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ABBREVIATIONS*

€	Euro
AIAF	Asociación de Intermediarios de Activos Financieros (Association of Securities Dealers)
ABCB	Asset-backed comercial paper
ATA	Average total assets
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
bn	Billions
bp	Basis points
CBE	Banco de España Circular
CBSO	Banco de España Central Balance Sheet Data Office
CCR	Banco de España Central Credit Register
CDOs	Collateralised debt obligations
CDS	Credit Default Swap
CEIOPS	Committee of European Insurance and Occupational Pensions Supervisors
CIs	Credit institutions
CNMV	Comisión Nacional del Mercado de Valores (National Securities Market Commission)
CPSS	Basel Committee on Payment and Settlement Systems
DIs	Deposit institutions
ECB	European Central Bank
EMU	Economic and Monetary Union
EU	European Union
FASB	Financial Accounting Standards Board
FSA	Financial Services Authority
FSAP	Financial System Assessment Program
FSR	Financial Stability Report
FVCs	Financial vehicle corporations
GDI	Gross disposable income
GDP	Gross domestic product
GVA	Gross value added
GVAmp	Gross value added at market prices
IAS	International Accounting Standards
ICO	Instituto Oficial de Crédito (Official Credit Institute)
ID	Data obtained from individual financial statements
IFRSs	International Financial Reporting Standards
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
LBOs	Leveraged buy-out operations
LGD	Loss given default
m	Millions
MEFF	Mercado Español de Futuros y Opciones (Spanish Financial Futures and Options Market)
MiFID	Markets in Financial Instruments Directive
MMFs	Money market funds
NPISHs	Non-profit institutions serving households
PD	Probability of default
PER	Price earnings ratio
pp	Percentage points
ROA	Return on assets
ROE	Return on equity
RWA	Risk-weighted assets
SCIs	Specialised credit institutions
SMEs	Small and medium-sized enterprises
SIVs	Structured investment vehicles
SPV	Special-purpose vehicle
TA	Total assets
VaR	Value at risk
WTO	World Trade Organisation

* The latest version of the explanatory notes and of the glossary can be found in the November 2006 edition of the *Financial Stability Report.*

CONTENTS

Overview

The deepening of the financial turbulence that began last summer coupled with gloomier global growth prospects make for a more complex scenario for Spanish and foreign financial institutions alike. However, and as highlighted throughout this Financial Stability Report (FSR), the position of Spanish deposit institutions as at December 2007 means it may be said that they are facing this period of greater uncertainty from a sound position. Further, Spanish banks have avoided complex products whose valuation has proven highly problematic, they have not held off-balance sheet positions through specific vehicles (conduits and SIVs), they maintain very limited risks in leveraged buy-out operations (LBOs) and they have no exposure to monolines. That said, the property market slowdown poses certain additional challenges for Spanish banks.

Since the publication of the last FSR, *the international financial turbulence has intensified,* affecting various markets and institutions. In addition to tensions in the money markets, which continue, the credit and financing markets have seen their difficulties increase. There have been substantial reductions and strong oscillations in stock market prices, though the functioning of this market has not been subject to significant distortions, unlike the credit markets. These developments have had a very adverse impact on certain international banks with a strong presence in the investment banking business and on other financial market participants (monolines and hedge funds).

Growth forecasts for the world economy have been gradually revised downwards as the financial turbulence has heightened. Along with the factors of risk stemming from financial markets, uncertainty persists over the scale of the slowdown in the US economy and in relation to the correction of global imbalances and to the inflation outlook. Although the downside risks are marked, the developed economies can draw on significant factors of resilience in the current circumstances, such as the soundness of the business sector and greater economic flexibility.

Foreign financial assets are highly diversified, while their risk profile is very low. Accordingly, the challenges for Spanish banks stem largely from financing to households and firms in Spain, and also from the difficulties international financial markets are undergoing.

Credit extended by Spanish deposit institutions grew at a notable rate in 2007, though it has held on the slowing trend observed in previous FSRs. This slowdown is largely related to a reduction in the pace of credit to activities linked to the real estate sector, both in housing and property development, in step with the ongoing adjustment in this sector in Spain. A strategy of greater diversification of credit portfolios would appear to be under way, at the same time that financing granted to companies not in the construction and property development sectors is increasing.

Doubtful assets grew during 2007. The increase, due in part to the rise in interest rates, should be viewed having regard to several factors. First, it is a natural consequence of the strong growth of credit in previous years, given the time lag between when a loan is granted and when default problems emerge. Further, the starting levels of doubtful assets are very low, which logically affects the attendant rates of change. Also, the levels of provisioning for doubtful assets are very high, all the more so when the comparison is at the international level.

Doubtful assets ratios, despite rising slightly in 2007, are at low levels. They are likely to continue rising during the current year, owing both to the growth of doubtful assets and to the slowdown in credit. The data on financing granted in recent years, in terms of both mortgage and corporate loans, indicate that the deterioration in bad debts is not due to banks having pursued excessively lax lending policies. Moreover, these data also confirm that the situation in Spain is not comparable to that in the United States. This is so not only in respect of the sub-prime segment, which does not exist in Spain, but also when Spanish mortgages are compared with their highest-quality US counterparts. These differences have held over time, i.e. they are structural and are not in response to the cyclical position of the housing market in both countries.

Doubtful assets ratios in the real estate development segment, which have risen slightly, remain at very low levels. However, there are certain factors that make a detailed analysis of this sector worthwhile: the strong growth of credit to real estate development companies in previous years and the developments in the Spanish property sector, which is immersed in a process of adjustment. To assess the impact of a more-pronounced-than-expected deterioration in the sector's credit quality, several stress tests have been performed under very severe assumptions. Spanish deposit institutions, thanks to their provisioning level, are in a position to withstand very significant increases in defaults on credit to property developers.

Spanish banks will be affected by the general conditions in international financial markets, which at present have witnessed a notable contraction in liquidity. The Spanish banking system is not immune to this situation, though its liquidity levels have proven sufficient. Part of the explanation is due to the appropriate financing structure Spanish banks have maintained in recent years, with very long-dated financing accounting for a significant weight, despite the higher cost entailed. In Spain, the predominant banking model is a retail one, which gives banks greater room for manoeuvre to step up the raising of deposits.

Spanish banks have financed some of the growth in their activity through the wholesale markets, pursuing a policy of active diversification of their sources of financing. One widely used means has been asset securitisation which, in Spain's case, evidences significant particularities. Thus, banks have not used securitisation as a risk-transfer mechanism, and nor have they developed the types of structures and complex products present in other banking systems. And reinforcing this is the high quality of the portfolios that have been securitised.

Currently, the higher cost of financing through securitisations and the withdrawal from the market of a good number of investors in these products have led banks to continue securitising, in order to retain bonds and thus, on a precautionary basis, have collateral with which to obtain — if necessary — liquidity from the Eurosystem or from other financial intermediaries (i.e. secured lending). Net Eurosystem loans represent a very low weight in Spanish banks' total balance sheet (1.3%), continuing to stand below Spain's relative weight in the Eurosystem. Conversely, other countries' banks obtain funds above their relative weight, without that denoting any problem either for these banks or for the Eurosystem as a whole. It should be clarified that these operations are part of the habitual framework in which the Eurosystem implements its monetary policy.

Also, in present international financial market conditions, Spanish banks have been resorting to a greater extent to short-term financing in the wholesale markets. This means that there is a need for appropriate liquidity management, and for a resumption of financing at longer maturities, despite the higher cost, once market conditions return to normal.

Spanish banks are in a good starting position on the basis of an analysis of their profitability and solvency. From the standpoint of *profitability,* their results in 2007, unlike those for other international banks, were not affected by the sub-prime crisis. Accordingly, the notable growth in earnings was underpinned by the sound performance of the main operating margins, and by improved efficiency.

Solvency remains well above the regulatory minimum levels, while Spanish banks' capital and reserves as a proportion of assets stand above that of most of the major banks in other developed countries. What is more, the soundness of Spanish banks is manifest in the stress tests conducted which, despite considering adverse macroeconomic scenarios, continue to show their notable resilience.

The financial turbulence is not only complicating the banking industry's operating environment; *other market participants* (insurance companies, and pension and investment funds) are also facing a more complex setting. In Spain, however, the exposure of these intermediaries to the sub-prime segment is also very marginal.

To date, the turbulence has affected financial markets, but not the infrastructures underpinning them. Nonetheless, supervisors and regulators continue working to bolster their correct functioning, and to adjust and improve the regulations bearing on market participants.

1 Macroeconomic risks and financial markets

International financial turbulence persists and is worsening against the background of a less dynamic world economy.

Since the last FSR the *international financial environment* has been marked by the persistence and deepening of the turbulence that began in the summer of 2007. Tensions have heightened in the credit markets and in the short-term financing markets linked to securitised assets (ABCP), and they persist in money markets. They have also passed through to new segments (hedge funds) and other leveraged structures.[1] Certain banks exposed to structured products linked to the transmission of credit risk have posted heavy losses which, on occasions, have required capital increases, largely financed by the sovereign funds of emerging economies. The turbulence has also strongly impacted other financial agents, such as bond insurance agencies (monolines). These risk seeing their credit rating downgraded and, were this to come about, that would be an additional setback for the trading of the financial products that they insure. All these developments have come about in a less buoyant world economy, the result in part of tighter financing conditions and of a downward revision practically across the board of growth expectations, which in turn makes resolving the turbulence in the financial system more difficult.

The factors at the root of the turbulence have worsened.

The factors at the root of the financial turbulence have worsened. In the United States, subprime mortgage loan default rates have increased significantly and the housing market continues to adjust, both in terms of activity and of prices. Moreover, the lack of trust in structured products has been exacerbated in part by the valuation problems affecting these instruments of complex design and scant transparency.

Risk indices in the credit markets have increased strongly, marking their peak since the start of the turbulence, and corporate bond spreads have also risen, particularly in the financial sector. Furthermore, the persistence of the turbulence has meant that, since early 2008, tensions have been visible in both the low-grade and high-grade segments (see Chart 1.1.A).

Central banks are reacting to ease money market tensions.

Tensions in interbank markets have not abated as a lack of trust persists among banks, entailing a high counterparty risk premium (see Chart 1.1.B). The main central banks have reacted to these tensions since they emerged in August 2007 by taking numerous measures, including most notably a more active management of liquidity in interbank markets and an increase in the proportion of funds supplied in long-term refinancing operations. Moreover, certain central banks, such as the Federal Reserve and the Bank of England, expanded the range of collateral acceptable for liquidity operations and broadened the number of eligible counterparties. There has also been notable international cooperation among the main central banks which took the form of the setting up of currency swap lines between the Federal Reserve, the ECB and the Bank of Switzerland. In March, faced with worsening liquidity tensions, the main central banks announced further measures. In the case of the Federal Reserve, this involved setting up a new instrument — a term securities lending facility — through which it will increase the volume, duration and collateral admitted for liquidity provision. An expansion in the volume of the aforementioned swaps facilities was also announced.

The tensions have spread to other markets.

The impact of the turbulence on other financial markets has been considerable. A flight to quality has been witnessed which, among other aspects, has contributed to reducing short- and medium-term interest rates on public debt securities. The repercussions have spread to new segments which had hitherto shown some resilience, such as stock markets and US

1. Box 1.1 gives a brief explanation of these and other terms.

VOCABULARY REFERRING TO PRODUCTS AND RECENT DEVELOPMENTS RELATING TO THE PRESENT SITUATION IN INTERNATIONAL FINANCIAL MARKETS BOX 1.1

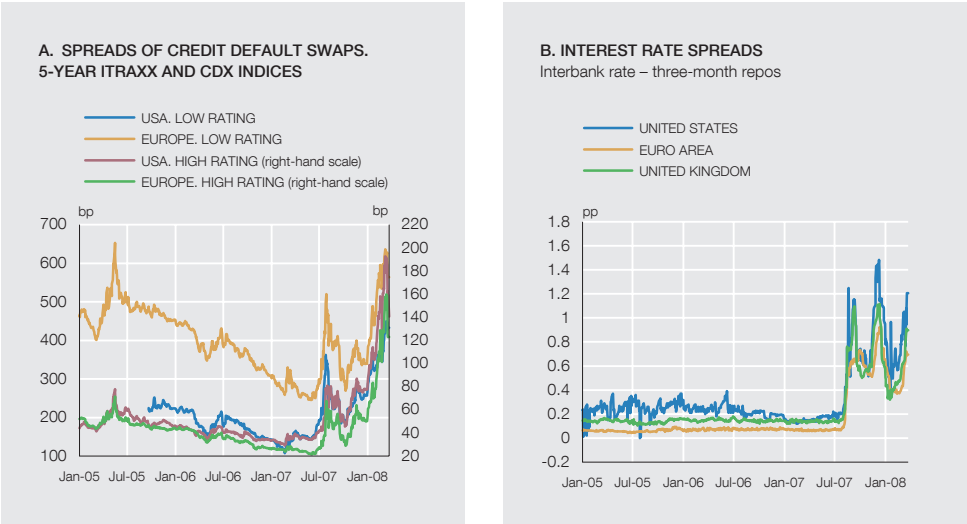
Sub-prime mortgage	US high-risk mortgages granted to households characterised by a credit record of defaults, as well as low or nil capacity to finance a part of the purchase of the house and low (and unstable) income in relation to the amount of debt assumed.
Conduits and special investment vehicles (**SIVs**)	Institutions whose activity is based on raising funds through issuance of short-term commercial paper (ABCP) and investing in long-term assets (asset-backed bonds, CDOs, etc.). Unlike SIVs, conduits usually have liquidity lines with the banks that sponsor them.These special-purpose entities were pursuing an activity very similar to that of banks (short-term funding and long-term investment) without having the required capital, access to central bank liquidity or suitable supervision.
Leveraged buy-out (**LBO**)	Corporate acquisition operations carried out through external financing in which the indebtedness of the acquired company is raised substantially. These activities fall within private equity operations, in which a group of investors buys a company with the aim of restructuring it, making it more profitable and later selling it.
Pipeline risk	Possibility that once the originator of a certain operation (for example, of an LBO) has assumed the related debt, it cannot syndicate it or place it with other investors, due to changes in market conditions.
Asset-backed securities (**ABS)**	Bonds arising in the process of asset securitisation. When mortgage loans are securitised, the bonds are called RMBS (residential mortgage-backed securities).
Asset-backed commercial paper (**ABCP**)	Securitisations funded through the issuance of short-term commercial paper. As there is a high and continuous volume of commercial paper issuances and redemptions, the liquidity risk is very high.
Collateralised debt obligations (**CDO**)	Securitisation structure in which the portfolio has little granularity and, moreover, the assets that compose it are heterogeneous. Collateralised loan obligations (CLOs), in which loans are securitised (corporate finance, LBO, etc.) are distinguished from collateralised bond obligations (CBOs), when corporate or high-risk (high-yield or junk) bonds, among others, are securitised.
CDO of ABS	CDO in which bonds coming from other securitisations (ABS) are incorporated into the securitised portfolio.
CDO squared	CDO in which other CDOs are incorporated into the securitised portfolio.
Synthetic securitisation	Financial structure through which credit risk is transferred, using for such purpose a credit derivative (typically a CDS).
Credit default swap (**CDS**)	Credit derivative in which the seller of protection, in exchange for a premium, undertakes to make payment to the buyer of protection if a certain credit event occurs (for example, the default on a bond, or a change in its credit rating).
Monolines	Insurance companies authorised to offer credit enhancements in certain bond issues. They initiated their activity in the area of US municipal bonds, but in the last few years they have increasingly turned to insuring asset-backed bonds, CDOs, etc. Their success depends on having a high credit rating.
Derivative product companies (**DPCs**)	Companies that sell protection against credit risk using derivatives (typically CDSs). In some ways they are similar to monolines, although they assume the risk through derivatives and not through an insurance policy.

municipal bonds, in this latter case as a result of the difficulties facing monolines. As from January 2008, there were strong oscillations in stock prices and significant losses, largely as a result of the (downward) revision of growth expectations and of the greater risks associated with maintaining the pace of activity. The emerging markets were also affected, in terms both of stock markets and of debt, although sovereign debt spreads remain relatively contained and have reacted with notable vigour in the periods in which improvements have been recorded in the developed markets.

The Federal Reserve is cutting interest rates. The

The Federal Reserve continued with the gradual cuts to official interest rates it initiated in August 2007, which quickened as US growth prospects worsened. In January 2008 it twice cut

RISK PREMIA ON CREDIT AND INTERBANK MARKETS CHART 1.1



SOURCES: Datastream and Bloomberg.

dollar is depreciating and the slope of the yield curve is increasing.

interest rates for a total of 125 bp, with a further 75 bp shaved off in March. The federal funds target rate has thus fallen to 2.25%, compared with 5.25% in July 2007. That has contributed to a notable and generalised depreciation of the dollar, to an all-time low against the euro, and to a greater slope in the debt yield curve, insofar as the decline in long-term interest rates has been appreciably less than that in short rates. The Bank of England also cut its official rate by a further 25 bp to 5.25%.

