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EU BANKING SECTOR STABILITY

NOVEMBER 2007

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EXECUTIVE SUMMARY

This report reviews the financial condition of the EU banking sector in 2006 and the first half of 2007, primarily based on balance-sheet data. Regarding the potential impact of the recent financial market turbulence on EU banks' performance, the report presents a tentative first assessement based on qualitative supervisory information that covers the third quarter of 2007. The report also discusses the main risks surrounding the outlook for the EU banking sector, complemented by market-based information, and provides an assessement of the financial soundness and shock-absorbing capacity of EU banks.

THE FINANCIAL CONDITION OF EU BANKS IN 2006 AND IN THE FIRST HALF OF 2007

The financial condition of the EU banking sector continued to develop positively throughout 2006, the latest year for which full-year consolidated financial results for the EU banking sector are available. This masks some important divergences across different types of banks, however, as small EU banks continued to report below-average performance.

The profitability of EU banks increased further in 2006. However, while the return on equity of medium-sized and, especially, large banks increased significantly from 2005, profitability according to this measure increased to a lesser extent for small banks that follow the reporting regime set out in the International Financial Reporting Standards (IFRS), and even decreased for small banks in non-IFRS countries. For these small banks the upward trend in profitability initiated in 2003 was therefore reversed in 2006. This was possibly the result of the strong competitive environment in the primarily retail domestic markets where small institutions' activity is mainly focused. At the same time, EU banks' costs remained well-contained throughout 2006. However, medium-sized and, especially, small banks still have to cope with a heavier cost structure, as assessed by the ratio of total operating costs to total assets.

Throughout 2006, favourable economic conditions supported the growth of banks' recurrent revenue across the EU as lending volumes continued to rise at a rapid pace. Strong trading results and high net commission income also substantially increased net non-interest income, indicating that EU banks' income growth in 2006 was broad-based. This notwithstanding, the backdrop of intense competition in the lending market could have rendered it difficult for banks, especially those more concentrated on traditional maturity transformation activity, to boost profits as margins on domestic retail banking continued to narrow in most countries.

Another factor contributing to the reduction of banks' margins were the lower deposit inflows. In order to fund new loan issuance, banks may have had to resort to wholesale funding sources or to selling off existing loans. Such dependence on debt issuance, securitisation, interbank borrowing and other non-deposit funding sources could have increased the vulnerability of some institutions to the shocks to funding liquidity which materialised in the third quarter of 2007, and are later discussed in the report.

In most of 2006, the global capital markets developed favourably. Large EU banks that follow business models which rely strongly on investment banking and asset management activities were those that benefited most from the favourable market conditions. Developments in the non-interest income of medium-sized banks were also rather positive, offsetting a slight drop in net interest income. However, the total income of small IFRS reporting banks in 2006 deteriorated in comparison with the previous year and remained barely unchanged for small banks that do not yet report under the new accounting rules. A significant drop in net interest income was not entirely compensated for by revenue stemming from sources of non-interest income.

Also contributing to the strength of profitability in 2006 was the persistently low level of impairment charges which remained low

throughout the first half of 2007. On average, the asset quality of EU banks improved in 2006, and remained strong. Non-performing or doubtful assets, while increasing, tended to drop as a share of total loans, irrespective of banks' sizes, mostly due to the strong growth of the loan portfolios. The high asset quality and robust profitability in 2006 were also reflected in the fact that EU banks remained well-capitalised with minimal changes in Tier 1 and total capital ratios when compared with the values of the previous year. Solvency figures for large EU banks in the first half of 2007 confirmed that solvency ratios remained adequate to cope with unexpected losses.

It is notable that off-balance sheet items such as credit lines, contingent liabilities and other commitments represented quite large shares of some EU banking sectors' balance sheets in 2006 despite a significant dispersion of exposures both across Member States and bank size categories. The proportion of the balance sheet total accounted for by credit lines, contingent liabilities and other commitments at the end of 2006 ranged from less than 5% in a few countries to well above 50% in others. The role of these items has been growing steadily since 2002, and is of particularly importance for large EU banks.

THE RECENT MARKET TURMOIL

In July and August 2007 turmoil erupted in the financial markets that originated from larger than expected losses in the US sub-prime mortgage market and subsequently spilled over to other markets. Throughout the past years, the more widespread use of the originate-and-distribute business model, innovative structured finance and the ability to package securitised mortgage loans in highly-rated products have allowed US mortgage originators to expand credit to less creditworthy customers. The rise of short-term interest rates and the sharp slowdown in the appreciation of residential real estate prices affected the ability and willingness of sub-prime borrowers to repay their loans; the deterioration of credit quality was reflected in the acceleration of the loan delinquency rates, which, in turn, led to the re-pricing of collateralised securities.

The most relevant transmission channel to banks in the EU has been the provision of liquidity facilities by banks for structured investment vehicles and conduits, whose ability to roll-over short-term asset-backed commercial paper was severely impaired by the market turbulence. These links revealed some hitherto less well-known concentration risks that were exposed by the problems in the commercial paper markets. Uncertainty about the actual level of the losses and exposures of individual institutions subsequently contributed to undermining investors' confidence and a reduction of the supply of funds available in the interbank market. Although major central banks have met the increasing liquidity demands by money market counterparties, liquidity risk has remained an impediment to the normalisation of banks' funding policies.

The market turbulence occurred at a time when EU banks were in a financially strong position. The sound profitability of EU banks over several consecutive years has generated substantial buffers against expected losses; as regards the buffers against unexpected losses, EU banks' solvency ratios have comfortably exceeded minimum requirements. It should be noted, however, that a significant share of banking profitability has been driven by fee and commission income, as well as by income from trading activities, which tend to be of non-recurrent nature and thus potentially more volatile income sources. The impact of the sub-prime turmoil is therefore expected to have repercussions on many EU banks' non-interest earnings in the second half of 2007. This notwithstanding, the strong financial results recorded in previous years has left most EU banks in a position that permits them to withstand shocks.

BANKS' OUTLOOK AND RISKS

The solid financial position of EU banks was underpinned by a macroeconomic

environment that remained supportive throughout 2006 and in the first half of 2007 with gradually accelerating GDP growth and low unemployment rates in most EU countries. Corporate insolvencies generally continued falling against a background of steady growth in corporate profits and high returns on capital. Developments in the household sector were more disparate across EU countries. While household sector indebtedness continued rising in the majority of the countries, it remained stable or even decreased with respect to 2005 in some large countries.

Since the publication of the 2006 report on EU Banking Sector Stability, the annual growth rates of loans to both the corporate sector and households in the EU have remained high. However, differences in developments in lending growth can be seen across Member States. The results from the October 2007 ECB Bank Lending Survey, which covered the first months of the recent financial market turmoil, show that bank lending standards were tightened, particularly on loans extended to enterprises. Regarding the existing debt stock, the aggregate levels of indebtedness of EU households and firms remain moderate by international standards. However, large variations exist across Member States and borrower categories, and previously identified pockets of vulnerability could have deteriorated further.

As discussed above, the financial market turmoil which commenced in July and August 2007 will most likely have negative implications for several EU banks' earnings.

Beyond the short-term liquidity considerations, the main vulnerabilities for EU banking sectors relate to the likely evolution of the credit cycle – which could even be affected by the recent re-pricing of credit risk, should it prove lasting – and its impact on borrowers' credit quality and banks' credit risk. In addition, for large banks in particular, there are uncertainties about the extent to which their financial performances could be impaired by declining revenues from non-interest income sources if, for instance, activity in the market for securitised loans were to remain depressed for a more protracted period.

Finally, the continued expansion of foreign currency lending to households in some EU countries could be posing increasing risks to the banks involved if housing market developments are reversed in the countries affected or if exchange rate volatility increases. In 2006, EU banks also further raised their exposures to emerging market economies, searching for revenues that are less correlated with domestic income sources.

Although the capacity of the EU banking sector to absorb shocks has not changed significantly against the background of past strong profitability and comfortable solvency, the forward-looking assessment based on market indicators, which partially takes into account the possible impact of the market turbulence in the second half of 2007, suggests that near-term risks facing the banking sector have increased. Uncertainties among market participants about the banking sector's earnings prospects have increased and this could be further aggravated by unexpected developments in the US sub-prime mortgage market and if the problems in structured credit markets were to spill over to the broader credit and capital markets.

Section 5 of this report analyses EU banks' exposures to residential property markets, focusing on exposures at the lower end of the mortgage credit quality spectrum and on the sustainability of households' mortgage debt. The results suggest that, while pockets of vulnerability have grown in the EU mortgage markets, particularly with respect to rising household mortgage indebtedness, the risks to both households and banks' balance sheets are rather limited. Nevertheless, such relatively benign conditions may be masking a build-up of risks that has been driven, to a certain extent, by a general easing of banks' credit standards. If conditions were to turn less favourable, these risks may quickly surface.

OVERALL ASSESSMENT

The further improvement of financial health within the EU banking sector in 2006 and in the first half of 2007 increased the capability of EU banks to withstand shocks relating to their different risk exposures. Nevertheless, banks' growing reliance on more volatile income sources could have made their earnings vulnerable to fluctuations in sources of non-interest income. In addition, the increasing role of non-deposit sources of funding has exposed some banks to liquidity risks that could impair their ability to manage their assets as effectively as they did over the past few of years. While the final impact of the recent re-pricing of credit risk will become evident only gradually, it cannot be excluded that the earnings, profits and funding liquidity of many EU banks will temporarily be negatively affected in the near term. However, solvency positions should remain robust. Beyond the short term, risk concerns focus on the outlook for the credit cycle – which will affect banks' expected losses and impairment charges – and the prospects for interest income from new and existing lending activities, which are related to the changes in interest rates at various maturities.

Pockets of vulnerability in the household and corporate sectors, including the highly leveraged borrowers and – in some Member States – exposure to foreign currency risk, need to be closely monitored. The final implementation of the Basel II Capital Accord this year will improve the banks' risk management practices. Nevertheless, recent events have underlined the importance of continuing attention to be paid on liquidity risk management including stress-testing and contingency funding planning.

I INTRODUCTION

This report is based on the main findings of the annual macro-prudential analysis of EU banking sector stability that is carried out by the Banking Supervision Committee (BSC) of the European System of Central Banks (ESCB). The BSC is composed of representatives of the banking supervisory authorities and central banks of EU countries and the ECB. Annual reports of this kind have been published since February 2003.

The assessment of banking conditions in 2006 draws on supervisory data for that year that caver the entire EU banking sector, while the corresponding evaluation for the first half of 2007 is based on a sample of large institutions. While the soundness of EU banks in 2006 is a good indicator of banks' ability to withstand the shocks that affected the financial markets in July 2007, the impact of the recent market turbulence is obviously not apparent in the figures discussed in the chapter on banks' performance in 2006 and in the first half of 2007.[1] To bridge this gap, Box 2 discusses the likely impact of the recent turmoil on banks' earnings and financial condition, based on EU supervisors' assessments as well as publicly available information. In addition, the discussion of the main risks to banks relies strongly on forward-looking and other market-based indicators. It should be noted that the report identifies the main potential sources of risks to EU banks' stability, which are not necessarily the most probable outcome, but should rather be seen as plausible downside risks for banks.

The analysis in the report draws upon a number of sources. The primary source of quantitative information is a large set of indicators constructed by national supervisors, national central banks and the ECB that refer to the 2006 reporting year. These are based on the consolidated banking data (CBD) regularly collected by the BSC. These data cover nearly the entire EU banking sector and are among the timeliest of comparable data collected by national authorities (see Box 3 in the Statistical Annex). Publicly available data for the first half of 2007 issued by large EU banking organisations in accordance with the CBD definition (see Box 3) have been used to complement this analysis. A qualitative assessment of the expected impact on banks' condition in the remainder of 2007 (for which factual information is scarce) is considered in the referred Box 2.

Although the report covers all 27 EU Member States, the differences in the pace with which the International Financial Reporting Standards (IFRS) are being adopted by European banks for supervisory purposes in each country, as well as the fact that the new and old accounting standards are not directly comparable, required a split of the EU-27 banking data into IFRS-compliant and non-IFRS-compliant country samples. Most EU countries, however, are in a transitory phase in which IFRS reporting has been implemented for regulatory and supervisory purposes, although unquoted or small banks may still be allowed to report in accordance with the old standards. For the production of the banking data supporting this report, only one reporting standard is assigned to each country, even if both IFRS and non-IFRS accounting were permitted for supervisory purposes in 2006.[2] As of end-2006, slightly more than the half of the reporting institutions, measured in terms of banking assets, had already implemented the new accounting rules.[3] For data integrity reasons, data from IFRS and non-IFRS reporting countries, although generally following similar trends, are not aggregated.

Besides favourable financial market developments over recent years, the new accounting rules

1 Banks' third quarter results were not publicly available at the time when this report went to print.
2 Countries in which IFRS has been widely adopted but other accounting standards still coexist, did not report the proportion of non-IFRS-compliant banks. Banks not covered in the CBD sample, however, account for an only small fraction of the EU banking system's total assets.
3 There are only six countries in which IFRS-compliant reporting is not yet required for supervisory purposes (these are Austria, Germany, Hungary, Luxembourg, Sweden and the United Kingdom). Due to the weight of banking assets of Germany and the United Kingdom in the total of the EU banking system, the non-IFRS group represents almost half of the total EU banking system covered (the assets of the total banking system slightly exceeded EUR 30 trillion).

have also contributed to increasing the size of the balance sheets of IFRS reporting banks since its implementation, not the least due to the fair-value concept and to a number of off-balance-sheet items that should be reported on the balance sheet under the new accounting principles. This element should be taken into consideration when analysing the CBD indicators, generally presented in relative terms, as a share of total assets.

The report is structured as follows. Section 2 discusses the major developments affecting the financial condition of EU banks in 2006 and the first half of 2007. It also includes a tentative first assessment of the impact of the financial market turmoil that started in the summer of 2007 on EU banks' performance. Section 3 introduces and discusses the major sources of risk faced by EU banks', in particular the risks triggered by the recent financial market dislocation, covering credit and market risks as well as counterparty risks and risks originating from EU banks' exposures to emerging market economies. Section 4 presents a forward-looking analysis based on various types of quantitative market indicators, with a special focus on the most recent events. Section 5 is devoted to a detailed analysis of the risks to banks stemming from residential property markets, based on macro-prudential and national survey data available for some EU countries and focusing, in particular, on EU banks' exposures to the lower end of the mortgage credit quality spectrum. The report concludes with an overall assessment of the stability of the EU banking sector.

2 EU BANKS' PERFORMANCE IN 2006 AND IN THE FIRST HALF OF 2007

The financial conditions and profitability of the EU banking sector continued to develop favourably throughout 2006. This masks some important divergences across different types of banks, however, as small EU banks continued to report below-average performance. The sound profitability of EU banks for a number of successive years has generated substantial buffers against potential losses, which is important for banking sector resilience in the economic capital environment.

Favourable developments were underpinned by the macroeconomic environment that remained supportive for EU banks with gradually accelerating GDP growth and low unemployment rates in most EU countries in 2006. Corporate insolvencies generally continued to fall against the background of steady growth in corporate profits and high returns on capital. Developments in the household sector were more dispersed across EU countries. While household sector indebtedness continued to increase in the majority of the countries, it remained stable or even decreased in comparison with 2005 in some large countries.

Fierce competition in domestic banking markets has triggered significant international expansion by EU banks over the past few years, and this trend continued in 2006, especially among large banks. Besides acquisitions of banks in central and eastern Europe, some EU banks have also pursued expansion in the Turkish, Russian and Japanese markets. Within the EU banking sectors, both domestic and cross-border consolidation operations intensified in the course of 2006, often involving large banks, thereby significantly increasing their market shares.

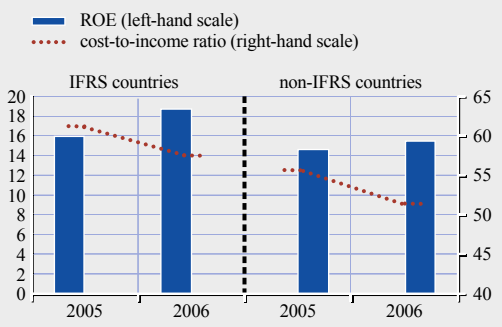
Despite a slight increase, impairment charges and provisions remained at low levels in 2006, further contributing to sound profitability. Comfortable solvency ratios across the board suggest that, at the end of 2006, EU banks were in a good position to withstand shocks to their asset quality.

PROFITABILITY IMPROVED FURTHER

The profitability of EU banks increased further, as illustrated by higher (after-tax) return-on-equity (ROE) figures and further cost reductions, driven by, in particular, large banks' performance (see Chart 2.1). Looking at the entire EU banking system, the average ROE levels for IFRS and non-IFRS reporting

Chart 2.1 Profitability and cost-to-income ratios of EU banks

(all domestic banks; percentages)



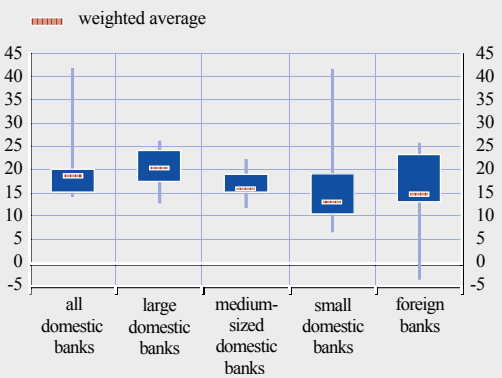
Source: BSC.

banks stood at just below 19% and almost 16% respectively. These average values cover wide differences among banks, however, that are related mainly to their size and business model.

While the profitability of medium-sized and, especially, large banks (as measured by their return on equity) increased significantly as from 2005, that of small banks following the IFRS reporting regime rose to a lesser extent, while that of small banks in non-IFRS countries actually decreased, thereby reversing the upward trend that had started in 2003 (see Tables 2 and 3 in the Statistical Annex). The

Chart 2.2 IFRS banks' ROE: average, maximum, minimum and inter-quartile range

(2006; after tax; percentages)



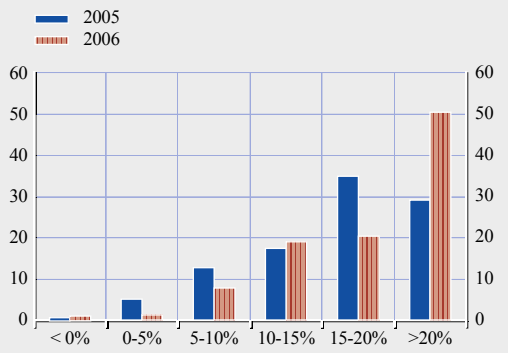
Source: BSC.

average ROE for large banks in IFRS reporting countries was just above 20%, whereas it was 13% for the small banks there (see Chart 2.2), and just above 5% for small banks in non-IFRS reporting countries. These results reflect the increasingly tougher conditions faced by small banks – which are typically more dependent on retail mortgages – in the domestic banking markets. Retail banking operations of some of the more diversified and larger banks also faced headwinds amid narrowing margins, although the strong performance of these banks' corporate and investment banking and asset management divisions in many cases more than compensated for the low margins in the domestic retail banking business. It should be nevertheless noted that the high volume of mortgage lending was still a significant contributor to profit growth, and lending to corporates and to small and medium-sized enterprises also picked up strongly in most countries in 2006.

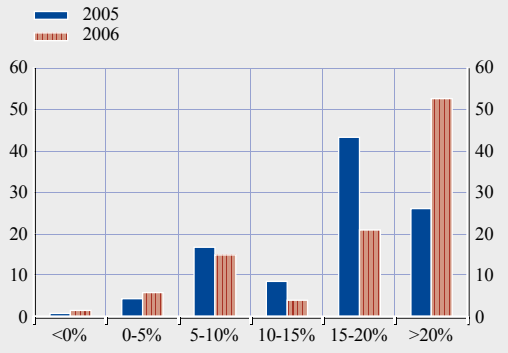
After the positive trend that started in 2003, the frequency distribution of ROE across the EU banking sectors shifted further to the higher percentages in 2006. In particular, it is quite remarkable that, irrespective of accounting framework followed, around 50% of the EU banking system (in terms of assets) enjoyed ROE levels in excess of 20% in 2006, up from less than 30% a year before (see Chart 2.3). The positive shift appears to be mostly due to profitability improvements among those banks that were previously in the ROE bucket of 15%-20%. The fact that ROE averages across the various size groups were persistently higher for the IFRS reporting sample suggests that some upward bias has been generated by the new accounting rules. It should be noted that the reporting for supervisory purposes of a significant number of large banks is still in accordance with national Generally Accepted Accounting Principles (GAAP), even if they may already report IFRS-compliant published accounts, so that this bias should not be due to there being a significant proportion of large EU banks that report according to the new rules.

Chart 2.3 Frequency distribution of ROE for EU banks

(IFRS countries; all banks; percentages)



(non-IFRS countries; all banks; percentages)



Source: BSC.

While indicating common trends, results also mask some differences across countries as illustrated in Tables 9 to 12 in the Statistical Annex.

COSTS REMAINED CONTROLLED

EU banks' costs remained well contained throughout 2006. On account of both external and internal sources of growth as well as non-recurrent investments, operating costs did, on average, increase for large banks (as a share of total assets), but at a slower pace than revenues. On average, staff costs, as a share of total assets, decreased for small and medium-sized banks. These developments contributed to a further improvement of cost-to-income ratios across all types of bank, irrespective of the accounting standards followed. Average cost-to-income ratios for EU banks hovered around 57% and 52% for IFRS and non-IFRS banks respectively (see Chart 2.1).

While significant differences still exist in cost-to-income ratios at the country level (e.g. on account of different degrees of concentration within the national banking sectors, which may condition levels of efficiency), national averages did not generally exceed 60% and were as low as to 30% in some cases, as a whole, thus indicating quite satisfactory cost-to-income ratios (see Tables 9 to 12 in the Statistical Annex). Regarding size groups, the generally different business models of medium-sized and, especially, small banks still cause them to have to cope with a heavier cost structure as a proportion of total assets. For these banks, the cost-to-income ratios were well above 60% in some countries.

SLIGHT INCREASE IN OPERATING INCOME

Favourable economic conditions supported growth in banks' recurrent revenues across the EU in 2006. Strong trading results and high net commission income also substantially increased net non-interest income, indicating that EU banks' income growth was broad-based. Operating income, as a percentage of total assets, increased by 0.14% for EU domestic banks, irrespective of the accounting regime followed, thereby outpacing growth in total assets (see Tables 2 and 3 in the Statistical Annex). In 2006, the operating income of IFRS and non-IFRS reporting banks in the EU represented 2.47% and 2.09% respectively of their total assets. On account of the banks' performance in the second half of year, however, the high profitability figures are expected to decline in 2007.

