

**Spain: Financial Sector Assessment Program—Technical Note—
Housing Prices, Household Debt, and Financial Stability**

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FINANCIAL SECTOR ASSESSMENT PROGRAM
SPAIN

**TECHNICAL NOTE ON HOUSING PRICES,
HOUSEHOLD DEBT, AND FINANCIAL
STABILITY**
MAY 2006

INTERNATIONAL MONETARY FUND
Monetary and Financial Systems Department

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HOUSING PRICES, HOUSEHOLD DEBT, AND FINANCIAL STABILITY

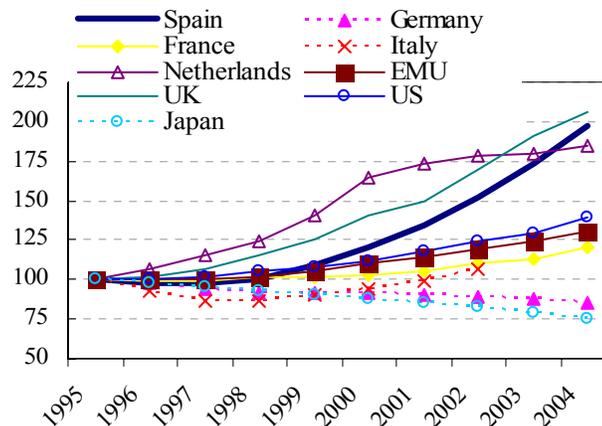
1. This note is divided into five sections. Section I reviews the macroeconomic determinants of the rapid growth in the Spanish housing market, including various policy elements. Section II examines the vulnerabilities of households' finances as a result of the rapid growth of housing prices and mortgage debt. Section III describes the Spanish mortgage market and assesses the resilience of the financial sector to a possible adjustment in the housing and mortgage market. Section IV presents a market-based indicator to show the market views on the quality of the mortgage portfolio and bank soundness. Section V concludes with some recommendations.

I. HOUSING PRICES

A. Macroeconomic Conditions and Demographic Factors

2. **The Spanish housing market has experienced a boom since the second half of the 1990s.** The increase in the real housing price is among the steepest in industrial countries (Figure 1). However, in 2005, the price growth rate shows some signs of deceleration from an annual growth rate of 17.1 percent in the first quarter to 12.6 percent in the fourth quarter.

Figure 1. Spain: Evolution of Real Housing Prices, 1995-2004

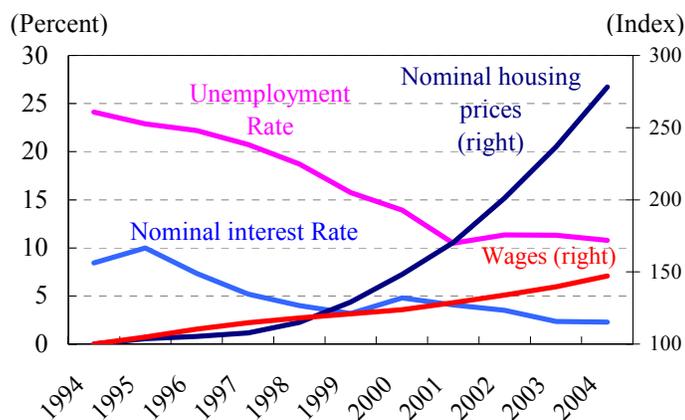


Source: Bank of Spain, 2005, and Housing Ministry, 2005.

3. **The rapid increase in housing prices has taken place in a benign economic environment.** Over the last ten years, the Spanish economy has experienced continued real GDP growth exceeding the EU average, while interest rates and unemployment have fallen to one-fourth and one-half of their 1995 levels (Figure 2). The rapid job creation, especially female and young employment, has raised the average number of employed household members from 1.36 to 1.54 with a corresponding increase in household wage income, which has improved house affordability. Moreover, since the mid-1990s, immigration flows have reversed the decline in population and have quadrupled the population of foreign residents,

which in June 2005 amounted to 8 percent of the total population. The average household size has declined in recent years from 3.2 members in 1995 to 2.9 in 2004, still above the EU average of 2.4. The Council of Economic Advisors of the Presidency projected that in the coming years 400,000 new households will be formed. **In addition to the benign macroeconomic conditions, the sharp fall in interest rates since the mid-1990s and the stock market crash in 2001 reduced the attractiveness of bonds and stocks in favor of real estate investments.**

Figure 2. Spain: Macroeconomic Performance, Housing Prices, and Wages, 1994-2005.



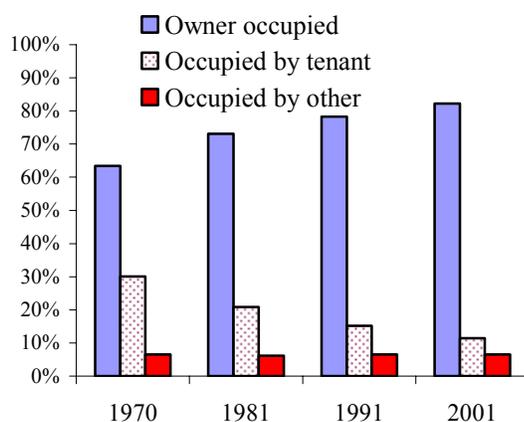
Note: The interest rate series corresponds to the one-year Madrid Interbank Offered Rate (MIBOR, 1994-98) and the one-year European Interbank Offered Rate (EURIBOR, 1999 onwards), the latter has become the main reference rate for mortgage lending. After 1999, both rates are within a 10 basis points difference.

Source: Bank of Spain.

4. **Spanish households have shown a strong preference for ownership over renting.** The rental market in Spain has been shrinking in the last three decades, from 30 percent in the early 1990s to about 10 percent of the housing stock by 2001. According to the latest census conducted in 2001, around 70 percent of existing houses are considered “main residence.” Of those, over 80 percent are owner-occupied houses and about 10 percent are tenant-occupied (Figure 3). According to the census, there were around 3 million unoccupied houses—but only a limited share of them could be made available to the rental market.¹

¹ As the census includes all registered houses, regardless of whether they are inhabitable or not, the number of houses potentially available for rent is likely to be substantially smaller. Also, given the strong internal migration in previous decades from rural to urban areas, part of the unoccupied stock is in the former.

Figure 3. Spain: Distribution of Houses by Occupancy (Main Residence)



Source: INE (2001). House and Population Census.