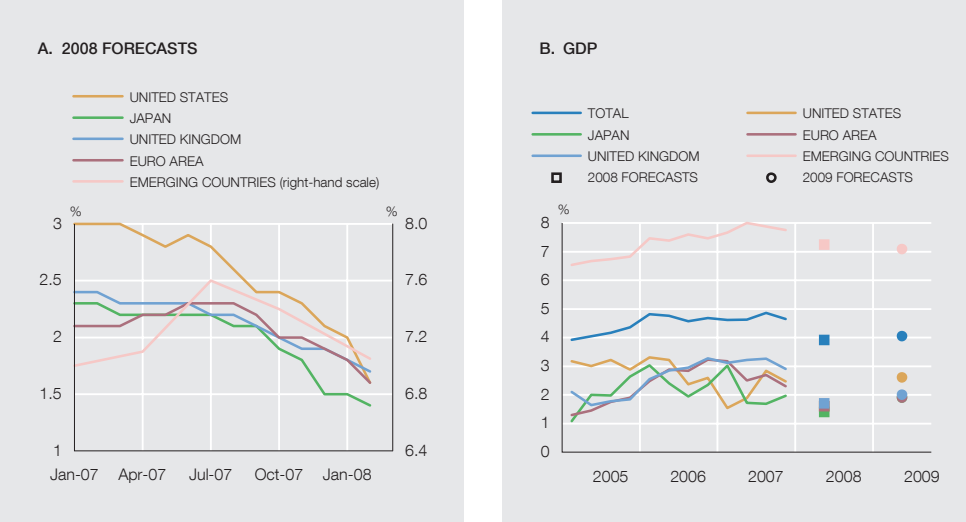
World growth forecasts have been revised progressively downwards, especially in the United States.

World growth forecasts have been progressively revised downwards as financial turbulence has become more accentuated (see Charts 1.2.A and 1.2.B), although the central scenario of most analysts incorporates only partially the deterioration in global financial conditions, ruling out the possibility of a severe, protracted and widespread credit squeeze, which is the biggest risk facing the global economy. Taking a consensus view of forecasts, the slowdown is expected to be more marked in the developed economies, in particular in the United States, while the emerging economies may be expected to sustain relatively high rates of activity, which is a favourable factor in a particularly complicated global picture. Likewise, the financial soundness of companies in the real sector and the greater flexibility of economies are favourable factors of some weight in the current circumstances. In any event, the uncertainty surrounding the persistence of the financial turbulence and its impact on the real economy means that the downside risks are marked. In the euro area, provisional Eurostat data show that in 2007 Q4 the pace of GDP slowed to a year-on-year rate of 2.3%, 0.4 pp less than in Q3 (see Chart 1.3.A). The latest ECB macroeconomic projections indicate that the growth rate of GDP in the euro area will continue to fall, standing for the year as a whole at between 1.3% and 2.1%.

There are downside risks to world economic growth.

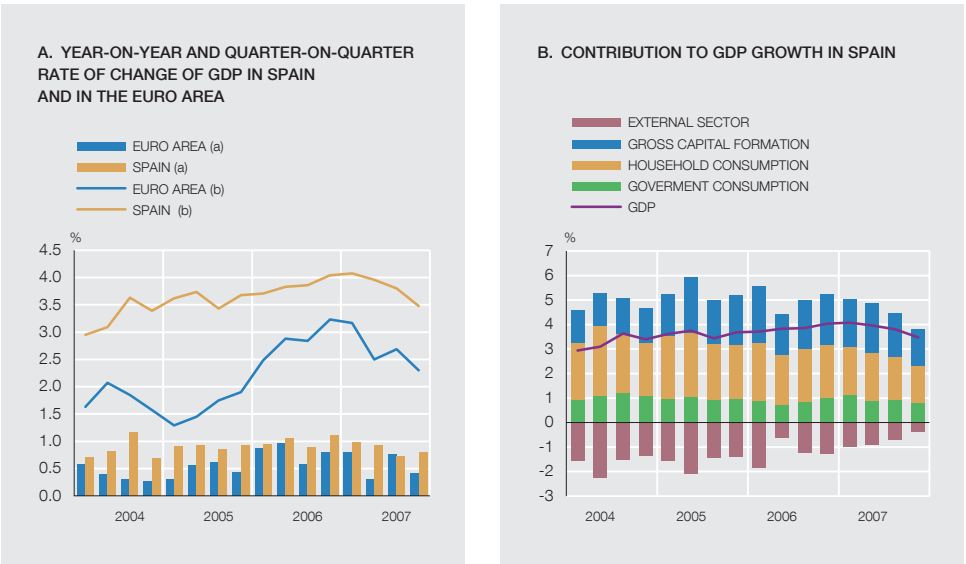
Another major risk, which stems in part from the financial turbulence and which might interact with it, is the possibility of the decline in US economic activity spreading to economies in the rest of the world, and of an abrupt and disorderly correction of global imbalances. Adding to this factor of uncertainty are oil prices (at an all-time high) and commodity prices, and the increases in food prices, insofar as they might adversely affect inflation. Indeed, the inflationary pressures observed in the second half of the year, and the possibility that these may take root in expectations about prices in the medium term, pose another significant risk as they constrain the monetary policy room for manoeuvre.

WORLD GDP AND FORECASTS CHART 1.2



SOURCES: Datastream and Consensus Forecast.

RATE OF CHANGE OF GDP IN SPAIN AND IN THE EURO AREA CHART 1.3



SOURCES: Instituto Nacional de Estadística, Eurostat and Banco de España.

a. Quarter-on-quarter rates.
b. Year-on-year rates.

Despite the less favourable setting, the Spanish economy continued to grow at a high — though slowing — rate.

In the case of the Spanish economy, and despite the less favourable external macroeconomic setting and the financial turbulence, GDP maintained a dynamic pace during the second half of 2007, although it continued on the moderately slowing trend observed throughout the year. In Q4 GDP posted a year-on-year growth rate of 3.5%, 0.3 pp down on the previous quarter and 1.2 pp above the euro area figure (see Chart 1.3.A).

GDP was more balanced, which was accompanied by less dynamism in job creation.

Spanish GDP developments during the second half of 2007 were the outcome, in terms of its components, of a reduction in the expansion of domestic demand, in respect of both consumption and gross fixed capital formation, which was not fully offset by the improvement in the negative net contribution of the external sector (see Chart 1.3.B). The growth rate of em-

ployment averaged 3% for the year, although in the final quarter there was a slight rise in the unemployment rate, which ended 2007 at 8.6%.

Private-sector financing conditions have tightened moderately…

The financial turbulence has made for a moderate tightening of loan concession criteria, but so far it has not entailed a significant increase in corporate and household financing costs, beyond that derived from the rise in interbank interest rates. In any event, the latter returns have fallen in 2008 to date.

… contributing to lessening the rate of increase of indebtedness, while house prices have continued to slow gradually.

Against this background, the rate of increase of household and corporate debt ratios has continued easing in recent months. The ongoing and gradual moderation in prices has continued in the housing market, with their year-on-year growth rate standing at 4.8% in December 2007, over 4 pp less than at end-2006.

The macroeconomic projections of the Banco de España point to a somewhat more marked slowdown in GDP in the coming quarters.

In sum, the Spanish economy ended 2007 with a robust expansion of GDP, albeit on a gradually slowing course. The macroeconomic projections of the Banco de España suggest that economic dynamism will be maintained in the coming quarters, though the slowdown in activity will be more pronounced. In any event, these projections are subject to considerably greater uncertainty than in the past due to the difficulties of anticipating the scale of certain phenomena such as, in particular, the impact of the financial turbulence.[2]

2. For more details see "Spanish economic projections report", *Economic Bulletin,* April 2008, Banco de España.

2.1 Deposit institutions

2.1.1 BANKING RISKS

The *consolidated balance sheets* of Spanish deposit institutions (Table 2.1) show a high rate of activity in 2007, with assets growing by 14.7%. Business in Spain, despite posting a slight slowdown in assets compared with 2006 (1.7 pp), is growing more sharply than business abroad (15.8% in Spain, against 10.7% abroad).

The pace of activity in 2007 is high, though slowing.

The growth of *total assets* is largely attributable to the rise in financing to the private sector (credit and fixed income), which increased by 16% in 2007. However, lending to the private sector, moving on a trend already observed in the previous FSR, slowed in relation to 2006, falling from growth of around 25% to 16%. This deceleration is centred on business in Spain, especially in secured lending.

Doubtful assets are growing sharply, but doubtful assets ratios remain at very low levels and coverage is high.

Doubtful assets are growing more sharply than in 2006 (44.6%), both in business in Spain and in total business. The higher growth of doubtful assets is largely due to the strong increase in credit in past years, and to the course of interest rates in the euro area. Nonetheless, the rate of change of doubtful assets should be assessed taking into account their low starting levels, which translates into a doubtful assets ratio[1] for total business at the consolidated level of 0.78%, only 17 bp higher than that recorded in 2006. In any event, the provisions for bad debts amply cover the volume of doubtful assets.

The slowdown in credit referred to was partly offset by the growth of fixed income, which had declined in 2006 in absolute terms. Investments contributed to the increase in total assets, and their notable growth, relating to the acquisitions by certain banks during 2007, translated into an increase in their weight in bank balance sheets (to 1.6%).

Banks have increased their financing from the Eurosystem, but the weight in the balance sheet is very low…

Finally, among the most expansionary items on the assets side is that of central banks. From the standpoint of liabilities, too, this heading posts a notable increase, reflecting the resort by Spanish banks to Eurosystem liquidity. The turbulence in financial markets has led to a change in the distribution of liquidity in the Eurosystem as a whole by country and by bank. Thus, Spanish banks have increased the liquidity they receive from the Eurosystem, raising net lending (the difference between the funds received in liquidity providing operations and those delivered in absorbing operations) as of December 2007 to €44,038 million which, nonetheless, accounts for a very small proportion of the total balance sheet (only 1.3% in December 2007). What is more, and as is analysed in detail in this FSR, the relative weight of the liquidity obtained from the Eurosystem by Spanish banks is, unlike in other countries, still below the relative weight of Spain's GDP in the Eurosystem's overall GDP.

Also as a result of the financial turbulence, financing via negotiable securities has also grown less sharply than in 2006. The related growth rate stands, nonetheless, at 19.6%, reflecting the fact that Spanish banks have continued issuing securities. Subordinated financing grew by 13.5%, a similar increase to that posted the previous year (14.5%).

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1. In the FSR the concept of default is used as a synonym for doubtful assets, although technically, doubtful assets include other assets besides those in default.

CONSOLIDATED BALANCE SHEET TABLE 2.1

Deposit institutions

ASSETS	DEC-07	(CHANGE) DEC-07/ DEC-06	RELATIVE WEIGHT DEC-06	RELATIVE WEIGHT DEC-07
	(€m)	(%)	(%)	(%)
Cash and balances with central banks	88,587	80.0	1.7	2.7
Loans and advances to credit institutions	249,345	2.0	8.5	7.5
General government	49,806	-1.4	1.7	1.5
Other private sectors	2,210,957	15.5	66.2	66.7
Debt securities	355,643	9.1	11.3	10.7
Other equity instruments	105,497	2.4	3.6	3.2
Investments	54,388	96.0	1.0	1.6
Derivatives	92,079	27.0	2.5	2.8
Tangible assets	35,984	-1.1	1.3	1.1
Other (a)	73,834	7.7	2.4	2.2
TOTAL ASSETS	3,316,120	14.7	100	100
MEMORANDUM ITEMS				
Financing to private sector	2,323,964	16.0	69.2	70.1
Financing to general government	204,298	0.4	7.0	6.2
Total doubtful assets	22,241	44.6	0.5	0.7
Total doubtful assets ratio	0.78	17.0 (c)	—	—
Provisions for bad debts and country risk	42,029	17.6	1.2	1.3

LIABILITIES AND EQUITY	DEC-07	(CHANGE) DEC-07/ DEC-06	RELATIVE WEIGHT DEC-06	RELATIVE WEIGHT DEC-07
	(€m)	(%)	(%)	(%)
Balances from central banks	91,973	111.9	1.5	2.8
Deposits from credit institutions	468,087	6.1	15.3	14.1
General government	89,432	15.3	2.7	2.7
Other private sectors	1,468,944	13.0	44.9	44.3
Marketable debt securities	659,235	19.6	19.1	19.9
Derivatives	105,909	33.8	2.7	3.2
Subordinated debt	80,645	13.5	2.5	2.4
Provisions	33,679	-8.6	1.3	1.0
Other (a)	109,895	-7.0	4.1	3.3
TOTAL LIABILITIES	3,107,799	14.3	94.0	93.7
MEMORANDUM ITEM				
Eurosystem net lending (b)	44,086	108.1	1.3	0.7
Minority interests	10,860	92.6	0.2	0.3
Valuation adjustments relating to total equity	16,940	-24.6	0.8	0.5
Own funds	180,522	23.7	5.0	5.4
TOTAL EQUITY	208,322	19.7	6.0	6.3
TOTAL LIABILITIES AND EQUITY	3,316,124	14.7	100	100

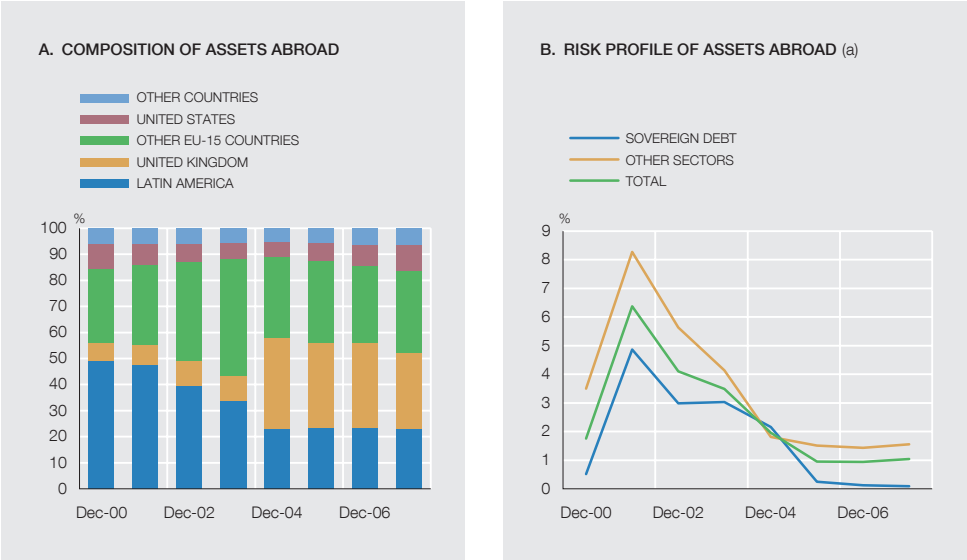
SOURCE: Banco de España.

a. The remaining assets and liabilities entries not explicitly considered, including valuation adjustments, are included in "Other".
b. Difference between funds received in liquidity providing operations and funds delivered in absorbing operations.
c. Difference calculated in bp.

… while deposits as a proportion of total assets have stabilised, following the reductions in previous years.

For the first time in recent years, the weight in the balance sheet of private-sector deposits has held virtually unchanged in relation to the previous year (44.3%), as they grew at a rate of 13%, similar to that in 2006. The business model pursued by Spanish banks, based on retail operations, with an extensive network of offices, close contact with customers and a high managed percentage of investment funds, makes it conceivable that, if the turbulence persists, banks will have the capacity to obtain more financing via deposits. This, combined with the slowdown in the demand for credit, will contribute to alleviating the need for financing on the wholesale markets while the current conditions in these markets remain in place.

COMPOSITION AND RISK PROFILE OF ASSETS ABROAD CHART 2.1
Deposit institutions



SOURCE: Banco de España.

a. Weighted average of default probabilities. An explanation of the calculation of the risk profile of assets abroad can be found in *Estabilidad Financiera* , No. 7, November 2007.

During 2007, Spanish deposit institutions increased their own funds for accounting purposes (at a rate of 23.7%) more sharply than in 2006, thereby raising their relative weight in the balance sheet (from 5% to 5.4%).

No significant risks are discernible in foreign financial assets.

The sharper growth of business in Spain compared with that pursued abroad means that the relative weight of the latter has declined slightly to 21% of total assets. Over the course of recent years Spanish banks have diversified their activity abroad, lessening their exposure in emerging countries, in particular in Latin America, in order to increase their presence in Europe, and more recently in the United States (see Chart 2.1.A). The risk profile of assets abroad remains very low (see Chart 2.1.B).

