

**FINANCIAL STABILITY
REPORT**

05/2007

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FINANCIAL STABILITY REPORT MAY 2007

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ABBREVIATIONS*

€	Euro
AIAF	Asociación de Intermediarios de Activos Financieros (Association of Securities Dealers)
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
CDS	Credit default swaps
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
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
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
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*.

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Introduction

Since the publication of the last *Financial Stability Report (FSR)*, economic activity worldwide and in Spain has held at a high growth rate, while certain prevailing global risks have eased. The international financial system has shown notable resilience in the face of specific adverse episodes. Currently, however, certain challenges remain. These include most notably substantial global imbalances, geopolitical risks and those relating to potential changes in the current perception of the level of risk, and the growing degree of leverage of hedge funds and of private equity transactions.

The favourable economic situation throughout 2006 allowed Spanish deposit institutions to pursue their activity in a benign setting. The trends identified in previous editions of the FSR have remained in place, and credit to the private sector continues to show signs of accelerating. Nonetheless, some change is perceptible in the pattern of recent years, since financing to households, especially for house purchases, is slowing. And the growth in credit to corporations, in both construction and real estate development as well as in other activities, is stepping up.

As might be expected, even in a favourable economic setting, doubtful assets are increasing following the strong growth in credit in recent years. This increase is also in response to the new accounting Circular (CBE 4/2004), since doubtful assets are now recognised earlier and in a higher proportion. In sum, the rise in doubtful assets should be seen as a natural process of greater convergence towards the levels in other banking systems in peer countries.

Doubtful assets ratios remain at very low levels, in particular when compared with those of other developed banking systems. The comparison is all the more favourable in the mortgage lending segment, particularly when set against the US market as a whole. The low levels of doubtful assets ratios largely attest to the favourable performance of the Spanish economy in recent years, but they also highlight the fact that there is little scope for further reductions in these ratios. Against a background in which the strong rate of expansion of credit were to ease, it would be reasonable to expect that the trend of these ratios would progressively be reversed.

The strong growth in economic activity and the diminished buoyancy of financing raised by households and firms through traditional bank borrowing obliges institutions to resort to the capital and interbank markets. This trend, which is not new, entails greater pressure on institutions' financial costs and on their liquidity risk management.

In the course of 2006, Spanish deposit institutions were able to shore up their income statements, the first line of defence against the potential materialisation of a more adverse scenario, despite the adverse impact of tax changes on results. The resilience observable in the main margins of the income statement, even stripping out the positive effect arising on the sales of certain holdings, is related to greater activity and to the increase in efficiency.

The markets' assessment of the main Spanish groups confirms the foregoing, corroborating the strength of the sector in Spain. What is more, according to market indicators the evaluation of Spanish groups is in line with that for the main European and US groups.

However, in a less favourable setting, some of the efficiency gains might be forgone. And, at the same time, if the growth rate of activity slows, there might be a more moderate increase in

earnings. The increase in profitability is partly related to the slight rise in the risk profile and to some change in the composition of regulatory capital. It is in such benign environments, in which institutions see their earnings boosted thanks to developments in activity, that complacency should be avoided and watchfulness over costs maintained, stepping up flexibility in order to withstand any potential deterioration in efficiency.

Against a background in which the strong growth of activity has pushed capital requirements up, both the total and tier 1 solvency ratios stand significantly above the regulatory minimum levels, which testifies to the strength of the banking sector in Spain. Moreover, the stress exercises performed confirm the notable resilience of Spanish institutions at present.

This strength is also shared by insurance companies, which evidence high profitability and high solvency margins. That indicates that the sector is in a position to face the risks arising from market developments and the risks inherent in their business, along with challenges over the medium-term horizon, such as the introduction of IFRS and Solvency II.

Other financial market participants that — without having undergone particular pressures since the last FSR — are subject to monitoring owing to their significance are hedge funds, although their relative weight in Spain is currently limited. Nonetheless, the growth in assets managed internationally, their opaqueness and the high degree of leverage with which they operate all add, despite the possibilities of risk diversification these funds offer, further elements of uncertainty.

The stability of financial systems depends largely on the infrastructure underpinning them, and on the regulations that affect them. In this respect, developments such as Target2 or the MiFID will be viewed as important by the financial markets in the near future.

At the time of this FSR going to press, there was a correction in the listed prices of certain companies linked to the Spanish real estate sector. It would not seem this process will significantly affect Spanish deposit institutions, given their limited exposure to market risk and, in particular, to the volatility of stock market prices in the short term. In the medium run, these institutions continue to display very high earnings and capital-generating capacity and, therefore, resilience in the face of unexpected domestic and international shocks. It is highly likely that the central scenario will continue to be a mild and progressive change of business model from the real estate segment to others, in step with a macroeconomic scenario marked by a slowdown in house prices and in real estate activity to the benefit of investment in capital goods and exports.

1 Macroeconomic risks and financial markets

The world and Spanish economies have continued to grow at a sound pace...

Since the publication of the last FSR, international economic activity has been highly buoyant and expectations of robust growth in 2007 have firmed, with more balanced growth across the various areas. Also, inflationary pressures have remained contained, despite the high level of capacity utilisation and lax credit conditions. Against this background, the Spanish economy has posted high rates of growth, which have continued to benefit from the generous financial conditions, despite these being slightly tightened in 2006. Such conditions, in turn, have given rise to the growth in household and corporate debt and, therefore, in the net borrowing of the country as a whole.

... and some of the risks identified in previous reports have eased.

Also, some of the global risks to continuing financial stability identified in previous reports have eased. These risks include that of further oil price increases and the pass-through of the slowdown in activity in the construction sector in the United States to the economy as a whole, with contagious effects on other economies. Likewise of note has been the scant impact of certain crisis episodes during this period, such as the heavy losses suffered by the hedge fund Amaranth in late August 2006, the collapse of the Thai stock exchange in December in response to the imposition of controls on capital inflows into the country, and the financial crises in Ecuador and Venezuela. Similarly, the bout of global financial turbulence in late February 2007, which saw sharp increases in volatilities and significant falls in the prices of the highest risk assets, did not adversely affect the balance of risks to financial stability either, insofar as it seems to have contained elements correcting factors that might have given rise to an excessive appetite for risk. That said, the persistence of risks which, were they to arise, would have a negative impact on the normal functioning of the Spanish financial system, should not be obscured by these favourable developments.

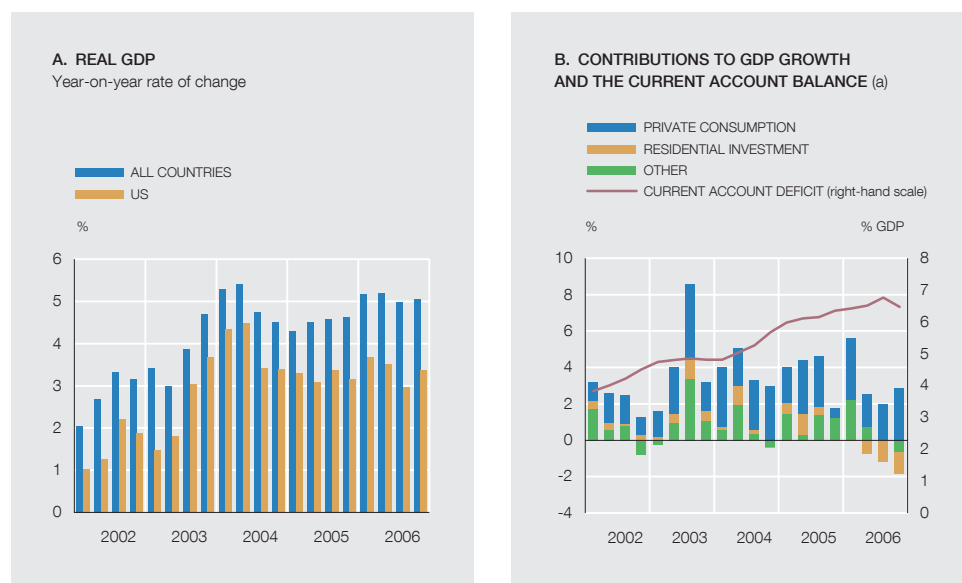
However, certain global imbalances persist ...

Despite the positive developments in economic activity, substantial external imbalances persist without any significant indication that they are tending to be corrected. In the United States, the downward adjustment of residential investment and the slackness of non-residential investment in 2006 Q4 exacerbated the dependence of the country's economic growth on private consumption (Charts 1.1.A and B). As a result, developments in the US economy and the resilience of its growth in the face of the poor performance of construction activity depended on the continuation of negative household saving ratios, which makes correction of the external deficit without a further slowdown in growth less likely. Against this background the contribution of fiscal policy was hardly decisive. Significantly, the reduction in the external deficit observed in late 2006 was as a result of oil price developments and, a little worryingly, of moderation in imports of capital goods, not of any correction of the domestic saving deficit in the United States.

There are no signs pointing to a disorderly correction of these imbalances, although their persistence does not contribute to correcting the dependence of global growth on the United States, or to a change in the pattern of international capital flows, which are highly influenced by this situation. Any sharper-than-expected adjustment would, however, particularly impact those countries which, like Spain, depend to a greater extent on external saving to finance their expenditure decisions.

... alongside geopolitical risks relating to developments in commodities prices.

Following a period of strong pressures which took oil prices to an all-time high in August, there was a heavy reduction from September. Combined with the fall-off in other commodities prices, this contributed notably to containing inflationary pressures. The fact there is some room to raise oil production allowed the price to react less energetically to the shocks on both the



SOURCE: Datastream.

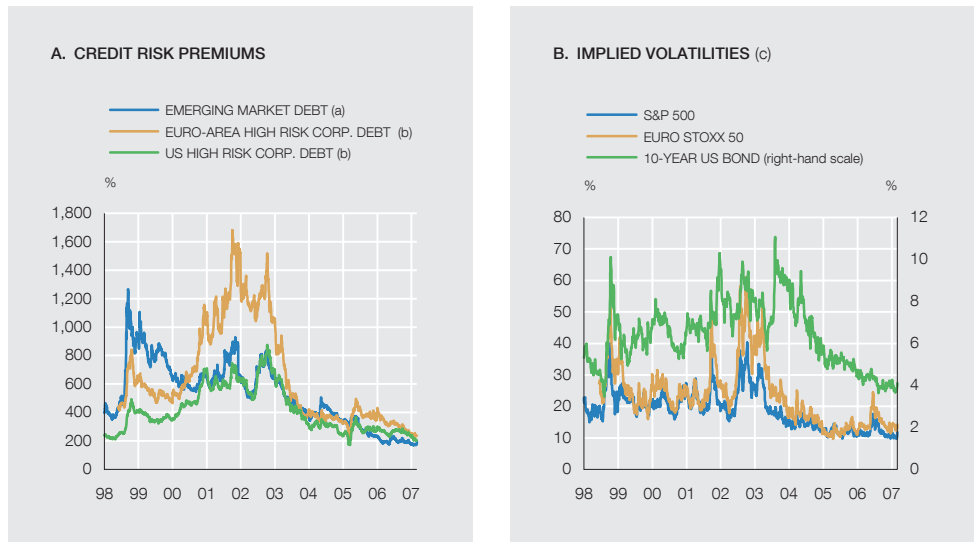
a. Contributions to the annualised quarter-on-quarter rate of change.

supply and demand sides and saw it settle to some extent at around \$60 per barrel. Nonetheless, robust global growth means the demand for oil will remain high, against a background marked by continuing factors of geopolitical uncertainty regarding the course of commodities prices. The risk of a rise in inflation rates greater than that being discounted by the markets thus persists and, if it materialises, it would surely oblige the monetary authorities to tighten their policy stance.

Agents might, moreover, reconsider the return they demand for assuming risks.

On international financial markets, asset risk premia, especially those for the highest risk instruments, have moved in recent years on a declining profile, reaching very low levels in historical terms (see Charts 1.2.A and B). Behind this, firstly, is the lesser uncertainty perceived by agents, as shown by the behaviour of implied volatilities on most financial instruments. That is in response, no doubt, to structural factors, the growing globalisation of markets and improved central bank monetary policy conduct, on one hand, and to other, more cyclical factors such as the favourable macroeconomic conditions. However, it cannot be ruled out that the changes in premia are also due to some reduction in the return demanded by investors to offset the incurrence of a given amount of risk. Against this backdrop, it is particularly difficult to anticipate how the markets may be affected by different types of shocks bearing either on the current perception of the level of risk or on the assessment of such risk by the various agents involved. Once again, however, it seems reasonable to expect risks will be more marked for those countries that resort to a greater extent to foreign saving.

Ongoing financial innovation in the field of risk diversification adds a further element of complexity. On one hand there are new products, such as credit derivatives, which make for more efficient management of such risks and, therefore, increase the system's resilience in the face of adverse shocks. On the other hand, however, the proliferation of agents, the growth of over-the-counter trading and the inherent technical complexity of the new instruments make it difficult to know with accuracy how risks are distributed among the various market participants and, therefore, what the overall results of specific shocks may be. Of particular note in this respect is the strong growth of assets managed by hedge funds, whose positive effects on diversification possibilities and on the profitability of international portfolios should not mask



SOURCES: Datastream, Bloomberg and Merrill Lynch.