5. **The factors listed above have increased demand of housing boosting construction—over 700,000 new houses were built in 2004.** Housing construction is expected to slow down as the market starts cooling off over the medium term.²

6. **Most of the empirical work on the assessment of the “long-run equilibrium” level of housing prices find evidence of a misalignment with respect to the estimated equilibrium** (Table 1). A group of studies have looked at the historical ratio of rent to housing prices and conclude that housing prices are “overvalued”—for example, Bank of Spain’s study by Ayuso and Restoy (2003) finds a 20 percent overvaluation, whereas a more recent study by the Economist (2005) finds a 60 percent overvaluation. Other studies take a different approach to avoid measurement problems of the rental market. These studies—Martinez Pages and Maza (2003), IMF (2004), and Caruana (2005), among others—estimate a stylized econometric model including three main explanatory variables: household income, the real interest rate, and the average return of the stock market. Among them, the most recent study (Caruana, 2005) finds an overvaluation of housing prices in the range of 24 to 35 percent above the estimated long-term equilibrium level. The same report suggests that this overvaluation can be corrected gradually.³

²In fact, the largest 6 construction companies have started to venture outside Spain with an increased presence in Europe (for example, transport and waste management in the UK, construction activities in Italy and Poland, and toll-road concessions in Bulgaria).

³ The difficulties in assessing asset price “over-valuation” are well recognized in the empirical finance literature. In particular, there are two main caveats related to the specific econometric technique employed by these papers: (i) the presence of structural changes over the last 30 years complicates the estimation of a robust and stable long-term relationship between housing prices and fundamentals (i.e., the estimates are based on time series analysis where transitional dynamics dominate the behavior of the series); (ii) the estimation of the long-term equilibrium price level requires as inputs the long-term equilibrium level of fundamentals, which are very difficult to assess.

Table 1. Spain: Housing Price Misalignment?

	Overvaluation (In percent)
Banco de España:	
Ayuso and Restoy (2003)	20
Martínez Pagés and Maza (2003)	8-17
Ocasssional Paper No. 507	24-35
IMF (2004)	20-30
The Economist (2005) and other studies	28-60

B. Policy-Related Elements and Demand for Housing⁴

7. Current policies and legislation tend to favor home ownership vs. the rental market:

8. ***Favorable fiscal treatment of house ownership.*** There are fiscal incentives arising from a tax relief that favors home ownership. As is common in other OECD countries, the Spanish income tax allows for a deduction in the income tax base from mortgage payments when buying a house as the main household's residence. In contrast, there is practically no deduction for tenants on rent payments. In the first two years of the mortgage, the *maximum* amount deductible for mortgage payments is capped to €1,803 per year, after which that maximum falls to €1,577 per year.⁵

9. ***Legal uncertainty and difficulties that owners encounter to evict problem tenants.*** On average it takes 12 to 14 months for an owner to evict a problem tenant. More agile systems such as the U.S. allow problem tenants to be evicted within one to two months.

10. ***Minimum length of rental contracts.*** The length of the contract is freely determined between owner and tenant. However, if it is set below 5 years, upon the termination of the

⁴ This note focuses on the aspects of the housing market, household debt, and mortgage lending that are most relevant for financial stability, without addressing the wider macroeconomic and sectoral policy issues including: (i) the unequal fiscal treatment arising from generous tax relief that favors home ownership and weighs heavily on the budget; (ii) changing the legal framework to foster the undersized rental market; and (iii) reforming the regulations governing "developable land" that limit its supply (i.e., zoning regulations). This sub-section will only discuss the issues to the extent they are relevant to assess their effect on housing prices.

⁵ The actual deductible amount from the income tax base depends on the size of the mortgage payments, which for 2004 was on average €6,357 per household (which is below the maximum annual deduction of €9,015 in the tax base). Based on the average mortgage payments in 2004, the implied average tax break in the first two years would be €1,404, and, for the remaining years, it would amount to €1,179 assuming constant mortgage payments (the average expected amortization of a 2004 mortgage was 7.2 years). For houses purchased without a mortgage loan, there is generally a one-off 15 percent deduction (also capped at €9,015.)

contract, the urban rental law gives the tenant the right to extend it up to a total length of 5 years.

11. **Land issues and incentives.** Local administrations are in charge of setting the policy over land zoning—i.e., which areas are marked as residential, non residential, and commercial. The same local administrations derive a substantial share of their revenues from taxing real estate, where the revenues are directly related to the price of real estate. This creates perverse incentives to limit the supply of residential and commercial land.⁶

12. **The government is taking an active role through the 2005-08 Housing Plan, which aims at fostering housing affordability and developing the small Spanish rental market.** Some of the proposed policies include increased supply of subsidized housing (*viviendas de protección oficial*), creation of a public housing rental agency, and tax breaks for rental housing developers. The government has also created in Madrid and Barcelona “fast tribunals” to speed up the resolution of housing rental disputes. These measures are intended to affect housing prices and the rental market over the medium term, but it is too early to assess their impact.

II. HOUSEHOLD DEBT AND THE MORTGAGE MARKET

13. **In recent years, delinquency rates on home mortgages have been falling.** The low NPL ratios have been accompanied by a boom in credit institutions’ mortgage loan portfolio and an exponential increase in housing prices since the mid-1990s. Households’ debt to income has steadily increased to reach 105 percent by end 2004—surpassing euro area’s average of 90 percent, but still below U.S. ratio of 120 percent. This suggests that other factors, such as falling interest rate and increasing household incomes, have kept mortgage service costs affordable.

14. **Swelling real estate prices and increased home ownership have blown up both household’s assets and liabilities.** Overall, households’ wealth has increased since the mid-1990s from about 400 percent of GDP to 600 percent by 2004, of which over 500 percent is accounted for by real estate wealth. Such rapid increase in wealth is explained mostly by the high proportion of home ownership (with positive equity), about 80 percent, and the relatively low levels of household debt other than mortgage debt (only 25 percent of total household debt). As of end 2005, households’ net financial wealth stood at 95 percent of GDP.

15. **The sharp increase in mortgage debt has not significantly affected household’s debt-service capacity.** Figure 4 shows the results of a study conducted by the Bank of Spain

⁶ Various taxes related to the home purchase are collected by the local administrations. In particular, a levy on patrimonial transmission (“*impuesto de transmisiones patrimoniales onerosas*”) paid by the seller and collected by the autonomous communities. A levy on the increased value of urban land (“*impuesto sobre incremento de valor de los terrenos de naturaleza urbana*”) and an annual house ownership tax (“*impuesto sobre bienes inmuebles*”) are collected by the municipalities.