The share of net non-interest income in total income continued to steadily approach the 50% mark in the case of non-IFRS reporting banks, and slightly exceeded that level in that of IFRS banks, confirming the importance of this source of revenue for EU banks (see Tables 2 and 3 in the Statistical Annex). Somewhat in contrast to developments in 2005, the average growth of net non-interest income was driven less by fee

and commission income, which comprises retail banking fees for transactions as well as fees from banks' asset management and corporate finance activities (which have decreased as a share of total assets), than by growth in trading income. This latter stream of revenue benefited from favourable capital market developments and strong client demand for products in securities-related activities. In 2006, however, fee and commission income still accounted for a far larger share of total income than trading income, even for banks in IFRS reporting countries which include, for the purposes of compiling the CBD, all gains or losses on financial instruments under this item. On average for IFRS reporting banks, fee and commission income represented 26% of their total income, compared with a share of 15% for their trading activities.

Large EU banks with business models that rely strongly on investment banking and asset management activities were those that benefited most from the favourable market conditions. Developments in the non-interest income of medium-sized banks were also rather positive, offsetting a slight drop in net interest income. However, the overall average performance of small banks deteriorated in 2006 when compared with 2005. A significant drop in net interest income was not compensated for by revenues stemming from non-interest income sources.

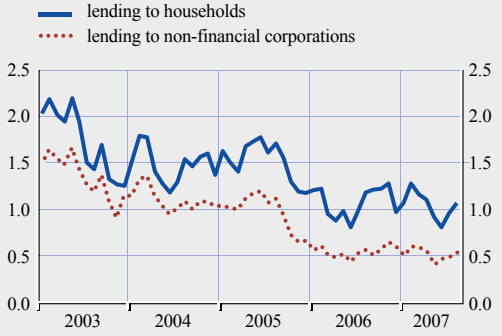
The competitive environment in most EU countries throughout 2006 made it difficult for small banks, most of which concentrate on traditional maturity transformation activity, to boost profits. Margins on domestic retail banking continued to narrow in most countries and competition, especially on residential mortgage markets, stepped up, which further explains the moderate profitability of small and medium-sized institutions. The operating income generated by the domestic retail banking divisions of large banks also generally fell short of the growth reported by other divisions within these institutions. Looking forward, growth in recurring earnings is likely to remain challenging, given the competitive environment in most EU banking sectors.

The net interest income of EU domestic banks stood at 1.2% of total assets in 2006, for banks following both the IFRS and the non-IFRS regimes, roughly unchanged from 2005. This result is rather notable in view of the gradual increase in short-term interest rates throughout 2006, which compressed interest rate margins further. Flat yield curves also hampered the ability of banks to earn interest income on the spread between their assets and interest-paying liabilities.

According to non-consolidated data for euro area monetary financial institutions (MFIs), margins

Chart 2.4 Lending margins of euro area MFIs

(Jan. 2003 – Aug. 2007; percentage points)



Source: ECB.
Note: The weighted lending margins are the difference between the interest rate on new lending and the interest rate swap rate, where both have corresponding initial rate fixations/maturities.

Chart 2.5 Deposit margins of euro area MFIs

(Jan. 2003 – Aug. 2007; percentage points)

Source: ECB.
Note: The weighted deposit margins are the difference between the interest rate swap rate and the deposit rate, where both have corresponding initial rate fixations/maturities.

on lending to the non-financial corporate sector remained broadly unchanged throughout 2006 and the first half of 2007, while those on lending to households increased somewhat in the second half of 2006 before subsequently returning to previous levels (see Chart 2.4). In turn, deposit margins increased in the first half of 2006, but likewise returned to beginning-of-the-year levels in the second half of that year, suggesting that interest rate increases were passed on to depositors throughout 2006 (see Chart 2.5).

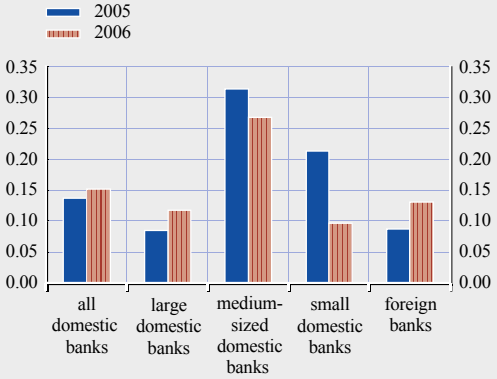
SLIGHT INCREASE IN IMPAIRMENT CHARGES

EU banks' operating profitability was positively affected by continued cost containment and still low loan impairment charges. On average, impairment losses on financial assets and provisions (as a share of total assets) nevertheless increased slightly in the case of both IFRS and non-IFRS reporting banks in 2006, albeit from very low levels. Although this reversed the general trend in the EU that had started in 2003, the increase was rather insipient, so that it cannot be considered to have hampered profitability.

The increase in EU banks' average impairment charges (or flows of provisions for non-IFRS reporting banks) in 2006, representing 0.15% and 0.22% of total assets of IFRS and non-IFRS reporting banks respectively, was mostly driven by the group of large banks (see Charts 2.6 and 2.7).[4] There are some indications that the (mild) reversal of the downward trend in the impairment cycle was due mainly to developments in the second half of 2006.

Chart 2.6 Impairment charges on financial assets of EU banks in IFRS countries

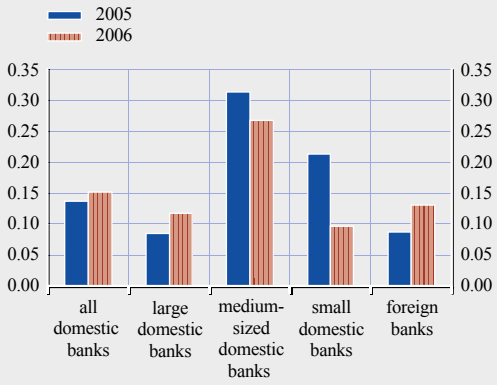
(percentage of total assets)



Source: BSC.

Chart 2.7 Provisions of EU banks in non-IFRS countries

(percentage of total assets)



Source: BSC.

On average, provisions of small EU banks that follow the old accounting rules which had stood at slightly more than 0.4% of total assets in 2005, increased further to roughly 0.55% of total assets in 2006, which is not negligible (see Table 3 in the Statistical Annex). However, given their limited weight in EU banking system in terms of assets, the average figures for the entire EU banking system still indicate that overall credit costs remained at rather low levels by historical standards.

The asset quality of EU banks improved, on average, and remained strong in 2006 (see Table 6 in the Statistical Annex for non-IFRS countries). Non-performing or doubtful assets, while increasing, tended to drop as a share of total loans, irrespective of banks' sizes and accounting regimes, mostly on account of the strong growth of loan portfolios.

4 It should be noted that the new accounting rules (IFRS) embed a new concept of impairment that is based on incurred (and not expected) losses, and thus tend to have a favourable effect on impairment figures.

Developments in impairment charges, however, were far from homogeneous across individual EU countries. While the EU averages indicated a slight rise in provisions or impairment charges, the impairment cycle did not turn in all countries. In a small number of countries, impairment charges (expressed as a share of total assets) increased significantly in comparison with the previous year, and they increased moderately in almost half of the countries. The increase in impairment charges at the country level was observed for banks following both the old and the new accounting regimes, thus suggesting that, while the level of impairment charges may be influenced by the accounting standards followed, changes with respect to the previous year should not be affected too much by this factor. It should be also borne in mind that the levels and growth rates might look modest because they are expressed as a share of banks' total assets, which increased significantly in the course of 2006. Countries that witnessed a rise in impairment charges in 2006 generally expected the charges to increase further in the course of 2007. However, the effect on profitability is expected to remain contained. In half of the EU countries, impairment charges declined further in 2006, reaching new historic lows. By mid-2007, there were no apparent signs in many countries of a likely increase in the course of the current year, based on EU large banks' results (see Box 1). However, against the background of the recent turmoil on the financial markets, it can not be excluded that impairment charges will rise in the third and fourth quarter of 2007.

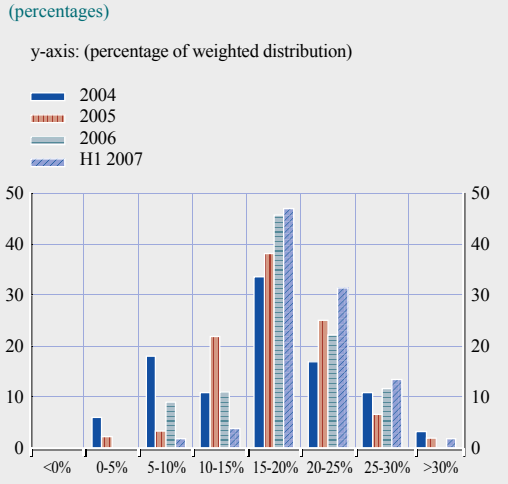
Box 1

THE FINANCIAL CONDITIONS OF LARGE EU BANKS IN THE FIRST HALF OF 2007

This box provides a concise overview of the financial condition of large EU banks on the basis of data covering the first six months of 2007. Therefore, the results will not reflect the impact of the recent market turmoil. For the first half of 2007, the majority of large EU banks continued to experience a broad-based growth in profitability, despite continued pressure on

Chart A Frequency distribution of return on equity (ROE) for a sample of large EU banks

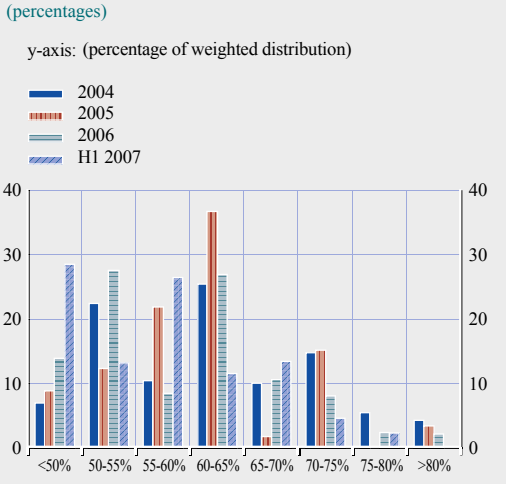
(percentages)



Sources: Bankscope, published financial accounts of individual institutions and ECB calculations.

Chart B Frequency distribution of cost-to-income ratios for a sample of large EU banks

(percentages)



Sources: Bankscope, published financial accounts of individual institutions and ECB calculations.

retail margins in some markets. The growth in profitability was underpinned by increased volume growth in domestic and non-domestic retail markets as well as by higher income from fees and commissions, by trading and by a continued control of operating costs. Credit risk costs remained at historically low levels on account of both better credit risk management by institutions and the generally benign current macroeconomic environment. Capital ratios weakened slightly as a result of acquisitions, but continued to remain significantly above minimum regulatory requirements.

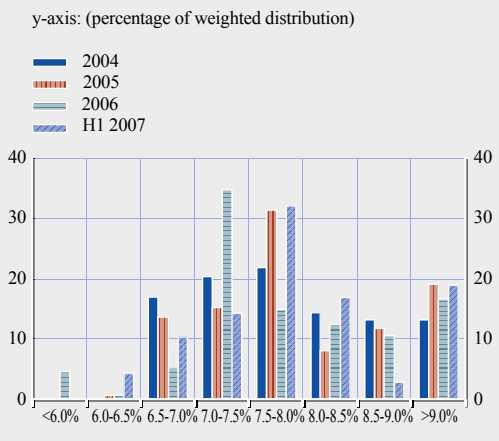
The financial positions of large EU banks – reporting under IFRS – remained strong in the first half of 2007, further consolidating the increased profitability recorded since 2004. This was mainly driven by volume growth in lending in EU Member States, as well as by emerging retail markets in non-EU eastern European countries, in Asia and in South America. The weighted average (annualised) ROE increased from about 18.2% in 2006 to about 20.4% in the first half of 2007.

The median ROE rose from 18.5% to 19.8% over the same period. Institutions in the left tail of the distribution have also managed to improve their performance since 2004. This is shown by a shift to the right in the distribution for 2006 and the first half of 2007 (see Chart A). With respect to the factors underlying the headline profitability, banks reported that interest income growth continued as a result of strong volume growth in lending, but overall margins continued to remain compressed for most institutions. The currently low level of loan impairment charges continued as a consequence of the current macroeconomic environment and active credit portfolio management. The institutions stated in their 2007 earning releases that these low levels were regarded as exceptional and were not expected to continue indefinitely.

The cost controls put in place over the past few years continued to be a factor driving profitability in the first half of 2007. Since 2004, the cost-to-income ratio has continued to decline, indicating that operating income continued to outstrip operating costs due to the centralisation of various business processes, the outsourcing of other processes and improvements in IT infrastructures

Chart C Frequency distribution of Tier 1 ratios for a sample of large EU banks

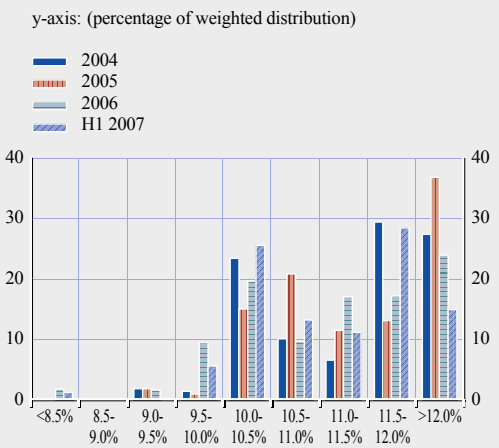
(percentages)



Sources: Bankscope, published financial accounts of individual institutions and ECB calculations.

Chart D Frequency distribution of total capital ratios for a sample of large EU banks

(percentages)



Sources: Bankscope, published financial accounts of individual institutions and ECB calculations.

and platforms. The cost-to-income ratio of large EU banks declined from about 58% in 2006 to just over 56% in the first six months of 2007 (see Chart B).

The average Tier 1 capital ratio increased slightly from 7.9% in 2006 to 8.1% for the first six months of 2007. This increase reversed a small decline in the Tier 1 capital ratios of large EU banks over the period from 2005 to 2006 that had been due to balance sheet expansion and, in some cases, major acquisitions during that period. More encouragingly, institutions that performed less well on this measure managed to rebuild their Tier 1 capital ratios slightly (see Chart C), which should contribute favourably to the stability of the European financial system. Overall, Tier 1 capital ratios remain adequate to cope with unexpected losses. Total capital ratios declined slightly over the period for some large EU large banks as a result of lower amounts of Tier 2 instruments being issued for regulatory capital purposes. For the first half of 2007, the weighted average total capital ratio stood at 11.3%, well above the regulatory minimum of 8%.

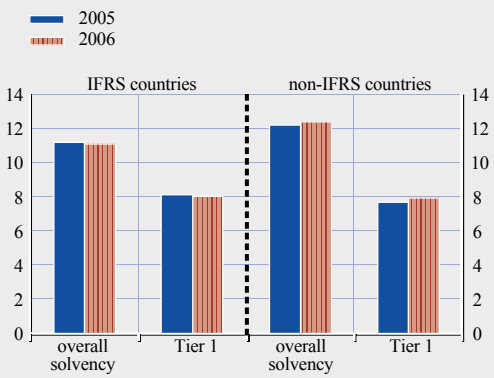
Aside from the geographical heterogeneity, which reflects the different stages at which EU countries are in the business and credit cycles, it should be noted that impairment charges also tend to diverge quite significantly, depending on the weight of different types of lending (e.g. unsecured, secured and/or mortgage loans) in different countries' total lending, which cannot be distinguished in the consolidated banking data.

STABLE SOLVENCY POSITIONS

The high profitability levels in 2006 were also reflected in the solvency levels of EU banks (see Chart 2.8). On average, EU banks remained well-capitalised in 2006, with minimal changes in Tier 1 and total capital ratios when compared with the values of the previous year. In average terms, there was a minimal increase (of 0.2%) in the solvency position of non-IFRS reporting banks and a negligible decrease (of 0.1%) in that of IFRS reporting banks. However, country-level information showed a slight decrease for both groups in most countries. The main reason for this development is that reported increases in eligible own funds were offset by the growth in the base of risk-weighted assets. On the one hand, an increase in Tier 1 and Tier 2 capital was witnessed in various countries, e.g. due to retained earnings from the previous year and

Chart 2.8 Overall solvency and Tier 1 capital ratios for EU banks

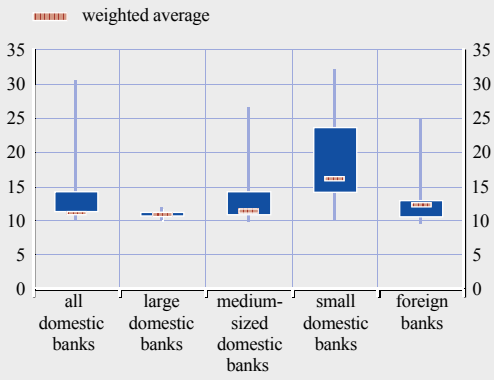
(all domestic banks; percentage of risk-weighted assets)



Source: BSC.

Chart 2.9 EU banks' overall solvency ratios in IFRS countries

(2006; IFRS countries; percentage of total risk-weighted assets; minimum, maximum and inter-quartile distribution of country values)



Source: BSC.

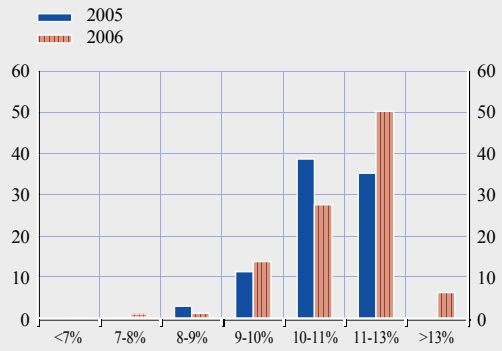
an increase in issuance of subordinated debt. However, strong credit growth, especially in central and eastern European countries, and a general growth of banking activities, contributed to a growth in risk-weighted assets.

Aggregate solvency positions rather strongly reflected the weight of large EU banks, which tend to have lower capital ratios in comparison with other size categories and even foreign banks. Small and medium-sized banks continued to report above-average solvency ratios, possibly on account of their focus on particular markets and a lower ability to diversify exposures, which results in different capital structures and higher capital requirements (see Chart 2.9).

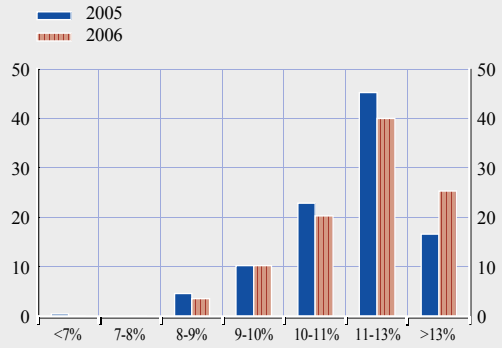
The frequency distribution of overall solvency ratios in 2006 also painted a comfortable picture (see Chart 2.10). On average, more than 65% of banks (in terms of risk-weighted assets) in non-IFRS countries enjoyed overall solvency ratios in excess of 11%. This figure exceeded 55% for banks in IFRS-reporting countries. Turning to the left tail of the distribution, banks with an overall solvency ratio below 9% represented less than 4% and 5% of total assets of the EU banking system in the case of IFRS and non-IFRS reporting banks respectively.

Chart 2.10 Frequency distribution of overall solvency ratios for EU banks

(IFRS countries; all banks; percentage of total risk-weighted assets)



(non-IFRS countries; all banks; percentage of total risk-adjusted assets)



Source: BSC.

There were very modest changes from 2005 in the structure of risk-adjusted assets of EU banks. Similarly to developments in the previous year, in 2006 IFRS reporting banks showed a slight increase in the share of banking book risk-weighted assets and a fall in the proportion of risk-adjusted trading and off-balance-sheet assets, whereas the opposite was true for the set of non-IFRS reporting banks. This result appears to reflect the weight of countries experiencing strong credit growth in the IFRS group (e.g. most central and eastern European countries and the Baltic states), which contributed to the increasing share of banking book risk-weighted assets. In turn, some EU countries in the non-IFRS reporting group, where banks have more highly developed financial market operations, banks registered an increase in the share of risk-adjusted trading and off-balance-sheet assets.

SLIGHTLY WEAKENED LIQUIDITY POSITIONS

This sub-section assesses the liquidity position of EU banks, as of end of 2006, based on stock liquidity ratios. While these measures of structural liquidity can be valuable in regular times, these indicators have significant limitations in times of financial distress, since liquidity can evaporate rather quickly. In particular, these measures cannot account for either balance sheet dynamics or volatility of liquidity exposures.[5] In addition, stock liquidity

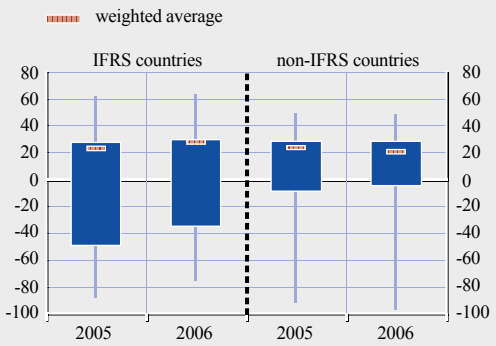
5 Only stock liquidity indicators can be compiled for EU banks using the CBD. The informational value of most liquidity indicators (including e.g. liquidity gap analysis which requires the reporting of both assets and liabilities by maturity buckets) is nevertheless quite limited in times of distress since it is backward looking. Only liquidity stress tests and scenario analysis may simulate sudden and abrupt changes in the drivers of bank liquidity.

measures do not include off-balance-sheet commitments, for example, that are usually taken into account in stress testing exercises and contingency funding plans. The financial markets dislocation triggered in July 2007 has underlined the importance of analysing banks' funding structures, increasing concerns with regard to banks that rely predominantly on the wholesale markets to fund their activity. In particular, the recent financial market turbulence has pointed out banks' need to reassess the robustness of their liquidity risk management policies and the degree of reliance on more volatile funding sources in times of stress.

The liquidity positions of EU banks (in terms of stock ratios) remained favourable in 2006, despite the slight drop in liquidity indicators observed in most countries. Liquid asset ratios stood at 71% and 89% for IFRS and non-IFRS countries respectively, indicating an adequate cover of liquid assets for short-term liabilities (see Tables 4 and 5 in the Statistical Annex).[6] The banking sector's customer funding gap, which represents the proportion of customer loans that is not covered by customer deposits, widened further for IFRS countries (see Chart 2.11). This reflects the strong lending growth observed in 2006, coupled with a decrease in deposits or the slower pace at which these have been growing. It should be noted that these two effects probably increased banks' funding costs. In order to fund new loan issuance, banks may have had to resort to debt issuance, wholesale funding sources or to selling off existing loans. Such dependence on securitisation, interbank borrowing and other non-deposit funding sources may a negative impact on the profit and loss account of some institutions to the shocks in funding liquidity that materialised in the third quarter of 2007.