- a. Yield spread between the emerging market bond index (EMBI) and US public debt.
- b. Yield spread between corporate debt rated BBB or lower and that rated AAA.
- c. Five-day moving averages.

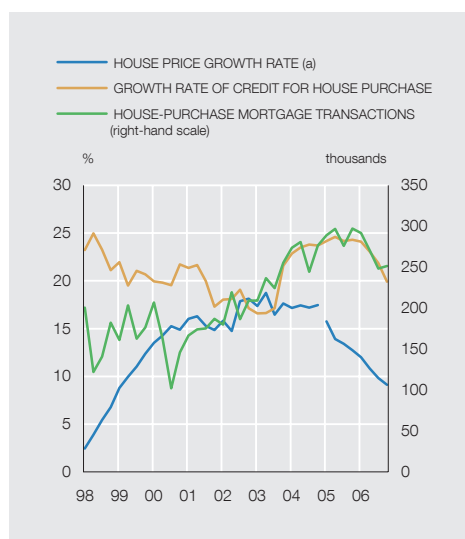
the fact that their traditional opaqueness and the consequent difficulties of evaluating these holdings factor in a further unwanted element of uncertainty. Also notorious are the problems in identifying which portion of the increases in the relative weight of foreign assets held by certain agents is actually the result of a risk diversification exercise and which the result of more speculative activities, such as carry trade¹.

The international financial markets have been affected in recent months by various shocks which, ultimately, have not had a significant bearing on the risk premia demanded. But other, new shocks have arisen, such as that associated with defaults in the US subprime mortgage market. In principle, the size of this market and its eminently local nature should contribute to restricting the scale of this shock internationally. However, regard must be had to the coupling of this market to the buoyancy of US real estate market activity and, through this channel, to US growth developments and, therefore, to some of the aforementioned global imbalances.

Financing a growing volume of M&As poses fresh challenges ...

The year 2006 saw strong growth in corporate mergers and acquisitions which were largely financed via greater resort to debt. This development has been on a global scale and is due, among other fundamental factors, to robust economic growth and favourable corporate earnings, against a background of generous corporate lending conditions. In Europe, bank intermediation in these deals has been significant and merits close monitoring of lending and of the extent to which the risks have actually fed through to a broad set of investors. While a portion of these mergers and acquisitions has been financed through private equity², the necessary funds for the bulk of them have been provided through debt issues, especially for the large-volume operations, with a significant participation by institutional investors. The nature of this debt has been varied, but debt with a higher proportion of repayment instalments scheduled towards the end of its life or debt bearing a fixed interest rate have become increasingly

¹. Activity in which very low-cost financing is obtained in one currency and invested in assets yielding a higher return in another currency. The carry trader works on the expectation that the exchange rate will show low volatility or even contribute positively to the total return on the transaction. ². Private equity is defined as those activities in which a group of investors acquires a firm with a view to restructuring it, making it more profitable and subsequently selling it to obtain a return on their investment. A good part of private equity activities involve substantially increasing the debt of the purchased firm.



SOURCES: Ministerio de la Vivienda and Banco de España.

a. New statistics from 2005.

prominent. Accordingly, a deterioration in the macroeconomic climate might entail a swift unwinding of these activities and of the attendant outlook, with the risk of contagion to other debt instruments. Also pivotal is the stance of institutional investors; some (such as hedge funds) are highly dynamic and their participation is motivated by the search for high returns. Further, during the debt placement period, banks retain a portion of the risks associated with these operations, which are occasionally financed through bridge loans or with undertakings to provide project financing. Given the sizeable volume attained by operations of this type and the degree of leverage involved, some might not be successfully completed. In any event, if the international banks most involved in this type of business have structured their operations and diversified risks appropriately, an event in this market should not have a significant impact on the stability of the international financial system.

Spanish corporations have contributed most notably to the surge in mergers and acquisitions, with a volume in 2006 of close to €100 billion. This figure quadruples that of 2005 which, in turn, showed strong growth on the previous year. In Spain, moreover, a most sizeable portion of the funds needed has been provided by credit institutions through operations which, often, have taken the form of syndicated loans.

... which, in Spain, compound those stemming from house purchase loan developments.

In recent years mortgage loans for house purchases have held at a high rate of increase which has become one of the main sources of expansion of banking business (see Chapter 2). However, the buoyancy of these loans has recently begun to ease, the slowdown being closely linked to the progressive normalisation of property market conditions. This move towards a normal footing can be seen both in house prices, the year-on-year growth rate of which has been on a clearly declining trend since late 2004, and in the changes in the number of mortgage transactions linked to residential property purchases (see Chart 1.3).

These changes make the prospect of a central scenario in which adjustments in this market proceed in a gradual and orderly fashion more realistic. As a result, the likelihood of alternative scenarios in which corrections were to take place in a less orderly fashion is limited, although this should not mask the fact that, throughout this process, Spanish credit institutions have considerably increased their exposure to developments in the domestic property market.

2 Deposit institutions and other financial market participants

2.1 Deposit institutions

2.1.1 BANKING RISKS

As noted in Chapter 1, macroeconomic activity and financial market developments have generally been favourable since the last FSR, although certain risks persist. Against this background, the main participants in the Spanish financial markets took the opportunity in 2006 to strengthen their financial position, and this has helped mitigate the risks which they face. This chapter deals precisely with identifying those risks and assessing the resilience of the institutions.

The consolidated balance sheets of Spanish deposit institutions show (Table 2.1) a brisk pace of activity (14.8%), albeit lower than in the previous year (23.2%). This lesser growth of assets is due to the performance of business abroad which, after various years of rapid expansion, has posted growth of 6%, partly as a result of the appreciation of the euro against the Latin American currencies.

Financing to the private sector is the main factor explaining asset growth.

Financing to the private sector is the main factor behind the growth of activity, while funding granted to general government decreased in relative weight. Indeed, the expansion of business in Spain, where asset growth was 17.6%, is mainly explained by the performance of credit to the private sector, which has grown at a rate somewhat above 25%. Compared with December 2005, there is a slight slowdown in secured credit, which nonetheless is holding at a rate of more than 27%, while other credit extended is picking up.

The growth of doubtful assets has not passed through to the doubtful assets ratio ...

The 2006 consolidated level data reflect an acceleration of institutions' doubtful assets, which have gone from a growth rate of 4.6% in December 2005 to the current one of 9.9%. This quickening is due to the doubtful assets of business in Spain, where they are growing at 13.9%. However, this growth of doubtful assets has not passed through to the doubtful assets ratios, which remain at record low levels, partly due to the rate at which activity is growing.

Deposits from the private sector have grown at 13.6%, which is below the growth rate of financing to this sector, and this has obliged institutions to resort to the international markets to finance their credit expansion (mainly via issues of marketable securities and subordinated debt). These sources of financing are more costly and probably more volatile. However, own funds grew by 17.6% and their weight in total assets has remained around 5%.

... and the risk profile of business abroad is decreasing.

As a result of the performance of foreign business, the weight of financial assets abroad has decreased slightly (by 1.3 pp) to 21.9% of total assets. The tendency of financial assets abroad to be increasingly located in geographical areas less prone to potential bouts of instability and, generally, the favourable economic situation of the world economy, mean that the *risk profile* of financial assets *abroad* continues to be very low (Charts 2.1.A and B).

In short, analysis of the consolidated balance sheets of Spanish deposit institutions shows that the main risks for them are associated with operations in Spain and, in particular, with developments in credit extension and doubtful assets.

Lending to households has slowed, but not that to corporations ...

Credit to the resident private sector in business in Spain continued to accelerate in 2006 (25.9% in December) due to the strong growth of lending to the corporate sector (30.3%), in a setting marked by the positive performance of economic activity. Lending to households, however, showed signs of a slowdown in the second half of the year, particularly that for house

CONSOLIDATED BALANCE SHEET
Deposit institutions

TABLE 2.1

ASSETS	DEC-06	(% CHANGE)	RELATIVE	RELATIVE
	(€m)	DEC-06/ DEC-05	WEIGHT DEC-05	WEIGHT DEC-06
	(€m)	(%)	(%)	(%)
Cash and balances with central banks	49,219	6.1	1.8	1.7
Loans and advances to credit institutions	244,407	9.9	8.8	8.5
General government	50,526	-3.7	2.1	1.7
Other private sectors	1,909,638	24.8	60.8	66.1
Debt securities	326,009	-16.4	15.5	11.3
Other equity instruments	103,042	33.2	3.1	3.6
Investments	27,803	-2.8	1.1	1.0
Derivatives	72,506	-0.6	2.9	2.5
Tangible assets	36,387	4.8	1.4	1.3
Other (a)	68,828	12.7	2.4	2.4
TOTAL ASSETS	2,888,365	14.8	100	100
Memorandum items:				
Financing to the private sector	1,998,619	22.9	64.7	69.2
Financing to general government	203,443	-22.7	10.5	7.0
Total doubtful assets	15,219	9.9	0.6	0.5
Total doubtful assets ratio	0.61			
Provisions for bad debts and country risk	35,595	17.1	1.2	1.2
LIABILITIES AND EQUITY	DEC-06	(% CHANGE)	RELATIVE	RELATIVE
	(€m)	DEC-06/ DEC-05	WEIGHT DEC-05	WEIGHT DEC-06
	(€m)	(%)	(%)	(%)
Balances from central banks	43,400	-24.1	2.3	1.5
Deposits from credit institutions	437,760	1.9	17.1	15.2
General government	77,562	14.8	2.7	2.7
Other private sectors	1,304,883	13.6	45.7	45.2
Marketable debt securities	545,881	43.7	15.1	18.9
Derivatives	79,139	16.9	2.7	2.7
Subordinated debt	70,871	14.5	2.5	2.5
Provisions	36,842	0.8	1.5	1.3
Other (a)	118,037	1.1	4.6	4.1
TOTAL LIABILITIES	2,714,375	14.7	94.1	94.0
Minority interests	5,643	-9.2	0.2	0.2
Valuation adjustments	22,448	18.8	0.8	0.8
Own funds	145,899	17.6	4.9	5.1
TOTAL EQUITY	173,990	16.6	5.9	6.0
TOTAL LIABILITIES AND EQUITY	2,888,365	14.8	100	100

SOURCE: Banco de España.

a. The remaining assets and liabilities entries not explicitly considered, including valuation adjustments, are included in "Other".

purchases (Chart 2.2.A). Nevertheless, both types of credit continued to grow rapidly (at nearly 22%). These developments signal a certain change of pattern with respect to recent years, in which lending to households outpaced corporate credit.

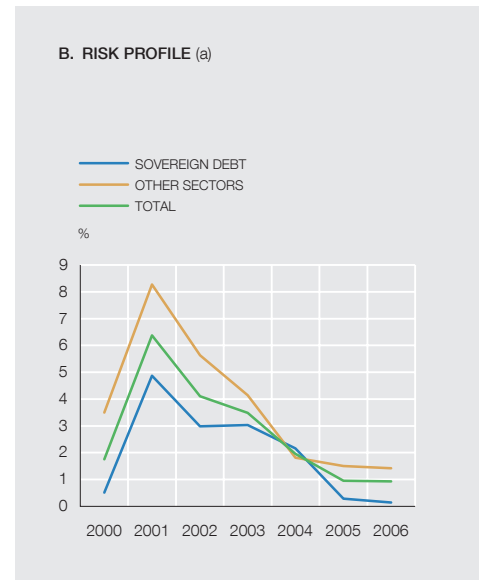
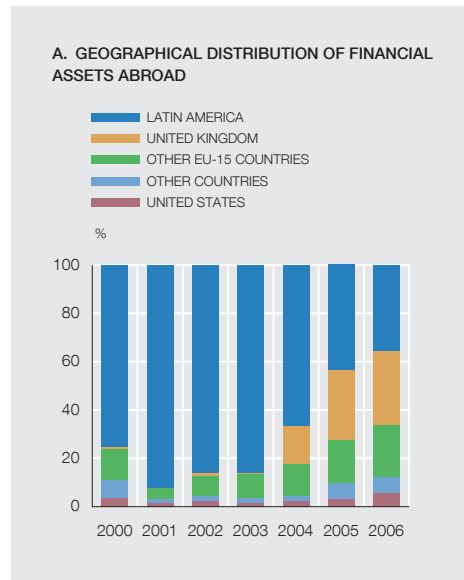
... both in construction and property development and in other sectors.