(2004) based on the actual debt in 2002 of a random sample of 5,000 households (i.e., includes mortgages originated at various points in time). In 2002, the median ratio of household debt payment to gross income was 15.2 percent, and only 7.2 percent of the families had a ratio above 40 percent. Table 2 (see last column) shows that households' average debt-service in the year of mortgage origination, interest and principal payments, has remained at around 35 percent of households' average net income over the last 10 years. Two factors explain the stability of that ratio:

- **A drop in interest rates owing to Spain's participation in the European Monetary Union.** Interest rates have fallen from over 10 percent in the early 1990s to about 2 percent by mid 2005 (one-year reference rate, EURIBOR).
- **Rapid development of financial markets and fierce competition among credit institutions since the late 1990s** have pushed mortgage rates to historically low levels, with an average spread above the reference one-year EURIBOR of 75 basis points for floating-rate residential mortgages. Competition has also pushed the length of mortgage contracts from maximum maturities of 10 years in the early 1990s to over 30 years by 2005.

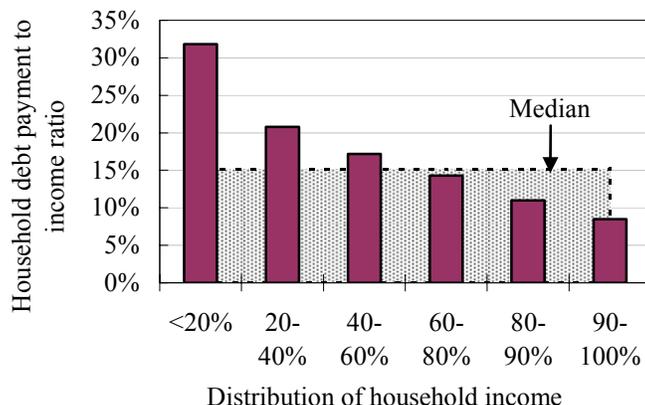
Table 2. Spain: Distribution of Households by "Debt-Service to Net Disposable Income (DTI)" Brackets 1/
(In percent)

Origination date	Sample distribution by DTI bracket					Average DTI	
	<20	20-30	30-40	40-50	>50		
1995	22	26	26	15	12	100	37
1996	24	28	25	12	11	100	36
1997	29	30	23	10	9	100	34
1998	30	32	22	9	7	100	33
1999	32	32	21	8	7	100	33
2000	32	30	20	9	8	100	33
2001	31	31	21	9	8	100	34
2002	28	27	23	11	11	100	35
2003	27	28	23	12	10	100	35
2004	29	27	25	11	8	100	33

Source: Genworth (2005). Genworth conducted this study, commissioned by the Spanish Mortgage Association, based on information from a sample of 700,000 mortgage loans at origination.

1/ For example, in 2004, 8 percent of households had a ratio of debt-service (interest and principal) to net disposable income of above 50 percent, while the average ratio was 33 percent.

Figure 4. Spain: Ratio of Household Debt Payments to Gross Income: Sample Distribution by Income Bracket (Year 2002) 1/



1/ The interpretation of this figure is as follows: for example in 2002, the top ten income percentile households had a debt payment to income ratio of about 8 percent, whereas the bottom 20 percentile had a debt payment to income ratio of about 32 percent.
Source: "Encuesta Financiera de las Familias", Bank of Spain (2004).

16. **The large exposure of households to mortgage debt has increased their vulnerabilities to financial and economic risk factors.** A fall in housing prices of about 25 percent, in line with recent overvaluation estimates, would leave some households with negative equity—especially those holding recently originated mortgages with loan to value (LTV) ratios of about 80 percent. Additionally, that fall would negatively impact consumer’s confidence and economic activity, especially construction, which represents 10 percent of GDP and 13 percent of total employment. Moreover, **in a housing price fall scenario or in the event of tightening European monetary policy, mortgage rates, currently at historical minimum levels, would increase.** An increase in rates would further deteriorate households’ debt service capacity, which overwhelmingly hold floating rate mortgages.

17. **Despite the concerns raised by the marked increase in households’ debt, there are some risk-mitigating factors in addition to the high level of provisions and capital buffers held by Spanish credit institutions.**

- Most of the outstanding mortgages were generated with a loan to value (LTV) ratio under 80 percent. In the aggregate, the average LTV ratio for outstanding mortgages is estimated to be around 65 percent. While no prudential regulation limits the LTV to a maximum of 80 percent, credit institutions have incentives not to exceed this limit as doing so would double the regulatory-capital risk-weighting and require tougher provisioning. Moreover, qualifying mortgages for issuance of *cédulas hipotecarias*

(i.e., covered bonds) must have a LTV no greater than 80 (70) percent for residential (commercial) real estate.⁷

- The rapid accumulation of home equity in recent years would allow those home owners to withstand a significant housing price fall. Moreover, borrowing against home equity by households is still incipient albeit increasing. In fact, mortgage loans tend to be re-paid within 7 to 8 years.
- The number of working household members has increased since the beginning of the 1990s from 1.36 in 1991 to 1.54 in 2004, helped by the prosperous macroeconomic conditions prevailing since the mid-1990s.
- The proportion of households with a high debt-service to net income ratio is moderate. As Table 2 shows, in 2004 only about 8 percent of the new home owners had a DTI ratio above 50 percent in contrast to 12 percent in 1995.

18. **There is considerable dispersion across Spanish regions on household debt and housing affordability.** Table 3 presents a housing affordability index by region (BBVA, 2005). The index shows the multiples of a typical mortgage that an average household would be able to afford within prudential limits; namely, the index is constructed assuming a LTV ratio of 80 percent and debt payments-to-income ratio of one-third. In 2004, the affordability index ranged between 1.1 and 2.0 with a country average of 1.4 (i.e., in 2004 the average Spanish household could afford 1.4 mortgages). The regions with lowest affordability ratio were Pais Vasco (1.1), Baleares and Madrid (1.2).

⁷ These qualifying mortgages are also the only ones that can be refinanced through Mortgage Securitisation Funds (*Fondos de Titulización Hipotecaria*).