Chart 2.11 Customer funding gap for EU banks

(percentage of loans to customers; average, minimum, maximum and inter-quartile range of country values)



Source: BSC.
Note: The customer funding gap is calculated as the difference between loans to customers and amounts owed to customers, expressed as a percentage of loans to customers.

The average results presented in Table 4 (see the Statistical Annex) indicate that, whereas loans to customers (expressed as a percentage of assets) increased by almost 2% in comparison with 2005 figures, amounts owed to customers decreased by 1%. The funding gap narrowed somewhat for non-IFRS reporting banks, where the growth rate of deposits was quite satisfactory in some countries in 2006 and outpaced that of loans to customers.

A positive funding gap – as characterises most EU banks irrespective of their size and the accounting framework followed – indicates reliance of banks on interbank funding or on funding from other sources (the extent of which depends on the size of the gap). Interbank funding is not only more costly than deposit funding, but is also of short-term nature, requiring frequent renewal and, hence, implying a higher funding volatility. It should be mentioned, however, that over the last few years, banks have taken significant steps in an attempt to diversify their funding programmes and to reduce structural funding risks. In particular, longer-term wholesale funding sources such as securitisation have contributed to lengthening of the maturity of banks' wholesale funding, thereby reducing the maturity mismatch between assets and liabilities. Securitisation and the use of other structured products, which have contributed to raising liquidity, especially in the case of large banks, are not taken into account

6 The comparable ratio for EU banks in non-IFRS countries (liquid asset ratio 2) includes short-term government debt, in addition to cash and loans to credit institutions, as a percentage of the amounts owed to credit institutions.

in the funding gap and other liquidity measures at present. Should current liquidity indicators be adjusted to also take account of alternative sources of longer-term funding, the funding of the liquidity positions of most of the large and some of the medium-sized banks would be likely to improve. However, the financial market turmoil started in July-August 2007 has emphasised both the speed at which liquidity may evaporate and how funding liquidity risk and market liquidity risk can be interlinked and triggered by the same factors.

The uneven growth of the lending and deposit base has required significant improvements to banks' liquidity risk management. In addition, the increasing degree of internationalisation of many EU banks has also called for effective liquidity risk management in banks with significant activity in foreign markets that operate in various currencies. Typically, the management of liquidity risk is decentralised by currency; however, policy guidelines on liquidity, limits and internal controls tend to be coordinated centrally.

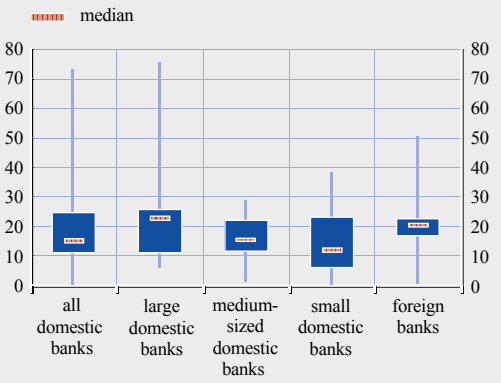
CREDIT LINES

It is notable that off-balance-sheet items such as credit lines, contingent liabilities and other commitments were significant in terms of the balance sheets of EU banks in 2006, irrespective of the accounting regime followed, mainly on account of large and, to some extent, also medium-sized banks (see Tables 4 and 5 in the Statistical Annex). While the growth of credit lines (expressed as a share of total assets) continued to expand in the case of IFRS reporting banks in 2006, it decreased slightly, on average, in that of non-IFRS reporting banks. It should be noted, however, that these off-balance-sheet items have been growing at a steady pace since 2002, more than compensating for the growth in banks' balance sheet totals.

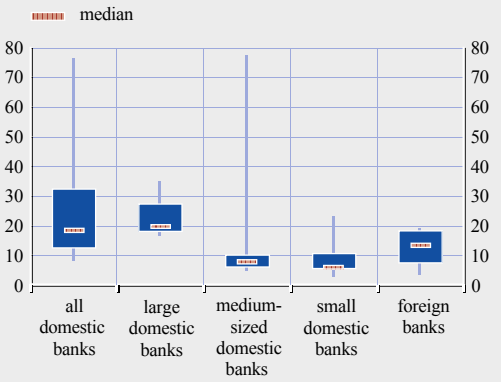
The median value of such commitments represented or exceeded 20% of the balance sheet totals of large banks reporting under the non-IFRS and IFRS regimes respectively. The importance of these off-balance-sheet items – some of which subsequently caused problems for EU banks in the third quarter of 2007 – has been characterised by significant dispersion across EU countries throughout the past decade. While the magnitude of credit lines, contingent liabilities and other commitments was very small relative to the total size of the balance sheets in some countries in 2006, the share was well above 50% in others. For the group of large and foreign banks in a number of countries following the IFRS regime, these off-balance-sheet items often exceeded 50% and in some cases could even reached 70% of the balance sheet total.

Chart 2.12 Credit lines, contingent liabilities and other commitments

(2006; IFRS countries; percentage of total assets)



(2006; non-IFRS countries; percentage of total assets)



Source: BSC.
Note: On account of data integrity problems, three countries were excluded from the calculations and the computation of medians was preferred to the use of weighted averages.

Box 2

ASSESSMENT OF THE IMPACT OF THE FINANCIAL MARKET TURMOIL ON EU BANKS' FINANCIAL CONDITION

This box discusses the main risks to the EU banking sector posed by the global financial market correction that started in July-August 2007 and affected the credit markets, in particular. The assessment is based on information provided by central banks and supervisory authorities of EU countries, reflecting their assessment of the impact of the turmoil on domestic banks, as well as on publicly available information. EU banks' third quarter results were not yet available at the time this report went to print.

As mentioned in the executive summary and in Section 3 of this report, financial institutions and markets have entered a challenging period that started in the second half of 2007. The financial market turmoil, with roots in the rise of US sub-prime market delinquencies, led to disturbances in the securitisation and credit risk transfer processes. Losses on mortgage-related products, coupled with declining confidence in the valuation of mortgage-related and other structured credit products, triggered a rise in credit spreads that spilled over to markets for other risky assets. In particular, the securitisation market and the market for collateralised short-term financing, comprising asset-backed commercial paper (ABCP), were significantly affected by the spill-over from the re-pricing of credit risk.[1] The liquidity disruption that primarily affected the ABCP market soon spread to the interbank money market and contributed to increasing money market rates. Several central banks met the banks' increasing liquidity needs, but occasional liquidity shortages remained along the maturity spectrum throughout September and October.

Against this background, risks to EU banks were grouped into mainly three areas that are discussed below. First, exposures to securitised markets, including the US sub-prime market, which can be of a direct or indirect nature; second, warehousing risks stemming from banks' difficulties in distributing credit risk due to a sharp fall in the demand for leveraged loans and structured credit products from end investors; and finally, the impact of the need to fund growing warehouses of assets on banks' liquidity position. While the impact of the current credit market turbulence differs significantly across EU countries and is strongly dependent on banks' business models, there is broad consensus in that potential losses stemming from banks' exposures appear to be relatively contained in terms of the capital of the EU banks.

Exposures to securitised markets

At the beginning of the fourth quarter of 2007, a few large EU banks had made public announcements regarding their direct or indirect exposures to securitised markets, namely those most affected by the turmoil that had started in the summer. Information available to EU supervisors confirms that direct exposures to the US sub-prime and Alt-A mortgage sectors is limited and confined to the highest rated tranches (AAA and AA). Direct exposures to ABCP conduits appear to be more significant, although still remaining quite contained in terms of banks' total assets or their own funds, even when maximum potential exposures are considered.[2]

1 Securitisations, including ABCP, pool large quantities of homogeneous assets with predictable cash flows or marketable securities into a special-purpose vehicle that issues securities against this collateral. The pools are divided into tranches of securities with different levels of seniority and different maturities: in the case of ABCP the securities issued are of a short-term nature.

2 It should be noted that, in a few countries, conduits are consolidated in banks' balance sheets, thus implying that credit lines granted to these entities were included in the prudential liquidity reporting of the banks (e.g. the Netherlands and Denmark).

Turning to information on indirect exposures, such as credit risk exposures on assets affected by the turmoil or investment exposures arising from holdings of asset backed securities (ABSs), namely residential mortgage backed securities (RMBSs) or CDOs backed by sub-prime loans, these – although featuring more prominently than direct exposures – also tended to be contained, according to assessments by EU supervisors. Information of significance has been disclosed by some large EU banks on their investments in structured products, including the volume and rating structure of the portfolio and, in some cases, the fraction related to US sub-prime market and the likely amount of impairment.

Information on mark-downs or potential losses from valuation adjustments is not yet available. However, in most cases these were not sufficient to affect current guidance on profit expectations for 2007. Nevertheless, it is likely that some of banks' business lines may be hit by losses or drop in revenues, essentially on account of restrained activity.

Warehousing risks

Warehousing risks can be defined as the risk that a bank is unable to dispose of debt into credit markets and is thus left with an uncomfortably high and/or unplanned level of debt exposures. These risks have not only crystallised in the aftermath of the July turmoil, but have also increased going forward, especially for large banks. The quick reduction in investors' appetite for leveraged loans and other structured credit products such as RMBSs has resulted in the inability to securitise assets as planned. Banks' involvement in leveraged lending, in particular LBO financing – from which banks have earned significant fees over the past few years – has generally been mostly confined to the role of advisors, intermediaries and temporary warehouses of risk for loans to be disposed of into the market in the context of the originate-and-distribute model. The lengthening of the debt distribution processes, during which debt is parked at banks' balance sheets, means that banks need to allocate capital against these exposures for longer than anticipated and also that banks have to roll-over short-term financing, representing an unanticipated increase in their funding requirements.

Only a few EU banks, primarily large banks, have made substantial leveraged loan commitments. While these institutions are experiencing difficulties in clearing the leverage loan pipeline, recent information indicates that some loans have been successfully sold and that remaining exposures are manageable. While some debt may have been sold below par, information provided by the banks suggests that discounts from historical market prices have been moderate. Warehousing risks do not appear to be a concern for EU banks in countries with less developed local leveraged loan markets and/or for the banks' that follow a buy-and-hold business strategy.

Many EU banks, however, face warehousing risks that stem from mortgages intended for securitisation which remain in banks' books, given that the securitisation market has not yet normalised. While such mortgages tended to be extended under sound credit standards and are, hence, not likely to represent valuation losses, they may affect funding requirements and banks' ability to originate new lending.

Liquidity positions

Most EU banks face increasing funding costs when rolling-over short-term debt or securitising loans which may further compress margins. Coupled with tightening lending criteria, this

effect may slow down profit growth in the medium term. Liquidity management became more challenging for all banks, with the market for medium and longer-term funding under pressure, and short-term funding gaining prominence. Banks employing liquidity management strategies that rely on transforming funding in one currency to another have also come under pressure following problems in the foreign exchange swap market.

In EU countries with banking systems that are to a great extent foreign-owned (central and eastern European countries and Baltic states), it was confirmed, e.g. via enquiries on risk management made by supervisors, that (foreign) parent banks intended to continue to fund subsidiaries in these countries and that these subsidiaries generally have operational contingency plans for ensuring liquidity needs in the event that financing from parent banks should, for some reason or other, be discontinued.

Commitments to conduits, in particular through credit enhancements and liquidity facilities generally appear to be quite modest for most EU banks. Nevertheless, in some EU countries, a number of large and medium-sized banks sponsor conduits, structured investment vehicles (SIVs) and SIV-lites, providing liquidity lines for these vehicles. Liquidity stress-testing scenarios have been performed, in which worse-case scenarios were considered, such as requiring banks to fund all ABCP programmes, conduits and SIVs for which they provide liquidity support. Results tend to show that the impact on solvency is manageable, even in cases where all lines are called and exposures are held in the banking book.

All in all, the liquidity situation of EU banks is considered adequate at the moment. EU supervisors have not generally prescribed specific stress-testing scenarios, but some have asked firms to apply more robust assumptions to scenarios under the current circumstances. Special emphasis has also been placed on liquidity continuity planning and market-based funding diversification. It is however recognised that higher funding costs in wholesale markets could lead to a tightening of credit availability thereby limiting growth of new lending.

Developments in the second half of 2007 have also triggered a significant *response from EU supervisory authorities*, mainly in terms of enhancing their monitoring activities over supervised financial institutions.

Most EU central banks and/or supervisory authorities issued surveys to large or even to all licensed credit institutions requesting information on the institutions' involvement in with the sub-prime sector. Such initiatives started as early as in May 2007. Comprehensive information from banks with a greater exposure to securitised markets, warehousing risks and facing liquidity strains has been collected in some countries by means of ad hoc meetings between supervisors and banks, or through special on-site inspections, in which detailed information was requested on exposures to and investments in sub-prime markets, hedge funds, structured products and leveraged financing activities.

In countries where banks are more exposed to the aforementioned off-balance-sheet vehicles, supervisors have dedicated additional efforts in analysing the role and position of such vehicles (e.g. collecting data from major ABCP conduit sponsors and from the SIV sector) not the least because of the significant backstop liquidity facilities provided by banks to their own and third party ABCP conduits.

In the absence of banks' third quarter results and as the credit market turmoil is still ongoing, though with some signs of stabilising, it is too early to make definitive assessments as of early November 2007. The recent events have, however, drawn the attention of both market players and the official sector to issues such as transparency, valuation standards and risk management that could be stepped-up in an attempt to protect financial markets against potential future turmoil. In particular, the EU finance ministers in conjunction with the Financial Stability Forum, and the central bank Governors of the Group of Ten countries, have recently identified four broad areas for improvement. These including greater transparency for investors, markets and regulators about financial institutions' exposures, namely to structured instruments and off-balance sheet entities;[3] valuation standards for illiquid assets; the regulation, risk management and stress testing of liquidity risk; and the market functioning with particular regard to the role of rating agencies and the organisation of non-regulated markets.

3 The transparency requirements under Pillar 3 of the Basel II framework (to be implemented in 2008) are also likely to help enhancing disclosure of institutions' exposures.

3 EU BANKS' OUTLOOK AND RISKS

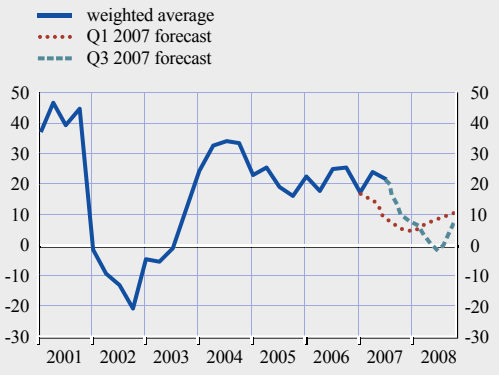
After the publication of the 2006 Banking Stability Report, the macroeconomic environment surrounding the EU banking sector developed mostly favourable. Economic growth became gradually more broadly based, which supported demand for loans by the household and, in particular, the corporate sector. At the same time, the impact of the gradual tightening of monetary policy in most of the Member States become visible in the stabilisation or reduction of growth rates in banks' lending.

The recent market correction that had its origins in the loss of confidence in assets backed by mortgage loans extended to US sub-prime borrowers will most likely have negative implications for the earnings of several EU banks (see Chart 3.1). The market correction caused liquidity problems especially for those banks whose business models are dependent on a smooth functioning of money markets and on securitisation activities. Moreover, some banks with commitments to provide back-stop funding for off-balance-sheet vehicles had their contingent credit lines triggered after the vehicles were no longer able to roll over their short-term funding in the asset-backed commercial paper market.

In addition to the increased volatility in the short-term money and commercial paper markets, investors' appetite declined in the securitisation market. This caused warehousing risks for several large EU banks on large loans, some of which had been extended to finance LBO transactions and which the banks were no longer able to sell to the secondary market. Other banks with a strong reliance on securitisation revenues or financing from the wholesale markets faced funding liquidity problems. Although it is difficult at the current juncture to estimate the ultimate impact of the turmoil on EU banks' profits and solvency, it cannot be excluded that the financial results of

Chart 3.1 Earnings and earnings forecasts for large EU banks

(Q1 2001 – Q4 2008; % change per annum)



Sources: Thomson Financial Datastream, I/B/E/S and ECB calculations.

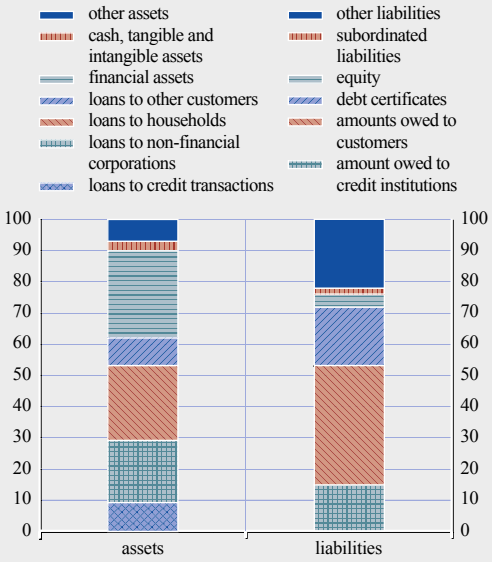
those banks that are most affected by the turmoil could temporarily be negatively affected.

Beyond the short-term liquidity considerations, the main vulnerabilities of the EU banking sectors relate to the evolution of the credit cycle and its impact on borrowers' credit quality and banks' credit risk. The signs in the October 2007 ECB Bank Lending Survey that banks could be tightening their lending standards, if confirmed by coming surveys, suggest that the credit cycle could even be anticipated by the recent re-pricing of credit risk. In addition, for large banks in particular, it is not yet clear to what extent their financial results could be depressed by the declining revenues from non-interest income sources. Finally, the continuing expansion of foreign currency lending to households in several non-euro area EU countries could be posing increasing risks to banks involved in the case of a reversal in housing market developments in the countries affected, or in the event of increased exchange rate volatility.

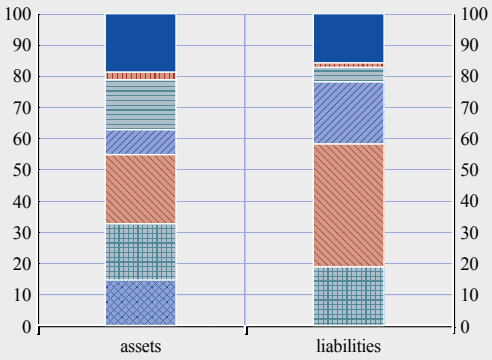
Following several years of favourable financial market developments, the balance sheets of those EU banks that are particularly active in financial markets have grown rather substantially. The new accounting rules have also contributed to an increase in the size of balance sheets of IFRS reporting banks, as some off-balance-sheet items such as derivatives are now reported on the balance sheet and as the fair-value concept is applied.

Chart 3.2 EU banks' balance sheet structure

(2006; IFRS countries; percentages)



(2006; non-IFRS countries; percentages)



Source: BSC and ECB calculations.

The distribution of the assets on EU banks' aggregate balance sheet reveals that credit risk remains the main risk factor affecting banks (at least when not taking into account the possibility of hedging of exposures, see Chart 3.2). However, for the banks following the IFRS reporting standards, financial assets also represent a substantial share of total assets. In 2006 and in the first half of 2007, the overall credit quality of banks' assets remained favourable with low rates of loan write-offs being reported, while positive financial market conditions until the third quarter of 2007 contributed to growth in investment income. At the same time, a further increase in the level of indebtedness of households in some Member States and in some income categories, as well as among non-listed non-financial corporations, may have increased banks' exposure to credit risk in those countries.

On the liability side, the ratio between amounts owed to customers and those owed to credit institutions is rather similar for both IFRS and non-IFRS reporting banks. Although the amount owed to credit institutions is still moderate in

the aggregate balance sheet, rather significant differences exist both across Member States and across different bank size categories, with larger banks in countries with more developed financial markets being typically more reliant on wholesale funding sources.

EU BANKS' CREDIT RISK EXPOSURES INCREASED AT A SLOWER PACE

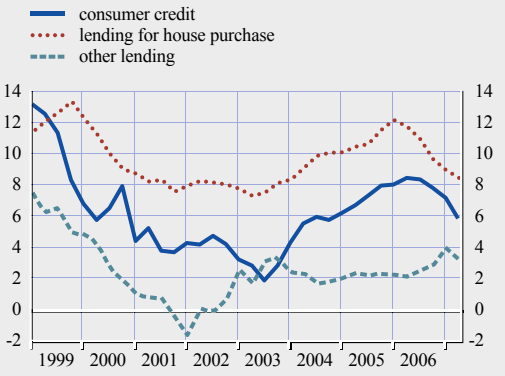
Since the publication of the 2006 Banking Stability Report, the annual growth rates of loans extended to the corporate sector and to households have either stabilised or decreased in the EU. Although the rates of growth are still high, country-level information confirms that in most Member States lending growth has already reached a turning point and could possibly be starting a downward trend. The aggregate levels of indebtedness of EU households and firms remain moderate by international standards. However, large variations exist across Member States and borrower categories and previously identified pockets of vulnerability could have deteriorated further. More recently, banks have reported tighter lending standards for loans extended to enterprises in particular. Further developments in banks' lending policy thus warrant close monitoring in the period ahead.

HOUSEHOLD SECTOR CREDIT RISKS

The rate of growth of loans to households continued to decline in most EU countries throughout the period since the publication of the 2006 Banking Stability Report (see Chart 3.3 that shows the euro area MFI loans as a proxy for the EU). The slowdown in lending for house purchases, in particular, is likely to reflect slowing loan demand as a result of a moderation of both house price growth and housing market activity in a number of economies in the EU. It is also likely to reflect the rise in interest rates in many Member States in line with higher key central bank rates and a worsening of consumer confidence. The growth rate of consumer credit also decreased in the period under review.

Chart 3.3 Annual growth in MFI loans to households in the euro area

(Q1 1999 – Q2 2007; percentages per annum)



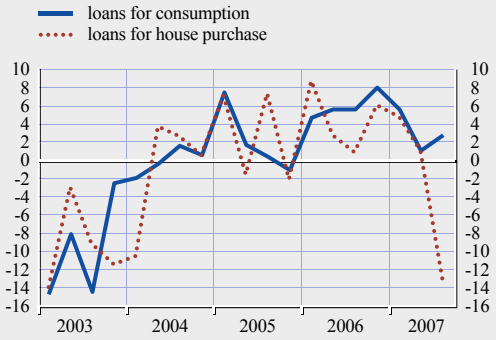
Source: ECB.
Note: Data are based on financial transactions involving MFI loans.

All in all, despite the recent moderation, and underpinned by the ongoing buoyancy of economic activity, the rate of credit expansion to the EU household sector remains strong, and it has continued to increase in some Member States. Looking forward, according to banks, the demand for loans for house purchases is expected to continue to moderate significantly, driven mainly by a softer assessment of housing market prospects by households, while demand for consumer credit is expected to remain unchanged.