In the corporate credit segment, lending for *construction and property development* quickened further, reaching a rate of 44.8% at end-2006, but so did that for other business activities, with growth of 18.6%, up 8 pp on December 2005. Lending for construction and, in particular, that for property development, continued to grow strongly (33% and 50%, respectively), even accelerating in the second half of 2006. However, this may reflect the new projects

**GEOGRAPHICAL DISTRIBUTION OF FINANCIAL ASSETS ABROAD
AND RISK PROFILE**

CHART 2.1

Deposit institutions



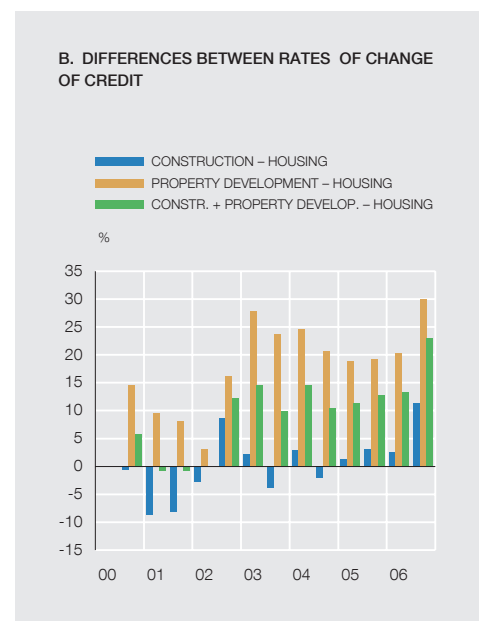
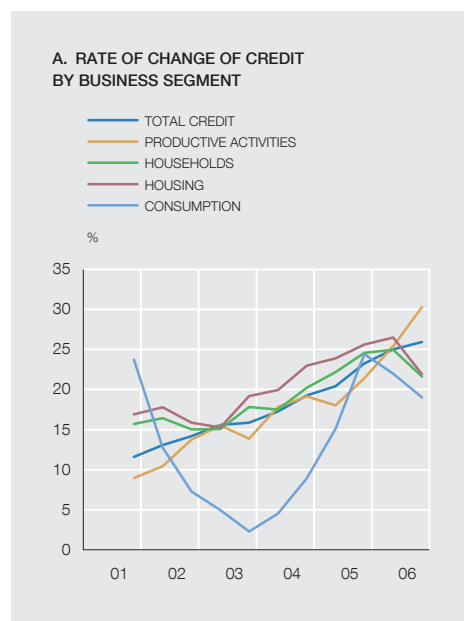
SOURCE: Banco de España.

a. Weighted average of default probabilities.

CREDIT

CHART 2.2

Deposit institutions. ID

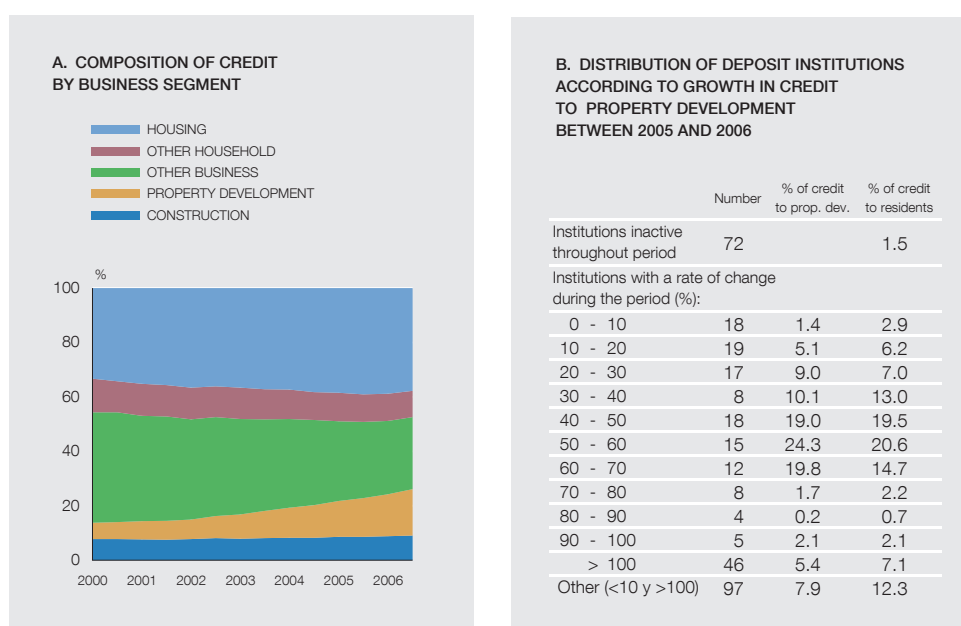


SOURCE: Banco de España.

undertaken early by property developers in 2006 ahead of the entry into force of the new construction quality regulations with the attendant higher costs.

The gradual slowdown in the rate of change of house prices, along with the progressive rise in interest rates (175 bp in the euro area since end-2005), is in line with the recent trend in house purchase lending (Chart 1.3), and contrasts with the developments in credit to the commercial

Deposit institutions. ID



SOURCE: Banco de España.

real estate sector (Chart 2.2.B). This decoupling, if it persists over time and is accompanied by a marked slowdown in economic growth, will constitute a risk factor for the Spanish financial system. Historically, construction and property development loans have shown the highest default rate of all corporate credit, as noted in previous FSRs.

Credit concentration has risen in lending to real estate companies and decreased in house purchase lending.

The pick-up in construction and property development lending continues to raise the *sectoral concentration* of institutions' loan portfolios (Chart 2.3.A). In December 2006 nearly half the corporate loans (49%) of all deposit institutions were to construction firms (17%) and property developers (32%). However, the relative weight of house purchase loans has decreased slightly.

The growth of lending to property developers is not evenly spread among the institutions (Chart 2.3.B). First, there is a numerous group of institutions with little or no activity in this business segment. Second, there is another group of institutions with high growth rates. In any event, these two groups of institutions both have a very small share of total lending to the resident private sector and, in particular, of lending to property developers. Third, there are somewhat more than 50 institutions, accounting for a very high (nearly 75%) share of business with property developers and two-thirds of total lending to residents, whose business growth is concentrated around an average rate of 50%.

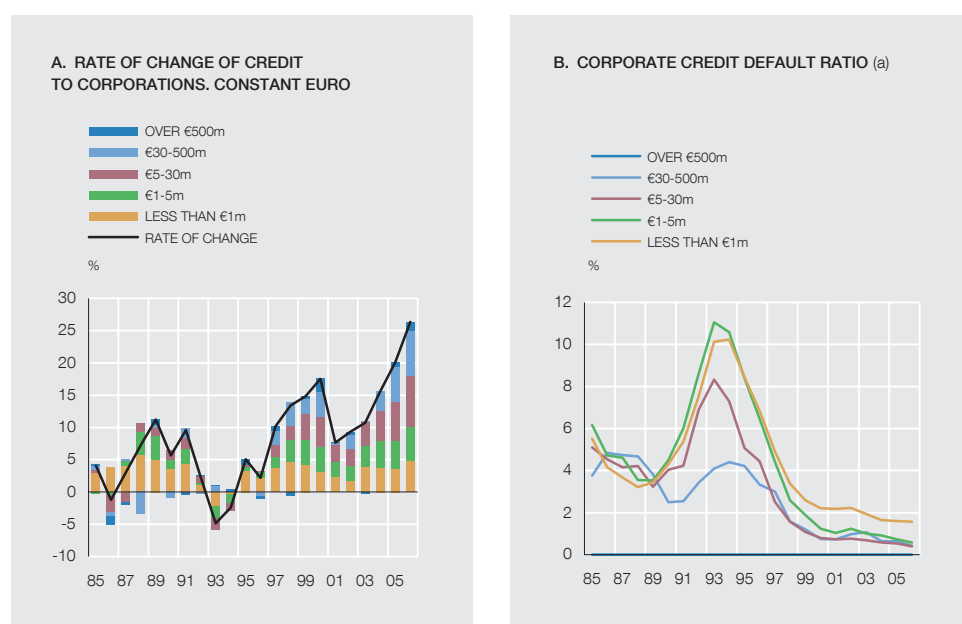
The pick-up in corporate credit is related to larger transactions ...

Recent years have seen a growing trend towards an increase in the relative weight of larger credit transactions. Thus lending has grown at 5 pp per year since 2003 as a result of transactions exceeding €5 million (Chart 2.4.A). Excluding transactions above €30 million, corporate credit accelerated in 2006 from 14% to 17.9%, which is less than the effective change (from 20.1% to 26.3%).

... which generally entail less credit risk.

In general, credit risk varies inversely with transaction size (Chart 2.4.B). In 2006 the default ratios (number of doubtful loans as a percentage of total loans) were at their lowest level for the last 20 years in all size groups, and they were all very similar (around 0.5%), except for

Deposit institutions. ID



SOURCE: Banco de España.

a. Ratio between the number of doubtful credits and the total number of credits.

transactions of less than €1 million (95.5% of the total transactions by number and 29% by volume), which had a ratio of 1.6%. Risk exposures in the over-€500 million group (0.001% of transactions by number and 2.9% by volume) have not shown any default in the last 20 years, as a result of the careful scrutiny to which these transactions are subjected and of the quality of the borrowers. A significant portion of these transactions is usually subsequently assigned to others through the syndication process.

The volume of lending to households in currencies other than the euro is very limited.

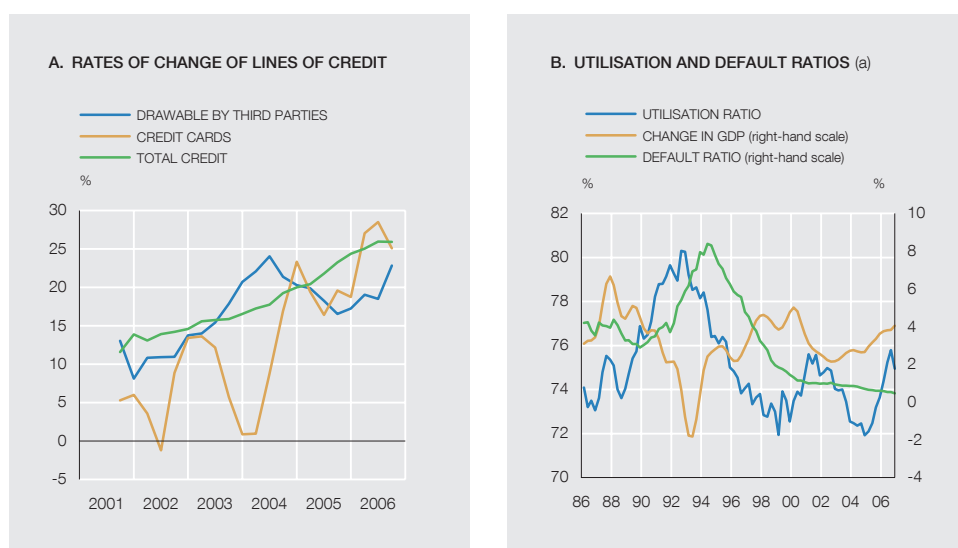
A very small part of bank lending to residents is extended in currencies other than the euro. Thus in 2006 around 0.3% of mortgage loans to individuals and 0.2% of other loans to individuals were denominated in other currencies, mainly Swiss francs (two-thirds of mortgages and nearly half of the others) and yen (one-third and nearly half, respectively)¹. The interest rate spread between the euro, Swiss franc and yen, and the movements in the euro exchange rate against these currencies (stability of the Swiss franc and the trend depreciation of the yen) have stimulated the appetite for debt in these currencies. However, the risks associated with transactions of this type are higher (exchange risk for the customer and reputational risk for the institutions marketing the debt).

The use of credit lines by firms has increased.

Concurrently with the strong growth of on-balance-sheet lending, the last few years have also seen a significant increase in credit lines (Chart 2.5.A). From the perspective of a broad time horizon (Chart 2.5.B), at aggregate level for total corporate credit, the utilisation ratio (ratio of amount drawn down to the sum of the amounts drawn and undrawn) has shown cyclical behaviour, rising to 80% in 1992 and subsequently falling to a low of 72% in 2004.

Simple correlation analysis shows that, in general, this utilisation ratio led the slowdown in activity and the rise in doubtful assets. Behind this behaviour lies the greater use of credit lines by

1. 1.8% of corporate credit is extended in foreign currencies, of which two-thirds is in US dollars, 20% in sterling and the rest basically in Swiss francs and yen.



SOURCE: Banco de España.

a. The utilisation ratio is the ratio between the amount drawn down and the sum of that amount and the amount still available.

firms trying to guard against possible future liquidity constraints in economic downturns, and this behaviour becomes more marked as the probability of corporate default increases. Adding to this is the more prudent attitude of banks as they reduce the amounts drawable by their more risky customers. The direct relationship between the utilisation ratio and an increase, with a certain lag, in doubtful assets has not been observed in this decade, which has been characterised by a significant change in the utilisation ratio and a highly stable doubtful assets ratio.

As was to be expected, following the strong growth of credit volume, doubtful assets are increasing ...