Table 3. Spain: House Affordability Index by Region 1/

	No. of employed household members	Household wage income (euro)	Average housing price (90 m2)	Household affordability index
Spain	1.5	18,254	139,041	1.4
Andalucía	1.3	16,385	115,029	1.3
Aragón	1.6	17,717	124,911	1.6
Asturias	1.4	18,063	120,627	1.5
Baleares	1.6	16,902	157,491	1.2
Canarias	1.5	15,086	126,981	1.3
Cantabria	1.5	16,971	136,305	1.4
Castilla-La Mancha	1.5	15,587	92,826	1.8
Castilla-León	1.5	16,740	103,896	1.7
Cataluña	1.6	19,698	162,378	1.4
Comunidad Valenciana	1.5	16,205	109,872	1.6
Extremadura	1.3	14,702	68,337	2.0
Galicia	1.6	15,481	95,148	1.9
Madrid	1.7	22,051	216,396	1.2
Murcia	1.7	15,322	104,661	1.7
Navarra	1.7	20,603	126,945	1.9
País Vasco	1.6	21,084	202,509	1.1
Rioja (La)	1.6	16,530	109,953	1.7

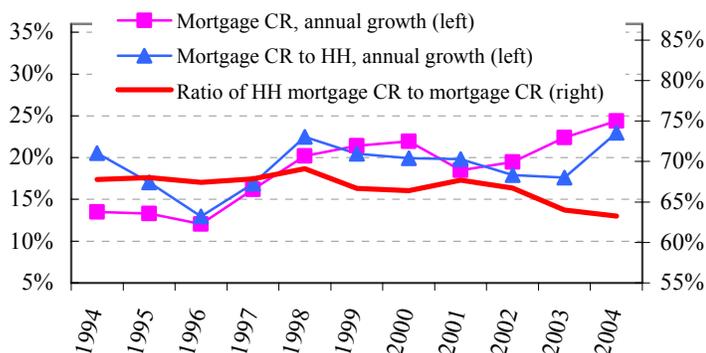
1/ The "Housing Affordability Index" is based on the International Association of Realtors, adapted to the Spanish residential market. The indicator shows the multiples of a typical mortgage that a household with average income can afford within given prudential limits, taking into consideration the financing conditions and housing prices. For example, in 2004 for an average household income of 18,250 euros, an average mortgage rate of 3.3 percent, and a mortgage length of 25 years, an average household had a financing capacity (fixed at 1/3 of net disposable income) of about 160,000 euro. Adding a 20 percent downpayment (i.e. assuming a LTV ratio of 80 percent) would allow the average household to afford a house of up to 200,000 euros. Since the national average housing price in 2004 was 140,000 euro, the index was above 1, in particular the average family would be able to afford 1.4 mortgages.

Source: BBVA (2005), "Situación Inmobiliaria", Servicio de Estudios Económicos.

III. THE MORTGAGE MARKET AND FINANCIAL SECTOR STABILITY ISSUES

19. **Mortgage loans have grown rapidly in the context of a booming housing market and good macroeconomic performance** (Figure 5). Mortgage lending has been growing slightly faster for commercial than for residential real estate; nevertheless households still account for nearly 65 percent of the mortgage portfolio. Both banks and cajas have participated in the buoyant mortgage market—cajas hold a 55-percent share.

Figure 5. Spain: Mortgage Credit Growth



Source: Bank of Spain, 2005.

20. **The NPL ratio for household mortgages has fallen to historical lows (0.3 percent) under conditions of growing credit, falling interest rates, and longer maturities.** Most mortgages carry variable rates: 97.5 percent of those originated in 2004. The one-year EURIBOR, at around 280 bp by end-2005, is the reference rate for over 80 percent of the contracts. Average LTV ratios for the outstanding portfolio are around 65 percent and average debt payments to net income ratios are around one-third for those mortgages originated in 2004. The average loan amount has increased significantly over the past 8 years and is as of mid-2005 around €125,000, while the average mortgage contract generated in 2004 had a 25-year maturity. However, based on past patterns, credit institutions expect an average life of the contract of only 7 to 8 years, as most households pre-pay.

21. While most mortgage loans carry floating rates, new products are starting to be offered, but demand for those is still incipient. There is, however, little offer of (a) *mortgages set at fixed rates for the entire length of the mortgage contract*; (b) *adjustable-rate mortgages (ARM)*, whereby the fixed rate is revised at a given frequency (above one year); and (c) *combined mortgages*, with a part of the mortgage at floating rate and another part being a fully fixed-rate mortgage or an ARM.⁸ Some hybrid-rate mortgages are recently being offered, for example:

⁸ In contrast to Spain, credit institutions and mortgage bonds' investors in other European countries bear most of interest rate volatility risk, given the preponderance of fixed-rate or quasifixed-rate mortgage contracts.

- Mortgages set at fixed-rates for the first few years (up to 5 years) and floating rate for the rest of the life of the mortgage.
- “Constant payment mortgages” are variable rate mortgages with equal payments throughout the length of the contract, where ups/downs in interest rates extend/reduce the maturity of the mortgage but leave service payments constant.
- “Interest-only mortgages” leave for the final payments a large proportion of the principal.
- A variation of “interest only mortgages,” where every year the borrower can choose between a fixed rate for the next 3 years or one that is adjustable every 6 months.

Table 4. Spain: Typical Residential Mortgage Loans

Mortgage Purpose	Maximum LTV	Variable interest rate	Commissions
Main residence	80%	Euribor + 40bp	0.25%
	100%	Euribor + 85bp	0.50%
Second residence	60%	Euribor + 80bp	0.75%
Any purpose	80%	Euribor + 100bp	0.75%

Source: Selected Spanish credit institutions, June 2005.

22. **The Bank of Spain has repeatedly warned credit institutions and households of the risks involved in pure floating rate mortgages.**⁹ Additionally, credit institutions are obliged to explain to the potential borrowers the risks involved in contracting a variable rate vs. a mixed or fixed rate mortgage. In particular, credit institutions are expected to make the borrower aware of the risks over the medium- and long-term of a hike in interest rates. Moreover, the Bank of Spain has a very informative and user-friendly web page describing all relevant aspects of contracting a mortgage loan, including risks and commissions.¹⁰

23. **The following measures could help in making the market more flexible to changing price conditions:**¹¹

⁹ A higher proportion of fixed-rate mortgages would pass interest rate risk from borrowers to credit institutions, which would probably reduce overall vulnerabilities as credit institutions are better equipped to manage such risks.

¹⁰ <http://www.bde.es/clientebanca/productos/prestamo/prestamo.htm>.

