: i) a dual labour market

calibrated to the behaviour of the Spanish labour market (base scenario); ii) a market equivalent to the previous one, except that the wage rigidity of permanent contracts is lower, equalling to that of temporary employees in the base scenario (flexible scenario), and iii) a labour market in which all duality has been stripped out, replacing the two types of contract with a single contract that implies aggregate adjustment costs similar to those of the dual labour market of the base scenario and in which wage rigidity equals the average of that of temporary and permanent employment in the base scenario (elimination of duality scenario). The productivity shock, whose scale is such that it causes a 1% decline in output in the first quarter of the base scenario, causes a fall in total employment of around 0.55% over the course of the first year, broken down into a 0.49 pp decline in temporary employment and a 0.06 pp decline in permanent employment, whereas if the wages of temporary and permanent employees were equally flexible, employment among the latter would fall less (by 0.01% of total employment) and that among the former by slightly more (by 0.58% of total employment). However, in the labour market with a single contract, the reduction in total employment is 0.19%, approximately one-third of the fall in the base scenario, which is essentially due to the fact that higher dismissal costs for permanent employees in the base scenario prompt a very high turnover of temporary employees which tends to exacerbate flows into and out of unemployment, shortening employment spells and thereby inhibiting growth in workers' productivity. With regard to wages, the decline in productivity brings about a reduction of 0.06% and 0.24% in the base and flexible scenarios, respectively, and of 0.27% in the case of a market with a single contract. Given that real wages have a certain degree of rigidity in all three scenarios, the decline does not prevent unit labour costs (the ratio of wages to labour productivity) from undergirding increases of 0.21%, 0.07% and 0.18%, respectively.

In sum, according to these simulations, reducing heterogeneity of adjustment costs would significantly reduce the volatility of employment and of output, without much increase in that of wages. Accordingly, the volatility of disposable income would be lower (approximately by half), and so too, possibly, would that of consumption.

3. See J.J. Dolado, M. Jansen and J.F. Jimeno (2007), *A positive analysis of targeted employment protection legislation*, *B.E. Journal of Macroeconomics (Topics)*, vol. 7, no. 1, art. 14, and C. Alonso-Borrego, J. Fernández-Villaverde and J.E. Galdón-Sánchez (2004), *Evaluating labour market reforms: a general equilibrium approach*, IZA Discussion Paper, no. 1129.

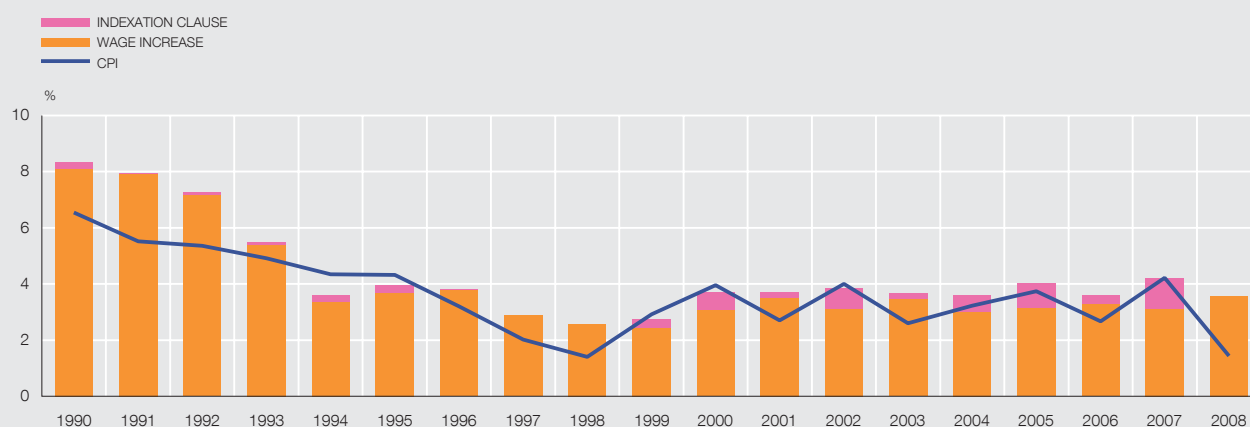
legal or administrative control (in the case of collective dismissals), there are a welter of temporary contracts, which have lower firing costs and, by their very nature, may be terminated without legal and/or administrative sanctioning. Temporary contracts can be entered into under specific circumstances, provided the duration of the job is of a fixed term (causality principle). The excessive incidence of temporary hiring (duality), the scant conversion of temporary into permanent contracts (employment segmentation) and intense job turnover involving one sub-group of workers (the concentration of the employment adjustment in temporary workers) are the consequences of this excessively complex hiring model. In practice, this model means that companies use employment as the main source of adjustment in the face of economic fluctuations. There is also empirical evidence upholding the fact that the unfavourable trend of productivity over the past decade is due in no mean part to the scant incentives temporary workers and their employers have to invest in training and, in the case of the latter, to innovate