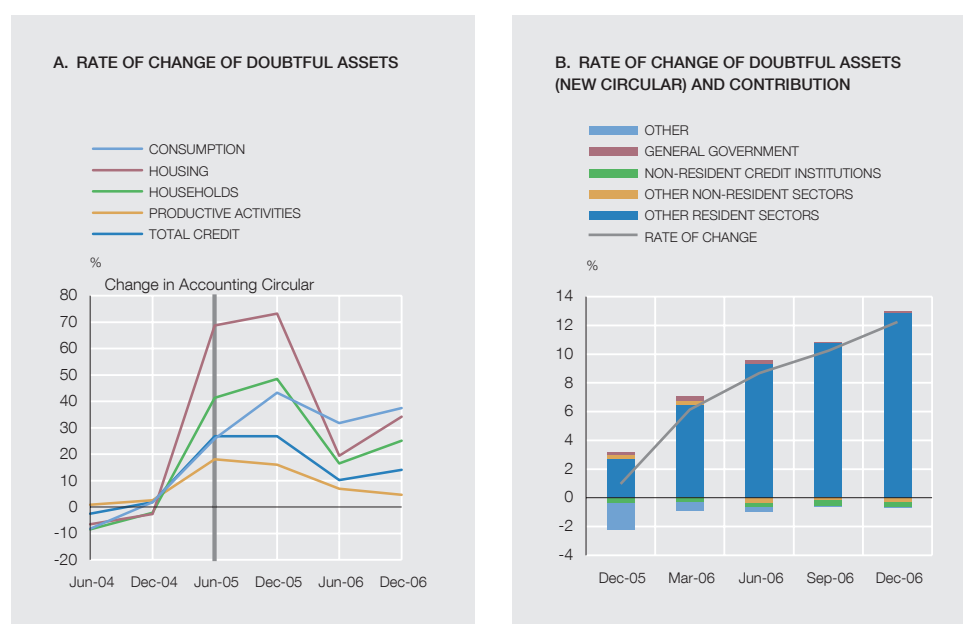
... partly due also to the new accounting rules, ...

The strong lending growth in business in Spain in recent years is, as expected, giving rise to an increase in *doubtful assets* (Chart 2.6.A), given the traditional lag between these two variables, and despite the favourable performance of economic activity. A higher volume of loans in deposit institutions' portfolios translates into higher doubtful assets if default probabilities remain constant. As has been pointed out in recent FSRs, this increase is partly due to *changes in accounting rules*, which require doubtful assets to be recognised earlier and in a higher proportion. In addition, the behaviour of doubtful assets will become more volatile (Box 2.1). The figures recalculated by the institutions in accordance with the new accounting criteria since December 2004 show a progressive quickening of the rate of change of doubtful assets (Chart 2.6.B), which grew by 12% in December 2006 (14% for corporate and household doubtful assets).

Of the business segments, house purchase lending showed the highest year-on-year increase in doubtful assets (34.1%), followed by other lending to households (17.2%) and credit to property developers (16.3%), although its course is highly erratic and partly attributable to the strong expansion of credit (Chart 2.6.A). By contrast, doubtful assets in corporate credit, particularly if construction firms and property developers are excluded, are growing very slowly, at 4.6% and 1.6% in December 2006, respectively. Hence the business segments that have grown most rapidly in recent years are naturally those that show the highest rise in doubtful assets.

... although the doubtful assets ratios continue to fall, ...

As a result of the combination of generally moderate growth in doubtful assets and strong credit expansion, the *doubtful assets ratios* of the business segments continued to decrease



SOURCE: Banco de España.

during 2006. The exception to this behaviour is, as mentioned in previous FSRs, the upward trend of the doubtful assets ratio of consumer credit (Chart 2.7.A). This, together with the almost imperceptible increase in the doubtful assets ratio of house purchase lending to households (4 bp, from 0.36% to 0.4%), meant that in December 2006 the doubtful assets ratio of corporate credit was, for the first time, less than that of household lending. Also contributing to this was the aforementioned change in the pattern of lending growth.

As regards *risk categories*, in business in Spain the order of their doubtful assets ratios coincides with the qualitative assessment of their risk level. Consumer finance, particularly that extended via credit cards or current account overdrafts, is the business segment with the highest level of risk. Although the doubtful assets of the low and medium-low risk classes (credit backed by collateral that fully covers the outstanding exposure) only account for around 40% of total doubtful assets, their contribution to the growth of these was highly significant in December 2006.

... and are well below the ratios in other countries.

At international level, the doubtful asset ratios of Spanish institutions are among the lowest (Box 2.2). In this respect, the doubtful assets ratios of mortgage lending to households in the Spanish market contrast markedly with those of such lending in the US market, where the subprime² segment differs greatly from the rest of the mortgage market (Chart 2.7.B).

..., particularly in mortgage lending,

In addition to the marked differences in the level of total doubtful assets between the US and Spanish mortgage markets and in the requirements to document mortgage transactions that have to be met by Spanish institutions under the rigorous Spanish mortgage market regulations, it should be noted that the current proportion of mortgage loans in Spain to individuals who at some time in the past have failed to meet their credit obligations is very small (1.27%). Moreover, although the doubtful assets ratio for mortgage loans is higher among foreign resi-

2. Although there is no single generally accepted definition, the subprime credit segment comprises mortgage loans to borrowers that have had difficulty in meeting payments at some time in the past, that have not adequately documented their income or that have characteristics indicating very high levels of risk (quantified using credit scoring models).

Banco de España Circular (CBE) 4/2004 considers that *all* the outstanding amount of a transaction must be classified as doubtful once three months have elapsed from the first default. Thus CBE 4/2004 has *toughened* the so-called transaction *carryover effect*, since its predecessor, CBE 4/1991, established that either of the following two conditions had to apply for this to occur: the accumulated past-due amounts classified as doubtful due to arrears had to exceed 25% of the amount payable; or there had to be amounts past-due by more than 12 months (six months for mortgages and consumer credit). Hence one of the direct consequences of the application of the new Circular is an increase in the volume of credit institutions' doubtful assets and in their doubtful assets ratios, as seen in recent FSRs.

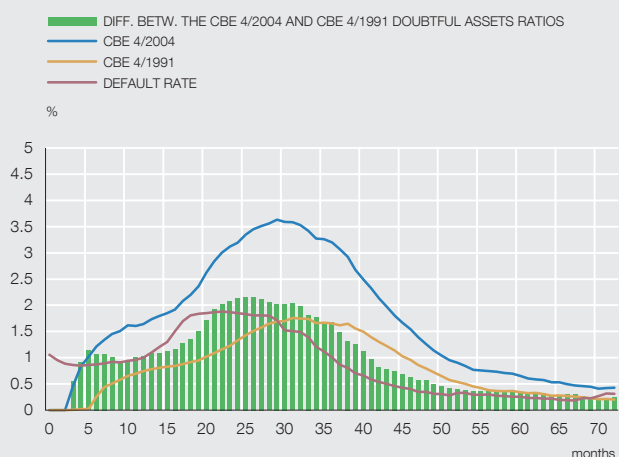
A simulation analysis of a mortgage loan portfolio over the business cycle vindicates the foregoing observations. Note that the levels of the doubtful assets ratios and the differences between them are a result of the assumptions made in the simulations and need not necessarily be related to the actual levels of current or future doubtful assets.

It has been assumed that an institution begins to grant mortgage loans in month $t=0$, so until three months have elapsed, no doubtful amounts will appear in its balance sheet. Also, the assumed default rate simulates cyclical behaviour by means of a progressive increase in defaults up to the end of the second year and a continuous decrease from the middle of the third year. Under these assumptions, Chart A shows that an institution will have a higher ratio of doubtful assets, since these will appear earlier in its balance sheet. Also, it confirms that the different classification of doubtful assets under the two Circulares produces differences in the doubtful assets ratio that become greater with increasing probability of default.

A similar study was conducted to analyse the impact of the new Circular on the volatility of the doubtful assets ratio. Assuming an environment characterised by small shocks within a certain macroeconomic stability, there were found to be moments of greater variability under CBE 4/2004 than under CBE 4/1991 (Chart B).

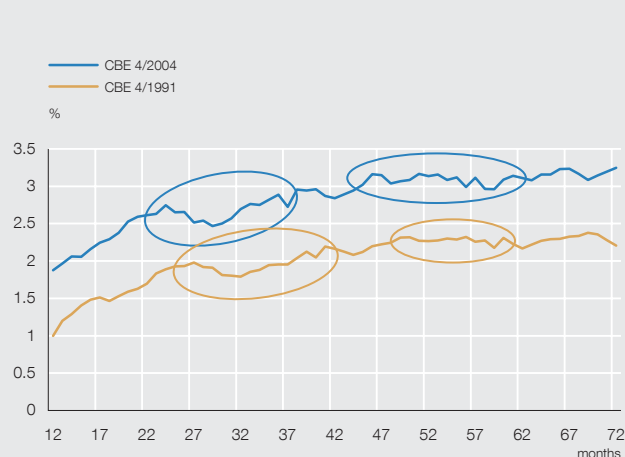
These results should be viewed with caution given that they depend on the assumptions used in the simulations on which they are based.

A. SIMULATION OF THE DOUBTFUL ASSETS RATIO UNDER CBE 4/2004 AND CBE 4/1991. TIME IN MONTHS



SOURCE: Banco de España.

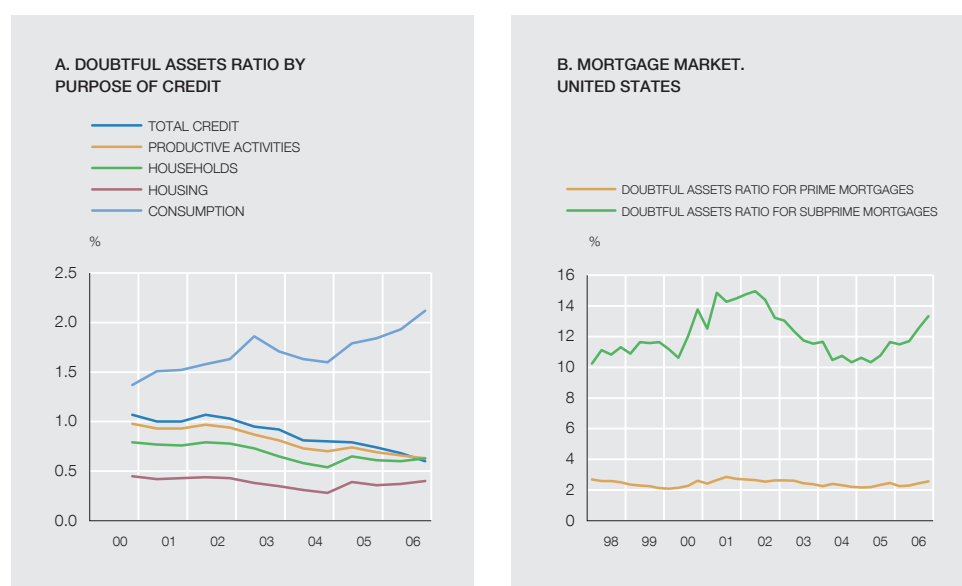
B. ANALYSIS OF THE VOLATILITY OF THE DOUBTFUL ASSETS RATIO UNDER CBE 4/2004 AND CBE 4/1991. TIME IN MONTHS



... although it can be expected that the downward trend will progressively reverse.

dents, its level of 1.4% is very low, and even below the doubtful assets ratio in the consumer credit segment. Finally, the available information on the delinquency of the new mortgage loans granted in late 2005 and in 2006 does not show that they are performing any worse than those granted in the previous three years (default rates around 0.04% or 0.07%, measured six months or one year after loan origination, respectively), so the Spanish market does not seem to suffer the problems of adverse selection detected in the US subprime market.

The doubtful assets ratios in Spain reflect the favourable course of the Spanish economy in recent years and, at the same time, indicate that no additional decreases in these ratios can be expected. On the contrary, given the strong growth of the volume of credit, with the logical and consequent increase in doubtful assets, it can reasonably be expected that, even in a benign economic environment, these ratios would grow if there were a slowdown in credit



SOURCES: Datastream, Mortgage Bankers Association and Banco de España.

extension. The new accounting framework will contribute further to accelerating this change.

The lower growth of deposits induces institutions to turn to the markets, ...

The strong expansion of corporate and household lending (24.8% at consolidated level, Table 2.1) has not been accompanied by similar growth in their bank deposits (13.6%). The competition from savings products developed in mutual and pension funds and insurance, which are largely marketed by the deposit institutions themselves, has obliged a growing number of institutions to resort to the capital and interbank markets to finance this process of credit expansion.

... to securitise assets and issue covered bonds ...

In addition to issuing marketable securities, institutions are increasingly resorting to the *securitisation of their assets*. Furthermore, at the end of 2006 the volume of *covered bonds* issued, including marketable ones, stood at 25% of the mortgage loan portfolio of deposit institutions. Other mortgage securitisations now represent 10% of the on-balance-sheet mortgage portfolio. 2006 saw a convergence between the growth rates of covered bonds, which slowed, and those of securitisations (whether mortgage or non-mortgage), which picked up.

Asset securitisation enables *the transfer of credit risk* from banks to other investors. Banking supervisors, including the Banco de España, regard these developments positively because they help to diversify risk. Indeed, institutions should consider the possibility offered to them by the current regulatory environment and the current conditions in financial markets to transfer the risk accumulated in the retained first loss tranches of previous securitisations. The new international rules issued by the BCBS will be more stringent in this respect.

... which adds to the importance of liquidity risk management.