¹¹ As pointed out by the president of the Spanish Mortgage Association in his address to the general assembly (June, 2005) “*La rigidez de la legislación española impide, o hace económicamente muy costosa, la posibilidad de reestructurar los préstamos hipotecarios porque la práctica totalidad de las modificaciones que pudieran introducirse en los mismos para salvar una coyuntura difícil o adaptarlos a un cambio significativo en la*

(continued)

- Trimming legally established fees for changes in mortgage contracts considered “*novación modificativa*” that are subject to “*aranceles notariales y registrales*.” In general, lower fees would facilitate changes in mortgage contracts, such as extending their maturity, which could be helpful in an eventual cyclical downturn that would reduce households’ debt servicing capacity.¹²
- Removing caps on credit institutions’ commissions for early mortgage repayment and for changes from fixed- to variable-rate mortgages. This measure is intended to allow the market to determine these commissions in order to (i) align them better with the risks incurred by credit institutions, and (ii) avoid that banks cover these risks through higher lending rates. With that change, only those borrowers that opted for a change in the terms of their mortgage contract would have to pay for it.¹³

A draft reform of the mortgage market is being prepared by the authorities to address some of these issues including regulatory changes to streamline commissions for early amortization; a reduction and streamlining of legally-established fees (“*costes arancelarios*”) incurred when modifying a mortgage contract; and enhanced information requirements from credit institutions to their clients. The draft reform also aims to make the mortgage market more efficient by improving the legal aspects involved in mortgage refinancing, enhancing the repayment capacity of issuers of mortgage backed securities, and reinforcing the independence of the appraisal companies.

24. Large credit institutions follow international best practices in credit risk management. To make lending and pricing decisions, those institutions have in place scoring models calibrated to their experience on default rates for residential mortgage loans based on (a) borrower’s profile including the LTV ratio, debt-to-income (DTI), employment and age, and (b) the purpose of the mortgage loan—i.e., for acquisition of primary residence, secondary residence, or for investment purposes. When the mortgage falls into a “grey” decision area, the loan officer needs to conduct further analysis and consult with supervisors

economía familiar, son consideradas novaciones extintivas y en consecuencia, sujetas a gastos por tasas y aranceles equivalentes a la constitución de una nueva hipoteca.”

¹² The regulatory framework allows for discounts in the legally-established fees charged when changing the type of mortgage contract. In particular, changes from a variable- to a fixed-rate mortgage benefit from a 90 percent discount and a 75 percent discount otherwise.

¹³ The current prudential regulatory framework sets caps on commissions for early repayment of a mortgage as well as for switching from fixed- to variable rate mortgages. First, for variable-rate mortgages, there is a maximum early repayment penalty of 1 percent of the outstanding balance. If the borrower switches to another credit institution (“*subrogation*”) and the mortgage was contracted after April 27, 2003, the penalty cannot exceed 0.5 percent (Law 2/1994 and Law 36/2003). Second, for a fixed-rate mortgage, there is no ceiling on the penalty for early repayment. When switching from a fixed-rate mortgage to a variable-rate mortgage, the government recommended (October 1996) that the penalty should not exceed 2.5 percent of the outstanding balance. There is no ceiling on the penalty for converting from variable- to a fixed-rate mortgage.

in the risk management department. For mortgages with LTV above 80 percent, mortgage insurance (offered by credit institutions) or additional guarantees are required.

- **Large credit institutions have built into their scoring models *automatic “sensitivity analysis”*** to assess the sensitivity of the borrower’s DTI ratio to interest rate shocks. When examining a mortgage application, they evaluate the impact on a prospective borrower’s DTI in case the interest rate increases by, for example, 300 bp. If this causes the DTI to exceed a threshold set by the credit institution, the application is rejected or the applicant is required to supply additional guarantees.
- **For commercial real estate loans**, the risk management mechanisms—including the loan pricing, frequency of loan surveillance, and early warning systems—are adjusted to account for the following factors (i) analysis of the commercial real estate portfolio before and after the inclusion of the loan; (ii) the main purpose of the loan; (iii) the internal and external rating of the borrower; and (iv) the geographical exposure of the credit institution and the borrower.

25. **The Bank of Spain should issue guidelines to credit institutions on best practices in mortgage lending.** While mortgage lending by large credit institutions appears aligned with international best practices, such guidance could still be useful for small or less-sophisticated institutions that may not have access to the resources and expertise of larger ones.¹⁴

26. **Sensitivity analysis conducted by various large financial institutions show that they would be resilient to fairly sizeable shocks to the mortgage portfolio.** In particular they would be able to withstand a wide range of shocks such as a fall in housing prices or a deterioration in the macroeconomic performance with a slow down in GDP growth and an increase in unemployment. The resilience of credit institutions is underpinned by prudent LTV ratios on the outstanding loan portfolio, moderate DTI ratio for the average household, a relatively low proportion of households with DTI ratios above 50 percent, adequate levels of capitalization, and very high provisioning of problem loans. There seems to be a consensus among financial institutions that unemployment is the most acute single-risk factor for their mortgage exposures. Overall, credit institutions remain moderately optimistic about the mortgage market, yet some are beginning to scale down their exposure to mortgage loans by setting more stringent loan criteria.¹⁵

¹⁴ Miles (2004) provides a guide to *giving advice on mortgage lending* by credit institutions in the UK.

¹⁵ See the technical note on the stress testing results and methodologies for details.

IV. MORTGAGE-BACKED SECURITIES¹⁶

27. **Spain has a well-developed market in covered mortgage bonds** (“*cédulas hipotecarias*,” CHs hereafter). CHs are similar products to the German Pfandbriefe, with the difference that only mortgages (in the case of the CH) are used to “cover” the bonds. The volume of CHs is limited to 90 percent of the issuer’s collateral pool. This is constrained to first-lien mortgages with LTV capped at 80 (70) percent for residential (commercial) mortgages. Through the issuance of CH, a credit institution benefits from relatively low funding rates, while keeping the loan in its portfolio.

28. **CHs are also the preferred asset in securitizations, followed by mortgage loans, and small-medium enterprise loans.** Data for 2004 and preliminary data for mid-2005 show that 83 percent of all the securitization activities were backed by mortgages, including mortgage loans and CHs. About 62 percent of the securitization bonds were bought by foreign investors. Thus, the quality of the mortgage portfolio becomes of paramount importance not only for the credit risk of the Spanish financial institutions but also for their ability of raising funding abroad at convenient rates.¹⁷

29. **The overall credit quality of CHs is related to the soundness of the issuer, the quality and size of the mortgage portfolio, and the level of over-collateralization** (Box 1). The credit quality of CHs is high because of both the preferential rights their holders enjoy in the event of bankruptcy and the high level of over-collateralization required by law (11 percent). However, unlike in other covered bonds (e.g., the German Pfandbriefe or the French Obligation Foncière), the collateral backing CHs does not constitute a special or protected fund if the issuer goes bankrupt.