Despite the marked deterioration in the labour market during the year, wage developments in 2008 entailed a rise in labour costs, in both nominal and real terms, which largely came about due to the extensive indexation present in the collective bargaining mechanism. The automatic adjustment of wages to the inflation outturn at the end of 2007 by means of the activation of the indexation clauses gave rise to an increase in wage rates in the first half of the year. In the closing months of the year, when the deterioration of the labour market was already most acute and inflation had begun to fall, the sensitivity of collectively bargained wages to cyclical conditions in the labour market was limited. Thus, whereas for the year as a whole the revisions of pluriannual agreements signed in previous years included a 3.5% wage increase, newly signed agreements showed an even higher rise (of 3.8%) in those recorded to December, with a very slight moderation in the final stretch of the year, registering an increase of 3.5% in the final quarter. The figures available for 2009 show this behaviour has continued, since agreements registered to February (mostly revisions of pluriannual agreements entered into in previous years) incorporate wage growth of 2.7%, which is a marked rise in real terms in light of recent inflation developments.

This wage behaviour does not differ greatly from that observed in the Spanish economy in previous periods. Firstly, the degree of nominal indexation present in collective bargaining is very high and wage increases are predominantly determined, with some lag, by the course of inflation. Panel 1 shows agreed wage increases and inflation in December each year from 1990 to 2008. There is a very close relationship between wage increases and past inflation, which is reinforced by the impact of the indexation clauses, present in most agreements, which automatically pass through any increase in inflation to wages. Significantly, however, the relationship to inflation is not symmetrical in view of the characteristics of the indexation clauses. And, indeed, as Panel 1 shows, periods in which a decline in inflation is seen, such as 1998 or, more recently, 2001, 2003 and 2006, are usually accompanied by increases in wages in real terms, as occurred in 2008.¹

1. Overall, from 1980 to 2008, the correlation between the change in inflation and the increase in real wages is -0.6.

1 NEGOTIATED WAGE INCREASES AND INFLATION



1 IMPACT OF INFLATION AND CYCLICAL CONDITIONS ON NEGOTIATED WAGE INCREASES (a)

Dependent variable:

Negotiated wage increase

Explanatory variables

	Revised agreements		Newly signed agreements	
	Coefficient	t-statistic	Coefficient	t-statistic
Positive deviation by inflation at t-1	0.92	108.6	1.13	148.8
Negative deviation by inflation at t-1	-0.21	-3.3	-0.34	-4.5
Change in unemployment rate at t-1	0.02	2.5	-0.24	-34.7
Constant	2.66	30.8	2.45	-27.1
Observations	39,537		52,610	
Adjusted determination coefficient	0.3		0.3	

SOURCE: Database of collective agreements recorded between 1990 and 2008, Ministerio de Trabajo e Inmigración.

a. The regressions include dummy variables of the sector of activity (NACE-93 two-digit level), bargaining level and presence of indexation clause.

As regards the impact of the cyclical position of the labour market on collectively bargained wage increases, the accompanying table shows the results of several regressions in which the agreed wage increases in each of the collective bargaining agreements signed since 1990 is related to inflation and the change in the unemployment rate at the regional level, controlling for other characteristics of the agreement, such as type (newly signed, revisions of pluriannual agreements entered into previously), bargaining scope (firm-level or wider) and the sector of activity of the firms affected by the agreement. In each year, only around one-third of the agreements with economic effects were negotiated the same year, given that most agreements are pluriannual², for which less contemporaneous sensitivity to cyclical factors is to be expected.