The uneven growth of lending and traditional deposits, and the readier access to international markets, mean that *liquidity risk* management is increasingly important for institutions, especially when currencies other than the euro are involved. According to their level of activity and degree of internationalisation, Spanish credit institutions have responded by improving the assessment of their liquidity needs, formulating stress scenarios and contingency plans and establishing limits and internal controls. In operations that involve currencies other than the euro,

INCOME STATEMENT

Deposit institutions

TABLE 2.2

	€m	% CHANGE		% ATA	
	DEC-06	DEC-06/DEC-05	DEC-05	DEC-06	
Financial revenue	107,306	23.0	4.05	4.28	
Financial costs	63,203	29.3	2.27	2.52	
Net interest income	44,103	15.0	1.78	1.76	
Share of profit or loss of entities accounted for using the equity method	4,580	28.4	0.17	0.18	
Net commissions	20,023	13.3	0.82	0.80	
Gains and losses on financial assets and liabilities	9,278	66.7	0.26	0.37	
Gross income	77,984	19.7	3.02	3.11	
Operating expenses	37,668	7.8	1.62	1.50	
Other operating income	1,410	17.5	0.06	0.06	
Net operating income	41,726	32.8	1.46	1.67	
Asset impairment losses	8,724	38.3	0.29	0.35	
Provisioning expense (net)	3,762	25.0	0.14	0.15	
Other income (net)	6,665	91.5	0.16	0.27	
Profit before tax	35,905	40.3	1.19	1.44	
Net income	27,100	33.1	0.94	1.08	
Memorandum item:					
Group net income	25,717	33.6	0.89	1.03	

SOURCE: Banco de España.

especially currencies of emerging countries, the management of liquidity risk is decentralised (by country and currency), although the policy guidelines on liquidity, controls, limits, etc. are centrally co-ordinated. Finally, it should be pointed out that in the international debate between banking supervisors there is a broad consensus on the scant effectiveness of quantitative regulations for controlling liquidity risk and on the need to promote best banking practices in this respect.

2.1.2 PROFITABILITY

As noted in previous FSRs, the income statement of Spanish deposit institutions discloses a solid position. In 2006, even disregarding the positive effect deriving from the sale of holdings by certain institutions, both the net income and the main margins showed notable growth.

Profitability increased ...

The *group net income* of Spanish deposit institutions grew by 33.6%³ (Table 2.2). As a result, the return on assets (ROA) before taxes and after taxes increased notably to stand at 1.44% (up 25 bp) and 1.03% (up 14 bp), respectively. This last figure is particularly notable given that the decrease in the corporate income tax rate, since it affected deferred tax assets and liabilities, had a negative impact on results (higher corporate income tax charge). The *ROE* was up from 16.6% to 19.6%, rising across-the-board in deposit institutions (Chart 2.8.A).

The improved ROE in 2006 (Chart II.1.8.B) was made possible by the greater efficiency with which institutions operated⁴. However, the profitability gains were also attributable to a shift in the composition of regulatory own funds towards preference shares and tier 2 capital, and to a certain increase in the risk profile despite lower gearing.

... as did the main margins ...

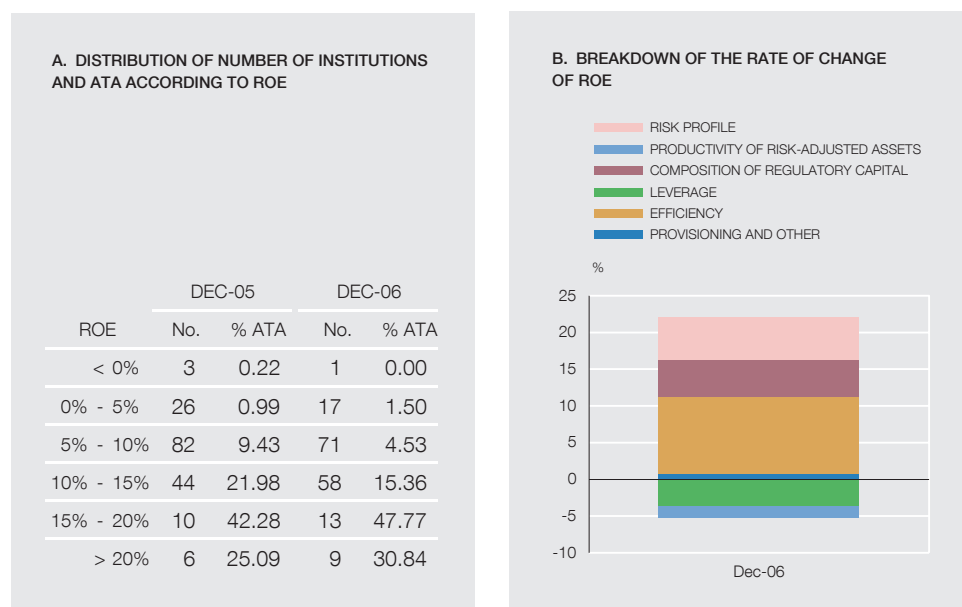
The increase in *net interest income* is explained by the strong performance of financial revenue, particularly that arising from customer lending. However, financial costs grew more

3. Exchange rate movements affected the income statement less than the balance sheet, since the change in the average rates was less pronounced. 4. For a detailed explanation of the breakdown of the ROE, see Box II.1 of the May 2004 FSR.

DISTRIBUTION ACCORDING TO ROE AND FACTORS INVOLVED IN ITS RATE OF CHANGE

CHART 2.8

Deposit institutions



SOURCE: Banco de España.

strongly, including those related to deposits and, in particular, those linked to the issuance of marketable securities. These developments, more noticeable in business in Spain, reflect the brisk pace of credit expansion and, therefore, the greater need for borrowing in the capital markets at a higher cost than in traditional business (Chart 2.9.A). The progressive rise in interest rates during 2006 is passing through somewhat more rapidly to the marginal rate on liabilities (Chart 2.9.B).

Gross income grew more rapidly than net interest income, partly due to the favourable earnings performance of investees, evidencing the strength of corporate earnings. However, the main explanatory factor is the sharp increase in *net gains on financial assets and liabilities* thanks to the buoyancy of the financial markets in 2006 along with the sales of holdings by certain institutions.

For their part, *net commissions* grew moderately at a rate below the increase in activity. The easing of growth was apparent in all components, although particularly marked in those relating to collection and payment services (Chart 2.10.A). This was more noticeable in business in Spain, where they decreased, and the reason may be related to the growing competition in this business segment. This competition, and a comparison with the relative levels of fees and commissions in peer countries, seem to indicate that the contribution of this caption to earnings is going to fall off once allowance has been made for the change in volume of activity.

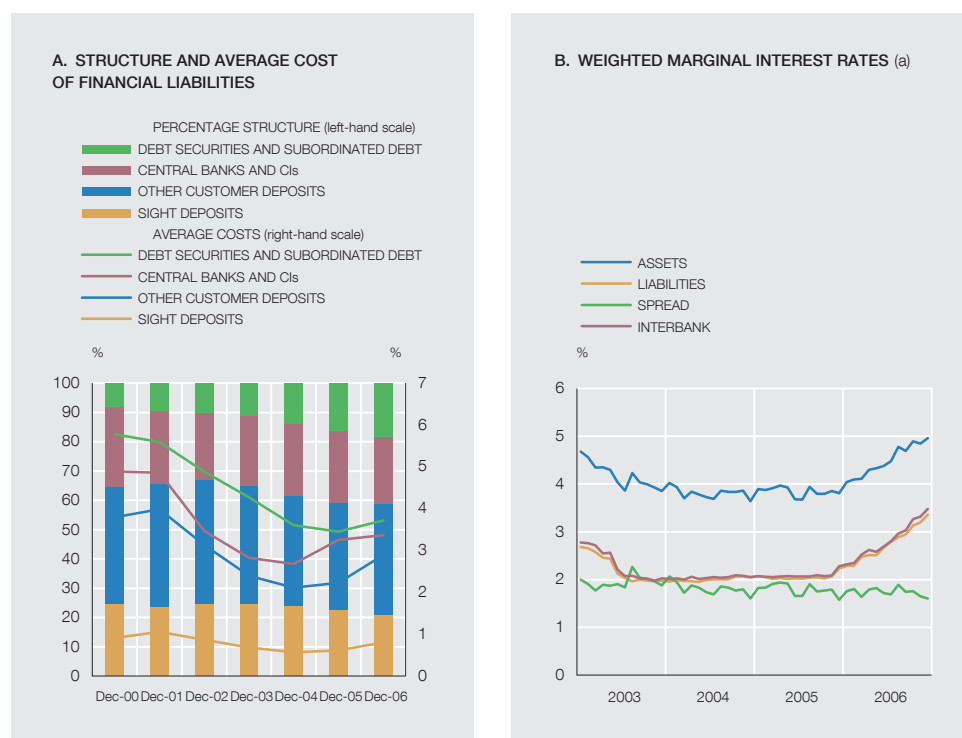
... largely due to the relative containment of operating expenses, which can be attributed partly to circumstantial factors.

Spanish institutions continued their efforts to achieve relatively moderate growth of *operating expenses* (up by 7.8%, but down in terms of ATA). This led to a significant improvement in the *efficiency ratio* from 53.6% to 48.3%, in line with a general pattern prevailing in the sector and, in particular, in the larger institutions (Chart 2.10.B). This behaviour of operating expenses was why *net operating income* expanded so strongly. However, part of this increase in efficiency is related to the sharp increase in activity and, therefore, has a significant conjunctural component. A slowdown in credit growth would raise the pressure of fixed costs on the income statement and hence increase the need to further improve efficiency.

STRUCTURE AND AVERAGE COST OF FINANCIAL LIABILITIES AND MARGINAL INTEREST RATES

CHART 2.9

Deposit institutions



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 assets weighted marginal rates include, inter alia, those applied to house and consumer finance and credit to non-financial firms, while the liabilities ones include, inter alia, fixed-term deposits and repos.

COMMISSIONS AND DISTRIBUTION ACCORDING TO EFFICIENCY RATIO

CHART 2.10

Deposit institutions



SOURCE: Banco de España.

The International Monetary Fund (IMF) has recently published a list of financial soundness indicators for a sample of 40 countries. The accompanying table compares the situation of credit institutions in Spain with that in a selection of seven EU and US economies. The general balance is relatively satisfactory for Spain.

The geographical distribution of the financing granted by Spanish institutions reveals an intermediate position, with one-third of credit being extended abroad, although only 10% was in emerging countries. The proportion of deposits to total customer loans is in line with that of other countries. The low interest rates and the strong credit growth have led to funds being raised on the European capital markets.

Spanish institutions show high profitability in terms of ROE and ROA, as a result of a high degree of efficiency and despite having the lowest asset-liability interest rate spread. This latter indicator reflects a higher level of competition in the Spanish banking market. Spain is also distinguished by staff costs accounting for a higher share of operating expenses, partly due to the retail banking model adopted by Spanish institutions and to the public's preference for personal attention in financial services.

Finally, a look at the main solvency indicators, i.e. the total and tier 1 capital ratios, shows that Spanish institutions occupy an intermediate position, although the low volume of doubtful assets is fully covered by provisions. The doubtful assets ratio is also very low.

FINANCIAL SOUNDNESS INDICATORS: POSITION OF CREDIT INSTITUTIONS (2005)

Consolidated data (%)

Geographical distribution of credit	ES	DE	UK	FR	IT	NL	PT	US
<i>Domestic economy</i>	66.2	75.2	50.7	57.0	86.0	35.2	79.2	86.2
<i>Advanced economies</i>	24.3	21.6	42.2	32.0	10.9	59.8	15.0	10.5
<i>Emerging economies</i>	9.5	3.2	7.1	11.0	3.1	5.0	5.8	3.2
Ratio of deposits to loans	77.6	71.9	62.2	78.9	66.5	76.3	70.4	107.1
ROA	0.95	0.48	1.12	0.50	0.74	0.49	0.93	1.61
ROE	16.9	13.9	17.3	14.4	14.0	16.0	15.5	17.7
Loan deposits spread	2.3	3.5	3.0		3.7	3.2	3.1	
Efficiency ratio	50.9	61.0	56.8	64.3	60.5	67.7		62.1
Staff costs as a proportion of operating expenses	59.2	55.1	47.9	58.3	58.1	51.0	54.8	45.0
Total solvency ratio	12.4	12.2	12.8	11.4	10.0	12.6	11.4	12.8
Tier I solvency ratio	8.0	8.0	8.9	8.3	7.3	10.3	6.9	10.7
Doubtful credits net of specific provisions as a proportion of capital	0.04	35.00	7.50	8.70	36.60		5.00	5.20
Doubtful assets ratio	0.8	4.1	1.0	3.5	7.3		1.6	0.7

SOURCE: International Monetary Fund.