The slowdown in credit is the result of a process of gradual adjustment…

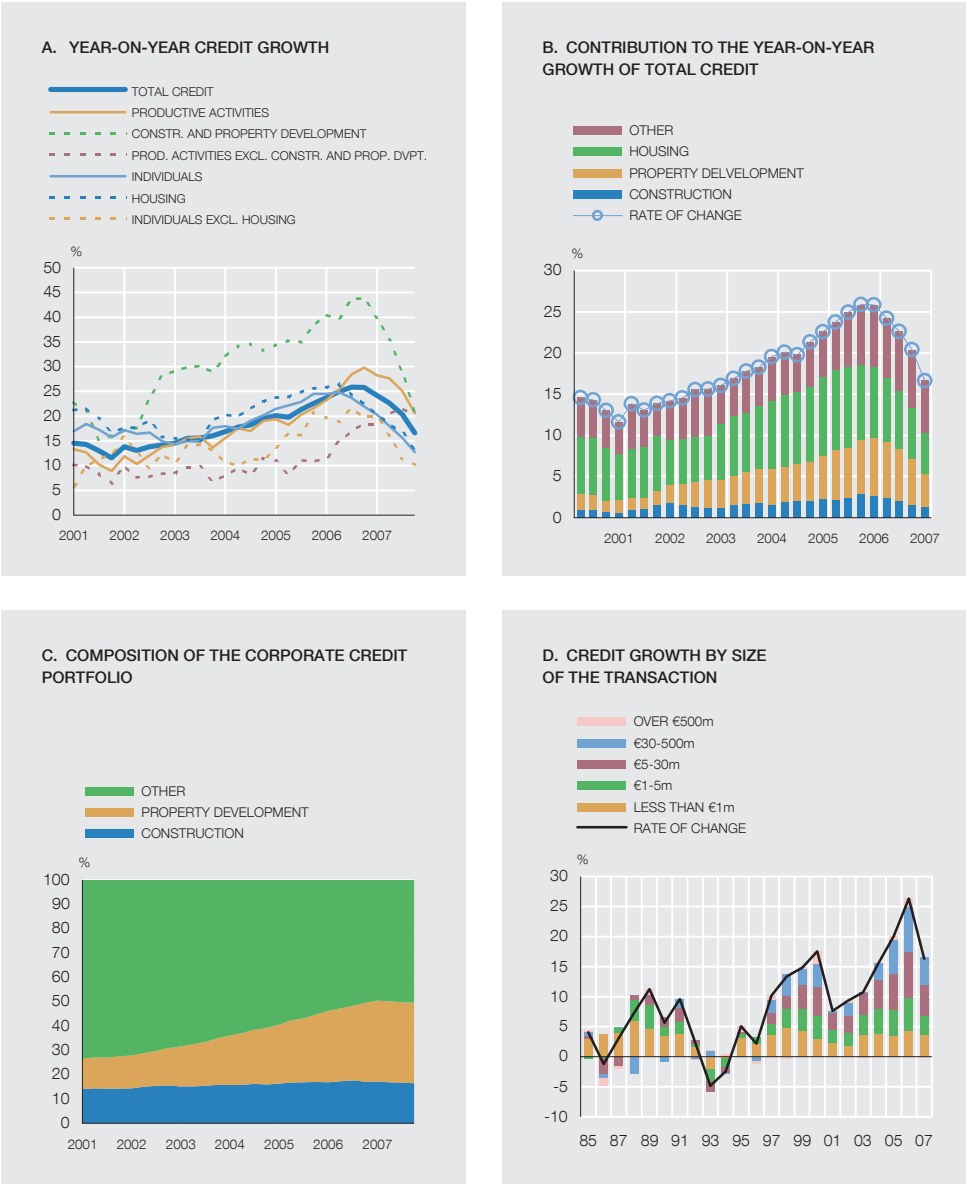
Credit to the resident private sector in Spain continued slowing in the second half of 2007 (from 22.6% in June to 16.6% in December; see Chart 2.2.A), a situation already observable in the first half of the year (25.8% in December 2006). The slowdown has thus come about gradually, which highlights the fact that it is a process of progressive adjustment towards a less expansionary situation than that experienced in recent years, when very high credit growth rates were recorded. Nonetheless, the figures for December 2007 show credit to be growing at an appreciable pace.

… concentrated particularly in mortgage credit.

The lower growth rate of credit is concentrated particularly in that extended with a mortgage guarantee (from 25% in December 2006 to 15% in the same month in 2007). The foregoing is reflected in a reduction in the contribution to total credit growth of activities related to the real estate sector (see Chart 2.2.B).

Confirming the trends dating back to end-2006, financing to households intended for house purchases has slowed (from 22.5% December 2006 to 13.4% in December 2007), but so too, and on a similar scale, has consumer credit (durable and current alike). In the corporate sector, credit for construction and real estate development, unlike financing ex-

GROWTH AND COMPOSITION OF CREDIT BY PURPOSE CHART 2.2
Deposit institutions. ID



SOURCE: Banco de España.

tended to the other sectors, has slowed notably (from 43.9% in December 2006 to 20.9% 12 months later). The decoupling existing in previous years between the growth rate of financing for house purchases and credit to the business real estate sector is thus tending to be corrected.

The lower growth of real estate activities is in response to the change of pattern in the Spanish economy and to a new diversification strategy by banks.

The slowdown in real estate-related activities in the broadest sense is consistent with developments in the property market. Likewise, it shows the new diversification strategy that Spanish banks are pursuing, which translates into a progressive, though still incipient, loss of relative weight of construction and real estate development in the overall financing granted to the business sector (see Chart 2.2.C). Thus, for business activities other than construction and development, the financing extended has quickened (from 18.5% in December 2006 to 20.3% in December 2007), with the year-on-year rate of change holding virtually stable from June to December 2007.

The risks associated with large-scale corporate financing and LBOs are very contained.

In previous years, a portion of the growth of credit to the corporate sector came about due to large-scale financing operations relating to corporate moves in different industries, included among which are LBOs.[2] In contrast, the arrangement and completion of large-scale financing operations ground to a halt in 2007 (see Chart 2.2.D). From the standpoint of the stability of the Spanish banking system, the risks in this segment are very contained. The reasons for this are that the financing has been successfully syndicated, normally among foreign credit institutions (only about 17% of the financing granted is from domestic institutions), that it has been conducted in the main in relation to highly profitable companies and that the risk retained is relatively low. Historically, moreover, the doubtful assets ratio of large-scale credit operations has been virtually nil.

Against a background of interest-rate rises, doubtful assets are growing. Nonetheless, they are also doing so because of the strong growth of credit in the past...

Doubtful assets in business in Spain continue to increase (53% in 2007), due to developments in those from the resident private sector (see Chart 2.3.A). This tendency is related, on one hand, to the recent dynamics of interest rates in the euro area, but at the same time, and significantly, it is the natural consequence of the strong growth of credit in the past, given the lag between the expansion of lending and the emergence of bad debts. Across the different sectors of activity, it can be seen that those in which the expansion of credit was sharper in the past are now posting higher rates of change in their doubtful assets. In this respect, under the category of households, doubtful assets are growing more sharply in credit for house purchases. In the business sector, it is the construction and property development sectors that evidence the biggest increases, while in step with the financial soundness of Spanish non-financial corporations, other business activities are posting very moderate increases in respect of doubtful assets.

… while starting levels are very low in bank balance sheets,…

In any event, the rate of change of doubtful assets should be interpreted bearing in mind their very low volumes in Spanish bank balance sheets (see Chart 2.3.B), in particular in financing for house purchases and in construction and property development activities.

… as well as in comparison with other European banking systems…

An international comparison of doubtful assets ratios merely reinforces the low starting level of Spanish banks. The Spanish banking system has the lowest doubtful assets ratios among the developed European banking systems (see Chart 2.3.C). Of particular note is the difference with the banking systems of the three biggest euro area countries, whose doubtful assets ratios are five times bigger.[3]

… and in relation to the funds set aside to cover them.

Further, the level of *coverage of doubtful* assets is far higher at Spanish banks. Spanish prudential regulations require that credit risk be appropriately covered, but not only that incurred and identified in specific operations, but also that which, having been incurred, cannot be identified in specific operations. Currently, then, provisions for bad debts cover the volume of doubtful assets more than twice over (see Chart 2.3.D), whereby if the latter were to increase twofold, banks at the aggregate level would have the necessary provisions, without this bearing on their results. What is more, if a loss given default (LGD) of around one-third is considered for the overall portfolio (which is very demanding in the case of the mortgage portfolio), the volume of doubtful assets covered by the funds set aside rises sixfold. Conversely, for the average of European banks, the coverage of doubtful assets is somewhat below 65% of doubtful assets.

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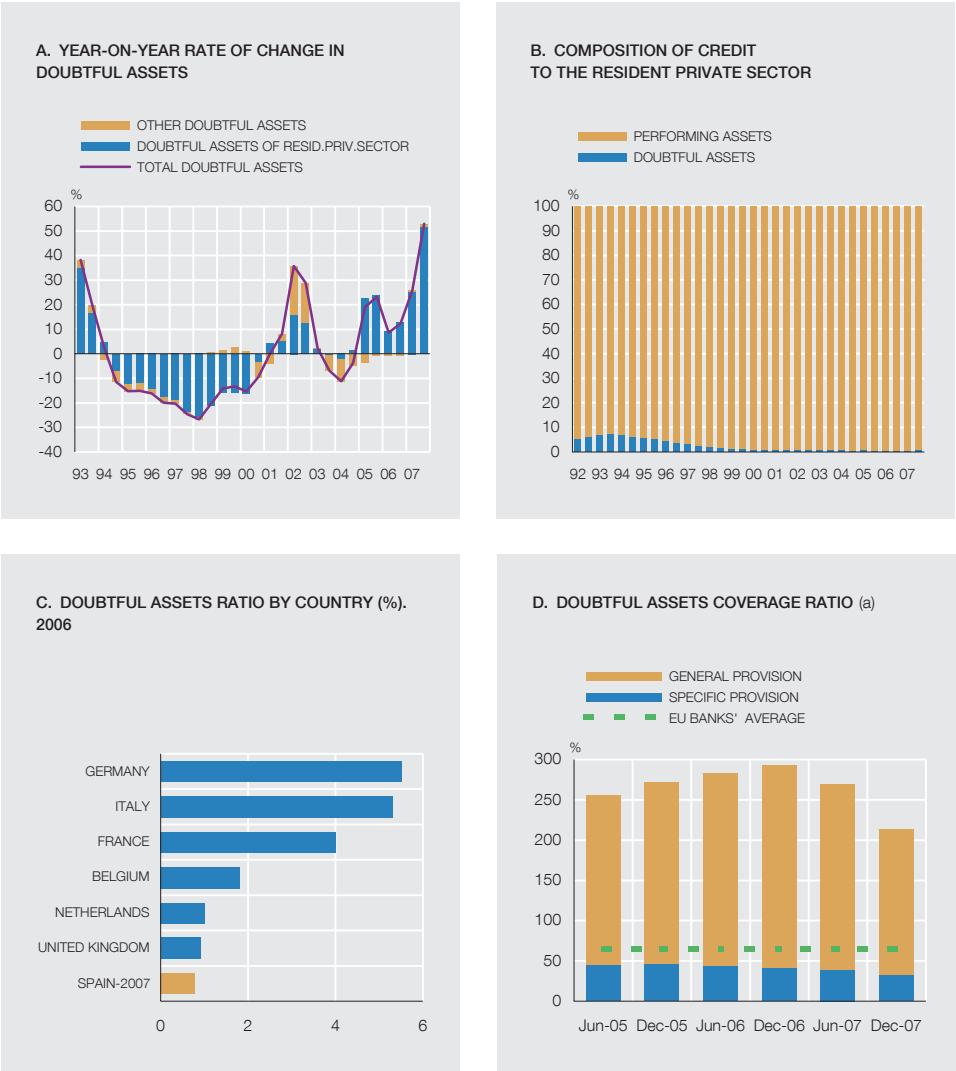
2. See Manzano, María-Cruz, "La evolución de las operaciones de leverage buy out y su financiación: posibles implicaciones para la estabilidad financiera", published in *Estabilidad Financiera,* No. 13. **3.** Some differences in the doubtful assets ratios can be attributed to different accounting definitions and practices. For example, some countries may permanently hold doubtful assets on their balance sheet once full provision has been made for them (they would only disappear if the related amount was recovered). In Spain, the usual practice is to derecognise them (they become bad debts) once four years have elapsed after their going into arrears. However, even adding bad debts to doubtful assets, the new ratio would continue to be very low in comparison with that of other countries.

DOUBTFUL ASSETS
Deposit institutions. ID

CHART 2.3



SOURCES: IMF, ECB and Banco de España.

a. The coverage ratio is defined as the ratio of provisions to total doubtful assets.

Despite rising slightly, doubtful assets ratios remain at very low levels, all the more so if a broader timespan is adopted…

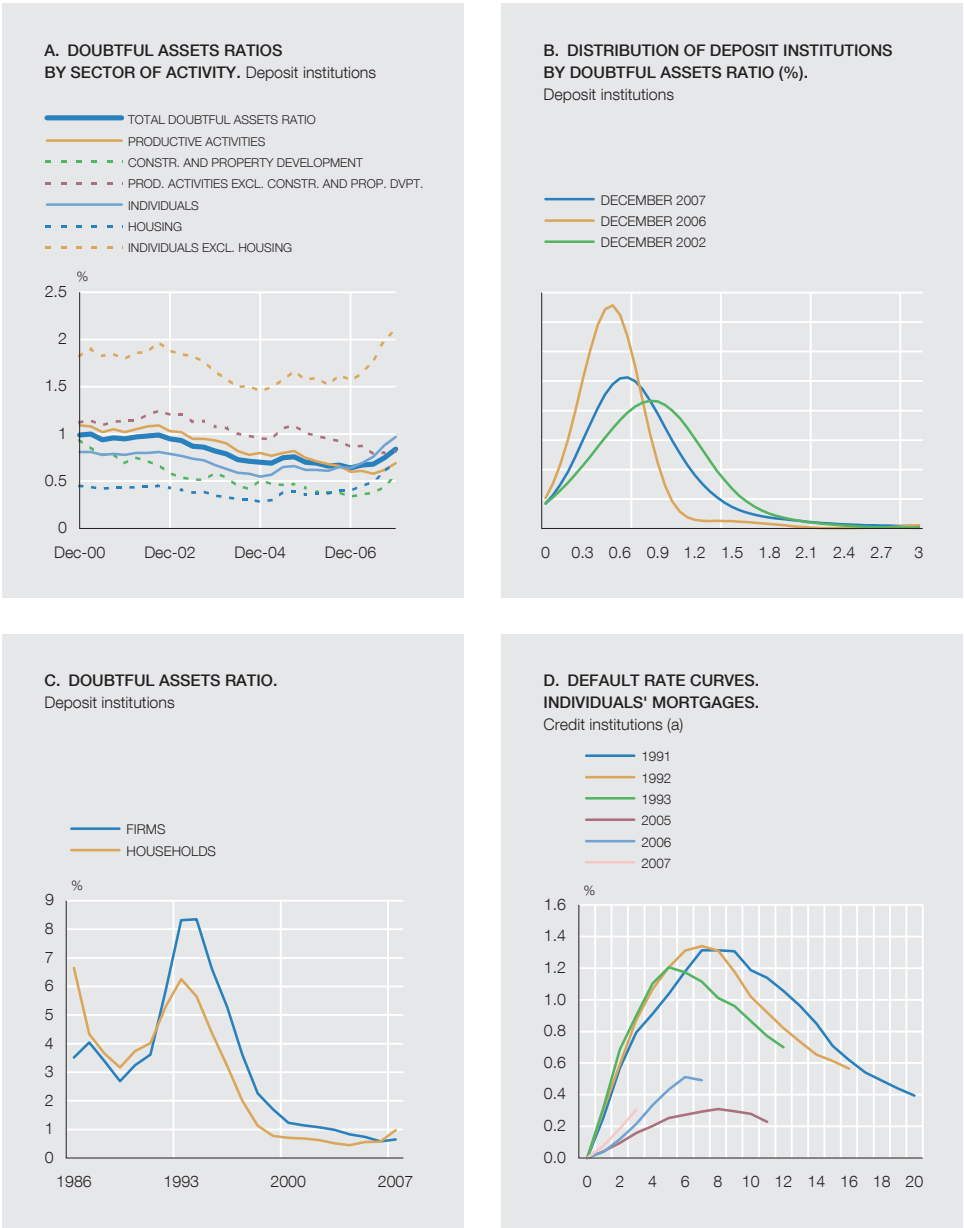
… both for banks considered individually…

In spite of the growth of doubtful assets, and of the slight rise in *doubtful assets ratios* over the last year, these ratios remain at low levels (0.84% for total credit to the resident private sector in December 2007). In terms of the different sectors of activity (see Chart 2.4.A), the biggest rise is in credit to households, both for house purchases (0.69%) and, especially, in lending for other purposes (2.11%). The increase in bad debts of non-financial corporations, which was less than for households, is concentrated in its entirety in the construction and property development sectors, which nevertheless show very low ratios (0.72% and 0.49%, respectively). The distribution of the doubtful assets ratio across banks and the recent trend thereof confirm that the low levels of these ratios are generalised (see Chart 2.4.B).

If a broader historical perspective is adopted, the lower levels of the current doubtful assets ratios are once again corroborated. Beyond the fact that the macroeconomic position in Spain at present is not comparable with that in the early 90s (budget deficit and high unemployment rate), if more adverse developments than expected were to ensue, the starting levels of the

DOUBTFUL ASSETS RATIOS AND DEFAULT RATE CURVES
ID

CHART 2.4



SOURCE: Banco de España.

a. X-axis: the number of quarters since the loan was granted.

ratio would be seen to be significantly lower (see Chart 2.4.C). This can be explained, first, by the fact that Spain's membership of an area of stability such as the euro area has entailed a significant structural change (a notable decline in interest rates) and, further, because over these years Spanish credit institutions have significantly improved their control and risk management mechanisms.

… and for the credits recently extended.

The foregoing is further substantiated when the *default rate curves for new loans* granted in the years prior to the 1993 crisis are compared with those currently being recorded. These curves, approximated with data from the Banco de España CCR, allow the monitoring over time of the new loans extended on a certain date and the determination, at each point in time,

of the proportion accounted for by doubtful assets in relation to the total amount of those loans that are being monitored.[4] Hence, for the mortgage portfolio,[5] in the two years prior to 1993 there was a very marked increase in the curves, while the levels attained were significantly greater than those observed in 2007 (see Chart 2.4.D). Accordingly, the deterioration in the new mortgages extended in the early 90s was appreciably more marked than that being recorded today. If the default rate curves for new loans granted to corporations are analysed, the conclusion is the same: both the slope of the curves and the level attained are considerably lower in the last three years than those observed between 1991 and 1993.

The doubtful assets ratios for the overall portfolio and for recent loans are far lower than those recorded in the United States...