With regard to the credit standards applied by banks to new loans to households for house purchase, in the October ECB bank lending survey banks reported a substantial net tightening of credit standards following a slight easing in the previous quarter (see Chart 3.4), although substantial differences exist across Member States. The main factors behind the net tightening were a slight deterioration of banks' balance sheet position and a worsening of housing market prospects as well as expectations regarding general economic activity. The net tightening of credit standards was mainly implemented via a widening of the margins on riskier loans and via higher collateral requirements and loan-to-value ratios. For the remainder of 2007, banks reported

Chart 3.4 Bank lending standards for loans to households

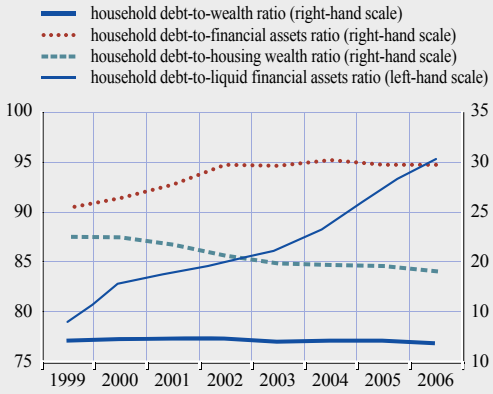
(Q1 2003 – Q3 2007; percentages per annum; net easing of credit standards)



Source: ECB.

Chart 3.5 Household debt-to-asset ratios in the euro area

(1999 – 2006; percentages)



Source: ECB.
Note: Data for 2005 and 2006 are based on estimates.

that they expect a further tightening of credit standards for loans to households for house purchases.

Regarding loans to consumer credit and other lending, in the October 2007 BLS banks reported a slight net easing of credit standards compared with basically unchanged standards in the previous quarter. Competition from other banks continued to contribute to a net easing of standards, while consumer creditworthiness, risks to collateral and less favourable expectations about the general economic outlook contributed to a tightening of credit standards. Looking forward, the responding banks expect credit standards on loans for consumer credit and other lending for households to tighten considerably.

Taken together, the combination of a continued robust expansion of credit extended by banks to households, on the one hand, and the until recently still relatively easy lending standards, on the other, suggest that EU banks' exposures to credit risk from new loans continued to increase from the year earlier, although at a slower pace.

To gauge the changes in credit risk to banks from their existing household lending stock, it is important to consider the changes in the capacity of EU households to service their existing loans. As a consequence of past robust lending activity, household indebtedness increased further in the EU, although, on average, it remains low by international standards (see Chart 3.5 for the euro area). In addition, households' debt-to-wealth ratios have remained stable, underpinned by past favourable asset price developments. Insofar as household loans are contracted at variable interest rates, higher short-term interest rates have been feeding into households' interest payments, with a falling interest payment burden of the household sector over past years giving way to a gradual increase. All in all, however, at the aggregate EU level, current household sector debt dynamics can be seen as being rather benign.

Although the average level of household sector indebtedness relative to GDP in the EU remains low in comparison with many other economic areas, the pockets of vulnerability identified in the past remain and may have increased in relevance. Moderating house price inflation or even price declines – particularly in countries that witnessed rapidly rising prices in the past – and increasing debt servicing costs could be pushing more households with both high mortgage debt and consumer credit into

financial distress, increasing the risk of borrower defaults. In those EU Member States where borrowing in foreign currency is common, there are additional risks of potential borrower distress in the event of unfavourable exchange rate movements.[7]

Reflecting the favourable economic environment and benign credit conditions in 2006 and in the first half of 2007, backward-looking indicators on banks' credit risks on existing loans suggest that write-offs on loans to households generally declined in late 2006 and remained stable in the first nine months of 2007 (see Chart 3.6).

Looking forward, the most recent indicators of economic activity across the EU continue to provide a rather favourable backdrop for household employment prospects, so that banks' borrower income risks should remain contained. It cannot be excluded, however, that a potential deepening and widening of the adverse implications of the episode of market volatility that erupted in July and August 2007 could contribute to a deterioration of the financial situation of highly indebted households and have a negative impact on banks' asset quality, particularly in cases where past lending standards have been more lenient than average.

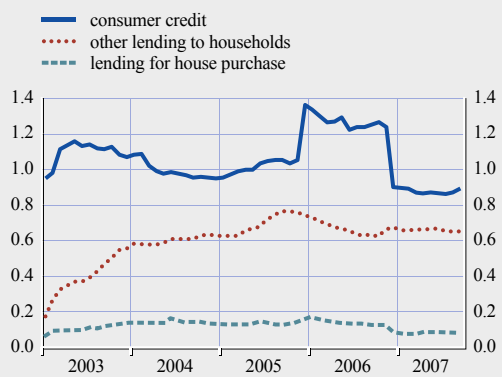
CORPORATE SECTOR CREDIT RISK

Reflecting the persistently low cost of borrowing, credit growth to corporates in the EU remained at a high level, although the rate of growth has shown some signs of stabilising (see Chart 3.7 for the euro area as a proxy for the entire EU). Indicating that economic growth in the EU has become broader-based, the demand for loans was particularly strong from small and medium-sized enterprises and in longer-term maturities, driven by fixed investment, inventories and working capital. The continuing importance of merger and acquisition (M&A) activity in the corporate sector was reflected by the fact that the issuance of corporate debt securities has been concentrated on the high-yield segment and that loans for corporate takeover activity accounted for a large share of the syndicated loans market. On account of the gradually tightened financing conditions, however, banks indicate that they have revised their expectations regarding future loan demand growth to enterprises down, particularly in those countries where the growth rates have been highest, although demand is still expected to remain positive.

7 Risks related to mortgage lending by EU banks are discussed in detail in Section 5 of the 2006 issue of the report on EU Banking Sector Stability.

Chart 3.6 Write-offs on loans to households

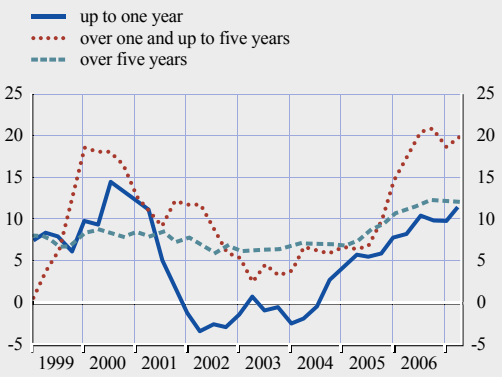
(Jan. 2003 – Sep. 2007; percentages per annum)



Source: ECB.

Chart 3.7 Annual growth in MFI loans of selected maturities to non-financial corporations in the euro area

(Q1 1999 – Q2 2007; percentages per annum)



Source: ECB.
Note: Data are based on financial transactions involving MFI loans.

Where the credit standards applied to new corporate loans are concerned, in the October 2007 ECB Bank Lending Survey banks reported that lending standards were tightened considerably following a long period where standards had remained broadly unchanged (see Chart 3.8). Contributing to tighter standards was competition from other banks (first time during the survey history), banks' capital and liquidity position, their access to market funding, worsening of banks' risk perception regarding general economic activity, as well as industry and firm-specific outlook. Banks indicated that they tightened credit standards by widening their margins on riskier and average loans and via shortening of the maturity and decreasing the size of loans or credit lines as well as via increasing more collateral. Looking forward, banks expect further net tightening of credit standards applied on loans top enterprises.

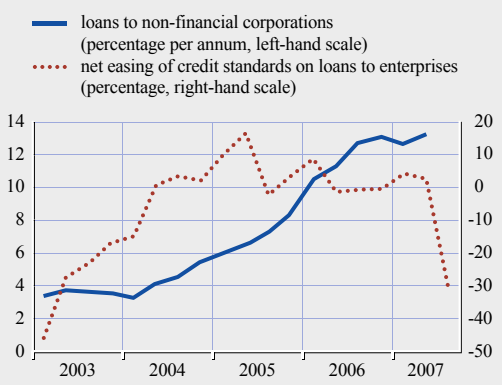
The still robust growth of banks' lending to enterprises, coupled with only recently tightened credit standards, point towards a growing exposure to corporate sector credit risk on new loans among EU banks throughout the past year.

With regard to credit risks on outstanding corporate loans, the combination of gradually increasing corporate sector indebtedness and a rising debt servicing burden could increase the vulnerability of borrowers to distress going forward. In particular, the growing reliance on debt to finance corporate investment and M&As may have increased the vulnerability of the corporate sector to interest rate and growth shocks. This notwithstanding, increasing leverage needs to be seen against the background of the strength of corporate profitability. Recent data show that corporate sector profitability in the EU has remained strong against the background of the strength of economic activity and an environment where debt and equity financing conditions remained broadly favourable. However, perhaps anticipating tightening financing conditions ahead, forward-looking earnings figures indicate some expectations of corporate profit growth moderation in the period ahead.

Regarding the more recent market developments, it is not yet obvious at the current juncture how firms' access to credit might be affected by the credit market re-pricing process that gathered pace in July and August 2007. In a normal credit environment, a cyclical increase in corporate sector default rates – which may, according to some indicators, already have started (see Chart 3.9) – would imply an increase in non-performing loans and loan losses for banks.

Chart 3.8 Annual growth in MFI loans of selected maturities to non-financial corporations in the euro area and bank lending standards for loans to non-financial corporations

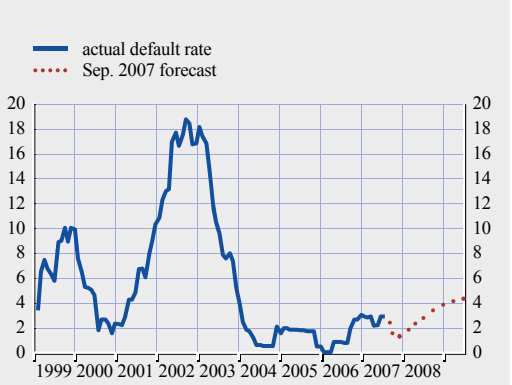
(Q1 2003 – Q3 2007; percentages per annum)



Source: ECB.
Note: Data are based on financial transactions involving MFI loans.

Chart 3.9 European speculative-grade-rated non-financial corporations' default rates and forecasts

(Jan. 1999 – Aug. 2009; percentages; 12-month trailing sum)



Source: Moody's.

To protect themselves against the financial consequences of such an eventuality, banks generally include a premium in their lending rates and make impairment charges. Should the present liquidity problems curb lending by EU banks and place corporate sector access to credit at risk beyond the short term, however, the turn in the default cycle could take place earlier and in a sharper manner than what is currently being forecast.

Backward-looking indicators for banks' corporate loan quality suggest that write-offs on loans to the corporate sector decreased quite sharply in late 2006 and continued to decline gradually throughout the first nine months of 2007, to reach the lowest levels recorded since 2003 (see Chart 3.10). Together with the bottoming-out of default rates, these figures suggest that, in the current credit cycle, the corporate credit quality of EU banks could have reached its peak in late 2006.

While the financial position of the euro area corporate sector has remained relatively sound at an aggregate level, there are some concerns, looking forward, that the possible implications of the recent events in the securitisation, structured credit and short-term money markets for future financing conditions may have adverse effects on the sector's creditworthiness. Particularly vulnerable in this sense could be many non-listed firms, among which the levels of indebtedness has grown faster than among listed firms.

Furthermore, should the prospects for tighter credit concerns persist, expected and realised corporate profitability, while remaining high, may be dented by a potentially less favourable macroeconomic outlook, thus possibly increasing the credit losses incurred by EU banks in the future.

Chart 3.10 Write-offs on loans to non-financial corporations

(Jan. 2003 – Sep. 2007; percentages per annum)

Source: ECB.

CREDIT RISK-MITIGATING ACTIVITY

Banks can mitigate their exposure to credit risk by either purchasing credit protection in the form of credit default swaps (CDSs) or by securitising loans. The global issuance of CDSs, the bulk of which is purchased by banks, continued to expand in 2006 and in the fist half of 2007. Developments in the pricing of CDSs, both for banks and their borrowers, fluctuated considerably within this period (see Section 4 of this report for a more detailed discussion).

Banks remain the main buyers of protection in the global CDS markets, with insurance companies and monoline industry acting as main sellers thereof. However, banks are also increasingly active in the CDS market for trading purposes. Surveys conducted before the eruption of the credit market risk re-pricing, commenced in the summer of 2007, reveal that the main concerns of participants in the credit derivatives market related to infrastructure risks, as well as to the risks associated with liquidity and clearing and settlement issues after a credit event occurred.[8]

Under many of the regulatory regimes currently applied in the EU, banks can move most credit risk exposures out of their balance sheets by securitising loans (however, banks tend to keep first loss tranches). Insofar as the loans involved are relatively risky, banks can reduce their risk-weighted assets and the amount of capital that has to be put aside for regulatory purposes. Loan distribution by securitisation

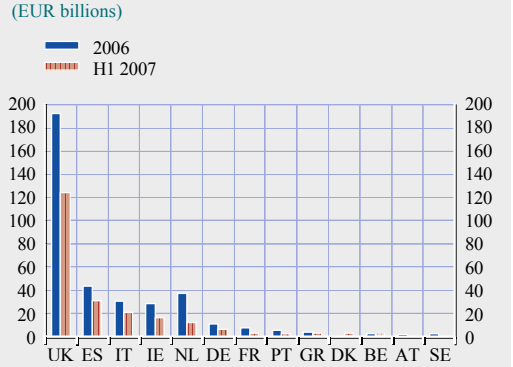
8 See Fitch Ratings, "CDx survey – market volumes continue growing while new concerns emerge", July 2007.

also provides banks with additional funds that can be used for the origination of new loans, which is important for several large EU banks that have increasingly moved to the originate-and-distribute business model.

According to figures of the European Securitisation Forum (ESF), the total amount outstanding on the European (EU plus Switzerland) securitisation market at the end of the second quarter of 2007 was €1.28 trillion. New issuance in the course of the first half of the year totalled €281 billion, which represented an increase of 70% from the same period in 2006. Of the individual collateral sectors, residential mortgage-backed securities (RMBSs) continue to see the largest volumes, followed by collateralised debt obligations (CDOs) and commercial mortgage-backed securities (CMBSs). Of individual EU countries, the United Kingdom was the main issuer (see Chart 3.11).

Sustained economic growth, high corporate profits, expanding investment and consumer spending were seen as supporting the high issuance volumes in the first half of 2007. However, the outlook for further issuance is likely to be considerably affected by the re-pricing of risks in the credit markets that commenced in the third quarter of 2007. By the cut-off date of this report, yield spreads between securitisation tranches and government bonds of comparable maturities remained rather substantially widened, contributing to a slowdown of new securitisation issuance.

Chart 3.11 European loan securitisation – issuance of collateral per country

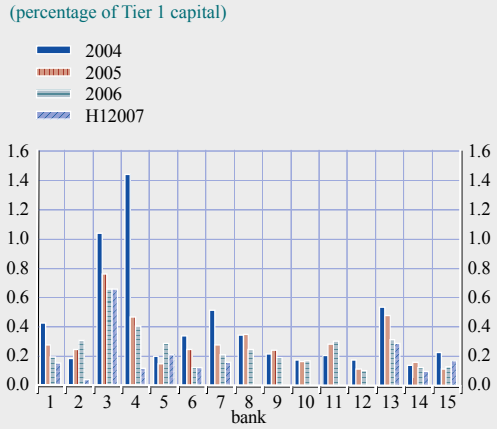


Source: ESF securitisation data report.

INTEREST RATE RISKS

Banks' banking and trading books are typically affected by interest rate risk due to their holdings of interest-bearing assets issued by the government, the corporate sector and emerging market economies. However, banks do not normally disclose information to this level of detail. Aggregate supervisory data for 2006 show that trading book own funds requirements for traded debt instruments have significantly decreased since 2005 (see Tables 7 and 8 in the Statistical Annex). In addition to that, Chart 3.12 depicts individual banks' reported information on interest rate value at risk (VaR) for a sample of selected large EU banks from 2003 to 2007. Interest rate risk remains the largest component of total market VaR for all banks and, overall, interest rate VaR decreased or remained constant from end-2006 to the first half of 2007. However, these low figures still reflect the unusually subdued levels of volatility in the macro-financial environment until the beginning of the financial markets turmoil that commenced in July and August 2007, and they should therefore be interpreted with caution. Moreover, the reported figures have to be seen as only rough estimates of the underlying risk since they reflect the average of ten days' VaR measures for a horizon of up to two quarters. Looking ahead and taking into account the recent developments in the EU banking sector, interest rate risk will probably not play a major role with respect to the solvency of large EU banks, especially when comparing it to other sources of risk such as liquidity risk. Evidence for such a benign view can be gauged from the relative resilience of large EU banks in the context of the temporary volatility spikes in bond markets such as those in May 2005, in May-June 2006 and in February-March 2007. However, this outlook could change to one with

Chart 3.12 Interest rate Value at Risk (VaR) for selected large EU banks



Source: Financial disclosures of banks.

a larger impact on EU banks if there were to be a more lasting increase in the volatility of long-term interest rates.

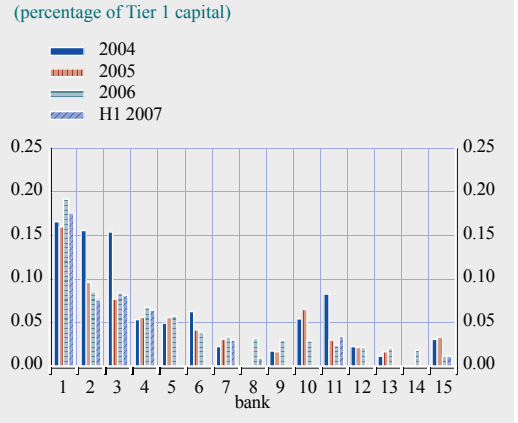
Stress-testing market and, more specifically, interest rate VaR is a common feature of EU banks' risk management practices, as suggested by country-level information collected for this Report. Almost all banks in the current sample of large EU banks have implemented stress-testing procedures for assessing market risk that allow the simulation of different scenarios of systemic stress. An interesting finding provided by country-level information is that comparing the results of stress-tests for interest rate risk with those for credit risk and other sources of market risk reveals that, in the medium term (typically, a three-year horizon), interest rate risk dominates the latter two risk factors, while credit risk plays a more pivotal role in the short term (over a one-year horizon). Country-level information on interest rate stress-tests concerning banks' banking books signals that a further flattening of the yield curve would have a significant impact on banks' revenues, although it should be kept in mind that such results are not directly comparable across banks or countries. However, such an impact would not be instantaneous as the transmission of changes in short and long-term interest rates takes place only gradually.

EXCHANGE RATE RISKS MAY HAVE INCREASED FOR SOME EU COUNTRIES

The direct exposure of EU banks to exchange rate risk is generally small, as net open foreign exchange positions are kept at low levels through hedging via off-balance-sheet derivatives. The low direct exposure to foreign exchange rate risk is underlined by both aggregate supervisory measures and the VaR figures of selected large EU banks. Aggregated supervisory data for 2006 on foreign exchange-related trading book capital requirements indicate a significantly lower exposure to this type of risk, as compared with the interest rate and equity positions in the trading book. Moreover, as a percentage of total trading book own funds, requirements have remained broadly unchanged since 2005 (see Tables 7 and 8 in the Statistical Annex).

Additional information on selected large banks' foreign exchange VaR suggests that EU banks kept their exposures to foreign exchange risk, expressed as a share of their Tier 1 capital, at low levels throughout 2006 and in the first half of 2007 (see Chart 3.13). Moreover, the country-level stress-testing exercises carried out by central banks and supervisory authorities indicated a great resilience of EU banks to exchange rate shocks. Overall, the

Chart 3.13 Exchange rate Value at Risk (VaR) for selected large EU banks



Source: Financial disclosures of banks.

direct exposure of EU banks to adverse foreign exchange movements appears to be low.

As regards the indirect exposure to foreign exchange rate risks built up through foreign currency lending, EU countries form a rather heterogeneous group.[9] In some EU countries, foreign currency lending is mainly denominated in euro. These are mainly non-euro area EU countries that should adopt the euro at some point in the future, with some of them already participating in the exchange rate mechanism (ERM II), thereby committed to keep the exchange rate stable. In other countries, the majority of foreign currency lending is denominated in currencies other than the euro (e.g. Swiss franc).

The share of foreign currency lending to the private sector can be quite high, at least in some EU countries. With respect to the corporate sector, banks' indirect exposure to foreign exchange risk is mitigated by the natural hedges provided by exports, at least to the extent that the borrowers are mainly larger firms with a focus on foreign markets. For some EU countries, however, risks related to high or increasing unhedged borrowing by households could be more relevant. In particular, households with substantial currency mismatches could face a sudden increase in repayment burdens in the case of an unexpectedly large deprecation of their local currency. Results of country-level stress-testing exercises suggest that the rise in the proportion of households with repayment problems under such a scenario could be material, albeit only in a few countries. It should be borne in mind, however, that the strength of profitability in recent years has helped banks to maintain comfortable solvency buffers which enable them to withstand higher credit losses even in the unlikely event of a significant depreciation of their local currency. Overall, although some pockets of vulnerability remain in areas where unhedged foreign currency borrowing by households is high, the indirect exposure of EU banks to foreign exchange rate risk generally appears to be limited.

DIRECT EXPOSURE TO EQUITY MARKET RISKS REMAINS MODERATE

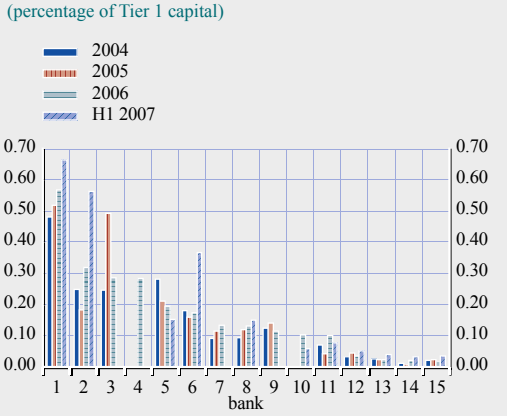
EU banks' direct equity market exposures, as measured by the share of trading book-related own funds requirements, increased moderately in 2006 from 2005 (see Tables 7 and 8 in the Statistical Annex). Additional information on selected large EU banks' equity VaR indicate that some banks increased their exposure in 2006 and in the first half of 2007.[10] Nevertheless, the exposure of these banks as a share of tier 1 capital generally remained moderate (see Chart 3.14).

In August 2007, global equity markets went through a period of heightened volatility which also led to significant falls in prices on EU stock markets. The recent period of market turbulence again served as a reminder that the common use of similar market risk models could amplify adverse market dynamics. Whereas low volatility for a protracted period tended to suppress VaR figures and allowed banks to expand their exposures without

9 Risks related to foreign currency lending by EU banks are discussed in detail in Section 5 of the 2006 issue of the report on EU Banking Sector Stability.

10 Note that, in a few cases, the increase in the first half of 2007 was attributable, at least partly, to methodological changes in calculating equity VaR.