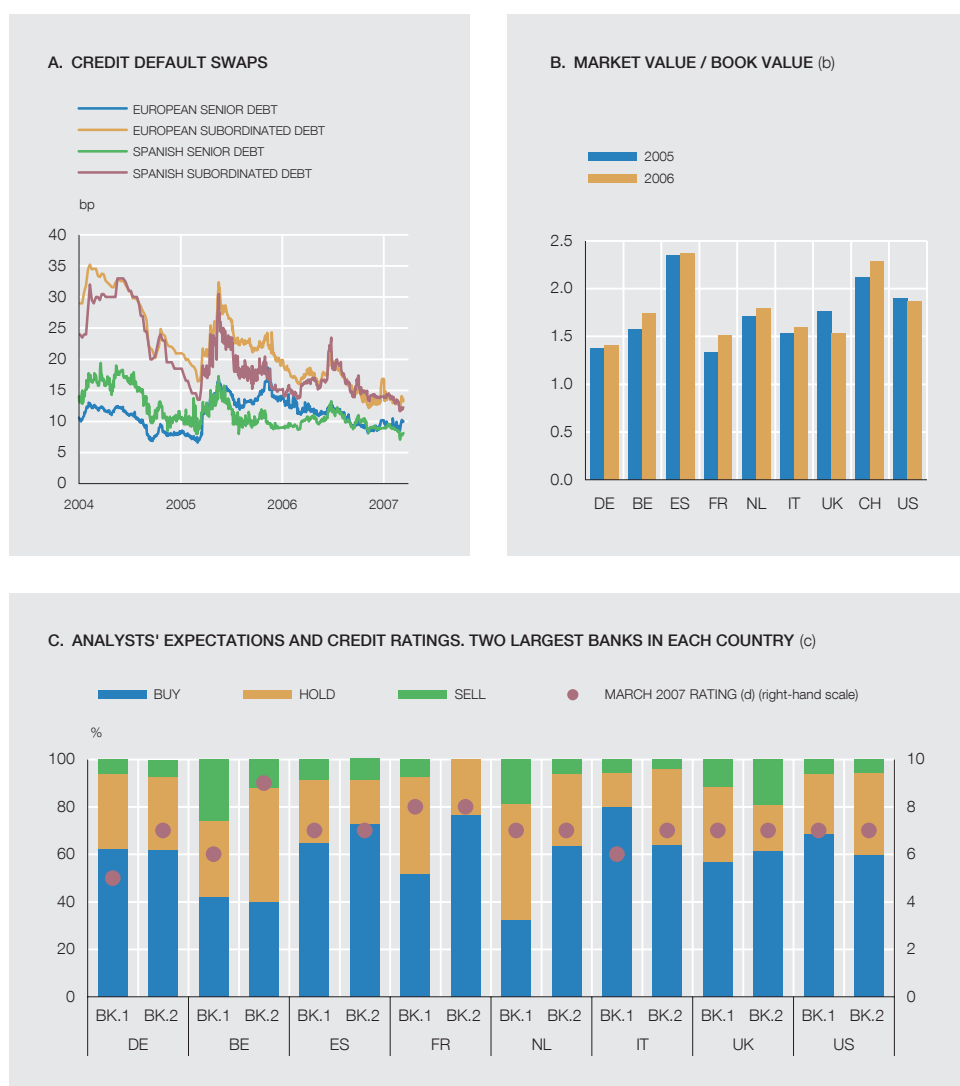
Loan loss provisioning grew by nearly 40%, against a background of rising doubtful assets and, at the same time, of strong credit expansion, which led to higher general provisioning charges. Other provisioning increased at a lower pace (25%), due to retirement provisioning by certain large institutions. In contrast, the results on sales of holdings almost doubled their contribution.

Market information confirms the soundness of Spanish institutions ...

The *market indicators* available for the main Spanish institutions confirm their soundness and provide an assessment in line with that for the main European banking groups. The recent publication by the IMF of its financial robustness indicators confirms this (Box 2.2).

The stock market prices of the large groups are bullish, while the associated volatility has remained steady for both Spanish and European institutions. The betas, calculated with respect to the DJ Stoxx 50 index, have risen for the main European banking groups and, to a lesser extent, for the main Spanish ones, although the latter continue to hold around unity.

Credit default swaps (CDS) indicate that the risk incurred by deposit institutions continues to be perceived as very low and unchanged since the previous FSR (Chart 2.11.A). Moreover, the credit ratings of the main European banking groups have been high and stable (with some improvement) during the past year (Chart 2.11.C). This chart also shows the expectations of stock market analysts. The buy recommendations for all but three institutions stand at above



SOURCES: Datastream, Bloomberg and Banco de España.

- a. The 20 largest banks in the EU according to assets are included, as well as the two largest Swiss banks and the five largest US banks. Banks in the chart are not necessarily in order of size.
- b. Tobin's q or ratio between the market capitalisation and book capital of each institution.
- c. Expectations are for a group of 30 analysts, while the credit ratings are those of Standard & Poor's.
- d. Rating equivalence: AAA = 10; AA+ = 9; AA = 8; AA- = 7; A+ = 6; A = 5; A- = 4; BBB+ = 3; BBB = 2; BBB- = 1.

50%, while the sell recommendations generally do not exceed 10%. In other words, at the date of preparation of the FSR, the analysts agreed that there were opportunities for appreciation for the main European banking groups, including the two largest Spanish ones, in the medium-term.

The ratio between the market value of shares and the book value of own funds (known also as the Tobin q) indicates also the medium-term potential attributed by the market to the US and European banking sector. In this case, the outlook for the large Spanish institutions is more favourable than that of their European counterparts (Chart 2.11.B).

... which have an income statement able to cope with potential difficulties.

In sum, the soundness of the income statement of Spanish deposit institutions, as reflected by their high profitability and efficiency, and the good prospects reflected by the available market indicators, suggest that Spanish institutions have the capacity to react in the event that poten-

tial difficulties should crystallise. However, it cannot be ruled out that, if the favourable economic situation were to change, a part of the institutions' improvements in efficiency might unravel. Moreover, if the growth of activity were to slow, this would have a significant impact on the growth rate of earnings.

2.1.3 SOLVENCY

Solvency levels remain comfortably above the regulatory requirements, ...

The solvency ratios of deposit institutions in 2006 remained well above the minimum requirement of 8% and held very steady, both under Spanish regulations and under Basel rules⁵ (Chart 2.12.A). Hence applying the more prudent Spanish rules, this ratio increased slightly by 12 bp to 11.2%, whereas under Basel rules it lost 8 bp to stand at 11.9%. The tier 1 ratio decreased markedly (66 bp), although it still remains high (7.2%). The individual-level analysis of the solvency ratio shows that a large number of institutions have raised this ratio from below 11% to around 13% (Chart 2.12.B).

... risk-weighted assets grew substantially, moving in parallel with the credit expansion, ...

The sustained growth of banking activity in 2006 led *risk-weighted assets* to increase by 21.4%. The greater buoyancy of lending meant that the requirements arising from credit risk accelerated by 2.2 pp to 22.2%, driven by both mortgage assets and consumer and corporate credit, which raised the risk profile of assets (ratio of risk weighted assets to total assets) to 67.3%, up 3.6 pp on 2005.

... and own funds increased more moderately.

Regarding *own funds*, the growth of both tier 1 and tier 2 capital slowed significantly. The growth rate of tier 1 capital dropped from 21.1% to 11.2%, explaining the fall in the tier 1 ratio, while tier 2 capital slowed by 23 pp to grow by 33.3%. Deductions were smaller, so their contribution was positive (Chart 2.13.A).

The increase in *tier 1 capital* largely came from the favourable performance of earnings, which were used to strengthen institutions' reserves (growth of 14.2%). Preference shares increased by 1.4%, while goodwill grew by 17.3%. The growth of *tier 2 capital* was due to two factors: first, the growth of subordinated debt and of asset revaluation reserves, which include a part of the cumulative gains on holdings in companies, in a year of highly favourable stock market performances; second, the entry into force of CBE 2/2006 enabled a large number of institutions to include a portion of their general provisions as tier 2 capital for the first time in 2006 (Chart 2.13.B). Finally, *deductions* from own funds decreased by 27.4% as a result of divestments of insurance companies.

The nature of preference share and subordinated debt issues is changing ...

Bank regulators attribute growing importance to the role to be played by investors in controlling the level of risk of the deposit institutions of which they are the shareholders, holders of preference shares, subordinated debt or other debt securities, and depositors of a certain size. Evidence of this is Pillar 3 of Basel II. If investors have more information on the risk incurred by institutions and these know that their decisions will be assessed more accurately, there will be a closer alignment of institutions' risk with the cost of the funds obtained by them or with the asset prices negotiated and, accordingly, in the return/risk trade-off of investors.

... so as to reduce reputational risk ...

Preference shares and subordinated debt are two instruments that may contribute to strengthening market discipline. However, for this discipline to be effective, certain requirements must be met. Among these is the need for the firm to be listed in a sufficiently liquid and deep market.

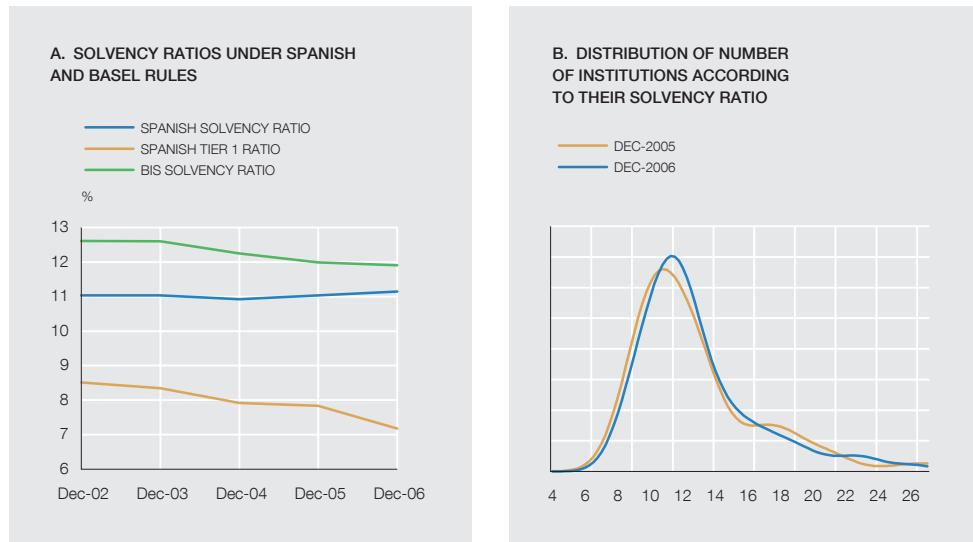
... although they require more liquidity.

The information available on preference shares and subordinated debt issued by commercial and savings banks in recent years shows that the features of these issues have

5. Spanish requirements are stricter than those of Basel because the Spanish rules specify that investments in insurance companies have to be deducted from own funds if they exceed 20% of the investee's capital.

AGGREGATE SOLVENCY RATIOS AND DISTRIBUTION OF NUMBER OF INSTITUTIONS ACCORDING TO THE LEVEL OF THEIR RATIO
Deposit institutions

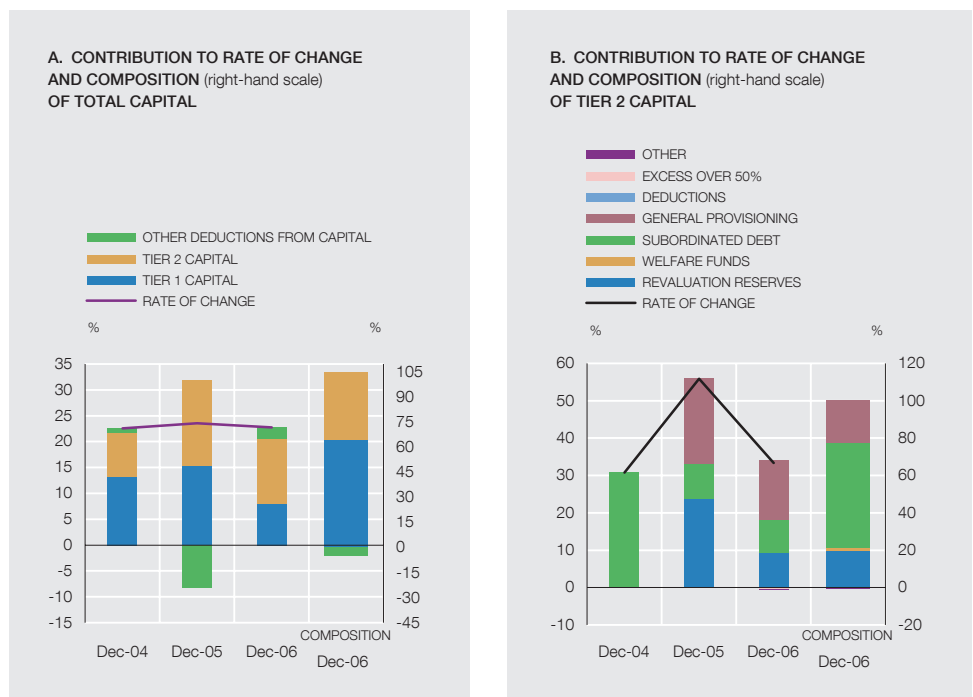
CHART 2.12



SOURCE: Banco de España.