Setting the trend of mortgage defaults against that observed in the United States, which is undergoing particularly intense difficulties in the real estate market, it is clear there are no similarities between the two cases (see Chart 2.5.A). If overall mortgages granted in Spain are compared with US prime-segment mortgages, Spanish banks can be seen to maintain a very low default level, even bearing in mind the recent rise and the possibility that defaults may continue worsening in the near future.

… and not only in the sub-prime segment (non-existent in Spain) but also in the prime segment.

The comparison between the default rate curves for the respective Spanish and US mortgage markets simply reinforces the differences between both markets, not only in the level of the curves but also, above all, in their time profile.[6] As discussed in the previous FSR, a significant increase in the slope of these curves largely highlights a relaxing of risk control standards in loan origination (adverse selection in the granting of credit). The comparison of the curves in the US prime market with all mortgages in Spain highlights the non-existence of adverse selection in the mortgages granted in the last three years in Spain (see Chart 2.5.B).

There are no visible problems of excessive laxity either in the granting of second-residence loans…

While the CCR data do not allow a distinction to be drawn between first and second residences, it is possible to study the default rate curves for the Spanish Mediterranean and island provinces, where there is a higher proportion of second dwellings. Although the levels of the curves are slightly higher, as might be expected, the time profile is very similar, once again highlighting the absence of adverse selection in this geographical area in recent periods. Comparing these curves not with US sub-prime loans, with which they obviously bear no relation since in Spain the sub-prime business segment does not exist (see Chart 2.5.C), but with the curves for intermediate quality loans (Alt-A) granted in the United States, it can be seen that the trend of the curves and the levels of defaults reached are in no way comparable (see Chart 2.5.D).

In short, whether using information on doubtful assets ratios or resorting to the approximation of the default rate curves, with the limitations described, no parallel can be found between the Spanish and US mortgage markets, in particular when comparing the former with the riskier US mortgage lending market.

… or in corporate loans.

It has already been ascertained that the level of the doubtful assets ratios and the trend of the default rate curves for corporate loans have shown no significant increases. But it is true that some business segments, in particular that of financing to property developers, have grown very substantially this decade and are now witnessing a sharper slowdown in credit. For that

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4. See the previous FSR for a detailed description of the calculation of these and other similar curves (default rates). What is involved here is an approximation to the actual curves for doubtful amounts because the information available at present in the CCR does not allow a perfect monitoring of operations over time. **5.** Given that the CCR does not explicitly hold information on mortgages for house purchases, all financial loans granted to households for an amount over €60,000, with a term of over five years, 100% secured and set up by fewer than four parties have been considered under this classification. **6.** The comparison should be viewed with some caution since, in addition to the caveats mentioned in footnotes 4 and 5, US data consider defaults after 60 days have elapsed, while for Spain defaults are included after 90 days (the definition of default) as are, in addition, doubtful amounts for reasons other than default (which may be operations still current in payment).

DOUBTFUL ASSETS RATIOS AND DEFAULT RATE CURVES CHART 2.5
Comparison between Spain and United States

SOURCES: Banco de España, Merrill Lynch and Intex.

a. X-axis: the number of quarters since the loan was granted.
b. X-axis: the number of months since the loan was granted.
c. Coastal provinces and island provinces. ALT-A: intermediate-quality loans in the United States, between prime and sub-prime.

reason, it is worth conducting stress tests of Spanish deposit institutions in the face of potential difficulties in this business segment.[7]

The Spanish banking system has the resilience to withstand, without seeing its

Thus, an initial test consists of multiplying the doubtful assets ratio for credit to developers at the worst point of the previous business cycle (13.1% in December 1993) by current exposure, in December 2007, and considering a loss given default of 50% (recovery rate of 50%), which

7. The exercise excludes construction companies as they represent a smaller-sized segment whose relative weight in banks' corporate credit portfolios has held fairly stable. Moreover, construction companies are generally more diversified (public works, housing, infrastructure, basic services, etc.) than property developers and, therefore, less sensitive to the business cycle.

solvency affected, a potentially severe deterioration in the credit quality of property developers.

is very high given that real estate assets are involved. Under these demanding assumptions the total loss would only account for 63% of the current provision for bad debts. A less drastic scenario, taking into account the significant changes in the Spanish economy, in the financial position of companies and in credit risk management by banks, but one with severe assumptions about the course of productive activity in the coming two years (stagnant growth), envisages doubtful assets ratios at around half those observed at the 1993 peak. These ratios, combined with a loss given default of 50%, translate into an impact on the provisions for bad debts of 31%. Accordingly, the Spanish banking system, thanks to a conservative provisioning policy in this decade, is in a position to withstand a rapid and significant deterioration in defaults in the real-estate development segment, were such an occurrence to take place. In these scenarios, and insofar as the general provisions are part, in a specific proportion,[8] of regulatory capital, the buffer tier 2 capital held by banks over the legally required minimum would be affected and reduced slightly.

Spanish banks have to operate in an international environment in which liquidity has contracted.

The — currently manageable — credit risk to which Spanish deposit institutions are exposed is not the only management challenge they face in the immediate future. Since last summer the *international financial system* has undergone a *notable contraction in liquidity.* At the international level credit institutions are encountering greater difficulties in obtaining financing in wholesale markets, which illustrates how important it is to pursue appropriate liquidity management, while being able to draw on a set of well-diversified sources of financing.

The percentage of credit financed with deposits is at a high level.

During recent years, against a background of credit growth and of favourable conditions in international financial markets, Spanish deposit institutions have financed a portion of the growth of their activity by resorting to the medium-and long-term wholesale markets.[9] This has made for a relative reduction in the proportion of credit accounted for by deposits which, nonetheless, stood in December 2007 at close to 80% (see Chart 2.6.A). The use of the medium- and long-term wholesale market has afforded Spanish deposit institutions greater flexibility in their financial structure, although the cost has been greater than if the financing had been short-term.

Consequently, although Spanish banks have not shunned the possibilities offered by financial markets and new products, they have at the same time maintained a sound deposits base for their financing. The banking model in Spain is structured around a series of elements which, though they do not make the model totally immune to the recent turbulence given increasingly integrated financial markets, do contribute to it currently having sufficient mechanisms to withstand such turbulence.[10]

The retail banking model prevalent in Spain offers greater scope for raising a higher proportion of deposits should this be necessary.

Firstly, *Spanish banks* engage in a *typically retail-oriented activity,* with an extensive office network and close contact with customers. Also, they manage a very high percentage of both investment funds (80%) and pension funds (50%). Their business model allows them, if the turbulence should persist over time, to progressively replace wholesale funding with the raising of deposits, in part using their proven commercial ability to change the combination of products offered to their customers (deposits, funds, etc.). In December 2007, time deposits, which accounted for close to 60% of total deposits and are the most stable, maintained the sharp growth they had been posting in recent months (a 27% increase), although total deposits are

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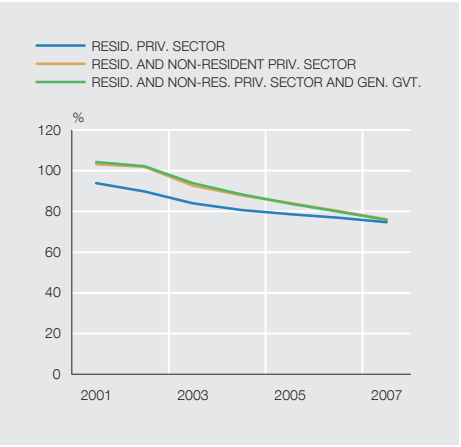
8. General provisions, of up to 1.25% of risk-weighted assets, are eligible as regulatory tier 2 capital. **9.** Box 2.1 analyses the financial instruments through which Spanish banks have financed themselves on the wholesale markets. **10.** Box 2.2 analyses the challenges to the traditional business model (buy-and-hold) compared with other recent banking model trends (originate-to-distribute).

LOAN FUNDING WITH DEPOSITS CHART 2.6
Deposit institutions. ID



SOURCE: Banco de España.

increasing at a lesser rate (some 16 pp less). Further, since last summer there have been sustained reductions in investment fund net assets.

Spanish banks have not developed complex securitisation structures…

Secondly, Spanish banks had used asset securitisation intensely as a mechanism for seeking financing. Far from moving towards an originate-to-distribute model, asset securitisation has been characterised by its simplicity, avoiding the use of complex products (CDOs, CLOs, etc.)[11] and keeping a very significant portion of risks on the balance sheet. This has prevented the introduction of perverse incentives that might adversely affect the pursuit of a rigorous credit extension policy, since there has been no separation between risk origination and management.

… and are characterised by the high credit quality of their securitised portfolios…

… which is reflected in their low default rates in relation to those observed in securitisations carried out by other countries' banks.

As indicated in the previous FSR, the *quality of mortgage-backed securities* is very high in Spain. This is reflected in the moderate loan-to-value (LTV) ratio of mortgage-backed securities, which stood at an average of around 70% (see Chart 2.7.A). Moreover, the underlying portfolio of these securitisations shows low geographical concentration, which is identical to that of the non-securitised portfolio. Most of the bonds arising from the securitisation process (93%) are top-rated by the rating agencies (see Chart 2.7.B), meaning that, with a doubtful assets ratio such as the present one (lower than 1%), it is difficult to think that credit portfolio defaults may affect the higher-quality bonds. Defaults on mortgage-backed securities in Spain in December 2007 stood at very low levels, in particular when compared with other European banks' securitisations (see Chart 2.7.C). In addition, the average LTV of total mortgage loans outstanding of Spanish deposit institutions does not reach 50%, given the average life and the distribution of the total mortgages granted. If this LTV were calculated at current house prices, it would be even lower. Accordingly, not only is the quality of mortgage-backed securities high but so too is that of the total mortgage portfolio, which reinforces its role as an additional guarantee for covered bonds. Finally, it should be mentioned that Spanish banks have increasingly securitised not only mortgages but also loans to SMEs, which are officially guaranteed, consumer loans and loans for car purchases (see Chart 2.7.D).

11. At the international level, on occasions, Spanish securitisations of loans to SMEs (placed through special-purpose entities called FTPYMES) are classified as CDOs. However, this classification is not appropriate, since the securitised portfolios do not comply with the main defining characteristic of CDOs, because in the case of the FTPYMES what are involved are uniform and highly granular portfolios.

FINANCING OF SPANISH DEPOSIT INSTITUTIONS ON THE WHOLESALE MARKETS

BOX 2.1

In recent years the growth rate of lending by Spanish deposit institutions has remained strong. Most credit is financed through deposits. However, as in other banking systems, Spanish institutions have had recourse to the wholesale markets. Spanish institutions have opted particularly for long-term financing, and so, by forgoing lower cost short-term financing, they have endowed their liability structure with greater flexibility and stability.

Financing has been obtained on the wholesale markets through a wide range of financial instruments, including most notably (40% of outstandings in 2007) fixed income (Table A). Second in importance is asset securitisation (34% of outstandings in 2007), which in Spain, unlike in other countries, has been used as a means of obtaining funds and not for transferring risk. 9% of financing is obtained by issuing shares and hybrid instruments (basically subordinated debt and preference shares) and the rest is raised in issues via resident and non-resident subsidiaries (recently almost exclusively commercial paper).

Within the outstanding balance of securitisations, a distinction can be made between asset securitisations and those consisting of securitised covered bonds, which account for 33% of the balance outstanding in 2007 of the total securitisations in 2007. Institutions can issue covered bonds directly on the market (included in fixed-income securities in Table A) or through securitisation special purpose entities.

This has enabled medium-sized institutions in particular to gain improved access to the market and reduce the cost of financing. Regardless of how the covered bonds are issued, their quality, aside from that associated with eligible loans,[1] is very high: legally they must be over-collateralised by at least 25%; and, in the event of insolvency of the issuer, the institution is liable with all its mortgage loans (except those assigned to asset securitisations) and, in addition, recourse can be had to the issuer's total assets.

The fixed income securities include most notably mortgage covered bonds (38% of outstandings in 2007), bonds and debentures (32%), which are characterised by their long term, and commercial paper (26%). The situation besetting financial markets means that institutions are finding it more difficult to issue long-term securities and so have stepped up commercial paper issues.

This means that, although institutions have been able to continue to raise funds on the wholesale markets, they have done so via shorter-term instruments. Nevertheless, the residual maturities, including issues by subsidiaries (excluding commercial paper), indicate that 10% of outstandings fall due in 2008, 31% between 2009 and 2012, and the remaining 59% after 2013. Therefore, the term structure suggests that the pressures derived from international financial market turbulence for 2008 are limited.

1. Mortgage loans with an LTV of 80% (60% for commercial mortgages).

FINANCING ON THE FINANCIAL MARKETS

TABLE A

Total amount outstanding. € m

	Own issues						Issues by subsidiaries	Issues by securitisation special purpose entities				Own issues of short-term fixed income securities: commercial paper
	Medium- and long-term fixed income			Shares and hybrids				Bonds and commitments				
				Debentures					Asset SSPEs			
	Bonds and debentures	Mortgage covered bonds	Territorial covered bonds	Subordinated shares	Preference shares	Shares		Mortgage SSPEs		Of which: multi-issuer covered bonds	Commercial paper	
2005	79,862	89,641	9,595	22,994	414	50,746	106,011	24,077	142,995	63,728	4,351	57,053
2006	111,123	132,993	12,245	28,057	1,126	54,318	141,202	25,025	210,950	89,398	5,448	69,878
2007	128,836	150,449	17,384	27,454	1,192	59,736	178,640	23,713	319,598	112,593	643	103,509

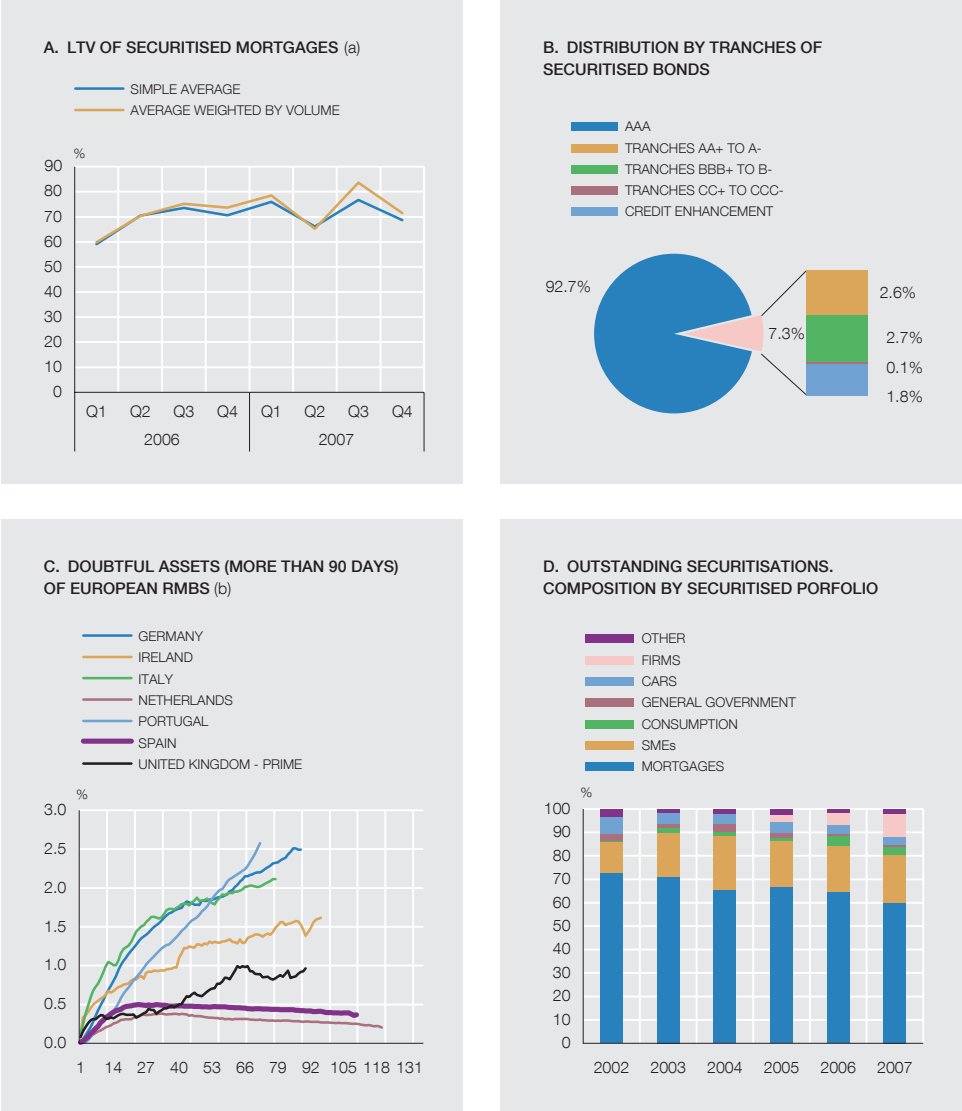
Maturities schedule (excl. commercial paper)	Total balance at 31-12-2007	Maturity up to June 2008	Maturity from July to December 2008	Maturity 2009	Maturity 2010	Maturity 2011	Maturity 2012	Maturity from 2013
	847,266	44,985	37,212	80,341	65,263	56,883	60,296	502,286

SOURCE: In-house calculations based on market information.

The difficulties in international securitisation markets have led Spanish banks to retain bonds on their balance sheets, increasing collateral for precautionary reasons.

The higher cost of financing via securitisations, along with the withdrawal of a large number of institutional investors from this market, has led Spanish financial institutions to modify their conduct. They have continued securitising, with a 55% increase in 2007 to €142 billion, approximately half of which were issued during the second half of the year. The difference from the situation prior to the financial turbulence is that now, and *for precautionary reasons,* just as other European banks are doing, asset-backed bonds are being retained so as to have additional collateral with which to obtain — if necessary — financing from other financial intermediaries through repos (obtaining liquidity by delivering the collateral as security for the operation, i.e. secured lending).