In relation to inflation, the estimates shown in the accompanying table reflect the impact of expected inflation on wage increases with the constant term of the regression, and they attempt to capture the potential asymmetrical relationship of wage increases to this variable, allowing the coefficient to vary depending on whether inflation ended the previous year above or below 2%. The results clearly show marked asymmetry in the wage determination mechanism, since positive deviations by inflation pass through with a coefficient close to

unity to wage increases, whereas, given the asymmetry caused by the indexation clauses, this pass-through does not take place when inflation falls below the 2% benchmark.³

Turning to the impact of the unemployment rate, the accompanying table shows that only in newly signed agreements is some sensitivity to the labour market situation detected. In particular, in these agreements a 1 pp increase in the unemployment rate would reduce the agreed wage increases in newly signed agreements by around 0.2 pp. Conversely, no negative relationship between the unemployment rate and wages in revised agreements is observed.

Overall, therefore, the characteristics of the collective bargaining system shape a labour market in which wage increases are strongly determined by inflation, although the existence of downside asymmetries in wages limits the pass-through of reductions in inflation. As to wage sensitivity to labour market conditions, a reduced response is detected which, moreover, entails a lagged adjustment of wages and only in newly signed agreements in the year, which account for around one-third of total agreements with economic effects in each year.

2. Average duration has been progressively increasing from somewhat over two years in the early 90s to somewhat over three years since 2004.

3. In fact, the negative coefficient means that inflation deviations below 2% give rise to wage increases.

... and also collective bargaining...

by adopting new forms of organising work.¹⁵ To promote job stability and to help companies better organise their workforces, it is vital in the current circumstances to introduce and encourage forms of permanent hiring that can be used broadly and whose termination does not entail such high redundancy payments as those associated with the permanent contracts currently in force.

The means by which the determination of wages and employment conditions is responding to the crisis also highlights the dysfunctions generated by the collective bargaining model. The wage settlement arrangements on which this model is based, as laid down in the agreements entered into by employers' associations and the main trade unions from 2001 [wage growth resulting from adding to the ECB inflation target ceiling (2%) a percentage point attributed generally and uniformly to productivity gains, along with indexation clauses that add wage increments if inflation exceeds this ceiling], have led to great inertia in the growth of labour costs. The upshot of this behaviour has seen high wage increases coinciding in time with a strong reduction in activity and employment, which is indicative of the economy's difficulties in restoring competitiveness and the depreciation of the real exchange rate needed to redress the external imbalance without incurring sharp increases in unemployment. As regards other employment conditions, while companies with their own collective bargaining agreements are able to face the crisis by resorting to combinations of wage adjustments and other measures

15. See J. J. Dolado and R. Stucchi (2008), *Do temporary contracts affect TFP? Evidence from the Spanish manufacturing firms*, CEPR Discussion Paper no. 7055, and IZA Discussion Paper no. 3832.

aimed at maintaining employment, those that are subject to industry-wide, regional or nationwide agreements are much more constrained here.

Looking ahead, there are other reasons to conclude that wage-setting arrangements in recent years have not been the best framework for promoting the adjustments needed in circumstances such as the present. On one hand, the necessary depreciation of the real exchange rate requires the Spanish economy to achieve a GDP deflator growth rate that is lower than that of its trading partners for some period of time. Moreover, the necessary sectoral reallocation of employment will call for relative wage adjustments. Given the low inflation rates being posted, in Spain and internationally, both adjustments are particularly constrained by the high downward nominal rigidity of wages imposed by the centralised and little-coordinated collective bargaining system that currently prevails.

... with temporary measures needed, while this reform proceeds, to reduce job destruction

The design of a far-reaching labour reform, which substantially redresses problems relating to employment contracts and collective bargaining and which is liable to enjoy broad-based social consensus, may need some time before coming to fruition and procedures that cannot be activated immediately. However, job destruction is proving most intense and, if this dynamic is not halted, the surge in the unemployment rate might have lasting effects on the Spanish economy's capacity to generate new employment opportunities. To avert such effects, it might be desirable while specific reforms are being designed and implemented and until some consensus is reached on them to resort to temporary measures, such as the introduction of new hiring arrangements and the prevalence of company-level agreements over industry-wide, regional or nationwide agreements. This type of measure would be immediately effective and would increase the beneficial effects of others introduced in recent months, such as hiring incentives, government support to sustaining employment and extended protection for the unemployed.