Chart 3.14 Equity market value at risk (VaR) for selected large EU banks



Source: Financial disclosures of banks.

breaching risk limits, a sudden increase in equity market volatility may have generated a reverse mechanism. In particular, heightened volatility may have led to the simultaneous breaching of VaR limits by several financial institutions, which in turn generated strong volatility feedback effects.

Overall, while the direct equity market exposure of EU banks remains relatively contained, unfavourable developments in equity markets could put some pressure on trading revenues or fee and commission income from trading-related activities in the second half of 2007, at least for those banks with larger investment bank activities.

INCREASED EXPOSURE TO COUNTERPARTY RISKS

The significant expansion of credit risk transfer markets in recent years could suggest that the banking system has become more resilient to shocks as credit risk became more widely spread throughout the financial sector. The market turmoil that commenced in July-August 2007, however, has reinforced questions as to whether a clean and effective transfer of risk is achieved in these transactions and as to whether, due to difficulties in selling or securitising exposures to specific counterparties, the concentration of risks in banks' balance sheets could be rising to uncomfortably high levels. These hidden concentration risks could stem from increased counterparty risks vis-à-vis hedge funds, and increased warehousing risks – the risk that a bank is unable to dispose of debt in the credit markets – in LBO business, for example.

Banks' exposures to LBO activity have apparently increased in the aftermath of the July 2007 turmoil. While the growth of the private equity-sponsored LBO loan volume, which had reached record levels in 2006, remained strong throughout the first half of 2007, it started to decline in the second half of the year. In mid-2007, some of the risks to banks deriving from financing LBO activity crystallised in the context of the financial market turbulence. The funding some large EU banks' had committed to LBOs, often characterised by large non-amortising loan tranches and compressed spreads, proved to be significant. Marked-to-market valuations in banks' leveraged loan books were also affected by the re-pricing of risks deriving from the change in market sentiment. Globally, in September 2007 the size of the leveraged loan "pipeline" was estimated at around USD 300 billion, including a number of large European deals, which banks had expected to dispose of in the second half of 2007.

While several collapses or closures of high-profile hedge funds have occurred since mid-2007, there have been no indications that banks would have experienced substantial losses on account of their exposures to hedge funds. However, it would be too early to assess the impact of the latest market turmoil on hedge funds' financial condition, as developments were still unfolding at the time of this report's publication. In addition, two important sources of concern remain. First, banks could be forced to load sub-prime mortgage-related and other illiquid collateral seized from hedge fund clients onto their balance sheets. Second, some banks may have extended sizeable credit lines to hedge funds, the original terms of which might not be reflective of the changed market conditions and the financial condition of the respective hedge fund counterparty.

Besides banks' exposures to hedge funds, leveraged lending (including leveraged loan bridging facilities) and exposures to structured investment vehicles (SIVs), as well as banks' role as liquidity providers to conduits of asset-backed commercial paper, have become a particular concern. The lack of liquidity in the credit and short-term money markets has raised worries about banks' liquidity positions and their potential impact on solvency ratios. While these off-balance-sheet exposures have reached significant levels in the case of some global banks, market studies tend to consider the potential impact of banks having to take these assets onto their balance sheets to be manageable.

EMERGING MARKET EXPOSURES INCREASED FURTHER

Macroeconomic conditions in emerging market economies remained relatively stable after the publication of the previous EU Banking Sector Stability Report in November 2006. This notwithstanding, since mid-2007 the global credit and financial market turmoil has also had a negative effect on emerging markets, with the sovereign credit spreads of most emerging market economies widening and equity markets enduring a period of heightened volatility. However, the emerging markets have proven relatively resilient during the recent period of market turmoil, possibly reflecting a still favourable fundamental outlook in most emerging economies.

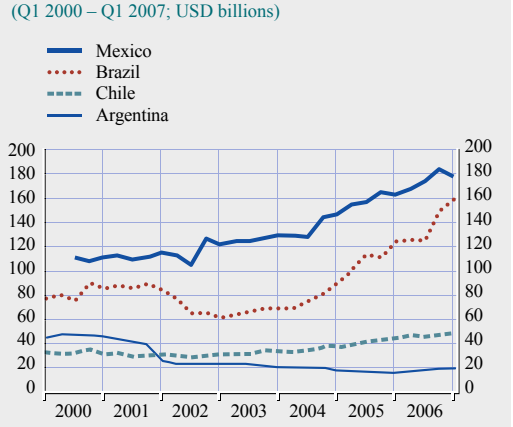
With regard to the exposures to individual geographic areas, as measured by the size of cross-border financing flows to selected emerging market economies, the exposure of EU banks to the main emerging market economies in Latin America continued to rise throughout 2006 and early 2007 (see Chart 3.15). Brazil and Mexico, the two largest economies of the region, accounted for most of the increase, while exposures to Argentina remained contained.

Exposures via cross-border financing flows to Asian emerging market economies increased at a somewhat higher pace in the same period than those to Latin America (see Chart 3.16). Indeed, by the end of the first quarter of 2007, the level of EU banks' overall exposure to Asian emerging economies had surpassed that of their exposure to Latin America. The growth in exposures continued to be heavily concentrated on the largest countries in the region. Besides the continuing rapid increase of exposures to South Korea, the growth of cross border claims by EU banks has also accelerated vis-à-vis China and India. This may be explained by the fact that China and India are the fastest-growing economies in the region, and their broad economic outlook also remains favourable. As for South Korea, whereas the one-off impact of individual large acquisition transactions may have partly explained the substantial increase of exposures in 2005, the growth of EU banks' exposures in 2006 and early 2007 has been more broadly based, probably reflecting the more advanced stage of financial deepening and the recovery of domestic credit markets after the resolution of the credit card lending crisis.

Overall, economic conditions in most emerging market countries have improved or remain sound and spillover effects from the financial market

Chart 3.15 International exposures of EU banks to Latin American countries

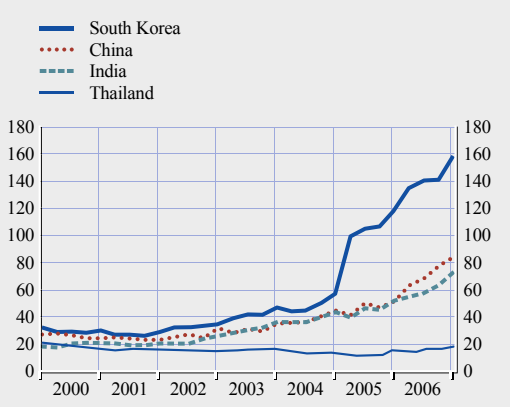
(Q1 2000 – Q1 2007; USD billions)



Source: Bank for International Settlements (BIS).
Note: Data on BIS reporting banks only.

Chart 3.16 International exposures of EU banks to Asian countries

(Q1 2000 – Q1 2007; USD billions)



Source: BIS.
Note: Data on for BIS reporting banks only.

turbulence do not, at the current juncture, appear to have altered the favourable growth outlook of emerging market economies. Given the still benign economic outlook, exposures of EU banks to emerging markets are still more likely to have a beneficial impact on banks' profitability via diversification effects. In a negative but low-probability scenario, however, a protracted period of reduced global liquidity and abrupt shifts in global risk aversion could lead to an increase in the downside risks to growth in emerging economies.

4 EU BANKS' ABILITY TO WITHSTAND SHOCKS

WORSENING EARNINGS PROSPECTS BUT SHOCK ABSORPTION CAPACITY REMAINS COMFORTABLE

After the finalisation of the November 2006 report on EU Banking Sector Stability, EU banks were challenged by the episode of financial market turbulence that occurred in February and March 2007 and the financial market turmoil which commenced in July and August 2007. Although the shock absorption capacities of all large EU banks have not changed significantly and although market participants have remained optimistic in their assessment of the robustness of banking industry, some market-based indicators suggest that the future risks for the banking sector have increased. This reflects the uncertainty of market participants about the banking sectors' earnings prospects, which depend upon the extent to which further developments in the US sub-prime mortgage market and the rising uncertainty about structured credit intruments might have a negative impact on EU banks (see Box 2).

The turbulence in the stock markets in February and March 2007 proved to be relatively short-lived, and EU banks' stock prices quickly recovered to the highest levels recorded since the beginning of 2007. However, risks related to the US sub-prime market crisis surfaced again in July 2007, giving rise to financial market turbulence with more protracted consequences for the indicators derived from EU banks' debt and equity. The turmoil even had a more pronounced impact on the share prices of EU banks than on those of US banks, possibly on account of the fact that EU banks' seemed to be affected more negatively by liquidity problems (see Chart 4.1). The fall of EU banks' stock prices reflected anxiety among market participants about the potential negative impact of the sub-prime mortgage market-related problems on EU banks' profits, also via indirect channels.

Some additional information on how markets view the future outlook for EU banks can be gauged by the option-implied probability

Chart 4.1 Bank stock prices in Europe and the United States

(Jan. 1999 – Oct. 2007; index: Jan. 1999 = 100)

Source: Thomson Financial Datastream.

Chart 4.2 Option-implied risk-neutral density bands for the Dow Jones EURO STOXX bank index

(Jan. 2006 – Feb. 2008; index value; 10%, 30%, 50%, 70% and 90% confidence intervals of estimations on 26 Oct. 2007)

Source: Thomson Financial Datastream.

distribution of the Dow Jones Europe STOXX bank index, calculated using the risk-neutral density function derived from quoted prices of options. The central projection suggests that the index would stabilise after a slight recovery within the next few months. However, market participants assess the downside risks to be higher than upside risks, which is indicated by the wider confidence bands on the downside (see Chart 4.2).

This view seems to be supported by an upward adjustment of market volatility towards historical averages. In mid-August 2007, the volatility of EU banks' share prices reached its highest level since 2003, when the banking sector last faced a very challenging operating environment in the aftermath of the bursting of the "New Economy" bubble in the United States (see Chart 4.3).

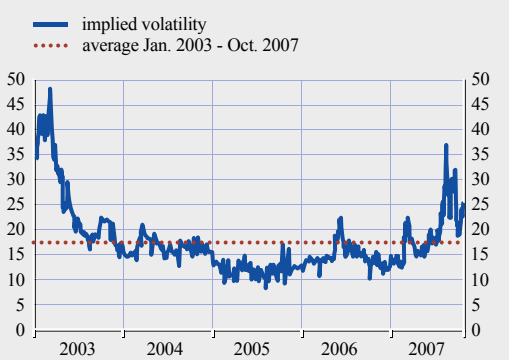
This combination of a relatively rapid decline in the prices of EU banks' stocks and a substantial upward revision of future risk, as reflected by market risk indicators, which started in mid-2007, indicated market participants' fears about the possible spillover of the sub-prime mortgage market problems to other segments of the credit market. Furthermore, EU banks profit-generating capabilities seem to have been revised downwards by market participants, as supported by the pattern in the price-earnings (P/E) ratios for the EU banking sector (see Chart 4.4). Changes in P/E ratios can shed some light on how market participants expect future profitability to develop in view of recent earnings performance. After having reached a local peak in early 2006, P/E ratios subsequently fell and, in September 2007, they had reached the lowest values recorded since May 2005, the last time when the global credit markets were seriously tested for their resilience after the downgrading of GM and Ford by credit rating agencies. In this respect, the recent fall of the P/E ratios may suggest that expectations of bank's future profits have been revised downward by market participants.

Turning to market-based assessments of the credit risk of EU banks, after increasing more or less continuously for two consecutive years, the distance-to-default indicator for large EU banks seems to have reached a peak in the first quarter of 2007 (see Chart 4.5). Although this indicator remains at historically high levels, market participants seem to assess the credit risk of large EU banks as being still higher.

This view is supported by the substantial widening of banks' CDS spreads, which increased as much as five-fold for some institutions soon after the recent market

Chart 4.3 Implied volatility for the Dow Jones EURO STOXX Bank index

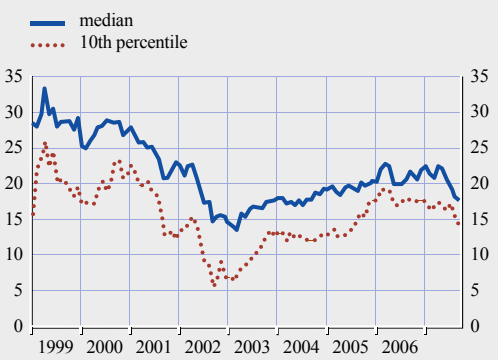
(Jan. 2003 – Oct. 2007; percentage)



Source: Bloomberg.

Chart 4.4 Price-earnings (P/E) ratios for large EU banks

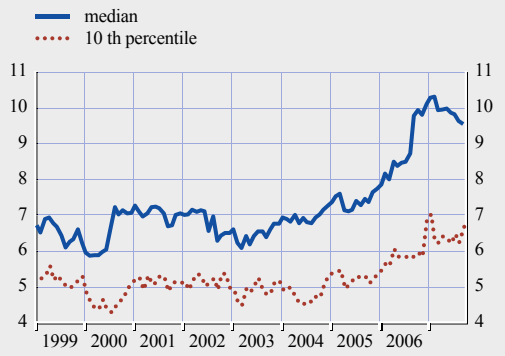
(Jan. 1999 – Sep. 2007; percentages)



Sources: Thomson Financial Datastream and ECB calculations.
Note: Earnings forecasts for the same period that is referred to by the price indicator.

Chart 4.5 Distance to default for large EU banks

(Jan. 1999 – Sep. 2007)

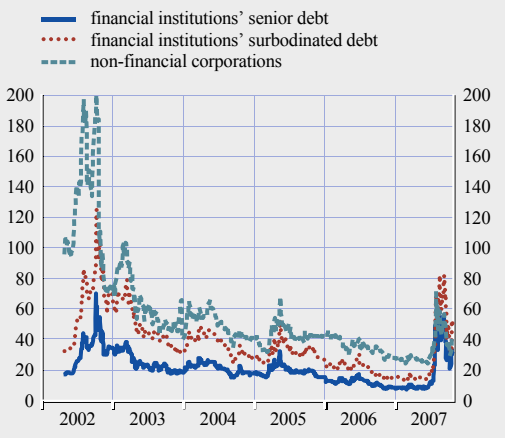


Sources: Moody's KMV and ECB calculations.
Note: An increase in the distance to default reflects an improving assessment.

re-pricing started in July-August 2007. Although this revaluation of CDS prices may to some extent reflect the adjustment in the price discovery process and a more accurate valuation of the underlying credit risk, market participants seem to have changed their opinions regarding the future risks faced by large EU banks, which they now deem to be higher (see Chart 4.6).

Chart 4.6 European financial and non-financial institutions' credit default swaps

(May 2002 – Oct. 2007; basis points; five-year maturity)



Source: JP Morgan Chase & Co.
Note: European financial institutions and non-financial institutions correspond to the definitions of JP Morgan Chase & Co.

All in all, the patterns in market indicators imply a less favourable outlook for the EU banking sector than at the time of finalisation of the 2006 report on EU Banking Sector Stability. Although the capacity of the EU banking sector to absorb shocks has not changed significantly against the background of their strong profitability and comfortable solvency, the forward-looking assessment based on market indicators suggests that the near-term risks to the banking sector could have increased. Market participants are particularly uncertain about the banking sector's earnings prospects, which might be affected by further developments in the US sub-prime mortgage market and the related uncertainty surrounding structured credit products.

DOWNWARD RISKS IN RATINGS

The overall high ratings reported for the large EU banks since the publication of the 2006 EU Banking Sector Stability Report were retained throughout 2007 up to the third quarter of the year. The average rating stood at the AA-, whereas outlooks, which are considered to be a medium-term indicator of credit quality (beyond one to two years) remained stable (see Table 17 in the Statistical Annex). As of October 2007, positive outlooks outnumbered the negative ones: the three major rating agencies assigned 21 positive outlooks and only six negative outlooks. While further positive rating actions cannot be ruled out for banks achieving specific improvements, the rating agencies acknowledge that the industry outlook going forward is more challenging than in the recent past. The generally high level of long-term ratings enjoyed by EU banks over the past few years could be tested downward in the event that the rating agencies' expectations of earnings resilience and risk profile stability are not met.

Against the background of some signs of a lower appetite for credit risk and leverage among investors after the turbulence experienced in the US sub-prime market in the summer of 2007, rating agencies see possibly higher credit

charges for the banking industry on account of a deterioration in the credit environment and a slowdown in some revenue sources, which could dent future earnings. There are some concerns involved, in particular in areas such as the leveraged finance market where EU banks tend to be more active than US counterparts, namely the higher risks associated with high exposures to the real state markets of countries that have experienced large housing price increases in the recent past (see Section 5), exposures to the US sub-prime market, the impact of increased interest rate levels in the euro area and exposures to M&A activity. In the view of rating agencies, a decline from the record results stemming from wholesale and investment banking activities in recent years should be expected, with a potentially significant impact on banks' earnings.

Nevertheless, the rating agencies see major EU banks generally well-positioned to absorb the impact of higher credit and market risk charges, due to the sustained improvements made in recent years in areas such as the diversification of income streams, cost efficiency, and risk management. Strong internal capital generation in the past is also likely to act as buffer if credit quality problems and higher risk charges should materialise.

Overall, while rating levels remained high for EU banks, downward pressure on ratings has became more tangible in the third quarter of 2007, especially when compared with the situation at the time of publication of the Banking Sector Stability Report one year ago, when further rating upgrades had been likely. Despite the higher risks, the rating agencies see a resilience potential in banks' earnings as long as a sharp capital market downturn does not materialise. In going forward, although individual improvements at specific banks ratings may occur, (e.g. due to an individual bank's improved performance), a more stable rating situation should be expected for the industry as a whole.

5 EU BANKS' EXPOSURE TO RESIDENTIAL PROPERTY MARKETS

This Section analyses EU banks' exposures to residential property markets, with a special focus on the exposures at the lower end of the mortgage credit quality spectrum in conjunction with the sustainability of households' mortgage debt. The results of this analysis are also important in the light of the recent increase in financial market volatility that stemmed from the turmoil in the US sub-prime mortgage market.

The structure of the mortgage market in the United States differs significantly from that in the EU. In the United States, the share of non-prime mortgage lending has been growing rapidly, accounting for 46% of total new lending in 2006, and bringing the proportion of outstanding non-prime mortgages to around 20% of the total.[11] There are no comparable data for non-prime lending in the EU, since many EU countries do not collect data on non-prime lending as a category of mortgage lending. Many EU countries are thought to have negligible amounts of non-prime lending. In the United Kingdom – one of the few countries where data are available – the proportion of non-prime lending outstanding is conservatively estimated at 8%.[12] Another difference is that, contrary to the situation in most EU mortgage markets, a large share of loans in the US mortgage market has been originated by non-depository financial intermediaries and then sold to banks and securities firms. These non-depository financial intermediaries tended to be subject to less stringent regulation and supervision than banks and securities firms. Finally, secondary market funding is not only less prevalent in the EU than in the United States, it is also subject in many

11 See IMF (2007), *Global Financial Stability Report*, April, and J. Kiff and P. Mills (2007), "Money for Nothing and Checks for Free: Recent Developments in US Subprime Mortgage Markets", *IMF Working Paper* No. 07/188.

12 This is a rather conservative estimate by the UK Financial Services Authority. The UK Council of Mortgage Lenders refers to industry estimates, suggesting that the share of "adverse" mortgage lending is somewhat lower, namely 5-6% (see CML (2006), "Adverse credit mortgages", *CML Housing Finance Issue* No. 10).

jurisdictions to laws that limit credit risk exposures (e.g. restricting loan-to-value ratios, loan-to-income ratios, or the share of a mortgage loan portfolio that can be securitised).[13] Notwithstanding these disparities, similar factors that contributed to the rapid rise in sub-prime lending in the US mortgage market may also have increased the volume of risky mortgage lending in the EU.

Indeed, as house prices have been rising rapidly in a large number of EU countries and as household indebtedness has risen accordingly, EU households' balance sheets have potentially become more susceptible to adverse shocks. This has to various degrees been driven by low interest rates and by rather loose credit policies of, as well as fierce competition between banks.[14] At the same time, rising house prices, ample liquidity, strong competition in mortgage markets, and the ability to off-load mortgage loans or the credit risk on these loans may have encouraged banks to extend mortgages on soft conditions, squeezing their margins and weakening the quality of their mortgage credit portfolio.[15] Some evidence of this conjecture is witnessed by the fact that banks have not fully passed on higher interest rates since the tightening cycle began in September 2005, while mortgage loan maturities have generally lengthened.[16] While this parallels the easing of credit standards in parts of the US mortgage market, it must be noted that this easing differs in qualitative terms (e.g. while raising affordability to households with little equity, it does not imply that credit standards for households with no income certainty or with a poor credit history have been eased). Nonetheless, to the extent that EU banks' credit standards have gradually been eased, while the credit availability to, and the indebtedness of, less creditworthy households have risen, mortgage credit risks have risen accordingly. These may turn into actual credit losses once, as has been the case in the United States, benign market conditions start to deteriorate (e.g. house prices and household income fall, while interest rates rise) and households fail to service their mortgage debt.

EU banks' exposure to residential property markets also demands attention owing to the fact that house price inflation – even though it had peaked in most EU countries in 2005 or 2006 – still continued to rise in some EU Member States and, despite a slowdown, remained at elevated levels in most EU countries in 2006.[17] This raises the question as to the extent to which residential property is accurately priced, which is relevant from a macro-prudential perspective as an increasingly large proportion of banking sector assets is linked to residential real estate value. To the extent that residential property is actually overvalued and that banks have extended highly leveraged mortgage loans on the assumption that prevailing house prices are in line with fundamentals, a reversal of house prices to levels consistent with fundamentals may cause unexpectedly large mortgage credit losses, possibly affecting banks' capital adequacy.[18]

To assess the risk to EU bank balance sheets, this Section follows a two-step approach. In a first step, using EU countries' own assessments

13 This reflects the greater importance of covered bonds in the EU, where it is estimated to fund 17% of mortgages in the EU as a whole and a much higher proportion in some member states. By contrast, covered bonds hardly exist in the US mortgage market (see ECBC (2007), *European Covered Bond Fact Book*, August).

14 A paper by the Committee on the Global Financial System (CGFS), documents developments in house prices, mortgage debt, loan features, mortgage funding, etc., in a number of OECD countries more accurately (see BIS (2006), "Housing Finance in the Global Financial Market", *CGFS paper* No 26.).

15 EU banks indicate that competitive pressures were the main factor behind the easing of their credit standards (see ECB (2006), *EU Banking Sector Stability Report*, November).

16 For the euro area, see C. Kok-Sørensen and J.D. Lichtenberger (2007), "Mortgage interest rate dispersion across euro area countries", *ECB Working Paper* No. 733, February and Bank Lending Survey results discussed in various issues of ECB *Monthly Bulletin*. For non-euro area countries, see ECB (2007), "House price developments in central and eastern European countries", *Monthly Bulletin*, September.