MORTGAGE SECURITISATION IN SPAIN CHART 2.7
Deposit institutions



SOURCES: Banco de España, Fitch and CNMV.

a. LTV: loan to value.
b. X-axis: shows the number of months since issuance.

Spanish banks have increased their use of Eurosystem liquidity…

…though its significance is very small in the total balance sheet. Moreover, this is in accordance with their weight in the Eurosystem and is relatively less than for other countries' banks.

In the second half of 2007, Spanish banks increased, in comparison with what for them was habitual, their *use of Eurosystem liquidity,* although its weight is very limited in the bank balance sheet as a whole (1.3% in December 2007 or €44 billion euro of net lending). Nonetheless, only a small proportion of the collateral used is from new securitisations. It should be pointed out that this means of operating *adheres fully to the working framework of monetary policy operations in the euro area,* in terms both of the operation and of the collateral used (see Box 2.3). In this respect, the Eurosystem has not increased the volume of financing extended to the euro area as a whole, but has made available to banks longer-dated and more fragmented financing and, with a view to promoting confidence, it has done so providing more liquidity initially, conducting liquidity-absorbing operations more intensely subsequently.

Regarding Spanish banks, if the liquidity they have obtained from the Eurosystem is compared with Spain's relative weight in terms of GDP in the Eurosystem (proxied by Spain's capital key

The purpose of this Box is to assess the medium-term challenges that the difficulties in international financial markets since last summer pose to the two basic banking business models: the originate-to-distribute model versus the buy-and-hold model. Under the first model, lender institutions transfer credit risk to the market, normally through investment banks (or universal banks with significant investment banking segments) and using complex instruments. Under the second model banks retain a significant portion of the credit risk, being able to use asset securitisation as a source of financing.

In the *originate-to-distribute model* there is a serious problem concerning the incentives to properly select and monitor the borrowers' credit risk. The difficulties in the sub-prime segment have starkly highlighted this *incentives problem.* Accordingly, this type of originate-to-distribute means of operating will either decline drastically (rejection by the investors of the full transfer of risk and of the lack of incentives of the originators) or else banks that maintain this type of business will have to pay a far higher risk premium to finance the activity, and one in keeping with the level of risk of the underlying asset.

At the second stage of the originate-to-distribute model are *investment banks.* These take responsibility for structuring securitisations and distributing them among investors in exchange for the corresponding fees. They would not only securitise and place the original loans but, in successive stages, they would create and distribute increasingly more complex products based on the original asset-backed bonds. The habitual practice was to construct new securitisations by grouping different bonds with different levels of risk in order to place them with investors with different appetites for risk. Indeed, the high-risk tranches were easier to place than super-senior debt owing to the different return/risk ratio. This activity produced a substantial flow of income for these banks.

Successive securitisations ultimately became *highly complex products that were very difficult to value.* And given the current circumstances, the demand for them fell markedly. This is the second challenge facing the originate-to-distribute model. Investors are unlikely to rapidly resume purchases of this type of highly complex product whose valuation is through mark-to models. Consequently, *this business segment,* which is very important for investment banks and for major universal banks with a strong investment banking presence, *is going to cease to contribute significantly to the results of these banks* and, probably, it will make a scaling down in size and in business expectations in the medium term necessary. In fact, the trend in the market prices of these banks since last summer is already highlighting the change in expectations.

Another segment that may be substantially impacted is that of leveraged buy-outs (LBOs). The change in market conditions has left a substantial volume of credit in the hands of the originators of these operations (pipeline risk). In fact, investment banks were participating very actively in these leveraged buy-outs because they knew that they could distribute a large part of the risk to third parties. Problems concerning incentives and future business volume once again emerge, with potentially significant consequences for the results of these banks.

In addition to the impact on their earnings, with a highly significant reduction in income and notable losses as their financial instruments depreciate, these banks will see how their *reputational risk* grows (along with the possibility of facing losses due to customer claims). This is because, first, they have sold highly complex products without having sufficient information on the quality of the underlying assets and, further, they themselves have been incapable of properly measuring the risk they were incurring (taking as valid the ratings accorded by rating agencies or being unable to see that the default correlations in the underlying loans portfolio might be significantly affected).

Poor credit risk management, including the resort to hedges that might prove ineffective, entails a serious setback for these banks. In this case it is not only a question of reputation; the *enormous losses* these banks are incurring, which have forced them to *recapitalise at a very high cost,* must also be taken into account.

Furthermore, the foregoing calls the *incentives system into question.* The excessive weight of reward in terms of current income has contributed to increasing the short-sightedness of the managers of these banks, with a high cost for shareholders.

The *enormous volatility of their income statements,* to which the procyclicality of fair value may contribute, will translate into a *higher risk premium* and, therefore, into a *higher cost of funding.* Conceivably, moves into high-risk business will be weighed up more carefully henceforth, auguring a *significant narrowing of margins* which, combined with the *decline in business volume* (securitisations, CDOs, LBOs, etc.), will exert pressure in the medium term on the income statement and solvency of banks that pursue this business model.

As a matter of fact, the originate-to-distribute model has been underpinned by arbitrage of regulatory capital (conduits, SIVs, skewed ratings) and by very high leverage, facilitated by the low risk premiums in recent years.

Set against the above model is the *traditional buy-and-hold banking model based on closeness between bank and customer,* on both the assets and liabilities sides, which reinforces the value of the banking franchise. A bank very close to its customer, with a dense office network that allows it to maintain a close relationship with the customer, adjusting to the latter's needs and, therefore, increasing *customer loyalty,* is a bank that is going to be able to *step up the raising of deposits* and replace, in part, the loss of funding from the wholesale market with retail market funds.

Retail banking based on closeness does not only sell banking products but also other alternative products for placing savings (investment and pension funds, life insurance, etc.). Naturally, heightened competition for deposits will raise the cost of the funds obtained but, in any event, to a lesser extent than the funds from a wholesale market.

The increase in the cost of funding is not going to squeeze the margins of all banks in the same way. Those with a high percentage of *fixed-rate loans will see a much swifter and significant narrowing of margins* than those with floating-rate loans that can transfer more rapidly the permanent change in risk premia.

During the period of adjustment to the new market conditions, it is important that banks should obtain financing from different sources. In this respect, the *precautionary collateralisation of assets* allows banks to build up a stock of collateral that can be used to obtain financing from other financial intermediaries (secured interbank financing, repos with other intermediaries, private placements of funds, etc.). The existence of good-quality collateral, with the discounts considered appropriate, gives banks considerable room for manoeuvre to progressively increase the term of financing, diversifying the sources thereof. The quality of this collateral is high, firstly, because what is generally involved are loans with a high degree of granularity, i.e. of a small amount and highly diversified across sectors and geographical areas; and secondly, because the measurement of the risk of this collateral is very straightforward (they are bank loans, not tranches or successive tranches of securitisations).

Among *retail banks* there are usually *different strategies,* and there may be well-positioned banks in terms of liquidity that take advantage of the current circumstances to gain market share in the different segments of the credit market (mortgages, consumer loans, SMEs, etc.), which should contribute to sustaining dynamic credit growth. That is to say, there is not only competition now to raise deposits but also to gain market share in loans.

The *Spanish banking system,* which fits in with the buy-and-hold model, evidences features that should make adaptation to the new financial market situation easier. These include, among others, a strong presence — of banks, savings banks and cooperative banks — in the retail business; the scant weight of fixed-rate and very long-dated asset-side operations and, therefore, a greater facility to pass through the increase in the cost of funding to assets; and the possibility of using high-quality collateral (credit defaults in Spain are among the lowest in Europe) in refinancing operations, initiating the diversification of financing sources and the lengthening of maturities. Moreover, mention should be made of *Spanish banks' great adaptability to a highly competitive and changing environment.*

In short, the new circumstances in international financial markets pose challenges to the two predominant banking models (originate-to-distribute and buy-and-hold). Looking ahead, the traditional buy-and-hold banking model, which is less affected by the current financial turbulence, might conceivably take on board the sounder aspects of the originate-to-distribute model insofar as these should pass the turbulence test. In any event, banks would have to consider this process from a prudent standpoint, ensuring that they have sufficient knowledge and understanding of the elements susceptible to be incorporated, and appropriate systems for measuring and managing the risks that may be assumed.

in the ECB), it is currently still below this capital key (see Chart 2.8). Some banking systems have traditionally accounted for a far greater weight than that corresponding to them in terms of their relative size, without this having entailed any problem for these banks or for the Eurosystem. Indeed, at present other smaller banking systems in the euro area are also applying for liquidity from the Eurosystem on a level greater than corresponds to their relative weight without — once again — this entailing any difficulty for their banks; rather, it essentially reflects structural characteristics of their banking systems.

The Eurosystem has not altered its eligible collateral criteria since the turbulence began last summer, and as a result collateral quality remains very high (only super-senior tranches of securitisations are eligible).[12] An AAA rating for a super-senior tranche of an initial mortgage-backed asset is far different, as evidence has shown in recent months, than an AAA rating for a re-securitisation (CDO of ABS or CDO squared). As the different asset-backed bonds are progressively securitised and repackaged in successive securitisations, the distribution of losses becomes more complex to estimate, while the risks to investors increase.

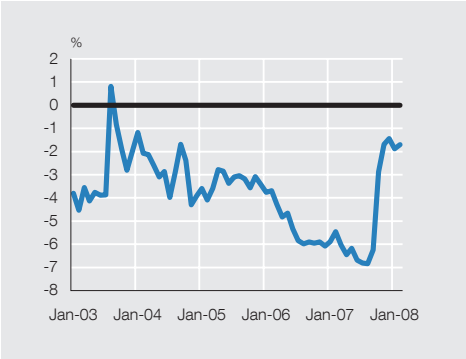
Moreover, through commercial paper issues, Spanish banks have been able to obtain financing in the wholesale markets.

Another change in the behaviour of Spanish banks regarding wholesale market financing is that, in view of the current market conditions, longer-dated fixed-income issues have been replaced by shorter-dated ones (see Chart 2.9.A).[13] The favourable aspect is that banks, in what are difficult market conditions, have been able to obtain financing which, as for most of their European counterparts, has had to be concentrated in shorter terms. In any event, the

12. See chapter 3 of the previous FSR for a detailed analysis of the Eurosystem's collateral policy compared with that of other central banks. **13.** The data in Chart 2.9.A do not include commercial paper issued from subsidiaries, which has grown significantly in recent months.

PROPORTION OF FINANCING RECEIVED FROM THE EUROSYSTEM MINUS THE CAPITAL KEY (a)
Deposit institutions

CHART 2.8



SOURCE: Banco de España.

a. Capital key: approximate relative weighting of each country's institutions in the Eurosystem as a whole in terms of its GDP.

balance sheet data for 2007 show that liquidity spreads by maturity have not changed significantly. Finally, another positive factor to be considered is the interbank position (interbank assets minus interbank liabilities): an analysis of this shows that, as indicated in the previous FSR, Spanish domestic banks are net lenders, Spanish savings banks have a balanced position and foreign banks, subsidiaries and branches are net borrowers (see Chart 2.9.B).

Resort to the Eurosystem and the shortening of maturities are challenges that banks have to manage appropriately…

The shortening of maturities, although this is a natural development in a situation of uncertainty such as that at present, is also an element that banks must manage appropriately in the medium term. In this respect, Spanish banks, and the Banco de España, have been aware of the significance of this risk. This is why banks, in step with their level of activity and their degree of internationalisation, have for years been improving their mechanisms for evaluating liquidity requirements. They have also developed stress tests and contingency plans, and have established limits and internal controls. The financing in recent years in the medium-and long-term wholesale markets is an example of prudent management of the financial structure.

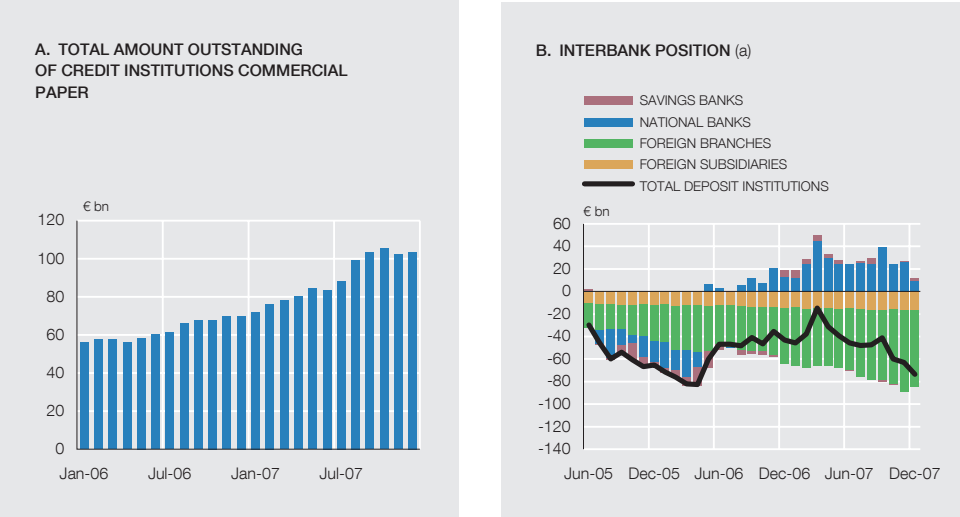
… although stress tests do not point to a very pronounced impact on credit in 2008, even if liquidity conditions were to remain unfavourable.

The possibility that tensions in obtaining liquidity may ultimately impact credit, if the difficulties in international financial markets persist, can be evaluated through a stress test. In this connection, different scenarios of funds raised are considered. If during 2008 Spanish banks were unable to obtain financing through asset securitisation, or through issuing covered bonds, if they were also practically unable to roll over those covered bonds maturing this year,[14] and if liquidity obtained from the Eurosystem did not exceed the capital key (as at present) and the growth rates of commercial paper and of bonds were to fall significantly, then credit to the resident private sector might grow at a rate of around 10% with growth in deposits similar to that recorded in 2007. That is to say, even in a highly unfavourable wholesale financial market scenario, there should not be an overly pronounced effect on credit to the private sector in 2008. What is more, and insofar as the demand for credit slows, especially in real estate sector-related activities, the aforementioned growth rates of credit appear to be aligned with the path of such demand.

14. Note that the covered bonds have been issued at long maturities and their amount has grown considerably only in recent years. That is to say, the amounts maturing this year are fairly small in comparison with the total volume of existing covered bonds.

TOTAL AMOUNT OUTSTANDING OF COMMERCIAL PAPER AND INTERBANK POSITION
Deposit institutions. ID

CHART 2.9



SOURCE: Banco de España.

a. Interbank position defined as assets less liabilities of credit institutions.

It must also be borne in mind that this type of exercise does not consider other management alternatives available to credit institutions, such as, for example, the realisation of assets on the market (sales of assets held for trading, of available-for-sale assets and also of investments). Fairly uniformly across banks, these assets account for around 10% of their balance sheet. This high proportion of assets that may be realised on organised markets means that the comparison of Spanish banks' liquid assets and liabilities shows a high degree of correlation, without any particular signs of concern for Spanish deposit institutions (see Charts 2.10.A and B).

2.1.2 PROFITABILITY

Despite the fact that developments in international financial markets in the second half of 2007 were very unfavourable, Spanish deposit institutions' results at the close of the year showed very significant and generalised growth. That marks a very good starting point for addressing the current challenges in the context of the heightening difficulties in international financial markets.

The data for 2007 confirm the soundness of Spanish deposit institutions' profitability...

Group net income increased by 19.3% (see Table 2.2), meaning that the ROA (after tax) rose by 3 bp in relation to December 2006 to 1.05%. The ROE grew slightly compared with 2006, rising to 19.9%. The increase in the ROE is mainly underpinned by improved efficiency and productivity, this being compatible with a diminished risk profile, and with an increase in prudential provisions and in the quality of capital (see Chart 2.11.A). Moreover, the increase in the ROE has been experienced by most banks (Chart 2.11.B)

… based on the favourable trend of operating margins, which have not been affected by the sub-prime crisis.

The strength of the income statement can be seen in its three main *margins,* which not only increased significantly in absolute values compared with 2006 (at a rate of over 16%), but also did so in terms of ATA. The *quarterly* trend of the main margins, and of net group income (see Chart 2.12.A), highlights the fact that Spanish banks, unlike those in other countries, have not been directly affected by the sub-prime crisis. In this respect, it should be recalled that, as indicated in the previous FSR, Spanish deposit institutions' direct (loans) and indirect (CDOs)

MONETARY POLICY IMPLEMENTATION AND FINANCIAL TURBULENCE

BOX 2.3

Monetary policy implementation differs substantially across countries and monetary areas. For example, there are notable differences between the Eurosystem and the US Federal Reserve, to cite just two central banks. In the euro area there is a structural liquidity deficit, the consequence of the existence of a reserve requirement and of how banknotes are issued, which obliges banks increasingly to resort to the Eurosystem to obtain the liquidity they need. In the United States there is no such liquidity deficit, given that in effective terms the reserve requirement is relatively moderate and, essentially, because the Federal Reserve holds a securities portfolio on the asset-side of its balance sheet which offsets the changes in banknotes issued, whereby liquidity injections by the Federal Reserve are much more moderate.

There are also policy differences in respect of the collateral accepted by each central bank in exchange for the liquidity they extend to banks. Generally, the Federal Reserve's collateral policy is more restrictive than that of the Eurosystem. Since last summer, the Eurosystem has not changed its collateral policy, while the Federal Reserve has in fact done so, making it more flexible.