30. **Club-funding is a unique feature of Spanish market.** While large credit institutions have better access to international capital markets, smaller credit institutions (regional cajas and credit cooperatives) can tap the international capital markets through the joint issuance of CHs and other securities backed by a common pool of mortgages. Given the recognized good credit quality, this funding is relatively cheap.

31. **Figure 6 shows the daily *asset-swap spreads* of different issues of CHs for the period 2002–05** (each line corresponds to a different CH). An asset swap spread is an indication of the credit risk that would be incurred by holding the security that is the object of the swap, in our case a CH. The spreads are calculated relative to the fixed-leg swap rate, which reflects the credit quality of the typical counterparty in the market (at least an AA corporate). For example, to estimate the spread, an asset swap can be engineered as follows. Consider a (defaultable) CH with fixed annual coupon payments. By using an asset swap, the investor can swap out of the coupon payments of the defaultable bond and receive floating Libor plus a fixed spread (which we shall refer hereafter as “the spread”).

¹⁶ This section draws from Avesani and García Pascual (2006).

¹⁷ Securitization is developing at fast pace. Spain is currently the second/third country in Europe by volume of securitizations (depending on the type of asset). Furthermore, the Spanish authorities are working on new guidelines, expected in the next few months, which will explicitly recognize credit derivatives as eligible assets for insurance and pension funds for both investment and hedging purposes. The loosening of the rules are likely to boost the domestic credit default swap market and further encourage the ongoing credit risk transfer from credit institutions to pension funds and insurance companies.

Box 1. Spain. Cédulas Hipotecarias

Issuers	Any Spanish credit institution regulated by the Bank of Spain: banks, cajas, credit cooperatives, and specialized financial institutions.
Supervisor	The Ministry of Economy & Finance through the Bank of Spain supervises at the issuer level and the National Stock Market Commission (<i>Comisión Nacional del Mercado de Valores</i>) must authorize any CH issue prior to its listing.
Relevant laws	Mortgage Market Law 2/1981, further developed by Royal Decree 685/1982. The new Insolvency Law 22 /2003 of July 2003 amended the Mortgage Market Law improving the position of CH holders in the event of the issuer becoming insolvent.
Collateral	The entire mortgage portfolio.
Eligibility Criteria	Only residential mortgages with a Loan-to-Value (LTV) ≤ 80 percent commercial mortgages with $LTV \leq 70$ percent are eligible to issue a CH. All properties must be fully insured and valued by real estate surveyors approved by the Bank of Spain. Only properties which are wholly owned by the mortgagors. To qualify, the value of the mortgages on buildings under construction cannot exceed 20 percent of the total eligible portfolio. For buildings under construction, only 50 percent of the value of the land and 50 percent of the value of the construction may be taken into account. Non-performing loans are ineligible. Mortgage loans which originally exceeded the maximum LTV may become eligible as collateral if, as a result of the principal being repaid by the borrower or as a result of an increase in the market value of the property, the LTV falls within the established levels.
Transfer of Loans	No; the loans remain on the issuer's balance sheet together with any other assets.
Cover Register	No; CHs are secured by all mortgages held on the issuer's balance sheet at any given time.
Mandatory Over-collateralization	Credit institutions can issue CHs up to 90 percent of the eligible mortgage loan portfolio, and there is a minimum mandatory over-collateralization of 11 percent.
Real Estate Valuation	All properties collateralizing eligible mortgage loans must be valued by surveyors approved by the Bank of Spain. Ineligible assets are not mandatorily subject to this type of valuation. Valuations by the issuer's own valuation services is permitted if authorized by the Bank of Spain, although in practice most valuations are undertaken by third party assessors. In early 2004 new legislation was passed modifying the real estate valuation criteria for those mortgage loans eligible to back mortgage bonds. ECO/805/2003 introduced the concept of "mortgage value" (more sustainable and less volatile than the market value).
Geographical Constraints	Although the law does not specifically address the location of the property, the need to register the loan in the national Property Register means that in practice only property in Spain may be used to secure loans.
Interest Rate and Maturity Matching Requirements	The average interest rate on variable CHs must be not exceed the average rate on qualifying variable mortgage loans; although in practice most CH issued are fixed-rate. No matching required in terms of maturity of assets and liabilities.
Substitute Collateral	No, the cover assets only comprise mortgage loans. However, as the collateral pool is made up of the entire qualifying mortgage portfolio, collateral does rotate constantly.
Prepayment Risk	Yes, residential mortgage loan prepayments are permitted with a penalty (see footnote 13).
Should the Issuing Bank Become Insolvent	The new Insolvency Law has enhanced the position of covered bondholders by stipulating the non interruption of payments of principal and interest on CHs during insolvency proceedings. The insolvency administrators will satisfy their claims at their original due maturities, from the revenues obtained from the mortgages/ public sector loans, regardless of the stage of the insolvency process.
Preferential Claim of Covered Bondholders	Special privilege; preferential claim on the whole mortgage loan portfolio.
Separate Cover Pool Administrator in Insolvency	No.
EU CAR Weighting for Bank Investor	10 percent.
Eligible for Tier 1 Repos with ECB	Yes

Sources: Fitch Ratings (2004) and IMF Staff.