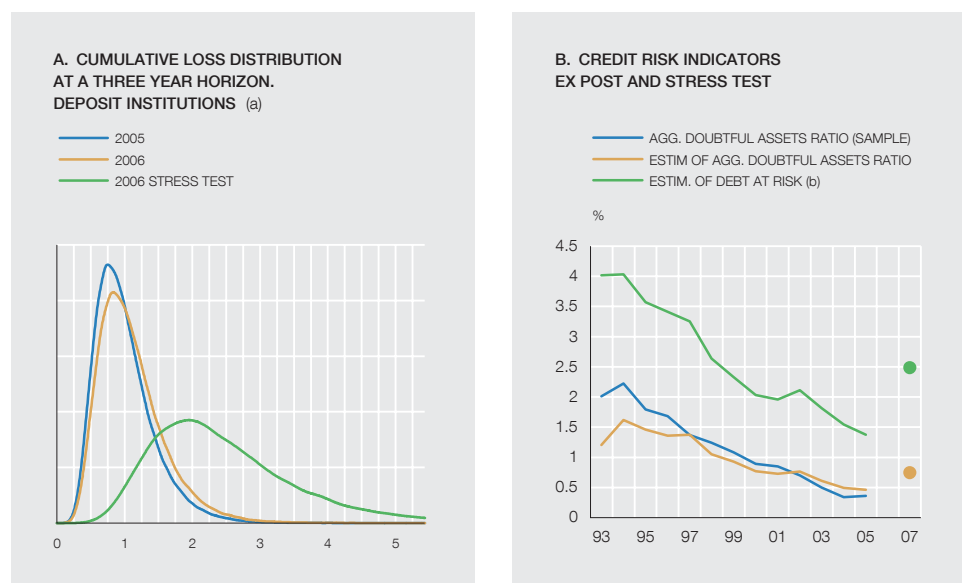
CAPITAL
Deposit institutions

CHART 2.13



SOURCE: Banco de España.

changed significantly. These changes increase their power as an instrument of market discipline and, in addition, reduce the reputational risk of these institutions. In 2006, all preference share and subordinated debt issues of commercial banks and the great majority of those of savings banks were targeted at the institutional segment, the risk premiums of which are traditionally higher than those of the retail segment. Also, a growing number of issues have a credit rating. This situation clearly contrasts with that at the beginning of



SOURCES: Banco de España and mercantile registry.

a. Loss relative to the expected loss in 2005.

b. Debt at risk is defined as the weighted average probability of default estimated for the sample firms, the weights used being the relative weight of their bank debt in the total debt of the non-financial firms included in the sample.

the decade, when retail placements predominated, especially in issues by savings banks, and ratings were rare. However, in regard to the degree of liquidity in the secondary market in which they can be traded, progress has been much more modest. Thus the turnover (ratio of the amount traded to the amount listed) of subordinated debt on the AIAF market stands at around 0.3 (compared with 11.1 for public debt), while that of preference shares is still lower (around 0.1).

Stress testing ...

The *distribution of credit losses* of Spanish deposit institutions can be estimated from historical data on the loans granted in the last two decades. This makes it possible to analyse how macroeconomic variables affect the proportion of defaults, the variation in the number of loans, and the loss that these defaults may cause institutions. Thus the impact that different macroeconomic scenarios would have on the distribution of the cumulative losses over a three-year time horizon can be calculated. Initially, comparison of the estimated distribution of losses for 2005 and 2006 (Chart 2.14.A) shows a slight shift to the right and a flattening of this distribution, indicating a greater volume of expected and unexpected losses, which in turn was a result of increased lending activity.

... confirms the resilience of Spanish deposit institutions.

A stress test was carried out to measure how the distribution of losses in 2006 is affected by four consecutive quarters of falls in GDP of a magnitude similar to those in the 1993 recession. It can be seen (Chart 2.14.A) that the loss distribution shifts significantly to the right, indicating a considerable increase in credit risk, to the point that the expected loss and the unexpected loss may reach twice their current values. Nevertheless, this shock would not jeopardise the strength of Spanish institutions, since these would be able to absorb comfortably the increase in losses through their provisions and other own funds.

From a different perspective, the credit risk exposure of Spanish deposit institutions to non-financial corporations was analysed by calculating two types of leading indicators of this risk for 2007. Both indicators are constructed from estimates derived from a model which incorpo-

rates the effect of changes in the business cycle through the inclusion of variations in GDP as an explanatory factor, along with the individual characteristics of the corporations. The projections for 2007 are based on stress testing which, *ceteris paribus*, quantifies the change in the estimator of the aggregate doubtful assets ratio and in the debt at risk in a scenario with a fall in GDP similar to that in 1993⁶. The results indicate that, despite the rise in the two leading indicators of risk, the doubtful assets ratio would stand at levels similar to those at the beginning of this decade and well below the credit risk levels at the beginning of the 1990s (Chart 2.14.B). At a more qualitative level, these results become more persuasive when one considers the process of continuous improvement in risk measurement and management at deposit institutions.

2.2 Other financial market participants

2.2.1 INSURANCE COMPANIES

The higher weight of debt securities ...

Half of the balance sheet of Spanish insurance companies is invested in *debt securities* (50.3% in September 2006), and the weight of *equity securities* and *fixed investments* is small (5.5% and 2.4%, respectively). In non-life insurance companies, however, investment in equity securities amounted to 8.6% while fixed investments accounted for 5.5% in December 2005⁷. Notable in life insurance companies is the weight of investments derived from unit linked policies (11%), in which the risk is assumed by the policyholder.

Despite the weight of debt securities, recent years have seen an increase in *other investment* (e.g. structured products), which account for 10.8% of total assets. They are the most noticeable in the insurance subsidiaries of credit institutions, probably because these groups are more used to handling more complex structures.

... means that the level of interest rates is a highly significant factor for the insurance segment ...

The weight of debt securities means that the level of interest rates is a highly significant factor in the performance of the segment. Hence a higher interest rate scenario offers investment opportunities with greater returns and thus enables the companies to offer more competitive products. The longer time horizon of investments and the need to match them with liabilities reduces the impact of potential rises in interest rates. Furthermore, since the weight of public-sector issuers has diminished relative to that of private-sector issuers, *credit risk* will become a more significant element of management.

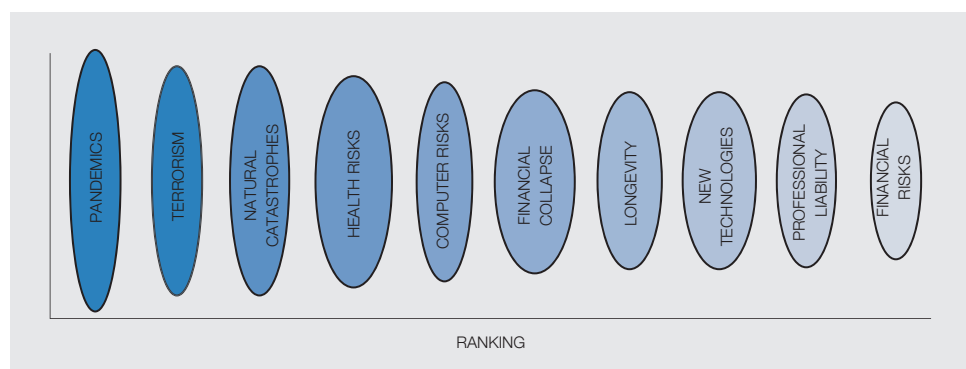
... as compared with the lower weight of the stock and real estate markets.

The domestic and international *stock markets* (Chapter 1) have, apart from certain bouts of volatility, performed favourably. Even if there were to be an adverse movement in the stock market, the low weight of equity securities suggests that the impact would be moderate. It can also be expected that the impact of potentially adverse developments in the *real estate market* would be moderate, given the low weight of fixed investments.

At international level, causes for concern are the risk of pandemics, terrorism and natural catastrophes, among other risks with an impact on insurance companies ...

A cause for concern in the international insurance sector is the possibility that bird flu may become a pandemic since, whatever its probability may be, the impact could be extremely grave. Terrorism, natural disasters, health-related risks and longevity are other sources of concern for the large international insurance companies (Chart 2.15). Some of these risks particularly affect *reinsurance* companies. In Spain catastrophic risks and terrorism, among others, are covered by the *Consortio de Compensación de Seguros* (Insurance Compensation Consortium).

6. For a more detailed analysis, see Documento de Trabajo (Working Paper) No. 0622, "Morosidad de la deuda empresarial bancaria en España, 1992-2003" (Delinquency in corporate bank debt in Spain, 1992-2003), Banco de España, by S. Ruano and V. Salas. 7. In each case, the latest information available at the date of this report is used, whether it be publicly available information from the Directorate General of Insurance and Pension Funds or estimates of the ICEA (Investigación Cooperativa entre Entidades Aseguradoras y Fondos de Pensiones — Co-operative Research between Insurance Companies and Pension Funds), an association representing around 90% of premiums in the sector.



SOURCES: Reports of several international insurance companies and Banco de España.

... and the challenges posed by IFRSs and Solvency II.

The *regulatory changes* (IFRSs and Solvency II) also pose challenges for the institutions. IFRSs, which are now used in preparing the consolidated financial statements of companies whose securities are listed in a regulated EU market and which will foreseeably be extended to the entire sector, involve, first, a considerable effort in adaptation by the institutions and, second, a certain element of additional volatility. The *Solvency II rules*, which will foreseeably come into force in the EU in 2010, pose new capital requirements more closely attuned to the level of risk. Their likely impact will be improved risk management and greater market discipline. Insurance companies will have to adapt to the change, particularly in regard to risk management.

Growth of premiums ...

Assessing the sector's resilience in the event of the crystallisation of potential difficulties calls for an analysis of its profitability and solvency. The ICEA forecast for life insurance is growth of 9.8% in premiums for 2006, while the expected rise in non-life insurance is 6.5%. These increases exceed 2006 insurance sector inflation by 3.5%.

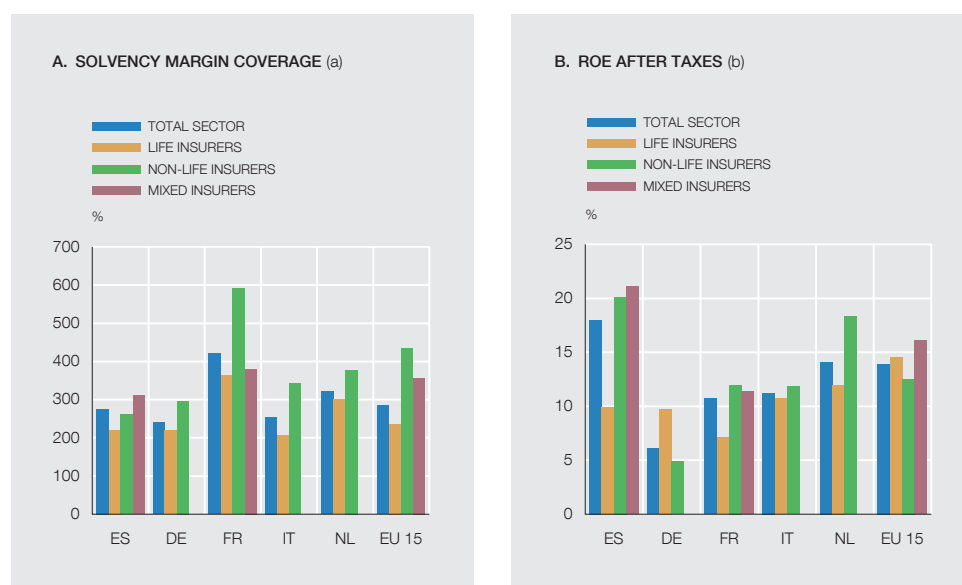
The favourable economic situation, the growth of multi-risk insurance in the non-life branch (linked to the real estate sector) and automobile insurance help to explain the performance of premiums. However, automobile insurance is growing less than in other years and more slowly than the total number of vehicles, largely reflecting the strong competition in the sector.

... and a good solvency situation ...

The estimated *coverage of the solvency margin* for 2006 is high both in the life branch (181%) and in the non-life branch (398%), although the direction of movement differs from that in 2005: a decrease in life (20 pp) and an increase in non-life (30 pp). The *ROE* of Spanish insurance companies (around 20% in 2006), which has trended favourably in recent years, exceeds the yield on long-term Spanish public debt. An international comparison based on the latest available data shows that Spanish life insurance companies have solvency margins around the EU-15 average and a slightly lower profitability (Charts 2.16.A and B). By contrast, non-life and mixed insurance companies have profitabilities well above the European average, while their solvency margins are somewhat lower, albeit growing over time.

... including the insurance subsidiaries of credit institutions.

In Spain, the insurance subsidiaries of commercial and savings banks represented around 35% of the sector's total assets in December 2005 (50% in life, 37% in mixed insurance and 6% in non-life). The situation of difficulty in the insurance sector could directly affect the banking sector. However, the weight of insurance companies in Spanish banking groups is very low, and their profitability and solvency situation is, at aggregate level, in line with that of the sector as a whole.



SOURCES: CEIOPS and Banco de España.

- a. EU 15 does not include Greece, because of lack of data.
- b. EU 15 does not include Greece or the UK, because of lack of data.