Accordingly, a high volume of liquidity injection by the Eurosystem is part of the monetary policy implementation framework in the euro area. So too is the fact that banks resort both to the marginal lending facility (at a higher rate than the MRO rate) to obtain overnight financing, in the face of unexpected needs, and to the deposit facility (at a lower rate than the MRO rate) to deposit unexpected liquidity surpluses overnight.

Banks' liquidity needs, both in the Eurosystem as a whole and in Spain, have held stable over the past 18 months. This is consistent with a reallocation of liquidity across countries and banks within the euro area. The increase in the use of Eurosystem liquidity by Spanish banks since last summer (from around €15 billion to approximately €44 billion) scarcely accounts for 1.3% of their overall balance sheet. Therefore, the use Spanish banks are making of Eurosystem liquidity adheres fully to the arrangements and instruments envisaged by the Eurosystem.

Spanish banks, like their European counterparts inside and outside the euro area, are increasing their collateral. There are three reasons for this. Firstly, they are doing so out of precaution: given the doubts as to how long markets will be closed, banks are building up high-quality collateral that will allow them to obtain liquidity from the Eurosystem. Secondly, they want to be able to have access to secured lending. Thirdly, because in a securitisation process there are two steps. The first is to convert the non-liquid assets (loans) into liquid instruments (asset-backed bonds). The second is to place these bonds on the market. As the markets progressively open, banks already holding an asset-backed bonds portfolio can gain much quicker access to these markets.

In the light of recent events, debate has arisen about whether the monetary policy should accept asset-backed bonds as collateral. However, what is important concerning the acceptance of specific collateral is its quality. As regards bonds stemming from securitisations, those derived from so-called traditional securitisations do possess this high degree of quality which, given recent events, does not appear to be the case for those whose origin is more complex securitisation processes (CDO, CDO of ABS, CDO square, etc.).

In this respect, the Eurosystem has not changed or made its collateral policy more flexible. The quality required of eligible assets is very high. In the case of mortgage-backed securities, only the super-senior tranche (AAA) is accepted. For example, this tranche usually accounts for 93% of the bonds issued. Therefore, to incur losses on an AAA bond, the probability of default on mortgage loans would have to rise to 14%, with a loss in the event of default of 50%. These amounts are totally inconceivable for a Spanish mortgage loan portfolio. At the depths of the last Spanish economic recession (1993), defaults in this segment peaked at 4%, while loss given default (LGD) was very low. Accordingly, the likelihood of incurring losses on an AAA Spanish mortgage-backed bond is minimal.

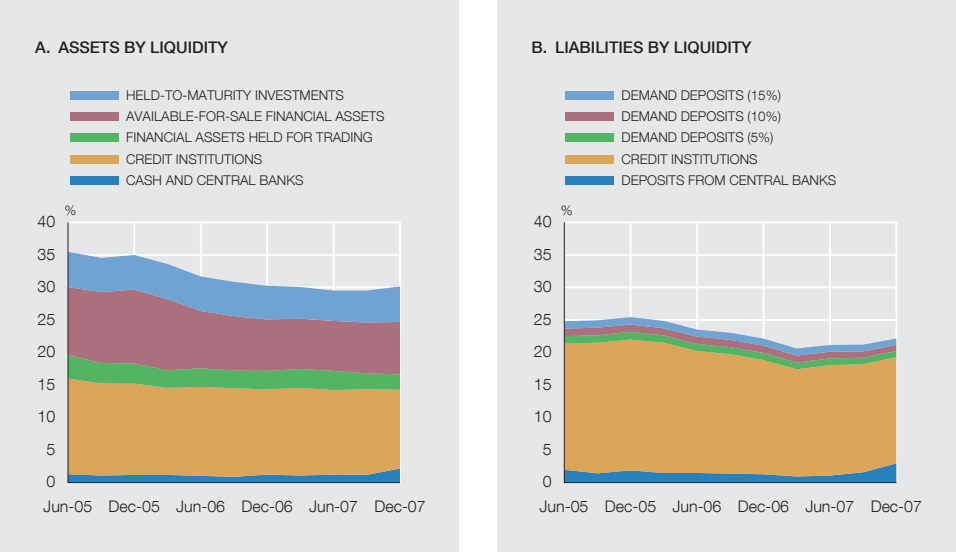
In sum, the relationship between Spanish banks and the Eurosystem since last summer falls fully within the habitual monetary policy implementation channels used in the euro area.

exposure to the US sub-prime segment is completely marginal (0.03% of its assets and 0.68% of its tier 1 capital).

Banks have been able to pass through the moderate increase in costs to assets, strengthening their net interest income.

Net interest income grew by 19.9% on December 2006. This rate of increase, which outpaced that of activity, means that, in terms of average total assets (ATA), there has been a 6 bp rise to 1.82%. Consequently, compared with 2006, Spanish banks have been able to increase their relative net interest income (as a proportion of ATA) in a setting of high interest rates. The favourable trend of net interest income is underpinned by the growth of financial revenue, and particularly that arising on loans extended to customers which, despite the slowdown in credit activity in 2007, are growing sharply (75 bp in terms of ATA). The increase in revenue has enabled the rise in financial costs, which was sharper in tradeable securities and also in the raising of deposits, to be offset.

ASSETS AND LIABILITIES BY LIQUIDITY CHART 2.10
Deposit institutions. ID



SOURCE: Banco de España.

The capacity to pass through financing costs, something of importance if the difficulties persist, is made easier by the granting of floating-rate financing.

As a result of the current tensions in international financial markets, financing costs should conceivably trend upwards. Undoubtedly, this is a management challenge for Spanish deposit institutions insofar as it adds extra pressures to margins in the income statement. Nonetheless, and unlike other countries' banks, a high proportion of financing extended by Spanish banks is floating-rate, which offers greater leeway to adjust to the new circumstances in international markets. The increase in the risk premium observed in interbank interest rates (e.g. in the three-month or one-year Euribor), which reflects the rise in the cost of bank funding, passes through automatically to the borrowers that use these interest rates as a benchmark. The spread between marginal lending and deposit rates has held stable in the past six months, corroborating this pass-through capacity (see Chart 2.12.B).

The dynamism of net interest income has fed through, albeit with less intensity, to *gross income,* which grew by 16.8% (2 bp in terms of ATA, to 3.13%). The diminished dynamism of gross income, notwithstanding its notable growth, is due to the moderation in commissions, which grew by 10.1%, falling in terms of ATA, in response above all to the course of its two main components. Commissions from collection and payment services grew to a lesser extent, which largely reflects stiffer competition among banks. Commissions from the marketing of non-bank financial products also grew at a lesser pace, due in part to developments in international financial markets, which were unfavourable in the second half of 2007.

The most dynamic component of gross income was the results on financial transactions, which grew by 26.7%, and tended to offset the more moderate performance of commissions. The greater dynamism of results on financial transactions is partly due to sales of non-group holdings by certain Spanish banks, but also to the gains arising on foreign exchange transactions, offsetting the poorer performance of the trading book in relation to 2006.

The exposure of the income statement to stock markets is very limited.

In this connection, it should be stressed that the exposure of Spanish deposit institutions' income statements to stock markets, whose performance since mid-2007 and in early 2008 has been negative, is very limited. The decline in stock market prices directly impacts banks' trad-

INCOME STATEMENT
Deposit institutions

TABLE 2.2

	DEC-07		DEC-06	DEC-07
	€m	(% CHANGE) DEC. 07-DEC. 06	% ATA	% ATA
Financial revenue	146,700	36.7	4.29	5.05
Financial costs	93,843	48.5	2.52	3.23
Net interest income	52,857	19.9	1.76	1.82
Share of profit or loss of entities accounted for using the equity method	4,369	-4.2	0.18	0.15
Net commissions	22,038	10.1	0.80	0.76
Gains and losses on financial assets and liabilities	11,758	26.7	0.37	0.40
Gross income	91,022	16.8	3.11	3.13
Operating expenses	41,305	9.7	1.50	1.42
Other operating income	1,381	-2.1	0.06	0.05
Net operating income	51,098	22.5	1.67	1.76
Asset impairment losses	14,061	60.6	0.35	0.48
Provisioning expense (net)	1,706	-54.7	0.15	0.06
Other income (net)	4,481	-33.2	0.27	0.16
Profit before tax	39,812	11.0	1.43	1.37
Net income	32,054	18.4	1.08	1.10
MEMORANDUM ITEM				
Group net income	30,640	19.3	1.03	1.05

SOURCE: Banco de España.

ing book, in terms both of the shares they hold and of share- and stock market index-based derivatives. However, and as mentioned, Spanish banks' trading book positions are small. Estimates made by the Banco de España reveal that the direct impact of the adverse stock market performance in January 2008 entails a reduction of less than 0.5% in income before tax.

The soundness of income is also underpinned by banks' notable operating efficiency.

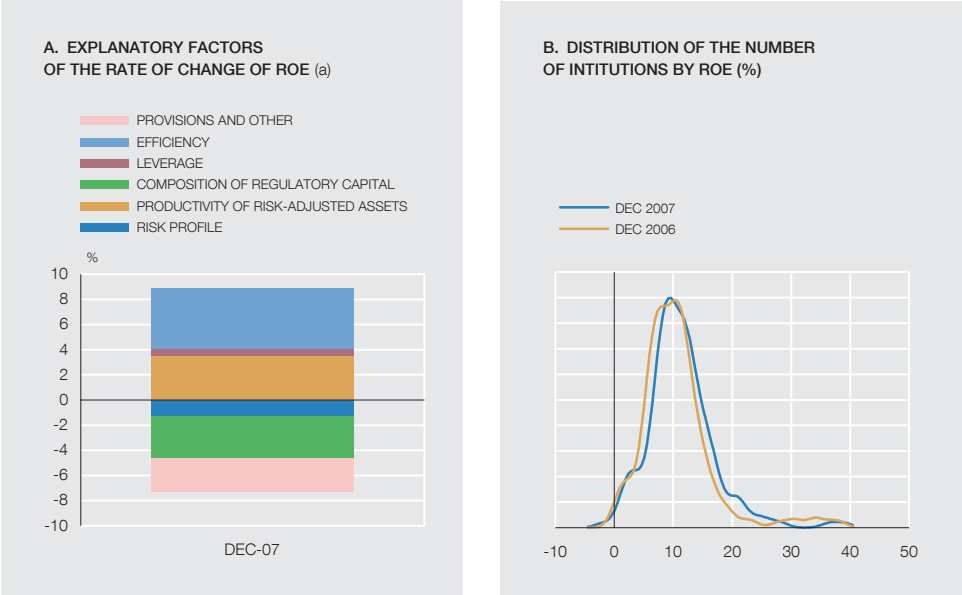
Operating expenses grew at a rate of 9.7%, which led to a reduction in their relative weight in terms of ATA (of 8 bp, to 1.42%). By component, developments were similar, with both staff costs (9.3%) and administrative expenses (10%) growing. The relative easing in operating expenses, combined with the expansionary behaviour of gross income, enabled the *efficiency ratio* to continue in 2007 on the path seen in previous FSRs; the ratio improved from 48.31% in December 2006 to 45.38% at the end of last year. This favourable performance of the efficiency ratio at Spanish banks was across the board.

In recent years Spanish deposit institutions have embarked on an intense process of geographical expansion, which has placed pressure on operating expenses. The rise in the number of employees and of new offices thus helps considerably in explaining the growth rate of operating expenses (see Chart 2.13.A). Nonetheless, Spanish banks have shown notable ability in managing these expenses, as highlighted by the ongoing improvement in efficiency in recent years in banking business in Spain and also in Latin America (see Chart 2.13.B).

The figures for 2007 show how the favourable performance of gross income has been bolstered by the containment of operating expenses, which translates into notable growth in net *operating income* (22.5%), namely 9 bp in terms of ATA (to 1.76%).

ROE
Desposit institutions

CHART 2.11



SOURCE: Banco de España.

a. For a detailed explanation of the ROE breakdown, see Box 2.1 of FSR No. 6 (May 2004).

Asset impairment losses (specific and general provisions), relating mostly to lending, grew sharply in total business (60.6%), due partly to the growth of doubtful assets and partly to the still-buoyant growth of activity. In this respect, general provisions make up around 75% of provisions for bad debts, which testifies to the importance accorded in Spanish prudential regulations to the recognition of losses incurred that are not yet identified in specific operations.

Both *provisioning expenses* (other than for the foregoing specific and general provisions) and *other income* declined in relation to 2006. Provisioning fell basically due to the changes in those earmarked for pensions, since these had increased sharply in 2006 owing to the behaviour of certain large institutions. Other income also declined, in this case due to the reduction in income associated with sales of holdings in group companies. Once again, income in 2006 was very high owing to the sales by certain banks.

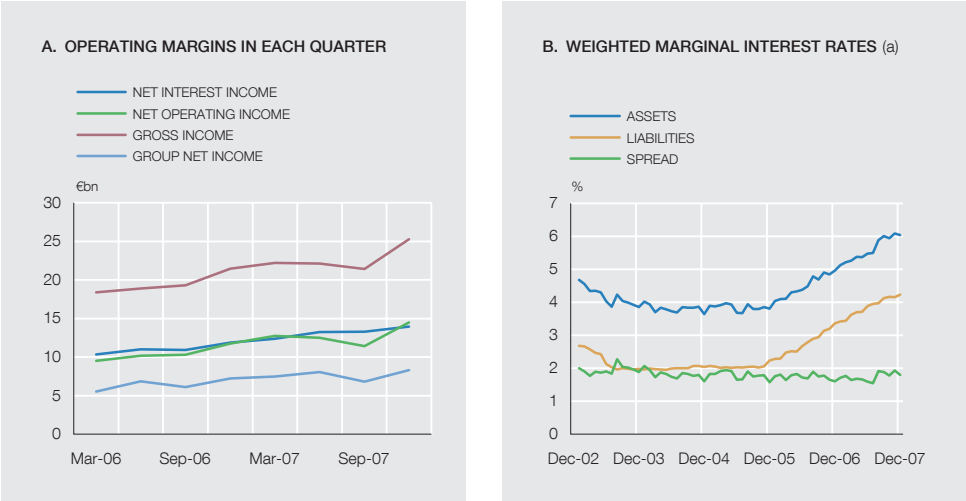
In any event, impairment losses and provisioning expenses subtracted 30.8% from net operating income, a figure only slightly higher than that recorded in December 2006 (30.1%). That said, *profit before tax* grew by 11%, while income for the year did so by 18.4%. The lower growth of taxes was due to the strong increase the previous year further to the reduction in the corporate income tax rate which, having a bearing on assets and liabilities in respect of deferred taxes, adversely impacted banks' income.

The resilience of the income statement to a potential increase in the cost of funding is notable.

As mentioned throughout this FSR, one of the consequences arising from the current financial turbulence is that the cost of funding for credit institutions increases. If this situation were to continue over time, deposit institutions' margins might be squeezed. One very direct stress test that allows this possibility to be evaluated is to increase the average cost of bank liabilities so as to analyse the impact on banks' recurrent income.

OPERATING INCOME ITEMS
Deposit institutions

CHART 2.12



SOURCE: Banco de España.

a. These rates are those established in transactions initiated or renewed during the month prior to that of reference, such transactions being weighted by their volume. The asset-weighted marginal rates include, inter alia, those applied to house and consumer finance and credit to non-financial corporations, while the liabilities ones include, inter alia, fixed-term deposits and repos.

The assessment considered is very direct for two reasons, among others. First, because a 0.25 bp increase in the cost of bank liabilities has been considered without any possibility of it being passed through to assets; consequently, the increase in the cost of funding is actually a narrowing of the spread. Second, because no management decisions of any type by banks have been considered, i.e. banks have no capacity to react (either by passing through the cost increase to assets or by cutting operating expenses). As well as being direct, the stress test should be understood as being very demanding insofar as a narrowing on this scale of the spread is more than double that experienced by Spanish banks in the past two years.

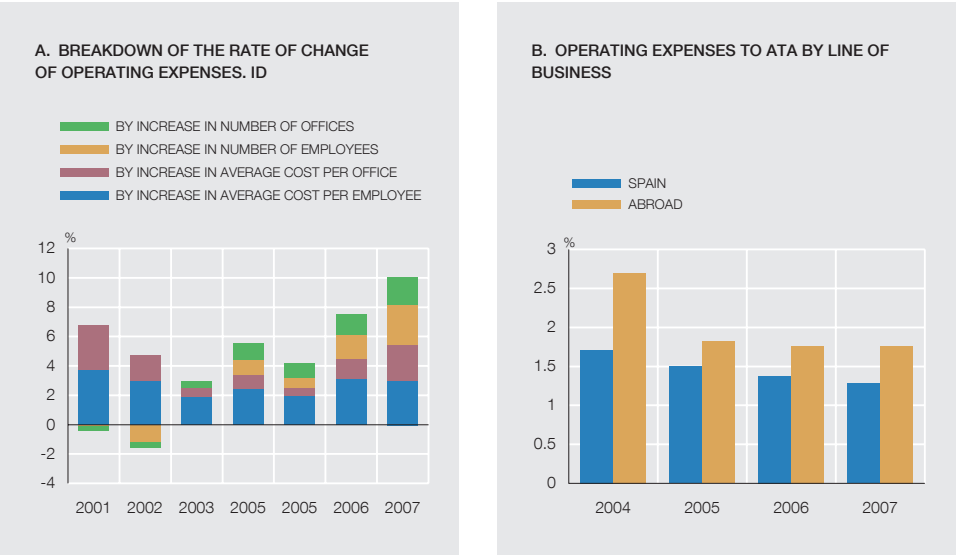
The results show that if the average cost of funding increases by 25 bp, without any possibility of pass-through to assets, net interest income will grow at a rate of 5.4% (compared with 19.9% in December 2007), while net operating income will do so by 7.5% (22.5% in December 2007). If the analysis is tightened still further by increasing the spread by 50 bp, making the likelihood of this scenario even more remote, net interest income will decline by 9%, while net operating income will do so by 7.6%.