32. **The analysis of CH spreads provide the following important insights:**

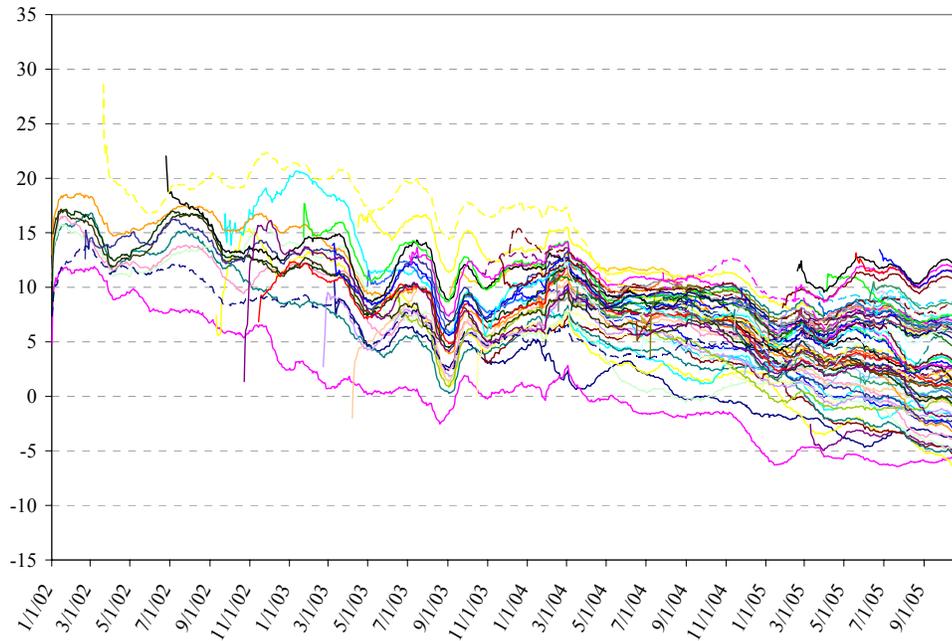
- **CH spreads have narrowed since 2002**, and for some of the older issues, the spreads in 2005 show a premium relative to the swap rate (i.e., negative spread), reflecting a positive sentiment of the market about the quality of the issuers and their mortgage portfolio (Figure 6).
- **However, since early 2005, there is an increased dispersion in the spreads of different issues as a result of new, longer-term CHs, which tend to pay higher spreads** (Figure 7).¹⁸ The figure shows the CHs' spreads for the largest issuers (AYTCED, BBVA, BSCH, CEDTDA, and Caja Madrid)¹⁹ and the CHs' maturities, ranging between 1 and 25 years. Credit institutions may be trying to secure funding while the spreads are still relatively narrow in the anticipation of a possible turn around in the housing market cycle. The considerably higher spreads paid on longer-term (i.e., riskier) instruments may reflect the market perception of increased riskiness associated with the growing exposures of credit institutions to a possibly overvalued housing market.

33. **An analysis based on *option-adjusted-spreads* (OAS) provides similar results** (Figure 8). The spreads are computed relative to German treasury bonds of similar maturity (note that the German treasury bonds have almost zero spread relative to the Spanish treasury bonds). The analysis based on OAS confirms the previous findings of increased uncertainty in the market in 2005 on the future evolution of CHs.

¹⁸ A similar analysis on the asset swap spreads conducted for the German *Pfandbriefe* market does not show evidence of an increase in the dispersion of spreads in 2005. Results are available from Avesani and García Pascual (2005) upon request.

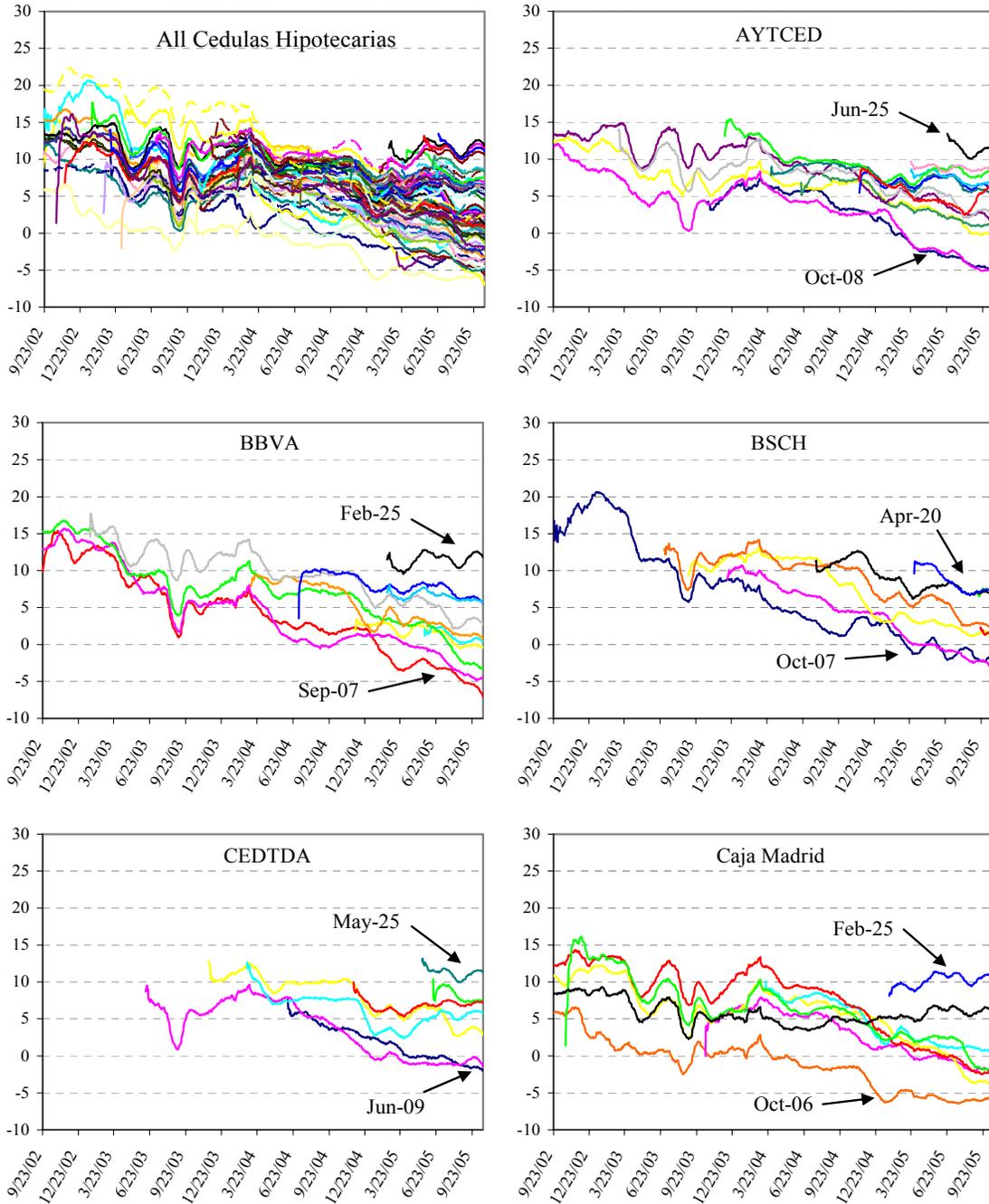
¹⁹ Each *jumbo cédula* under "AYTCED" and "CEDTDA" are pooled CH issues by different institutions—usually, smaller banks and regional savings banks, where the managing societies are AyT and TdA, respectively.