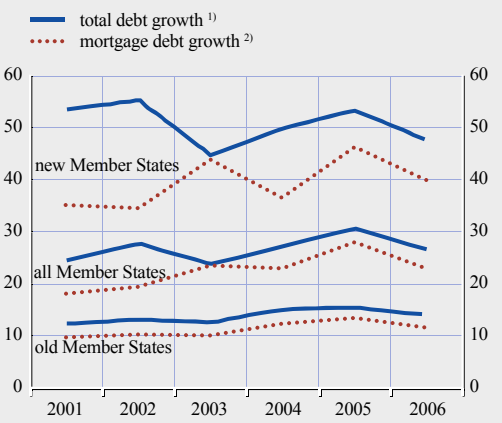
17 See ECB (2007), "Recent developments in euro area residential property prices", *Monthly Bulletin*, May, and references given in the previous footnote.

18 Assessments of residential property valuations typically look at current price-to-rent, price-to-income, and other affordability ratios relative to their historical averages (see N. Girouard, M. Kennedy, P. Van den Noord, and C. André (2006), "Recent house price developments: the role of fundamentals", *OECD Working Paper* No. 475, and, more recently, Fitch Ratings (2007), "House Prices and Household Debt – Where are the Risks?", *Fitch Special Report*, July).

of vulnerabilities and risks, complemented by aggregate data on household and bank balance sheets, the distribution of key vulnerabilities and risks among EU countries is reviewed. EU countries are studied in terms of the degree of household (mortgage) indebtedness relative to GDP, population, disposable income, financial and liquid assets, and net wealth, with a subsequent discussion of house price, interest rate, and exchange rate risks, placing particular emphasis on the "most indebted" countries. Then, in a second step, using disaggregated data derived primarily from national household surveys, a closer look is taken at the distribution of key risks among mortgaged households within countries. Although cross-country comparisons are made in both parts, both data deficiencies and country-specificities impede drawing strong conclusions and require qualifying the presented results.

Chart 5.1 Average household debt growth in the EU (changing composition)

(percentage changes; from financial accounts)



Sources: BSC and ECB calculations.
1) Non-weighted averages of 21 to 27 EU countries. In 2006, data is missing for LV and SK. MFI statistics have been used for IE (2006), CY (2006), and LU (all years). EE and LT are included as of 2004, RO as of 2003, and SI, MT and IE as of 2002.
2) Non-weighted average of 20 countries in 2001and up to 25 countries in 2005. Data on all years are missing for CY and SK, while those for 2006 are missing for LV. LT and RO are included as of 2005. MFI statistics have been used for all years for DK, EE, IE, IT, LU, and PT.

A MACRO-LEVEL SURVEY OF KEY VULNERABILITIES AND RISKS [19]

Interest rate, income, and house price risks are the key risks that have been at the core of the US sub-prime mortgage market turmoil, while rising housing leverage and the increasing use of hybrid interest rate-sensitive mortgages created pockets of vulnerability that laid the ground for it. While these vulnerabilities and risks have generally not given rise to concerns in the EU, they have likewise been identified, to different degrees, as the most relevant vulnerabilities and risks in EU housing and mortgage markets.

RISING HOUSEHOLD INDEBTEDNESS

Nearly all Member States identified rising household indebtedness as a key vulnerability in their housing and mortgage markets. Between end-2001 and end-2006 total household debt as reported in the financial accounts grew by, on average, about 23% per annum in the EU (see Chart 5.1). While the growth of household debt in the old EU Member States (EU15) averaged just over 11% per annum, it was even more pronounced in the new Member States (EU12), where household debt grew by, on average, close to 40% per annum. These averages conceal large cross-country differences. On the one end of the spectrum, household debt growth in Germany in this period averaged only 0.6% per annum, with total debt even declining in 2005 and 2006; on the other end, it averaged some 110% per annum in Romania.

Where the composition of household debt growth is concerned, mortgage debt growth stands out clearly. It almost consistently outpaced total debt growth, averaging 27% per annum in the EU (see Chart 5.1). At 51% per annum, on average, mortgage debt in the new Member States has been growing nearly four times faster than in the old Member States. However, since initial debt levels were low in the new Member States, such rates of growth

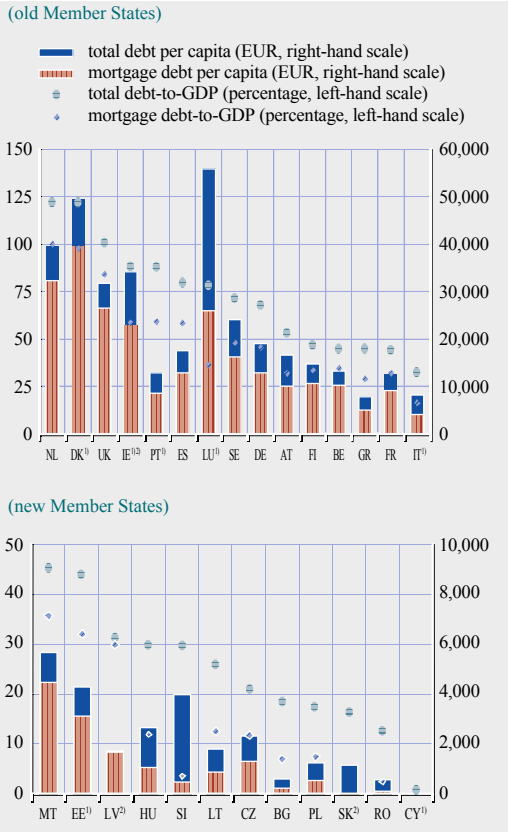
19 This section draws upon the assessments of vulnerabilities and risks in domestic housing and mortgage markets by national central banks and supervisory institutions represented in the Banking Supervision Committee (BSC), supplemented by data derived from financial accounts, MFI statistics, etc. that they provided (NCBs, National Statistical Offices, etc.).

merely reflect the maturing and deepening of mortgage markets as part of a rapid catching-up process. At the same time, debt growth seems to be decelerating in most Member States. That said, continuously rapid mortgage loan growth may undermine the quality of loan processing should resource constraints surface.

Looking into the distribution of household debt among EU countries by ranking it relative to GDP confirms that household indebtedness remains at fairly low levels in the new Member States (less than 25% of GDP, on average, see Chart 5.2). By contrast, households in Anglo-Saxon (-oriented), Nordic and Iberian countries are among the most indebted ones in the EU, with debt exceeding GDP in the top three countries. Evidently, household indebtedness is rather skewed in the EU: abstracting from the debt distribution within a country and omitting outliers, the least indebted citizens in the EU hold just over 1% of the debt held by the most indebted citizens.

Although it may be intriguing, comparing these extremes merely reflects the large existing disparities in economic and financial development within the EU, as well as the heterogeneous nature of its housing and mortgage markets. For instance, the degree of financial and mortgage market sophistication or completeness, as well as housing market policies (e.g. tax treatment), differ significantly within the EU.[20] The high ratio of household debt to GDP in those EU countries at the top end of the distribution in Chart 5.2 may merely reflect that financial (mortgage) markets there are fully liberalised, highly competitive, rather complete (in terms of mortgage products, creditors and debtors), and very efficient, thereby limiting the rationing of credit and culminating in a large proportion of households holding (mortgage) debt. Similarly, the low ratio of household debt to GDP may simply reflect that these markets are, despite (full) liberalisation and growing competition, still in their early stage of development in those EU countries at the bottom end of this distribution. For some of the old EU Member States the low rate of mortgage indebtedness may reflect that savings are not efficiently channelled through the banking system, suggesting that credit markets function imperfectly. Moreover, not only the proportion of households holding debt, but also homeownership rates vary considerably within the EU, ranging between about 44% in Germany and close to 100% in Lithuania in 2006. In addition to cultural differences, the variation in both the share of households holding housing debt and the share of households owning houses

Chart 5.2 Household debt-to-GDP ratio and household debt per capita in 2006



Sources: BSC and ECB calculations.
1) As financial account data on mortgage debt was not available, MFI statistics have been used instead. For LU MFI statistics have been used for both total and mortgage debt.
2) Data for 2005.

20 See P. Catte, N. Girouard, R. Price, and C. André (2004), "Housing markets, wealth and the business cycle", *OECD Working Paper* No. 394.

arises from differences in housing-related taxation (e.g. the tax deductibility of mortgage interest rate payments and the taxation of capital gains). Hence, some caution is required in interpreting Chart 5.2 and the other charts presented in this Section as they do not fully reflect important structural differences between EU countries.

That said, a common feature of household indebtedness is not only that it is rising throughout the EU, but also that mortgage debt accounts for a substantial and rising share of it. For those countries that have these data available mortgage debt accounts for the bulk of household debt (close to 60%, on average, in 2006). However, as mortgage markets are still maturing and deepening in many new Member States, it accounted for "only" 42% of household debt in the new Member States in 2006, compared with a share of 72% in household debt in the old Member States.

Among the determinants of rising household indebtedness referred to in the survey, low mortgage interest rates seem to be the dominant one, which, along with declining policy rates, had come down to historically low levels in 2005. Strong competition subsequently prevented banks from passing rising nominal interest rates through to mortgage rates.[21] Moreover, strong competition seems to have contributed to an easing of credit standards, which is still continuing in some Member States.[22] This is displayed by e.g. ever-lower down payment requirements and lengthening mortgage loan maturities, implying that creditors accept higher loan-to-value (LTV) and loan-to-income (LTI) ratios. Together with generally lower interest rates and higher house prices, this led households to take on more debt.

Comparing bank assets with households liabilities suggests that this rising household demand for house financing has largely, but not exclusively been met by banks. While the banks' share of the mortgage market in 2006 was less than 100% (averaging 86%) in seven of 17 countries that reported both figures, this share has actually been rising in all but two of these countries over time. Hence, as the focus of this report is on banking sector stability and as data on bank loans tend to be more readily available, household debt and mortgage debt in the remainder of this Section refer to the corresponding loans extended by EU banks.

RISING MORTGAGE CREDIT RISK?

Although rising household indebtedness has almost unanimously been identified as a key vulnerability, it has generally not been an immediate cause of concern as it was accompanied by strong income and employment growth in most EU countries. In conjunction with rising real and financial asset valuations, this improved households' debt servicing capacity. In fact, whether the observed rise in indebtedness weakened households' mortgage debt servicing capacity and raised mortgage credit risks for banks depends not so much on the level of debt than on the gearing of debt to households' disposable income and assets.

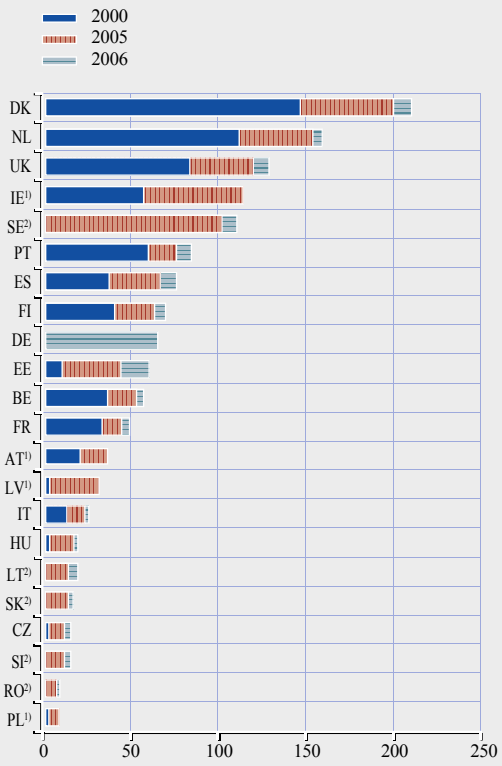
EU banks' housing loan growth, averaging close to 30% per annum between 2001 and 2006 (non-weighted basis), easily outpaced households' disposable income growth, which averaged "only" about 7% per annum in this period. Also, the stock of banks' housing loans exceeded households' disposable income in at least four countries in 2006, up from two in 2000 (see Chart 5.3). Hence, income gearing has increased significantly, likely largely facilitated by the low interest rate environment.

21 See C. Kok-Sørensen and J.D. Lichtenberger (2007), "Mortgage interest rate dispersion across euro area countries", *ECB Working Paper* No. 733, February, and ECB (2007), "Recent developments in the retail bank interest rate pass-through in the euro area", *Monthly Bulletin*, July. The pass-through would probably be even more incomplete for the EU as a whole if the figures for the euro area are complemented by some crude estimates of the pass-through to mortgage rates in non-euro area countries derived from the survey.

22 For the euro area, see the Bank Lending Survey results discussed in previous issues of the ECB's *EU Banking Sector Stability Report* and, more recently, the August 2007 issue of the ECB's *Monthly Bulletin*. For non-euro area countries, data has been taken from individual country assessments included in the survey.

Chart 5.3 MFI loans for house purchase relative to households' disposable income

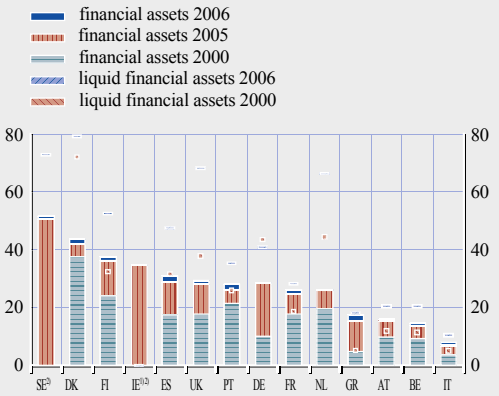
(percentages)



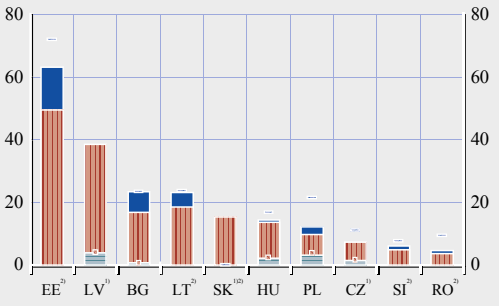
Sources: BSC and ECB calculations.
Note: Data are not available for BG, CY, GR, LU and MT. DE is the only country in which the ratio has declined.
1) Data are not available for 2006.
2) Data are not available for 2000.

Chart 5.4 MFI housing loans relative to households' financial and liquid assets*)

(percentage of financial and liquid financial assets)
(old Member States)



(new Member States)



Sources: BSC and ECB calculations.
Note: Data is not available for CY, LU and MT.
*) Financial assets: liquid financial assets and pension assets. Liquid financial assets: sum of shares, saving deposits, cash, deposits, bonds and other liquid financial assets.
1) Data are not available for 2006.
2) Data are not available for 2000.

Looking into the distribution of income gearing among EU countries shows that households in those countries that were identified as most indebted relative to GDP and population also have the highest ratio of housing loans to disposable income. Again, however, it should be born in mind that different economic structures and, in particular, fiscal policy can affect the equilibrium level of housing debt relative to disposable income.[23] Chart 5.3 also shows that although income gearing is lower, on average, in the new Member States, it has risen substantially in some of them, which is largely a reflection of the catching-up process mentioned earlier.

Households' mortgage indebtedness also rose substantially in terms of financial assets[24]

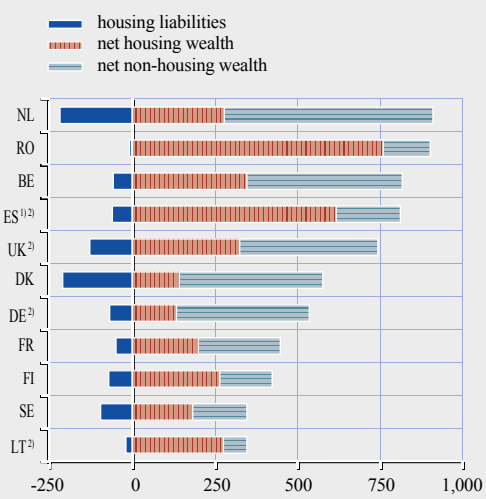
23 For instance, the tax deductibility of mortgage interest payments and the availability of tax-advantaged saving vehicles (e.g. pension plans) can provide an incentive for household balance-sheet expansion and a disincentive to repay debt. In addition, welfare state provisions may both reduce the volatility of disposable income, allowing households to take on more debt, and reduce the incentive for precautionary savings.

24 Financial rather than total assets, while underestimating household wealth, more accurately capture household debt servicing and repayment capacity for two reasons. First, real assets – which tend to be dominated by housing wealth – are typically less liquid, while selling them typically involves substantial transaction costs. In the case of foreclosure, the latter not only holds for households, but also for banks. Second, in times of a housing market downturn, banks may be less inclined to liquidate the collateral to prevent additional downward pressure on house prices. Abstracting from real assets allows an analysis of mortgage debt repayment capacity "through the cycle".

between 2000 and 2006. At the turn of the century, EU households' financial assets covered, on average, about 8 times the housing loans outstanding. This was halved by last year. As households in some Baltic countries hold relatively few financial assets, their balance sheets seem most stretched (see Chart 5.4). By contrast, household balance sheets in the countries that have consistently ranked among the most indebted in the EU now look less stretched. Although Chart 5.4 suggests that mortgage debt is comfortably covered by financial assets, mortgage debt relative to liquid assets depicts a less rosy picture. The latter averaged about 35% in the EU in 2006, up from less than 20% in 2000. As Nordic and Anglo-Saxon (-oriented) countries have sizeable pension assets as a result of their having fully funded rather than pay-as-you-go pension schemes, household mortgage debt is significantly higher once expressed as a share of liquid assets. Nonetheless, albeit less rosy, the picture is somewhat reassuring in that households' liquid assets still cover mortgage debt even in the most indebted countries.

Chart 5.5 Households' net wealth relative to their disposable income in 2006

(percentages)



Sources: BSC and ECB calculations.
1) Data are for 2004.
2) Preliminary estimate of housing wealth by national authorities.

Hence, notwithstanding the rise in households' disposable income and financial assets, the rise in indebtedness leaves households more vulnerable to income and interest rate shocks. The increase in households' net wealth witnessed in the period from 2000 to 2006 may provide a buffer for such shocks. With net wealth ranging from about 3.5 to close to 9 times disposable income in 2006, the EU households for which these data are available seem to have significant buffers (see Chart 5.5). However, as net housing wealth, on average, accounts for more than half of households' assets and is already subject in some countries to moderating house prices, rapidly falling house prices may equally rapidly jeopardize household debt sustainability. This holds particularly for those countries where households' mortgage loans are high relative to both net housing and net non-housing wealth.

HOUSE PRICE RISK

Close to half of the respondents identify house price risk as a key risk. Analysing country-level house price developments and their determinants is beyond the scope of the analysis in this Section[25], but the extent to which surging house prices have more generally been driven by an increase in credit availability or leveraged mortgage lending as financial liberalisation, deepening and innovation progressed throughout the EU is relevant from a macro-prudential perspective. Undoubtedly, banks have to a certain degree contributed to inflating house prices as they stimulated housing demand through two channels: first, by easing credit rationing as they increasingly transferred the corresponding credit risk – in itself entailing a risk of moral hazard – which both freed liquidity for renewed lending and probably triggered an erosion of credit standards, and, second, by having tended, in many jurisdictions, to ease credit standards directly in an attempt to maintain or gain market share in response to rising competitive pressures in mortgage

25 For instance, although factors like supply constraints prevalent in many EU housing markets and demographic developments are relevant in assessing residential property prices, they are less relevant for the present purpose.

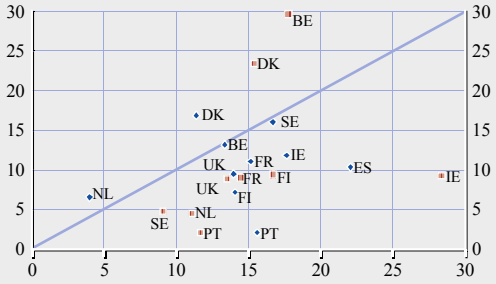
markets, which – through improved housing financing conditions and, hence, affordability – added to housing demand. Consequently, LTV ratios that, to some extent, guide both bankers and supervisors in their risk management may remain fairly stable, or even improve, despite a deteriorating debt servicing capacity below the surface. Similarly, the strength of not only bank but also household balance sheets may then be distorted, possibly culminating in an undervaluation of mortgage credit risks. However, rather than disregarding LTV ratios as a vulnerability indicator, these should be complemented by other indicators such as those included in the analysis presented in the latter part of this Section.

Chart 5.6 Nominal house price growth versus housing loan growth in selected EU countries

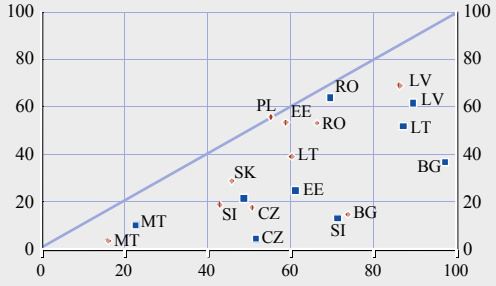
(old Member States; percentage changes)

x-axis: housing loan growth
y-axis: house price growth

2005
2006



(new Member States; percentage changes)



Sources: BSC and ECB calculations.
Note: Nominal house price definitions differ: in EE, LV, PL, RO and SI it measures the average price per square metre in the respective capital city; in FR and PO, it measures the average price of dwellings in the primary market only; and in PT, the change in the average price is based on an index.