The impact of the sub-prime crisis has, unlike for Spanish banks, been very significant for those of other countries.

The position of Spanish deposit institutions, and the zero direct impact the sub-prime crisis has had on their income in 2007, becomes apparent on comparing the major international banks. While the income before tax of the two biggest Spanish banks grew at a rate of close to 20%, the main US and — also — European banks saw their income decline significantly or even turn negative (see Chart 2.14.A). This is largely in response to corrections in the value of the portfolios of products related to the sub-prime segment (CDOs and others) for a set of banks (see Chart 2.14.B) that have progressively replaced the traditional banking model with the originate-to-distribute model. Stock market prices (see Charts 2.15.A and B) and CDS spreads (see Charts 2.15.C and D) confirm investors' worse perception of those banks that depend more on or specialise to a greater extent in the originate-to-distribute model. However, the latest available data at the time of this FSR being released show a significant correction in CDS spreads, though it would appear some time must elapse before this can be definitely confirmed.

OPERATING EXPENSES
Deposit institutions

CHART 2.13



SOURCE: Banco de España.

2.1.3 SOLVENCY

Solvency remains comfortably above the minimum regulatory requirements, with tier 1 capital having been strengthene.

The *solvency ratios* of the Spanish banking system comfortably exceed the minimum regulatory requirements. At the close of 2007, the total solvency ratio calculated under the Basel rules held at over 11.4%, despite declining by 50 bp. Under the stricter Spanish rules, the total solvency ratio stood at 10.6%, after slipping by 55 bp. The tier 1 ratio was up to 7.5% following a 32 bp rise which has broken the declining trend observed over the past decade (see Chart 2.16.A). This improvement in the tier 1 ratio was extensive to a large number of banks. In fact, very few banks have a tier 1 ratio below 6% (the required minimum is 4%) and their relative weight is very low (see Chart 2.16.B). Moreover, their number and their relative weight have diminished over the past year. Conversely, the relative weight of banks (over 100) with a ratio of over 8% (double the required minimum) has increased significantly.

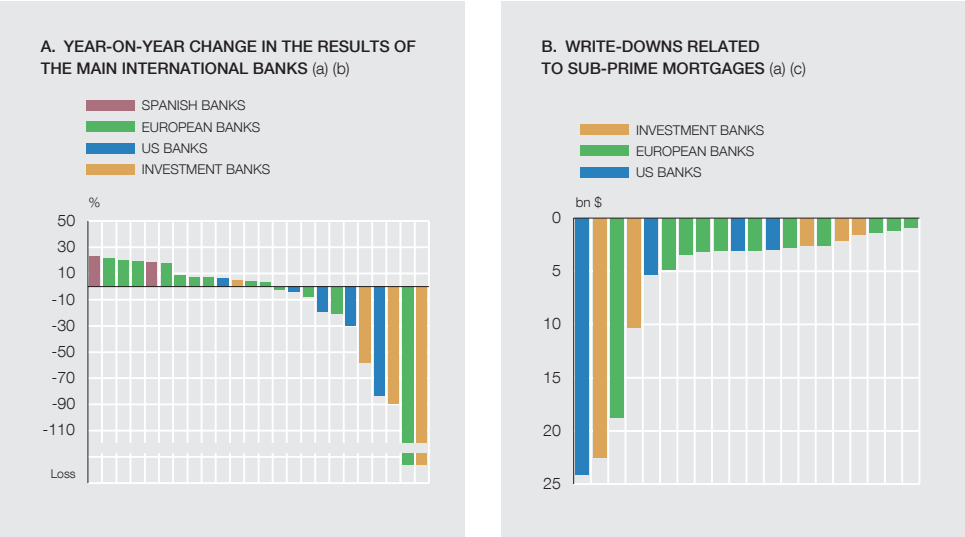
Risk-weighted assets are slowing…

The slowdown in Spanish deposit institutions' lending during 2007, amid easing activity, has passed through to *risk-weighted assets* which, after posting growth of 21.3% at end-2006, showed a rate of 12.7% a year later. Thus, credit risk requirements have grown to 13.8%, 8.3 pp less than a year earlier, as a result of the slowdown both in assets with a weighting of 50% (5.8 pp), mostly home mortgage loans, which grew by 8.8% in 2007, and in the riskiest assets (with a weighting of 100%) which have slowed by 9.1 pp with an increase of 15%. At the same time, credit with a zero rating (that to general government, among others) has increased by 25.5% which, combined with the foregoing, has resulted in a slight improvement in deposit institutions' risk profile (risk-weighted assets as a proportion of total assets) of 55 bp to 66.8%.

… as are own funds, where tier 1 capital is growing sharply.

The behaviour of *total capital* has been very similar to that of risk-weighted assets, as after several years' stable growth (at around 22%) it posted a strong slowdown in December 2007 (of 15 pp, having increased at a rate of 7.2%). The behaviour of its components was mixed. On one hand, on the positive side, tier 1 capital grew by 17.7%, entailing an acceleration of close to 6 pp, while tier 2 capital slowed for the second year running having grown at a rate of 7.3%, compared with 33% in 2006. On the other hand, deductions rebounded (141%), meaning that their contribution to the total solvency ratio was negative of the order of 7.2 pp.

RESULTS OF INTERNATIONAL BANKS CHART 2.14
Main banks



SOURCES: Banco de España, The Banker and company reports.

a. Data up to time of FSR going to press.
b. At banks reporting losses in 2007 Q4, it is meaningless to calculate the rate of change of the result.
c. Spanish banks do not feature in this panel as none of them have recorded write-downs related to sub-prime mortgages.

The notable growth in *tier 1 capital* can largely be explained (see Chart 2.17.A) by the sound performance of banking activity during 2007 which, converted into rising income, has allowed banks to transfer a portion of their profits to reserves (these quickened by around 6 pp having grown by 18.6%). The strong dynamism of reserves has been partly offset by the increase in goodwill. *Tier 2 capital* slowed significantly in step with the disappearance of the positive effects of the change in regulations on to the eligibility of general provisions and of revaluation reserves, which came about during 2005 and 2006. As a result, developments in tier 2 capital once again hinge, above all, on the change in subordinated financing which, moreover, is the most significant part of tier 2 capital (see Chart 2.17.B). Finally, *deductions from own funds* rose once again as a result of the increase in holdings in financial institutions.

The own funds/total assets ratio is also high…

… and the comparison with the major international banks shows the sound position of Spanish banks in terms of their core capital.

The solvency ratios are calculated taking into account risk-weighted assets. However, since last summer, there has been growing interest among analysts in the *direct comparison of own funds to total assets,* probably owing to the uncertainty over the level of risk of assets and to the greater interest aroused by the direct analysis of banks' degree of leverage. Spanish deposit institutions show (see Chart 2.18.A) a ratio of regulatory capital to total non-weighted assets of over 7%, which has been relatively stable in recent years. A closer measure is obtained by considering only capital and reserves (core capital), i.e. excluding tier 2 capital and the hybrid components of tier 1 capital (preference shares). Chart 2.18.A shows that the new ratio is close to 6%, which is a high level. In addition, an international comparison of the ratio of capital to reserves (net in this case of goodwill) shows the strength of the major Spanish banks (see Chart 2.18.B).[15]

15. Note that in the international comparison goodwill is deducted from capital and reserves. Without this deduction, the ratio would be higher for all countries, though it is very likely that the order of the countries would not change.

STOCK EXCHANGE PRICES AND CREDIT DEFAULT SWAP SPREADS CHART 2.15
Main banks

SOURCE: Datastream.

Using CCR data, a model has been constructed to estimate the distribution of Spanish deposit institutions' credit risk losses on the basis of historical data on loans granted by these institutions in the past two decades. By means of this model, an analysis has been conducted of the effect of macroeconomic variables such as GDP and interest rates on the proportion of defaults, the changes in the total number of loans granted and the loss that these defaults entail for banks. As a result, it has been possible to calculate the impact that different macroeconomic scenarios would have on the distribution of cumulative losses over a time horizon of three years.

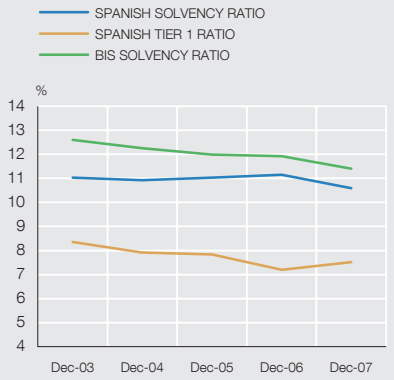
Stress tests using different adverse macroeconomic scenarios confirm the resilience of Spanish banks.

The distribution of losses shows a shift rightwards and a flattening (see Chart 2.19) from December 2006 to December 2007, which is indicative of greater expected and unexpected losses. The increase in the volume of credit extended between both dates explains the shift. However, the own funds available at present comfortably cover these losses. The expected loss amounts to only 45% of the sum of the general and specific provisions of all deposit institutions in December 2007, while the unexpected loss, calculated at a confidence level of 99.9%, accounts for only 19% of the system's own funds.

SOLVENCY
Deposit institutions

CHART 2.16

A. SOLVENCY RATIOS. SPANISH AND BASEL RULES



B. DISTRIBUTION OF INSTITUTIONS BY CORE CAPITAL (TIER 1) RATIO

	Dec 2007		Dec 2006	
Interval	No. of Inst.	% ATA	No. of Inst.	% ATA
- 4	0	0.0	0	0.0
4 - 5	2	1.0	2	1.7
5 - 6	6	3.9	11	6.4
6 - 8	55	71.7	45	75.0
8 - 9	14	10.0	26	10.7
9 - 10	18	9.7	7	1.1
10 -	72	3.6	76	5.1
Total	167	100	167	100

SOURCE: Banco de España.

In addition, a stress test has been performed on the distribution of losses obtained in 2007. It analyses the impact that four consecutive quarters of GDP declines on a similar scale to those that occurred in the 1993 recession would have. It is further assumed that, as from the fourth quarter, it would take two years to regain the previous growth levels. As can be seen (Chart 2.19), the fundamental effect on the distribution of cumulative losses over the next three years would be a considerable increase in credit risk. Specifically, the expected loss would increase by 57%, while the unexpected loss, also evaluated at 99.9%, might undergo a 44% increase on its current value. Despite the harshness of the simulated scenario, the own funds built up by Spanish deposit institutions would be capable of comfortably absorbing the increase in credit risk losses in the business in Spain. In particular, the expected loss in this stress test scenario would only amount to 70% of the sum of the general and specific provisions, while the unexpected loss would only be 26% of own funds.[16]

2.2 Other financial market participants

2.2.1 INSURANCE COMPANIES

As mentioned in previous FSRs, one differential characteristic of the Spanish financial system is the high presence of banks. Nonetheless, the study of other financial intermediaries, such as *insurance companies,* is relevant to the analysis of financial stability. The effects stemming from the US sub-prime mortgage crisis and the current conditions in international financial markets pose additional challenges to the insurance industry. However, the information available to date, and the assessments by various national and international agencies, suggests that at present there are no particular tensions affecting the traditional sector of this business.

The direct risks arising from the sub-prime segment for insurance companies appear to be limited.

This general assessment can be inferred from the fact that, at the international level, insurance companies have invested to only a limited extent in the type of structured products at the root of the problems besetting international financial markets. The exposures arising from risks related to the sub-prime segment, which some international studies estimate at between 2%

16. Note that no increase in own funds is permitted; i.e. own funds as at December 2007 are used, which makes the stress test even tougher.

CAPITAL
Deposit institutions

CHART 2.17

SOURCE: Banco de España.

and 10% of total assets in the sector, are considered manageable. So far insurance companies have not been affected by the liquidity risk derived from operations via conduits or SIVs.

The information available on the *Spanish insurance sector* confirms the foregoing. Companies holding some marginal risk, whether direct or indirect, are limited in number and in terms of their relative weight in the sector. Further to various studies undertaken, the biggest Spanish insurance companies have declared that they have no exposures in mutual funds or in structured products that are exposed to the US sub-prime segment.

The data available on Spanish insurance companies show their stability.

The data on the performance of Spanish insurance companies, available only to 2007 Q3, reveal the stability of the sector. To September 2007, insurance companies' assets grew by 6.2% on the same period of the previous year. The balance-sheet structure has not changed significantly in relation to previous periods, meaning that insurers hold a high proportion of their assets in fixed-income investments (50.5% in September 2007), most of which (around 60%) are classified as held-to-maturity investments. Equities account for a small proportion (5% of total assets), while unit-linked policies, in which the policyholder assumes the risk of the investment, account for 6% of assets. Accordingly, the fluctuations in securities markets are not factors of high risk for the Spanish insurance industry in view of its limited exposure. And nor is the trajectory of interest rates, insofar as positions are generally managed by means of duration immunisation.

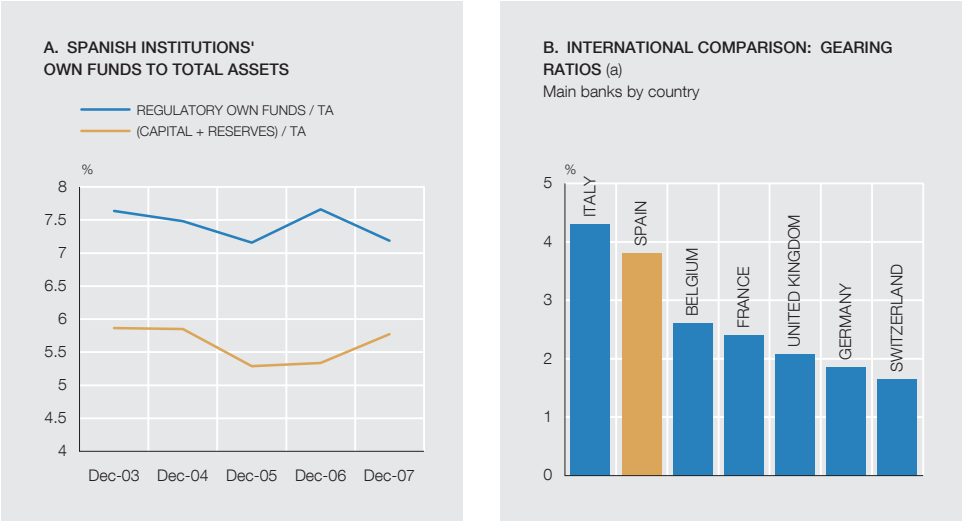
They have grown in terms of premiums…

The growth of the Spanish insurance sector can be seen in the 9.5% increase in premiums in 2007 Q3. The life branch (15.1%) outpaced the non-life branch (5.8%), with premiums in the latter accounting for 58% of the total.

… and have high solvency margins.

The solvency of the sector continues to be high. On one hand, the assets subject to technical provisions exceed the provisions to be covered, both in the life and non-life branches. On the

SOLVENCY. CAPITAL AND INTERNATIONAL COMPARISON CHART 2.18



SOURCES: Banco de España and Lehman Brothers.

a. The gearing ratio is defined as capital and reserves net of goodwill / total assets net of goodwill. The higher the ratio the lower the gearing.

other, the solvency margin is at a very high level, standing at 190% for life insurance and at 347% for the non-life branch.

There is growing concern at present about monolines….

At the international level, one insurance business area in which concern is growing is that of the so-called *monolines.*[17] These entities pursue a significantly different type of business from traditional insurance companies. They basically provide credit enhancements to bond issuers, which usually take the form of an unconditional and irrevocable guarantee of payment of the principal and interest of the bonds that are underwritten. In this way, the issues obtain a better credit rating than would have been assigned to them in the absence of the insurance. What is more, even if the issuer has a good credit rating, it may find it beneficial to engage the services of a monoline if its name is not widely known, since its securities become more attractive to investors.

… which have granted credit enhancements to the super-senior tranches of CDOs.

Traditionally, monolines have underwritten issues in the US municipal bond market. But in recent years, and despite the differences between the various companies in the sector, they have significantly increased their share in the structured products market, granting credit enhancements to the super-senior tranches of securitisations with CDOs, which in some cases had underlying assets of poor credit quality.

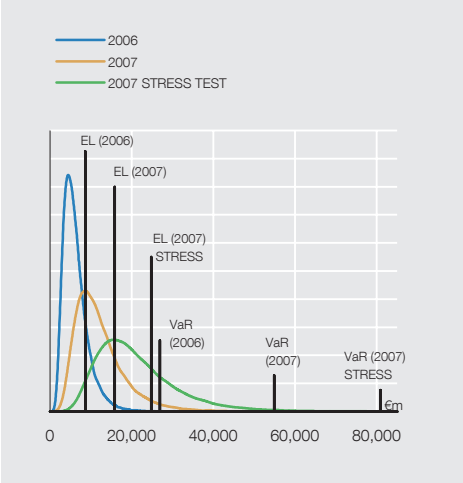
The pressures financial markets have experienced since last summer have impacted monolines, which have posted losses in their mark-to-market positions in products such as synthetic CDOs and other derivatives. This has been reflected both in their stock market prices (see Chart 2.20.A) and in CDS spreads.