Figure 6. Spain: Asset Swap Spreads of Cédulas Hipotecarias
(In basis points)



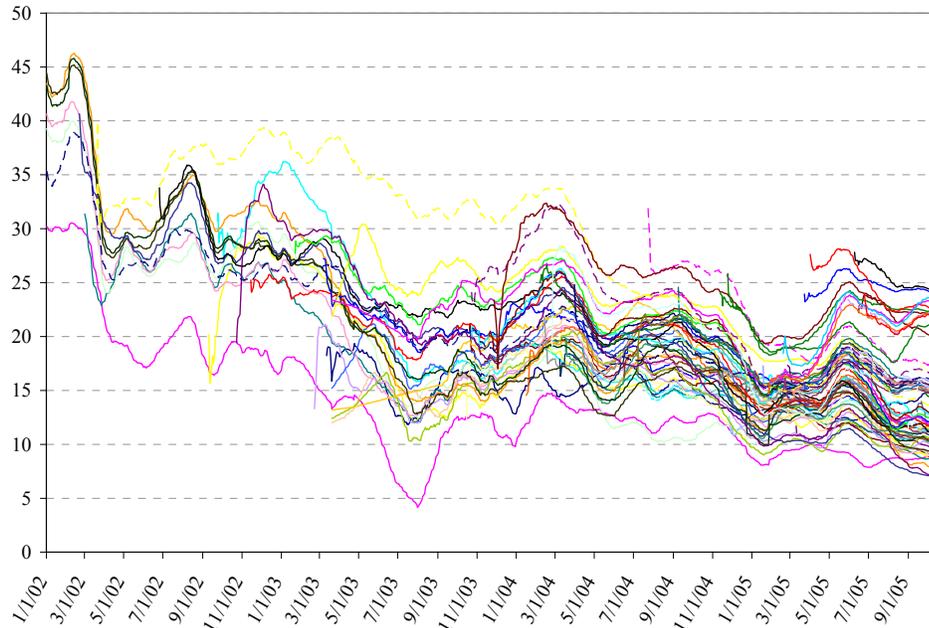
Sources: Bloomberg and staff estimates. A 30-day moving average was applied to the daily spreads. The CHs included in the analysis correspond to jumbo issues (at least a billion euros) by the largest banks and cajas, as well as “pooled-issues” of different small credit institutions, such as AYTCED and CEDTDA, where the managing societies are AyT and TdA, respectively.

Figure 7. Spain: “Jumbo” Cédulas Hipotecarias Asset Swap Spreads (in basis points): By Issuer (5 largest) and Maturity Date



Sources: Bloomberg and staff estimates. A 30-day moving average was applied to the daily spreads. The CHs included in the analysis correspond to jumbo issues (at least a billion euros) by the largest banks and cajas, as well as “pooled-issues” of different small credit institutions, such as AYTCED and CEDTDA, where the managing societies are AyT and TdA, respectively.

Figure 8. Spain: Option Adjusted Spreads of Cédulas Hipotecarias 1/
(In basis points)



Sources: Bloomberg and staff estimates. A 30-day moving average was applied to the daily spreads. The CHs included in the analysis correspond to jumbo issues (at least a billion euros) by the largest banks and cajas, as well as “pooled-issues” of different small credit institutions, such as AYTCD and CEDTDA, where the managing societies are AyT and TdA, respectively.

1/ The spreads are computed relative to German treasury bonds of similar maturity (note that the German treasury bonds have almost zero spread relative to the Spanish treasury bonds).

V. CONCLUSIONS AND RECOMMENDATIONS

34. **The Spanish financial system seems to be resilient to a downturn in the housing market.** Large credit institutions appear solidly positioned to absorb an increase in mortgage-loan delinquency rates that could emerge from a fall in housing prices, increase in interest rates, or a downturn in the macroeconomic cycle. The resilience of credit institutions is underpinned by (a) prudent LTV ratios on the outstanding loan portfolio; (b) a moderate DTI ratio for the average household; (c) a low proportion of households with DTI ratios above 50 percent; (d) good level of capitalization; and (e) very high provisioning.

35. **Despite credit institutions' overall solid position, the increasing size of their mortgage portfolio poses some risks.** First, localized risks could emerge among the regional credit institutions with portfolio concentration in overvalued real estate markets, especially in areas of heavy concentration of second residences and real estate development. Second, a decline in house prices could leave highly-indebted households with negative home equity, especially those holding mortgages originated at high LTV ratios. Third, an increase in mortgage rates could further deteriorate the debt servicing capacity of households, since a majority hold floating rate mortgages. Finally, a fall in housing prices would likely have a negative impact on consumer confidence, economic activity, and employment, especially on the *construction sector*, which represents 10 percent of GDP and 13 percent of total employment—as shown by the stress testing analysis, unemployment is arguably the most significant macroeconomic risk factor for mortgage credit.

Main recommendations

36. **Many of the factors affecting house prices and measures that could be taken to dampen the rise lie outside the purview of the FSAP.** These include fiscal incentives that favor home ownership and discourage rental housing. The rental market is further constrained by legal difficulties to evict problem tenants and by the de facto minimum length of rental contracts (five years). Land policy also creates perverse incentives to limit the supply of residential and commercial land. The government has adopted several measures intended to boost the rental market and address the issue of land use.²⁰

37. **The following recommendations could help in making the market more flexible to changing price conditions.**

- The Bank of Spain should issue guidelines to credit institutions on best practices in mortgage lending. While large credit institutions are already complying with international best practices, such guidance could be useful for small or less-sophisticated institutions. The guidelines could provide detailed recommendations in areas such as risk management, risk policy, and information systems on mortgage lending, in general, and credit to developers, in particular. They could expand upon

²⁰ Some of these issues will be analyzed in the 2006 Spain Article IV Consultation.

the general recommendations presented by the Bank of Spain in the *2003 Memoria de Supervisión Bancaria*.

- The authorities could trim legally established fees for changes in mortgage contracts considered “*novación modificativa*” that are subject to “*aranceles notariales y registrales*.” In general, lower fees would facilitate changes in mortgage contracts, such as extending their maturity, which could be helpful in an eventual cyclical downturn that would reduce households’ debt servicing capacity.
- The authorities could remove the caps on credit institutions’ commissions for early mortgage repayment and for changes from fixed- to variable-rate mortgages. This measure is intended to allow the market to determine these commissions in order to (i) align them better with the risks incurred by credit institutions and (ii) avoid that banks cover these risks through higher lending rates, so that only those borrowers exercising the option of changing the terms of the mortgage contract have to pay for it. A draft reform of the mortgage market is being prepared by the authorities to address some of these issues.

38. **Eventually, stronger prudential measures could be considered if the current trends in household debt, real estate lending and house prices continue.** In this scenario, the Bank of Spain could complement its ongoing moral suasion with a further tightening of the capital requirements on housing and construction loans.

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