Surging house prices, spurred both by the increased availability of credit to households and by foreign investment (speculative and leisure), may in turn have fuelled mortgage indebtedness for entrants in the housing market. This mutually reinforcing relationship is evidenced in Chart 5.6, which yields some interesting observations. First, house price growth outpaced housing loan growth in two of the most indebted old Member States, suggesting that LTV ratios in these countries may overstate banks' mortgage credit risk. Alternatively, it may simply reflect that only a limited proportion of housing valuation gains has been capitalised through mortgage equity withdrawal (which seems to hold for Denmark). Second, house price and housing loan growth are significantly higher in the new Member States, confirming that some of them are moving quite rapidly up the chain of household indebtedness, largely reflecting the catching-up process. Third, somewhat comfortingly, housing loan and house price growth have decelerated in most countries in 2006.[26]

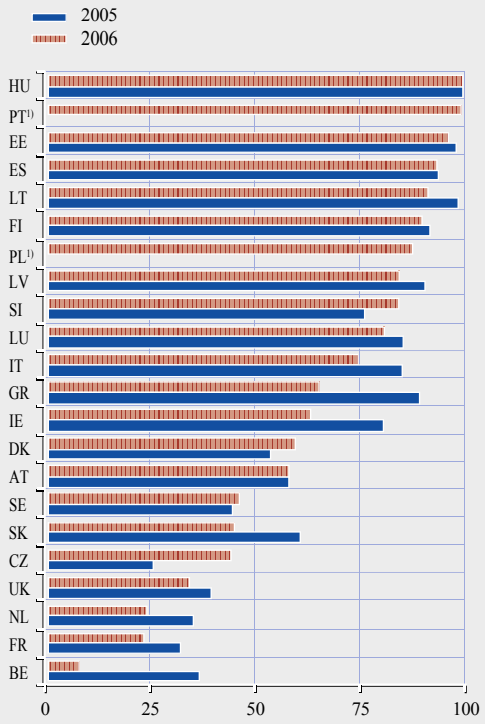
INTEREST RATE RISK

Another key risk referred to by EU supervisors is interest rate risk. Households' mortgage interest rate burden, after having declined for many years, seems to have risen in 2006, reflecting the rather delayed pass-through of monetary policy tightening in nearly all jurisdictions. Mortgage rates have long been suppressed by rising competition in mortgage markets, coming down significantly in all Member States. Consequently, interest rate risk on household balance sheets tends to have grown in the last couple of years. As expectations of rising house prices and falling interest rates have become entrenched, an increasing share of housing loans has been contracted with an initial interest fixation period of up to one to two years. This was particularly true in 2004, when – on average (non-weighted) – more than three of four new housing loans in

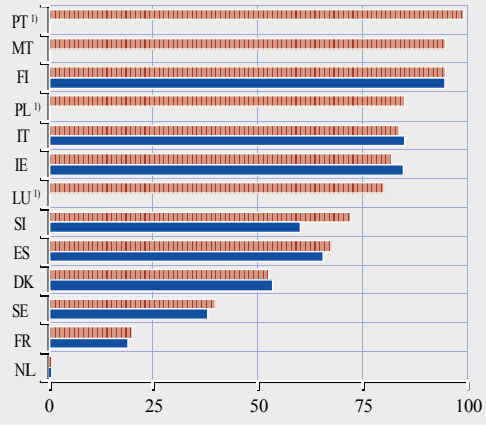
26 This is supported by country assessments, as well as by quarterly data.

Chart 5.7 Share of "variable" rate mortgages

(percentage of MFI loans for house purchase contracted in each year)



(percentage of all MFI loans for house purchase outstanding)



Sources: BSC and ECB calculations.
Note: Variable rate mortgages include mortgages with an initial interest fixation period of up to one to two years.
1) Authorities' own estimate.

the countries for which data are available were contracted at such a "variable" rate. Although the majority of housing loans extended in 2005 and 2006 were granted at short rate-fixation periods, rising short-term rates in euro area as well as non-euro area countries caused the average (non-weighted) share of "variable" rate housing loans to fall to 68% in 2006. This average, however, hides large cross-country disparities (see Chart 5.7). Comfortingly, in some of the countries with relatively indebted households, the interest rate risk on household balance sheets seems contained. For instance, households in the Netherlands, Sweden and France are less exposed to interest rate risk as the majority of mortgage loans are fixed-rate mortgages. Likewise, interest rate risks for Danish households seem relatively subdued. In these countries, to the extent that mortgage loans or the associated credit and interest rate risks are not sold or transferred to investors, rising interest rates tend to comprise an income risk to banks. By contrast, Portugal and Ireland are among the countries with relatively highly indebted households that also seem significantly exposed to interest rate risk as more than 75% of mortgages are granted at variable rates. This supposition only holds, however, to the extent that potential interest rate increases are uncapped.[27]

EXCHANGE RATE RISK

Finally, about one in three EU countries identify exchange rate risk as a key risk in their mortgage markets. Taking advantage of interest rate differentials, foreign currency lending has been particularly pronounced in many new Member States, but also in old ones like Austria and Greece. These countries can be divided into two sub-groups according to the main currency in which foreign currency loans are denominated: euro (non-euro area countries) and other currencies (primarily CHF). Hence, foreign currency borrowing not only owes its popularity to favourable interest rate differentials on long-term household loans, but also to expectations of joining the euro area. Furthermore, appreciating domestic currencies

27 For instance, a large share of variable rate mortgages in Denmark contains interest rate caps (see Danmarks Nationalbank, *Financial Stability,* issues 2006 and 2007).

significantly lowered foreign currency mortgage debt service burdens. Égert and Mihaljek estimate the average share of foreign currency loans in total household loans in 2006 at 43% for a group of Central and Eastern European countries, with the Czech Republic at the lower end (close to zero) and Estonia at the upper end (78%).[28] Some national authorities expressed unease about the persistently rapid growth of foreign currency mortgage loans. To the extent that households take exchange rate risks into account, the sustainability of mortgage debt denominated in foreign currency should be resilient to a depreciating domestic currency. As this may not always be the case, improving the financial literacy of households, so as to increase their risk awareness, should contribute to keeping financial stability risks that arise from foreign currency lending contained. For those countries where the majority of foreign currency mortgage loans are denominated in euro, exchange rate risks seem somewhat contained by the fact that these countries should adopt the euro at some point in the future, while some of them are already participating in ERM II, implying that national authorities are committed to exchange rate stability.

EU BANKS' EXPOSURE

To the extent that credit risk exposures have not been transferred through credit risk transfer (CRT) markets, weakening household balance sheets may significantly undermine EU banks' balance sheets as their exposure to the household sector is large (see Section 3). Housing loans account for the bulk of this exposure, by the end of 2006 averaging more than two-thirds and more than one-half thereof in those euro area and non-euro area countries respectively for which data are available. At the end of 2006, domestic mortgage loans in euro area countries accounted for, on average, nearly one-third of banks' non-MFI loan portfolio, up from less than 24% in 2000. This average figure obviously hides large cross-country disparities, with countries like Slovenia and Luxembourg at the lower end (10-12%), and the Netherlands, Portugal and Finland at the upper end (40-43%). For the non-euro area countries for which data are available, this share averaged more than 40% at the end of 2006, up from only 15% in 2000. Hence, EU banks' exposures to residential property markets through mortgage lending are considerable and have been rising. As a relatively large share of banks' income is generated by mortgage lending,[29] banks tend to have compensated for the declining interest spread by volume growth. In conjunction with an easing of credit standards that has been observed in many EU countries, this may imply that the risk profile of banks' mortgage portfolios has deteriorated, while the sustainability of the income they derived from this portfolio has weakened (housing loan growth is decelerating in most countries).

Notwithstanding the qualifications noted below, banks that rely primarily on mortgage lending may face strains from overstretched borrowers who fail to service their debts in an environment in which house prices are falling and labour market conditions are deteriorating. This holds particularly for those countries where relatively large residential property market exposures coincide with a relatively high level of mortgage indebtedness. However, to the extent that loan-to-value ratios have been capped (either upon requirements imposed by supervisory bodies or voluntarily), banks' exposures are shielded from house price risks. For instance, mortgage banks in one of the most indebted Nordic countries are not allowed to extend mortgage loans that exceed 80% of the collateral's market value, implying that, in the case of default, house prices need to fall by at least 20% before the default starts to eat into banks' capital. Without imposing caps on LTV ratios, most countries' supervisory

28 The countries included in the sample are Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Lithuania, Poland and Slovenia (see B. Égert and D. Mihaljek, "Determinants of house price dynamics in central and eastern Europe", *Focus on European Economic Integration*, 1/2007).

29 Net interest income accounts for 50-60% of EU banks' income, with mortgage lending accounting for about 30-40% of total loans (see Section 2). Taking into account that unsecured loans are more lucrative and abstracting from income derived from fees and commissions, a conservative "back-of-the-envelope" calculation estimates that 10-20% of banks' income is generated by mortgage lending.

regimes discourage highly leveraged mortgage lending by penalising mortgage loans that exceed a certain LTV threshold with a higher risk weighting. Under the Standard Approach, Basel II prescribes minimum risk weights for mortgages of 35%, which can be fine-tuned by supervisors on a discretionary basis. However, most supervisors apply a risk weight of 100% on mortgage loans with a LTV ratio in excess of 70-80%.[30] Likewise, while risks related to household indebtedness seem to have accumulated relatively rapidly in some new Member States, there are also higher prudential requirements for banks in place in some of them. Furthermore, in many EU countries banks limit highly leveraged mortgage lending, either through moral suasion, minimum standards or voluntary codes of conduct. Similarly, to the extent that interest rate increases have been capped, banks' exposures are somewhat shielded from "payment shocks" to households with a variable rate mortgage.

To sum up, although current rather benign conditions may alleviate immediate concerns, EU household balance sheets have become more stretched across the board, leaving households more exposed to income, interest rate and asset price shocks in the time ahead. The survey results and balance sheet analysis show, however, that large disparities exist within the EU. While households in Anglo-Saxon (-oriented) and Nordic countries consistently rank among the most indebted in the EU, households in some new Member States are rapidly moving up this ranking. As households may increasingly encounter stress once the business cycle peaks and conditions turn less favourable, these developments demand close monitoring by prudential supervisors. At the moment, however, these developments do not pose a significant threat to EU banking sector stability. Housing and mortgage markets seem to have started cooling down already in most EU countries, while no significant rise in delinquencies on housing loans have been observed following the rise in short-term and, ultimately, mortgage interest rates. Moreover, sufficient prudential safeguards seem to be in place, to some extent ensuring that banks can weather significant shocks without causing widespread stress. As pockets of vulnerability have been, and may continue to be, building up, however, downplaying risks in itself risks that these become under-priced.

A MICRO-LEVEL SURVEY OF KEY VULNERABILITIES AND RISKS

Deriving key vulnerabilities and risks and their distribution across EU countries from household and bank balance sheet data suffers from two significant shortcomings. First, not all households hold debt, making it difficult to disentangle the extent to which rising indebtedness merely reflects an easing of credit rationing or, more importantly, an increase in leverage. For instance, the proportion of households holding debt in euro area countries was estimated at more than 36% in 2001, and that holding mortgage debt at 21%.[31] More recent estimates for the proportion of indebted households in the euro area range from about 22% to 55% (Italy and Finland in 2004 and in 2005 respectively).[32] For some of the most indebted non-euro area countries, the proportion of indebted households is estimated at close to 60% (the United Kingdom in 2006 and Sweden in 2005). Evidently, average household debt measured at the country level underestimates the degree of concentration of indebtedness at the household level, while overestimating the relative indebtedness of those countries identified as most indebted in the previous sub-section. To the extent that the proportion of indebted households is larger in these countries, it may simply reflect a larger degree of credit availability. Therefore, ideally, any analysis of household debt sustainability should include

30 This risk weight is applied either to the part of the loan in excess of the threshold or – in some cases – to the entire loan.

31 See ECB (2005), "Assessing the financial vulnerability of euro area households using micro level data", *Financial Stability Review*, December.

32 See N. Girouard, M. Kennedy, and C. André (2006), "Has the rise in debt made households more vulnerable?", *OECD Working Paper* No. 535 and E. Sierminska, A. Brandolini, and T.M. Smeeding (2006), "Comparing Wealth Distributions Across Rich Countries; First Results from the Luxembourg Wealth Study", *LWS Working Paper* No. 1.

indebted households only. More specifically, for the purpose of this sub-section, the analysis should include mortgaged households only.

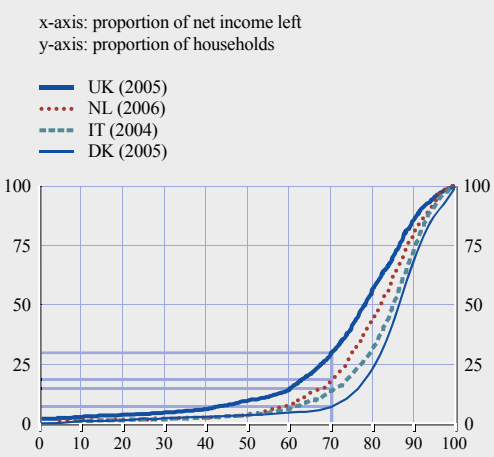
Second, both loan and borrower characteristics play a role in determining debt sustainability. As assets and liabilities are typically not equally distributed among households of different age or income categories, a household's risk profile will not be accurately determined by looking at aggregate household balance sheet data alone. Nor will it be able to identify those households among which risks might be concentrated.

As aggregate data do not allow distributional analyses and are not suited to quantify risks emanating from households in the lower end of the credit quality spectrum, this sub-section employs disaggregate data drawn primarily from various national household surveys. A caveat in deriving vulnerability indicators from these surveys is that the cross-country comparability is limited to the extent that underlying definitions of variables may differ. Similarly, the quality, coverage and frequency of the data differ between countries, further constraining their comparability (see Box 4 in the Statistical Annex). These differences call for a large degree of caution in interpreting the results presented below. Despite the fact that countries are jointly displayed in the charts, it must be born in mind that straight comparisons between countries can hardly be made. Where comparisons have nonetheless been made, these should be taken as highly suggestive rather than solid evidence of the case concerned. Similarly, in interpreting results at the country level one needs to take country-specific qualifications with respect to national housing and mortgage market conditions and policies into account.

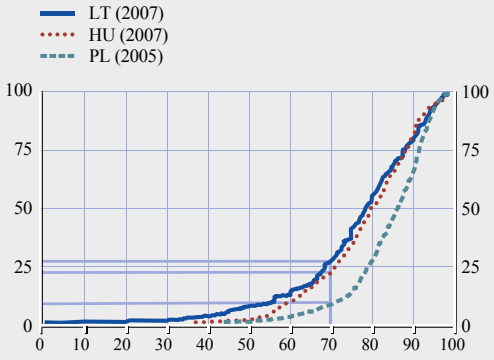
Although the number of countries that are included in the analysis is rather limited (four to seven of 27 EU countries), the countries include three of those previously identified as most indebted, and one of those seen to be rapidly becoming indebted. Furthermore, the countries are about equally divided into old and new EU Member States. In terms of the number of citizens, the countries represent 36% and 50% respectively of the old and new Member States in 2006. Jointly they represent 39% of the EU. In terms of MFI housing loans, these shares rise to 47% and 53%, while jointly representing 47% of the EU.[33] The number of countries included in the analysis decreases with the degree of detail.

Chart 5.8 Cumulative distribution of the share of households' net income left after servicing mortgage debt

(old Member States, percentage of households and of net income)



(new Member States, percentage of households and of net income)



Sources: BSC and ECB calculations.
Note: The distributions are not fully comparable as both the year of observation and the underlying definitions differ (see Box 4 in the Statistical Appendix). Denmark replicated the analysis on the assumption of deferred amortisation: i.e. the distribution is drawn for the share of households' net income left after servicing interest liabilities only (based on tax return income data, Statistics Denmark).

33 The difference between the share for the entire EU and that for the old Member States equals less than 0.1%-point, reflecting the relatively low mortgage debt levels in the new Member States.

MORTGAGE DEBT SERVICING CAPACITY

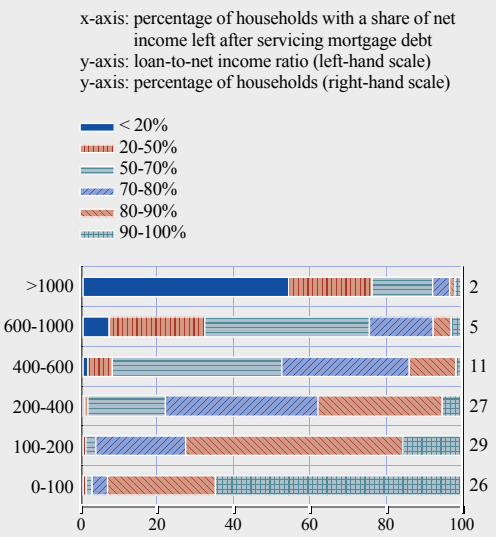
The subsequent analysis primarily builds on households' mortgage debt servicing burden relative to income as this indicator of vulnerability comes closest to the financial margin, which tends to capture debt sustainability rather accurately. Drawing a distribution of the share of households' net income left after servicing mortgage debt, the most vulnerable households in terms of debt servicing capacity tend to be clustered at the lower end of this distribution (see Chart 5.8).

Two observations are worth mentioning here. First, not surprisingly, these distributions are skewed to the right. For instance, the majority of mortgaged households spend less than one-quarter of their net income on servicing mortgage debt, which holds for both groups of countries. Likewise, a minority of households face a mortgage debt servicing burden that exceeds 30% of net income, ranging between 8.3% and 28.4% of mortgage indebted households. Second, more interestingly, the distribution's left tail seems to be fatter for the old Member States than for the new Member States.[34] This may suggest that banks in some of the new Member States tend to be more conservative in mortgage lending, or, in other words, that they more strictly condition the size of the mortgage loan on a household's income than banks in the old Member States.[35]

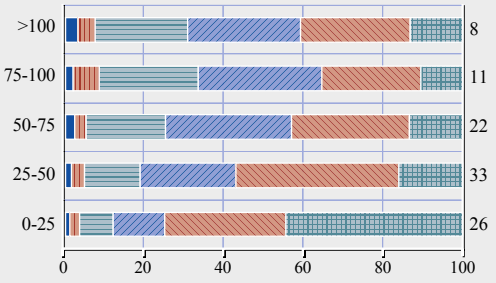
To justify the assertion that vulnerable households are concentrated at the lower end of the distribution, Chart 5.9 shows how the "income left" variable is distributed over two key vulnerability indicators; the loan-to-net income (LTI) ratio and the loan-to-value (LTV) ratio. These three vulnerability indicators jointly capture banks' exposure to the key risks discussed earlier. Namely, exposure to borrower income and interest rate risk is represented in the "income left" variable as well as in the LTI ratio, while exposure to house price risk is captured by the LTV ratio. However, it should be born in mind that the composition of both panels shown in Chart 5.9 differs according to the availability of the vulnerability indicators concerned: while the upper panel includes all six countries and observations, the lower panel includes four countries only, but still accounts for more than 75% of all mortgage indebted

Chart 5.9 Households' net "income left" versus other key vulnerability indicators

(loan-to-net income ratio: includes HU, IT, LT, NL, PL and UK)



(loan-to-value ratio: includes HU, IT, NL and UK)



Sources: BSC and ECB calculations.
Note: The data used here are non-weighted and aggregated over a different number of countries in different years. Therefore, interpreting this chart demands a large degree of caution. Households are grouped in 5 to 6 categories per vulnerability indicator, and plotted against each other by category. Guidance in reading the chart is given in the main text below.

34 It is important to note that the observations below 0% of households' net income have been excluded from the chart, but not from the analysis and figures described in the text.

35 Alternatively, it may merely reflect that households in the new Member States hold relatively few financial assets to back up their mortgage loan, which is consistent with the findings derived from aggregate household balance sheet data. Unfortunately, this cannot be verified with the data available.

households included in the full sample. Nonetheless, this different composition may affect the results somewhat.

Prior to discussing Chart 5.9, thresholds levels should be defined for these vulnerability indicators to signal which mortgage indebted household is deemed vulnerable. First, the threshold value to classify households' mortgage debt servicing burden as heavy is set at 30% of households' net income, which is consistent with previous analysis undertaken by the ECB and others.[36] This corresponds to a threshold value of 70% for the "income left" variable. Second, the threshold level for the LTI ratio is set at 600% of net income.[37] Finally, as discussed earlier, households with a mortgage loan that exceeds 75% of the collateral value are typically treated as risky by prudential supervisors, and is used here as the threshold value for the LTV ratio. The chart clearly shows that the share of households that face a heavy debt servicing burden rises with both the LTI and the LTV ratios. While only 2.3% of the group of households with the lowest LTI ratios can be labelled as vulnerable in terms of their debt servicing burden, this rises to 92.5% for the group of households with the highest LTI ratios. These groups account for 26% and 2% respectively of all households. Similarly, only 12% of the group of households with the lowest LTV ratios face a heavy debt servicing burden, which rises to 31% for the group with the highest LTV ratios (representing 26% and 8% respectively of all households). Nonetheless, this share is slightly lower that than for the group of households with the second-highest LTV ratios, which suggests that banks more tightly condition mortgage lending to households without any housing equity on their ability to service mortgage debt out of income.

The positive relationship between the mortgage debt servicing ratio and both the LTI and the LTV ratios is not only displayed at the extreme ends of the LTI and LTV ratios, but can also be illustrated by comparing the proportion of households with a heavy mortgage debt servicing burden that meet the vulnerability criteria for the LTI and LTV ratios with that of the households meeting these criteria without having a heavy debt servicing burden. Close to one-third of all households with a heavy mortgage debt servicing burden have an LTI ratio that exceeds the 600% threshold value, against only 1.8% of the households with a more manageable mortgage debt servicing burden. Similarly, "only" about one in six households with a manageable mortgage debt servicing burden has an LTV ratio in excess of 75%, compared with close to one in three for those that face a heavy debt servicing burden.

In short, the findings confirm that vulnerabilities are concentrated among households at the lower end of the "income left" distribution. To see what kind of households are involved, Table 18 in the Statistical Annex summarises some borrower characteristics – in addition to the vulnerability indicators – of the households that face a heavy mortgage debt servicing burden in selected Member States. The characteristics of households that have at least 70% of their net income left after servicing mortgage debt are included in the table to serve as a benchmark. It confirms that households that deal with a heavy mortgage debt servicing burden tend to be more indebted relative to their housing wealth and income, as displayed in higher LTV and LTI ratios in all countries. Furthermore, those households do not, on average, only hold larger mortgage loans, but also carry more debt in general, while earning less and holding fewer assets.[38] Mortgage loan maturities, however, tend to be somewhat longer for this group of households. These characterisations generally hold for those households that spend more than 30% of their

36 See ECB (2005), "Assessing the financial vulnerability of euro area households using micro level data", *Financial Stability Review*, December, and references therein.

37 Assuming an average income wedge rate of 33% (i.e. the percentage levied on gross income for income tax and social security contributions), this corresponds to a loan-to-gross income ratio of 400%. This is a conservative measure of income gearing. For instance, the revised Dutch Mortgage Code of Conduct implicitly qualifies as excessive income gearing for household with a median gross income to hold a mortgage loan in excess of 450% of its gross income.

38 Note that this variable is only available in two of the old Member States. In one of the new Member States, this variable is also available, but only for too limited a number of households.

net income on servicing mortgage debt, but without their mortgage debt servicing costs exceeding their net income, which account for some 8-27% of all households. These households tend to be younger than those with more manageable debt servicing burdens, suggesting that starters who have just entered the housing market are relatively well-represented in this group. By contrast, in some old Member States households that fail to service mortgage debt out of net income tend to be older, which suggests that retirees may be well-represented in this group.[39] Indeed, these households, on average, also hold relatively many assets, compensating for the shortfall in income left after servicing mortgage debt. This does not hold, however, in the new Member States.

Although vulnerabilities are concentrated among households at the lower end of the "income left" distribution, the average LTV ratios for these households are somewhat comforting as mortgage debt is, on average, still fully covered by collateral. For instance, the most vulnerable households among the selected EU countries are estimated to be, on average, resilient to a house price shock of up to 15% before they will end up with negative housing equity and – in case the house needs to be sold and in the absence of other net wealth buffers – leave banks with an actual credit loss after liquidating the collateral. Moreover, the share of households that would be labelled vulnerable on the basis of this single "income left" vulnerability indicator undoubtedly overestimates the share of households that are actually at risk of failing to service their mortgage debts. In the absence of income or interest rate shocks, households whose mortgage debt servicing costs take a relatively large bite out of their net income may nonetheless be able to meet their payment obligations.