The problems that have affected these products are jeopardising monoline ratings (normally AAA)...

Monolines normally maintain their positions to maturity and only have to meet the payments committed in the guarantees they offer in the event of the related bond defaulting. Nonetheless, to the extent that the losses in mark-to-market positions reflect the deterioration in the

17. This insurance business segment comprises a set of specialised institutions located in the United States, although some of them belong to European financial institutions. Concentration in the monoline market is high, since the joint market share of the six biggest companies is around 90%.

DISTRIBUTION OF ACCUMULATED LOSSES OVER THE NEXT THREE YEARS (a) CHART 2.19



SOURCE: Banco de España.

a. EL: expected loss; VaR: value at risk.

credit quality of the securities, they entail an increase in the likelihood of the monolines having to meet future payments on the instruments underwritten. Against this background, the rating agencies have recently announced a revision of these companies' ratings, a question which is fundamental to the type of business they pursue.

… which would affect the bonds underwritten, potentially prompting strong sales thereof.

The downgrading of monolines would have a significant effect on the ratings of the bonds they have underwritten. That might adversely affect credit markets, insofar as the downgrading of the securities guaranteed would prompt orders to sell by the investors holding such securities. Some international banks might also be directly affected, either because they are owners of or have capital stakes in monolines, or because they have taken out protection via CDSs to which these companies are a counterparty.

Spanish credit institutions have no direct exposure to monolines.

Spanish deposit institutions, unlike other foreign banks, have no significant exposure to monolines. Accordingly, there are no direct risks to the Spanish banking system. In any event, the risks associated with monolines would be indirect ones, insofar as their difficulties were to heighten the current turbulence besetting international financial markets.

2.2.2 OTHER FINANCIAL INTERMEDIARIES

In Spain, the direct exposure to US sub-prime mortgages of investment and pension funds is virtually nil. Nonetheless, the indirect risks stemming from the current conditions in financial markets pose sizeable management challenges to both types of entity.

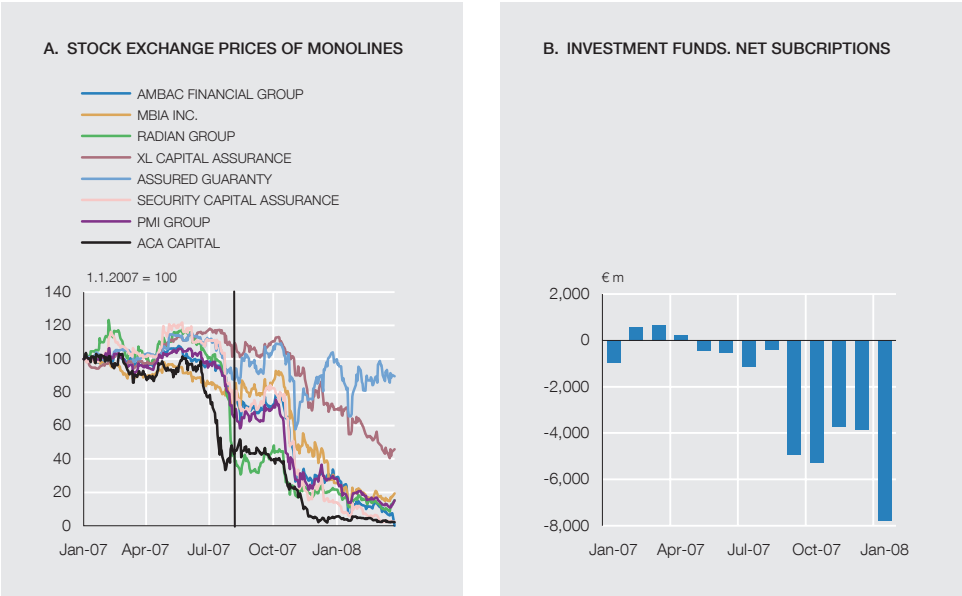
Investment funds may be affected by the downward and more volatile trend of markets,…

Developments in financial markets, characterised by an increase in credit spreads, and by the downward and more volatile trend of stock markets, will have an impact on the sector. In this respect, the average weighted return in 2007 for *investment funds* was 2.40%, below the return on public debt. The return on pension funds was, at 2.1%, also along these lines.

…, by investors' diminished appetite for risk and by greater competition from deposit institutions to capture savings.

In a setting in which financial markets are performing unfavourably, savers are likely to modify their investment strategies, opting for products — such as bank deposits — that offer a lower risk profile. A further contributing factor here is the new tax arrangements for saving products (see Table 3.1 of the November 2007 FSR).

MONOLINES AND INVESTMENT FUNDS CHART 2.20



SOURCES: Banco de España, Datastream and INVERCO.

The data available so far corroborate the foregoing. The total assets of collective investment institutions (CIIs) declined during 2007 by more than €9 billion (–2.7%) to €327.96 billion. Among CIIs, capital market investment funds, which account for 72.8% of the total, saw their assets fall by 6.1%, while the decline in the number of shareholders was 6.3%. Net share subscriptions were clearly negative, especially in the second half of the year, and since then net redemptions of close to €26 billion have been recorded (see Chart 2.20.B).

The situation in the pension funds sector was somewhat better, although their performance in 2007 was rather less dynamic than in previous years. Pension fund net assets increased in 2007 by 6.52% to €86.56 billion, compared with growth of 11.5% in 2006.

As noted in previous FSRs, the November 2005 Regulation on CIIs opened up further possibilities for the investment funds sector, allowing for the creation in Spain of hedge funds and of funds of funds. However, this sector is of limited relative significance in Spain, as is the exposure of Spanish institutions to it. Internationally, however, hedge funds have significantly increased the volume of assets they manage in recent years. There has been debate on several occasions about their capacity to diversify risks more efficiently and, at the same time, about their potential dangers as what are involved are highly leveraged structures. To date, however, they have not been at the root of the problems afflicting international financial markets, although some have experienced difficulties.

3 Infrastructures

Despite the significant difficulties that have arisen in international financial markets …

…problems have not been detected in the infrastructures underpinning them.

Despite the increasing difficulties in international financial markets since last summer (the subprime crisis, lack of liquidity in conduits and SIVs, withdrawal of institutional investors from the securitisation market (covered bonds and ABSs) and LBO-related debt, loss of confidence among the large international banks and accumulation of liquidity for precautionary reasons, exposures to monolines and DPCs, worsening expectations, rising defaults and falling stock markets), the *infrastructures supporting international financial markets* (securities dealing, clearing and settlement and wholesale and retail payment systems) have operated without any significant problems. The current difficulties are therefore not related to market infrastructures but, in part, to the working and dynamics of such markets. In any event, given the intensity of the turbulence, there is a growing debate over how best to further improve other regulatory-type infrastructures.

However, debate is intensifying over how to further improve the regulatory infrastructures.

In the area of regulatory infrastructures, two central elements have recently been overhauled. Firstly, through the process known as *Basel II* (and its application in the European Union through the Capital Requirements Directive No. 2006/48 and the forthcoming Banco de España Circular on capital)[1] and, secondly, through the entry into force of the *International Financial Reporting Standards* (IFRSs) (through EU Regulation No. 1606/2002 and Banco de España Accounting Circular 4/2004).

Basel II represents an enormous advance in risk management…

Basel II, which comes into force in Spain this year, represents an enormous advance in banking regulation by linking credit institutions' capital requirements much more closely to the level of risk assumed. As a result, potential incentives for institutions to arbitrage capital standards owing to their limited risk sensitivity will be avoided. For example, until now the consumption of regulatory capital in business financing was independent of the level of the credit risk so that a loan to a company with the highest credit rating consumed the same percentage of capital as another to a company on the verge of default. Securitisation enabled institutions to exploit this lack of sensitivity of capital requirements to risk.

… although, given the greater sensitivity of the requirements to risk, it may increase the procyclicality of the banking system.

Transition to a system of capital requirements that are much more closely aligned with the level of risk amounts to a very significant improvement in the regulatory infrastructure. However, this transition is not free from certain potential difficulties, which must be taken into consideration by the institutions, the most important of which is probably the *question of procyclicality.*[2] In contrast to capital requirements that were constant over the business cycle under Basel I, capital requirements are now going to be more proportionate to the level of risk and the latter, measured in terms of the loan's probability of default (PD), changes with the business cycle: PDs increase in downswings and decrease in upswings. Thus, in line with changes in PDs, a substantial increase in capital requirements may have an adverse impact on lending and, therefore, on economic activity, aggravating recessions.

The application of fair value also incorporates elements of procyclicality.

At the same time, the new accounting standards (IFRSs) applied in the European Union and in other countries of the world since 2005, and the standards applied in the United States (FASB), also incorporate elements of sensitivity to the business cycle, such as the application of fair value, which may be understood as the price at which purchasers and vendors exchange a

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1. The Banco de España published the text of this Circular on 29 February for public consultation. **2.** A discussion can be found in the paper by E. González "Prociclicidad, volatilidad financiera y Basilea II" published in *Estabilidad Financiera,* No. 8, pp. 153-161.

financial instrument. Fair value is applied in the valuation of financial instruments held in the trading book and of those available for sale, but not in the valuation of those held to maturity. The latter should be classified as held-to-maturity investments and are carried, both in Europe and in the United States, at amortised cost.

The financial system is procyclical by nature. The important question is to determine whether the regulation incorporates additional elements of procyclicality.

Financial markets, and the agents that participate in them, behave procyclically by their very nature. That is to say, during upturns they tend not to fully incorporate the risks that are accumulating, so as to react swiftly during downturns. Insofar as financial regulation has to reflect and be adapted to the reality of the markets, it also incorporates a certain element of procyclicality. This is the case, for example, of both Basel II and IFRSs. However, the important thing is to determine whether these regulations incorporate elements of procyclicality that are additional to those characterising the financial system, or whether they are a reflection of the same, i.e. their application is neutral in terms of the procyclicality that they incorporate. Given the importance of this question, it should be analysed in greater depth.

The BCBS has included various elements that mitigate this problem.

The Basel Committee on Banking Supervision (BCBS) was aware of the procyclicality question and introduced into the new regulatory framework, in both pillar 1 and pillar 2, elements that mitigate it (the possibility of calculating probabilities of default on the basis of a long time horizon,[3] stress tests in the face of stagnation in economic activity, adjustment of capital requirements to the cyclical profile, etc.). The most important element of mitigation is probably active management of capital by institutions, with a medium-term perspective and awareness of the impact that a change in the cycle has on capital requirements. In this respect, it should be noted that credit institutions operate in most cases with a significant margin of capital above the regulatory minimum.

The debate over IFRSs has been more limited, although it has been intensified by the recent difficulties ...

Debate regarding the sensitivity of fair value to the cycle has, however, been more limited. That said, the growing difficulties in the international financial markets since last summer have intensified interest in this question, since the procyclicality of fair value becomes more evident when there are no deep liquid markets (the fair value would be the market price if there were) and a mark-to-model approach must be used.

... since the valuation problems associated with marking to model have been highlighted …

Liquidity in many markets has declined very significantly since last summer, so that institutions have increasingly had to resort to obtaining the value of their financial instruments through information contained in markets for similar instruments or by using their own models (marking to model) which, moreover, use inputs (probabilities of default, losses given default, default correlations between the different components of a portfolio, etc.) that are not directly observable in the market.

US accounting standards (SFAS 157) classify assets (and liabilities) into three levels, depending on the way in which they are valued: level 1 assets, whose prices are observed directly on asset markets; level 2 assets, whose prices are obtained from markets that are not very active or, in the case of financial instruments, whose value depends on inputs that are directly or indirectly observable on a market; and, finally, level 3 assets, which are valued by marking to a model that uses inputs not observable in any market. The information supplied by US investment banks shows that level 2 and level 3 assets have grown since last summer. For example, the level 3 assets of investment banks clearly exceed the volume of their regulatory capital, while their level 2 assets may be 10 times their level 3 assets. That is to say, an erroneous

3. The paper by J. Saurina and C. Trucharte "An assessment of Basel II procyclicality in mortgage portfolios", in the *Journal of Financial Services Research,* vol. 32, No. 1-2, October (2007), pp. 81-1 shows the significant differences in regulatory capital obtained over the cycle depending on the method used to calculate the probability of default.

valuation of these assets, as a result of their complexity or a lack of reliable information, may have very significant solvency repercussions.

… especially for a group of very complex products held in the trading book.

A large part of the difficulties in valuing certain financial instruments stem from their growing complexity. The various securitisation tranches (from triple A to equity, the first tranche to assume losses) are recombined and repackaged into new financial instruments (CDOs, for example) to be resold to new investors. In order to value these successive instruments theoretical models are used which have been developed recently and have not been tested in a highly adverse scenario. The successive combinations of securitisation tranches and CDOs substantially alter the loss distribution so that it is much more difficult to calculate the level of risk incurred, which also increases with each successive securitisation. Many of these models did not take into account the fact that part of the underlying of these products was sub-prime loans with poorly measured behaviour that is highly sensitive to fluctuations in interest rates and house prices, and to borrowers' incentives. Therefore default correlations in portfolios with sub-prime loans were significantly underestimated, largely because the credit extension model changed from buy-and-hold (the bank retained all or at least part of the credit risk) to originate-to-distribute (the bank swiftly transferred all the credit and, consequently, its incentives for monitoring borrower quality fell drastically).[4]

Many of the investors in the most senior tranches of securitisations were not in a position to assume and manage much higher risk levels than those indicated by these securities' credit ratings. These instruments, which were generally recorded in the trading book, began to lose value at the same time as their rating was downgraded with the result that if they were used as collateral for other operations, investors had to increase such collateral and second, and most importantly, certain investors began to sell them once certain thresholds in the instrument's fair value were exceeded, thus putting further downward pressure on valuations and creating a vicious circle. These sales largely met the objective of limiting trading book losses.

In current financial market conditions, these problems have resulted in significant losses for certain international banks.

Strong growth of these complex products, against a backdrop of low risk premiums and of investors seeking higher returns, together with their inclusion in the trading book (and, therefore) at fair value, had a very significant effect on the earnings of the institutions which used them. During upswings, investors obtain high returns (as do the product placers), increasing the incentives to expand this business. However, in the event of a drastic change in market sentiment, these instruments are rapidly repriced (also incorporating a premium for lower liquidity) triggering sizeable losses which, since the instruments are in the trading book, are immediately taken to institutions' results. Certain investors may have hedged against the risks of loss of value of these instruments. However, the effectiveness of these hedges (through monolines and CDSs) may be in doubt if the volume hedged is very high and the fall in value very significant. The fact that sales of protection were made by just a few institutions only increases the uncertainty surrounding the effectiveness of these hedges. Under these circumstances, the solvency of protection sellers may also be questioned. These sellers had the benefit, in the upswing, of the insurance premiums and practically no defaults, with a very favourable impact on their income.

In short, when markets disappear, it is necessary to resort to inputs and internal models that are, in turn, extremely procyclical (higher correlations between the value of assets in the portfolio), which further contributes to aggravating problems in view of the reaction of investors and bank managers to limit losses. Accordingly, it has been argued that, if investors have no intention of trading these securities, i.e. they are going to hold them to maturity, then it would

4. See Box 2.2.

be appropriate to classify them as financial assets held to maturity and not in the trading book or as available-for-sale financial assets. Note that until last summer these comments were non-existent and that now, very probably, it is sought to delay the recognition of losses by re-classifying assets held for trading as assets held to maturity, which is not permitted by IFRSs or US accounting standards.

The solution to these problems should not involve reclassifying instruments in the trading book in other portfolios…

The solution in this situation is not so much to reclassify financial instruments in the trading book in other portfolios as to start a debate as to whether it would be *appropriate for IFRSs to recognise the uncertainties associated with the calculation of fair value under certain circumstances.* In view of the complexity of the products, the uncertainty surrounding their valuation and the difficulty of predicting how liquidity and investors' appetite for risk will develop in a changing environment, it would be desirable that when markets are booming, accounting standards permit the creation of objective and transparent reserves to reflect, for example, uncertainty about default correlations between instruments. Should the uncertainty become manifest, these reserves would be the first item to combat a decline in the value of these complex instruments.

… but rather an in-depth debate of the limitations of fair value in certain circumstances …

… and the possible appropriateness of creating objective and transparent valuation reserves to show the uncertainties surrounding certain parameters of valuation models …

Application of the above proposal to financial instruments held for trading and available for sale would decrease excessive earnings volatility and, consequently, would also moderate the incentives for financial institutions' managers to expand business excessively when markets are free from difficulties and to contract it excessively when markets disappear. Clearly, *these valuation reserves for uncertainty would have to be completely transparent* and reported to investors at all times to enable them to reconstruct the valuations, without the adjustment for reserves, if they so desire.

… as well as a more flexible way of recognising losses incurred due to credit risk.

The procyclicality of IFRSs is also present in the measurement of losses incurred due to credit risk in the corporate and household loan portfolio. Greater flexibility in the accounting standards for credit loss provisions (the calculation of asset impairment) would also enable this procyclicality to be reduced and would make accounting standards and changes in bank risk over the cycle more consistent.[5]

For all the above reasons, this seems to be a suitable moment to *commence a debate on the need to make IFRSs more flexible* when they apply basic principles of risk measurement and management and, in particular, on the appropriateness of earlier recognition of a highly likely future loss in asset value. In this way, bank managers could have greater incentives to limit their naturally procyclical behaviour.

5. A discussion on how to do this is found in the paper by G. Jiménez and J. Saurina "Credit cycles, credit risk, and prudential regulation", *International Journal of Central Banking,* vol. 2, No. 2, June 2006, pp. 65-98.

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