2.2.2 OTHER FINANCIAL
MARKET PARTICIPANTS

The 2006 figures show that the net assets of *collective investment institutions* (CIIs) grew by 6.7%, with mutual funds (weight of 78.5%) being the least buoyant (their net assets grew by 4.1%). The factor explaining this increase is profitability, particularly that of equity funds, against a background of favourable international financial markets. By contrast, redemptions grew more than subscriptions (26.2% against 11.1%). Meanwhile, *pension funds* grew by 11.4% thanks to the yields achieved, since net contributions remained practically unchanged (0.7%).

The tax reform and competition with other banking products are challenges facing the collective investment sector.

Some of the trends that have driven collective investment in Spain in recent years persist, such as the favourable economic climate, but others have tended to taper off, such as the tax advantages offered by these products, since the personal income tax reform largely equalised the taxation of the different instruments. Furthermore, against a background of higher interest rates, and of persistent growth of banking activity, the competition posed by products that can be considered to be alternatives (deposits with credit institutions) is a factor to be taken into account by the collective investment sector. To the challenges derived from these developments must be added the risks inherent in the financial markets, certain of which persist (Chapter 1).

Hedge funds ...

The new CII Regulations of November 2005 have presented new opportunities to the mutual funds sector, particularly by permitting hedge funds to be set up in Spain. There are risks of an overall nature associated with the hedge funds industry (Chapter 1), but the amount so far estimated to be managed by these institutions is limited, although greater activity is expected from the so-called funds of hedge funds, since this is the vehicle via which small investors will gain access to this market. Seven hedge funds and 14 funds of funds had been authorised by April 2007.

... and private equity ...

The *private equity* business, particularly leveraged buy-out transactions, has seen strong development in Europe, including Spain, in the last few years. This development is largely related to the ample liquidity in the markets and to the search for higher returns by investors.

... are increasingly active segments that must be monitored closely.

From the standpoint of financial stability, concern focuses on the high leverage that characterises this business and on the role of credit institutions as providers of funds. In this respect, institutions offer a significant level of financing at the time the transaction is carried out and seek as rapidly as possible to find others willing to take a share of this debt in the secondary market or via syndication. The risk for the institution is not only that it will make errors in assessing the project, but also that it will be unable to place the debt in the market. However, the available information indicates that these risks are still limited in comparison with the total exposure of the European banking sector. Moreover, Spanish institutions do not usually take part in the initial stages of the financing and they participate in high credit quality debt tranches.

3 Analysis of financial infrastructures

As indicated in previous FSRs, the stability of the financial system depends on the soundness of its infrastructures.

The systematic coverage for the first time in the FSR of the operational and institutional infrastructure of the Spanish financial system calls for some conceptual framing in this connection. The soundness of financial systems and, therefore, the ability to withstand systemic risks, hinges crucially on certain institutional and material elements that underpin the system's organisation. Under the umbrella of infrastructures of a potentially systemic scope, the Financial Stability Forum lists the following: the insolvency regime; the accounting regime; the governance framework; the control and auditing system; the completeness of financial markets; the functionality of such markets; and clearing and settlement systems.

Against this background, the aim of this chapter of the FSR is to draw together information on and assessments of the state of specific aspects relating to infrastructures of systemic importance. To this end, some broad reflections follow on the relationship between clearing and settlement infrastructures and financial stability, and on the MiFID.

Clearing and settlement systems

Value transfers using payment systems in Spain account daily for around 35% of GDP, highlighting the systemic significance of clearing and settlement systems. Moreover, any malfunction would affect a large range of transactions: operations on stock and debt markets, inter-bank transactions, retail payment transactions instrumented through transfers, direct debits, cheques and cards, among others.

Containing dislocation risk in the large-scale value circuit ...

The most extreme manifestation of the systemic risk inherent in clearing and settlement infrastructures would be the dislocation of the value circuit flowing through such infrastructures. The term dislocation refers to discontinuity in the functioning of the circulation of value for one of two reasons: either because such circulation has ground to a halt, or because, if not, compliance with other crucial standards has been subverted. The analysis of payment and clearing systems from the perspective of financial stability thus condenses, in its most basic essence, into containing the risk of dependence on a limited number of settlement services suppliers or the functioning of inadequate incentives leading to blockages in the value circuit or to situations of contagion (in the broadest sense of the term).

... warrants surveillance of payment systems and securities settlement systems.

The Law of Autonomy of the Banco de España lays down the central bank's responsibilities in respect of payment systems. In addition to the power to regulate and manage payment systems, the Banco de España is also responsible for ensuring that authorised systems in Spain operate securely. It is worth highlighting two facts in this respect: the supervisory powers of the Banco de España do not extend to securities settlement systems and its conduct in respect of payment systems is not exclusively guided by financial stability criteria.

The international principles informing oversight are compatible with different payment services provision models.

In any event, the conduct of the Banco de España in the field of payment systems is underpinned by the common reference framework provided by generally accepted international standards. Here, the Financial Stability Forum attributes a pivotal role to the "Core Principles for Systemically Important Payment Systems" issued by the Basel Committee on Payment and Settlement Systems (CPSS). In the securities settlement field, the international benchmark by which the interaction between securities and fund settlement is judged is defined by the "Recommendations for Securities Settlement Systems", jointly issued by the CPSS and the IOSCO.

Generally, these standards do not impinge on the corporate or technical solutions to which the provision of settlement services responds. It is this potential compatibility of the risk standards

with alternative forms of systems which, ultimately, allows the authorities to seek to provide for the compatibility of specific financial integration, market structure or other goals, besides safeguarding the security under which such systems operate.

In accordance with the foregoing considerations, it is not surprising that the discussion of infrastructure in relation to clearing and settlement systems should demand that priorities be established. Specifically, the distinction between systemic and non-systemic platforms means that the attention accorded in this FSR to retail payment systems-related issues will be less than that to large-value payments.

Interest from the financial stability standpoint relates to the implications of the models in terms of risk and not so much the models themselves.

A similar approach advises that the discussion of financial integration and/or market structure policies be structured in terms of the influence on the procedures and institutions by which the CPSS principles are substantiated. In practice, the degree of restriction this involves in relation to the specific content of financial stability will be relatively limited because major projects always entail substantial reforms and challenges. Illustrative of this are the influence of the European financial integration process in the formulation of the CPSS and CPSS/IOSCO principles and some challenges currently posed by the progress in financial integration that Target2 represents.

Regarding the first aspect, it should be recalled that the prospect of EMU spurred, during the 90s, the process of reform of payment systems and their upgrading to the requirements imposed by increasing capital flows. EMU would require a particularly efficient and secure payments mechanism that would underpin the single monetary policy and provide for greater cross-border capital flows. The response to these requirements was provided by Target, a European network of real-time gross settlement payment systems that brought about the partial integration of European large-value payments via the harmonisation of the essentials of the various sub-systems and interlinking arrangements. Against this background of payment system reform in a large number of CPSS member countries, the resulting principles laid down by this Committee were inevitably influenced strongly by developments in the euro area countries.

European monetary integration has boosted real-time gross settlement.

Protection against default by the largest debtor in the system, the central risk-related objective in the Lamfalussy criteria formulated in the early 90s, thus gave way to much more demanding and secure stability criteria. One of the biggest quid pro quos for this greater level of security was the higher liquidity requirements evidenced by real-time gross settlement systems. In this respect, Target proved particularly burdensome given the partial integration to which, from a regional standpoint, its design had to be tailored.

Target2 will complete the integration process ...

In this setting, Target2 is seen as a continuity solution on the road to a greater level of integration of domestic large-value payment systems. Once it comes on stream¹, this greater level of integration will take the following specific forms: effective harmonisation of services provided to users; achievement of savings in liquidity for institutions that decide to manage their liquidity jointly; and greater levels of robustness and the maintenance of decentralised relations between the national central banks and the system's member institutions. In step with these ambitious goals, the change in the profile of the systemic risks Target2 poses is also considerable, as is explained below.

... and will introduce savings in liquidity requirements by means of virtual accounts.

The attainment of savings in liquidity in Target2 necessitated the setting in place of the so-called *virtual accounts*, which allow several settlement accounts of different institutions to be grouped together. The purpose of this aggregation is to enable each of the multiple members of the virtual account to meet payments during the session, up to the amount available in the

1. Transition periods aside, Target 2 is scheduled to commence operating in November 2007.

overall accounts making up the virtual account. This saving in resources that makes it possible to share a single liquidity balance ends at the close of the session, when the different accounts making up the virtual account have to be balanced.

The intra-day multilateral netting that the virtual accounts mechanism refers to is a new feature that will test the legal and operational institutions that have to ensure the unshakable goals of financial stability. To this end, the mechanisms envisaged in the transposition of the Directive on financial guarantees are crucial as first, they allow the use of cash accounts as collateral, and second, they provide for robust netting agreements between the institutions participating in a virtual account, as the management of incidents may adhere to the content of the agreements, even if public tender situations arise.

The definition of the institutions that can be grouped in a virtual account chiefly follows the consolidated group criterion in IFRS 27². Further, the ECB Governing Council acknowledged in 2006 that networks of savings banks and credit co-operatives could also group their liquidity subject to certain conditions.

The level of integration of Target2 poses particular demands in terms of operational risks.

With regard to system robustness, Target2 marks a significant step forward from Target. This advance is the natural counterpart to the greater level of requirements that may be demanded of a fully integrated system. The technical architecture underpinning the Target2 integrated solution has given priority attention to the continuity of activity under extreme circumstances.

Target2 uses the resources provided by the three central banks which sponsored this initiative³, promoting risk control and system robustness. Each of the three regions involved in the provision of the services Target2 offers has two separate installations, though they are connected in synchronous mode in order to ensure the resumption of activity should one of them be cut off. The first two zones, respectively managed by the German and Italian central banks, alternatively provide settlement and accounting functionalities in accordance with a regular rotating schedule. Were any incident to affect the two installations in a single region, an asynchronous copy procedure for the information would allow the second zone rapidly to resume service. The third zone (Banque de France) manages the client relations system and the storage of relevant information. Overall, the shared management arrangements described should provide for the accommodation of extreme situations that might affect the continuity of activity. Moreover, the joint nature of the initiative will allow the robustness of the system to be sustained over time, despite the large-scale investment in maintenance and enhancements that major information technology projects require.

Market stabilisers

The turbulence on world financial markets in late February highlighted the speed of contagion across markets and the importance of volatility-stabilising mechanisms. One particular event was illustrative of how crucial the robustness of market infrastructure can be in this connection. On 27 February, while equity prices were falling worldwide (Chapter I), a bottleneck occurred as the company responsible for compiling the Dow Jones indices failed to process price information over the space of an hour. As a result of the distortion to market transparency, the sharp correction in prices already under way led to more acute discontinuity than would otherwise have been the case. Against this background, the activation of the so-called trading collars on the New York Stock Exchange saw arbitrage activity on the index grind to a halt, thereby contributing to some stabilising of the market situation.

2. This criterion does not presume that holders of accounts making up the virtual account hold them in different central banks. 3. Consolidating Target was initially conceived as a gradual process in which, in any event, there would be more harmonisation than in the initial system. However, the initiative by the German, French and Italian central banks, combined with the demands of European industry, ultimately prompted a far more intense consolidation.

**Markets in Financial
Instruments Directive
(MiFID)**

The MiFID falls within the framework of the set of regulatory changes designed to move towards a single financial market in the EU, enabling new organised trading systems ...

... and fostering better protection of investors.

The scale of the changes will require financial service providers to make an effort to adapt to them.

The MiFID, which comes into force in November this year, falls within the framework of the broad regulatory changes made under the Financial Services Action Plan (FSAP), which has the ultimate aim of building a single financial market in the European Union.

The benefits of greater financial market integration, recognised years ago by EU public policy-makers, are related to the creation of markets that are more efficient, competitive, innovative and, in short, more able to contribute to greater economic growth.

From this ambitious perspective, the MiFID proposes an in-depth reform of the 1993 Investment Services Directive. This reform has two basic aims. First, acknowledging the growing complexity and development of financial services and instruments and of trading systems, it prepares the ground for new organised trading systems, which will heighten competition. Insofar as this alters the principle of concentration of orders in markets, the MiFID requires the institutions to guarantee to customers the best possible execution of their orders.

Second, in relation to the greater complexity and sophistication of financial services, the MiFID recognises the need to protect investors to a greater extent. This has led to an extensive set of requirements for financial service providers. These requirements relate to their internal structure and, in addition, to the standards of conduct to be upheld. The former require, inter alia, adequate regulatory compliance and the proper management of risks and conflicts of interest. The latter are based on the classification of customers as retail or professional and here too the reform is far-reaching. This classification leads to a series of requirements which, especially in the case of retail customers, call for assessing the knowledge of investors and examining whether the product suits their profile and their aims.

The scale of all these changes, which is implicit in the gestation process of the MiFID approved in 2004 and developed in more detail through two additional provisions in 2006, will entail considerable efforts of adaptation for investment service providers, among them credit institutions. Indeed, proper adaptation exploiting the full potential of this directive will entail changes organisation-wide. However, it should be noted that the Spanish institutions are not starting from scratch in addressing this challenge, since they already have in place certain structures and procedures that can probably be adapted to the new requirements.

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