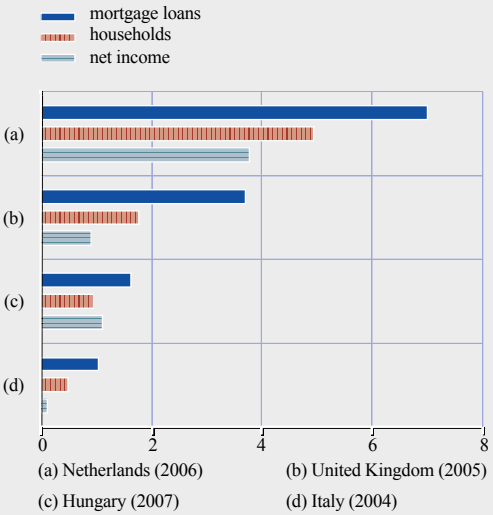
While it is impossible to single out which households are at risk of becoming unemployed or losing income for whatever reason, the data allow a rough differentiation of households according to the interest risk they face. For those countries for which mortgage interest rate data are available, a proxy variable measuring the extent to which mortgage debt servicing costs are dominated by interest payments can be calculated. Assuming that a household holds an interest-only mortgage if interest payments account for more than 90% of its debt servicing costs, and that such a household is in fact more vulnerable to changing interest rates[40], the share of households that are at risk of failing to service mortgage debt can be refined. It should be acknowledged, however, that this interest-only mortgage vulnerability indicator is evidently an imperfect, crude proxy of interest-rate risk exposure, while the introduction of such mortgage loans has contributed to raising housing affordability without necessarily

39 Note that the group of households that exhibits the heaviest mortgage debt servicing burden, accounting for up to 1.7% of all households, most likely includes many outliers that are, in fact, reporting errors.

40 This obviously depends on whether the mortgage loan was contracted at a variable rate, or at a fixed rate. However, these data are only available for two countries.

Chart 5.10 Proportions of households assumed to have a large "probability of default"

(percentages; proportions relative to total)



Sources: BSC and ECB calculations.
Note: Households are assumed to have a relatively large PD if they have less than 70% of net income left after servicing mortgage debt and interest payments account for more than 90% of mortgage debt service costs (interest-only mortgage proxy). Note, however, that any risk assessment differs per country depending on e.g. tax regimes, further constraining the limited comparability across countries.

raising interest rate risks provided that prudential safeguards have been in place.

The households that both have a large debt service ratio and are relatively exposed to interest rate risk tend to hold a disproportional large share of mortgage debt and to account for a disproportional small share of net income, confirming that they have a relatively large probability of defaulting on their mortgage debt (see Chart 5.10). Evidently, adding vulnerability indicators to identify vulnerable households reduces the share of these households significantly. For the country exhibiting the largest share, for instance, it falls from close to 17% of mortgaged households (see Table 18 in the Statistical Annex) to less than 5%. Nonetheless, this corresponds to close to 7% of all mortgage loans being at risk of becoming non-performing in that country, which remains rather high. As mortgage interest rate deductibility has not been taken into account in this analysis, the figures clearly overestimate the actual mortgage debt at risk.[41] Therefore, these figures should be interpreted as upper-bound estimates.

MORTGAGE DEBT REPAYMENT CAPACITY

Households that are relatively vulnerable (i.e. have a high probability of default) do not necessarily constitute a threat to banks' balance sheets as long as the banks can recoup the loan by liquidating the collateral. Households that both have a high risk of failing to service their mortgage debt and whose housing equity is in fact negative, however, embody a relatively large credit risk to banks.

To visualize this, Chart 5.11 plots households' net income after servicing mortgage debt against the LTV ratios on those households' mortgage loans. The rectangles show which households are at the lower end of the mortgage credit quality spectrum and have little or no housing equity. Applying the same threshold values for the three vulnerability indicators defined in the previous sub-section (i.e. share of net income left after servicing mortgage debt < 70%, LTI > 600 %, and LTV > 75%), some 3.4% of the mortgage indebted households in the four countries for which data are available can be labelled as vulnerable. At close to 8%, these households hold nonetheless a relatively large share of total mortgage debt. At the same time, they only account for about 2% of all households' net income. Tightening the thresholds for the vulnerability indicators to 50% for the mortgage debt servicing ratio, to 1,000% for the LTI ratio and to 100% for the LTV ratio, the share of vulnerable households drops to 0.34%. These households again hold a relatively large share of total mortgage debt (0.79%), and account for a relatively small share of total net income (0.12%).

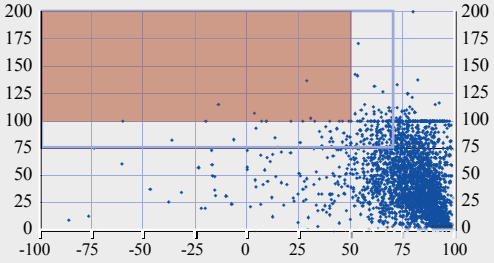
Finally, to arrive at a more accurate estimate of banks' potential credit losses, the composite

Chart 5.11 Identifying vulnerable households

(percentages; different years)

x-axis: net income left
y-axis: loan-to-value ratio

"very vulnerable": accounting for 0.34%, 0.79%, and 0.12% of households, mortgage debt, and net income respectively
"somewhat vulnerable": accounting for 3.4%, 7.6%, and 2.0% of households, mortgage debt, and net income



Sources: BSC and ECB calculations.
Note: The relative proportions referred to in the two rectangles that capture "very vulnerable" and "somewhat vulnerable" households respectively are calculated using weights - if applicable - at the national level only. The threshold values applied to the three vulnerability indicators (i.e. net "income left", and LTV and LTI ratios) for households to be labelled as "very" or "somewhat" vulnerable are given in the main text.

41 Interest-only mortgages are very popular in countries where mortgage interest payments are deductible from income tax. With a progressive income tax system, the gross mortgage interest burden will significantly overestimate the net mortgage interest burden. The latter is obviously more relevant in determining the degree of exposure to interest rate risk. For an overview of the taxation of residential property in many EU countries, see P. Hoeller and D. Rae (2007), "Housing markets and adjustments in monetary union", *OECD Working Paper* No. 550.

vulnerability indicator is tightened further by adding the variable approximating households' exposure to interest rate risk. While somewhat restrictive, households are now only labelled vulnerable if they meet the previous vulnerability criteria and, in addition, hold an interest-only mortgage. The rationale for doing so is that, with the data available, this probably comes closest to replicating "sub-prime"-type risks witnessed in the US mortgage market. In addition to having a poor credit history or insufficient income certainties, the US households that defaulted on their mortgage loans tended to combine a heavy mortgage debt servicing burden[42] with a high degree of income gearing and leveraged borrowing, as reflected in high LTI and LTV ratios, while being significantly exposed to interest rate risk through highly interest-rate-sensitive mortgages.

The results of adding the interest rate vulnerability indicator are shown in Table 5.1. Households that are "somewhat vulnerable" are identified by applying the initial, less tight threshold values for the vulnerability indicators, and adding the "interest-only" variable. Between 0.49% and 1.05% of mortgaged households in the selected EU countries are classified as vulnerable by this refined definition of the composite vulnerability indicator. It shows that the risk of these households defaulting on their mortgage debt is indeed rather high as these households hold only between 0.07% and 0.83% of net income, while the credit risk to banks also remains high as these households hold up to 2.3% of all housing loans outstanding. The "very vulnerable" households are identified by raising the thresholds values for the separate vulnerability indicators as before. Only a few mortgage indebted households in two countries satisfy these rather tight vulnerability criteria. They account for only between 0.13% and 0.33% of mortgaged households, but for about three times as much of the housing loans outstanding.

Table 5.1 EU banks' credit risk exposure to vulnerable mortg age indebted households

(percentages, relative to total)

country	proportion of	vulnerability	
		"somewhat"	*"very"*
United Kingdom	households	1.05	0.13
(2005)	net income	0.50	0.08
	mortgage loans	2.28	0.43
	Tier 1 capital	2.01	2.01
Netherlands	households	0.99	
(2006)	net income	0.83	
	mortgage loans	2.11	
	Tier 1 capital	2.38	
Italy	households	0.49	0.33
(2004)	net income	0.07	0.05
	mortgage loans	1.04	0.94
	Tier 1 capital	2.92	2.92

Sources: BSC and ECB calculations.
Note: The data used in the calculations have been weighted for the United Kingdom and Italy. Households' degree of vulnerability is determined by the threshold values for the vulnerability indicators given in the main text. Consistent with the Standard Approach of Basel II, Tier 1 capital is calculated by taking a 100% and a 35% risk weight on mortgage loans with a LTV ratio in excess of and below 75% respectively. Tier 1 capital held for mortgage lending is then expressed as a percentage of total mortgage loans outstanding.

Taking the percentage of mortgage loans held by "somewhat" and "very" vulnerable households as the maximum potential credit loss banks' might incur, and comparing that with a crude estimate of the Tier 1 capital that they are required to hold for mortgage lending, allows assessing the degree of distress banks may face in case of two adverse scenarios. The first adverse scenario would entail a shock to households' mortgage debt servicing capacity (e.g. income and interest rate shock) that, abstracting from households' financial asset holdings or assuming a simultaneous shock to these asset prices, would cause very vulnerable households to default collectively on their mortgage debt. Banks will face credit losses as they fail to recoup the entire mortgage loan from liquidating the collateral as the former exceeds the value of the latter. Nonetheless, the banking sectors in the two affected countries seem resilient to such a scenario, as the maximum potential credit losses are easily covered by Tier 1 capital. A second, more extreme, adverse scenario would involve a more significant shock to households' mortgage debt servicing capacity in conjunction

42 In fact, the mortgage debt servicing burdens were initially manageable, but became excessive after attractive interest rates on adjustable rate mortgages were reset to significantly higher levels.

with a shock to their mortgage debt repayment capacity (e.g. house price shock), which would cause also all somewhat vulnerable households to default on their mortgage debt. The upper-bound estimate of credit losses to banks is now significantly higher, and in one country even exceeds the Tier 1 capital held for mortgage loans. Hence, only in an extreme scenario of rapidly eroding mortgage debt service and repayment capacity will credit losses in one country bite into bank capital adequacy ratios.

Overall, the potential credit losses to banks in the included EU countries that arise from deteriorating conditions in housing and mortgage markets seem to be manageable and do not entail a systemic threat to these countries' banking sector stability. However, caution in interpreting these results is warranted. Not only do these countries represent a fraction of the entire EU banking sector, but the underlying data are only comparable to a very limited extent. Moreover, the ability of a country's banking sector to absorb any distress in the household sector would crucially depend on the characteristics of that banking sector, which are not incorporated in the analysis presented here. To the extent that distress in the mortgage market may be associated with problems in unsecured lending to households or distress in the corporate sector, credit losses to banks may be underestimated. That said, the results seem broadly supported by comparable analysis of vulnerabilities and risks in EU mortgage markets using disaggregate data. For instance, recent analysis of micro data for households in Denmark showed that financially vulnerable households only hold a small percentage of debt, while a similar analysis for Swedish mortgage indebted households showed that even substantial interest rate and house price shocks would not generate credit losses in the banking sector large enough to affect its stability.[43]

Having looked at the mortgage debt sustainability of the most vulnerable households in a selected number of EU countries, the presented results can at best be taken as indicative of a rather limited presence of the "sub-prime"-type risks that caused the distress in the US mortgage markets and beyond. If at all, the results tend to support the view that sufficient prudential safeguards are in place. Provided that it is done properly and responsibly, mortgage lending to the more vulnerable segment of the household sector not only contributes to diversifying bank assets and broadening the mortgage market, it also raises housing affordability for households that would otherwise have no or limited access to housing finance. Nonetheless, only one country reported identifying some vulnerabilities and risks in its housing and mortgage market that arise from "non-prime" mortgage lending in the time ahead. While not negligible, the risks going forward are nonetheless deemed to be manageable.

CONCLUDING REMARKS

The analysis presented here suggests that, while pockets of vulnerability have grown in EU mortgage markets, particularly with respect to rising household mortgage indebtedness, the risks to household and bank balance sheets tend to be rather contained. While recent relatively benign conditions may mask the build-up of risks, which are to a certain extent driven by a generally easing of banks' credit standards, these risks may surface once conditions turn less favourable. The rise in household indebtedness may leave many households in EU mortgage markets more vulnerable to house price, income and interest rate shocks. This notwithstanding, a closer look into the distribution of risks among households by identifying those households that tend to be most vulnerable to these shocks suggests that the potential credit losses to EU banks are fairly limited and should not endanger EU banking sector stability. While this message is comforting, it is subject to a number of

43 See Danmarks Nationalbank (2007), "Macro stress testing of Danish households", *Financial Stability*, issue 2007, and M.W. Johansson and M. Persson (2006), "Swedish households' indebtedness and ability to pay – a household level study", *Sveriges Riskbank Economic Review*, 2006/3. A recent OECD study also confirms for a broader group of countries that while the debt servicing capacity of vulnerable households is relatively weak, they tend to hold a small share of mortgage debt (see *OECD Working Paper* No. 535 referred to earlier in this section).

caveats, the most important of which are that the analysis builds on only a small number of EU countries at different points in time.

6 OVERALL ASSESSMENT

The financial condition of the EU banking sector continued to improve throughout 2006, the latest year for which full-year consolidated figures are available. The information available on large EU banks suggests that profitability rose further in the first half of 2007.

The impact on EU banks' financial condition of the recent re-pricing of credit risk will become clear only gradually, as banks report on their earnings figures for the second half of 2007. Although the direct implications of the turmoil are not likely to significantly affect EU banks' solvency ratios, profitability levels of many banks, particularly in the non-interest income categories, could be negatively affected. In addition, those EU banks whose liability side of the balance sheet is characterised by a strong reliance on funding from non-deposit sources, as well as those banks following the originate-and distribute business model, could see their revenues declining in a more substantial manner.

The risk re-pricing is a welcome development to the extent that it is a correction of past market valuations that reflected overly excessive expectations regarding future market liquidity and economic outcomes. However, owing to its negative impact on the availability of funding liquidity in the wholesale market it cannot be ruled out that banks that had followed prudent risk management practices in the past might suffer unduly from the turmoil. Although the robust balance sheets that are characteristic for most parts of the EU banking system provide banks with a good starting point for withstanding shocks to their various risk exposures, a swift resolution of the market dislocations in the various corners of the global credit markets is nevertheless crucial for avoiding a more protracted downturn in the financial condition of EU banks. This is particularly important against the background of the fact that the share of non-interest income sources in EU banks' total revenues has increased steadily and currently accounts for a substantial share of banks' earnings.

Over and beyond the implications of the credit market turbulence, future risks to EU banks relate to the evolution of the credit cycle, which developed particularly favourably until the first half of 2007 and also supported the buoyancy of the financial markets. The gradual stabilisation or slowdown in lending growth to households and non-financial corporations, as well as signs of tightening lending standards, support the view that EU banks' asset quality could start to deteriorate from the currently very high levels in the foreseeable future. Pockets of vulnerability among highly indebted, low-income households and highly leveraged, non-listed firms have become particularly relevant, and banks' exposures to such borrowers warrant close monitoring. The flat yield curve environment, should it persist, continues to make it challenging for banks to earn income from the maturity transmission business, which remains the key business line, particularly for smaller EU banks. Finally, a further increase in activity by EU banks in foreign currency lending business in some EU countries warrants a close monitoring of factors that could be seen as potential triggers for unexpected losses in such exposures.

Looking forward, the completion of the implementation phases of the Basel II capital regime and the IFRS accounting standards will further improve the transparency of financial reporting and risk management practices in the EU banking system. Despite these structural changes in the regulatory environment, an important lesson of the episode is that it remains key for EU banks to maintain comprehensive contingency liquidity plans and to put aside sufficient capital for their counterparty credit risk exposures. Furthermore, a close monitoring of off-balance-sheet exposures and continuing work towards more sophisticated stress-testing standards are needed to safeguard the future stability of the EU banking system.

STATISTICAL ANNEX

Box 3

DATA ON EU BANKS

The macro-prudential analysis conducted by the Banking Supervision Committee (BSC) is based on the pooling of relevant aggregated information on the banking systems of all EU Members States. The key set of data for this analysis, on which this report is based, is the consolidated banking data (CBD) provided by the member organisations of the BSC. These data include detailed information on bank profitability, balance sheets and solvency, and cover nearly 100% of the EU banking sector. Due to the introduction of the International Financial Reporting Standards (IFRS) in 2005, and their implementation for supervisory purposes, however, coverage was reduced slightly in order to preserve the quality of 2005 and 2006 data (see below). In countries where IFRS accounting has already been adopted for supervisory purposes, local GAAP reporting is generally still permitted, in particular for small or non-quoted banks.[1] Data on small banks, which are not yet IFRS-compliant, from countries in which the old and new accounting rules coexist for supervisory purposes were not included in the data collected in 2005 and 2006. The consequent loss in coverage, however, was small in terms of the domestic banking assets of IFRS countries. The data contain information on EU banks, which have been divided into three size groups (small, medium-sized and large). In addition, they provide information on foreign-controlled institutions active in EU countries.

This box summarises the key definitions used in Tables 1 to 16 in the Statistical Annex, and describes some of the most important changes in data collection in 2007, vis-à-vis that conducted in 2006.[2]

Key definitions for domestic banks

Consolidation
In order to provide a fully consolidated view of risks, the EU authorities report cross-border and cross-sector consolidated data on domestically controlled banks. In cross-border consolidation, data on branches and subsidiaries located (from the reporting country's point of view) outside the domestic market are included in the data reported by the parent institution. In cross-sector consolidation, branches and subsidiaries of banks that can be classified as other financial institutions are included. The definition of other financial institutions excludes insurance companies. This perimeter of consolidation was maintained for all countries even if it differs from that recommended by the new accounting standards (IFRS) in which the insurance sector is included.

Size groups
Large domestic banks are defined as banks with total assets greater than 0.5% of the total consolidated assets of EU banks, while medium-sized banks have total assets of between 0.5% and 0.005% of those total consolidated assets and banks with total assets of less than 0.005% of those total consolidated assets are considered small. The threshold in terms of absolute amounts is defined on the basis of the total assets of the banking sector available from the data collection exercise run in the preceding year. In the 2007 collection exercise (concerning end-2006 data),

1 In at least two EU countries, small cooperative and savings banks will not be required to adopt the new accounting standards in the near future.
2 See ECB, EU Banking Sector Stability Report, November 2006.

the thresholds were computed on the basis of the total assets of €28,732,577 million from the 2006 data collection exercise. This figure comprises the total assets of both domestic banks and non-EU foreign subsidiaries in all EU Member States (EU-25) at the end of 2005.

Key definitions for foreign banks

Foreign banks are defined as subsidiaries and branches that are controlled by either an EU or a non-EU parent that is "foreign" from the reporting country's point of view. The data for these institutions are excluded from the definition of the domestic banking sector, and are aggregated under the heading "foreign banks" in the following tables. A separate analysis for foreign banks is justified by their large share of the domestic banking sector in some EU countries.

Key definitions for all banks

For some items in the tables presenting the consolidated banking data, a separation between domestic and foreign banks is not available. For these items, most of which refer to solvency indicators, the category "all banks", which includes all domestic and foreign banks, is reported.

Differences in the data reported in the 2006 and 2007 reports on EU Banking Sector Stability

EU membership
The consolidated banking data for 2005 and 2006 discussed in this report includes data from the two countries that joined the EU in 2007, namely Bulgaria and Romania.

Split of the sample into IFRS-compliant and non-IFRS-compliant accounting regimes
As in the 2006 report on EU Banking Sector Stability, IFRS-compliant and local GAAP-compliant data are treated separately since the conceptual differences between the accounting regimes are thought to be too substantial to render the aggregation of IFRS and non-IFRS data meaningful. The number of EU countries not yet reporting IFRS-compliant data has decreased to six (Austria, Germany, Hungary, Luxembourg, Sweden and the United Kingdom). In these countries, IFRS-compliant reporting for supervisory purposes is not yet required, even if listed banks have already adopted the new accounting standards and publish results accordingly. The remaining 21 EU countries[3] have implemented the new standards since 2005, or earlier, and/or allow the coexistence of IFRS-compliant and local GAAP-based reporting for supervisory purposes.

Differences in coverage
A slight drop in coverage was deemed necessary to preserve the quality of the consolidated banking data. Coverage in the 21 EU countries under the IFRS regime comprises only the set of IFRS reporting banks that does not, in some cases, coincide with the whole national banking systems. The loss in coverage was negligible for most countries, but represented around 20% of total domestic banking assets in the case of two large euro area countries (France and Italy). Three of the four new countries reporting under IFRS regime (for the purposes of the CBD production) reported two years of data compliant with the new accounting regime, so as to have two years of comparable data. IFRS-compliant re-stated data for 2005 has not been requested for supervisory purposes in Belgium so that they could not be submitted for the CBD exercise.

3 The set of IFRS reporting countries comprises: Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Lithuania, Latvia, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia and Spain.

The number of reporting banks has also decreased slightly from 2005 to 2006. While the impact in the IFRS averages is minor, country-level results for Belgium should be interpreted with caution.

Coverage is weaker for the set of small banks. For the IFRS set of countries, these are generally institutions that still report in conformity with local GAAP that are, for this reason, excluded from IFRS-compliant domestic banking system data collection. Turning to the non-IFRS set of countries, the number of small banks has also dropped in some countries with a very large number of small institutions that represent a small share of total domestic banking assets.[4]

Changes in size groups
The thresholds for the definition, based on end-2005 data, of large, medium-sized and small banks were calculated on the basis of the total consolidated banking assets of the EU-25 countries, thereby aggregating total assets computed under both the IFRS and the non-IFRS regimes. The adoption of the new accounting standards contributed to growth in some banks' balance sheets (e.g. due to the implementation of IAS 39, fair-value accounting, off-balance-sheet items that are on-balance-sheet under the new standards). Mostly for this reason, and especially within the group of small and medium-sized banks, a few institutions that were reported as belonging to one size group in the 2005 data collection exercise have shifted to the next one. Such shifts, however, have had an only limited impact on the aggregate EU data.

Differences in definitions of specific data items
There were no changes to the reporting template and technical infrastructure for the production of the 2006 consolidated banking data. However, various items were re-defined or modified in accordance with the IFRS framework in the IFRS-compliant template, while the template for the non-IFRS reporting countries remained totally unchanged. For example, the item "trading and foreign exchange results" (in the profit and loss sheet of the non-IFRS template), corresponds to "gains (losses) on financial transactions" (cf. IAS 39) in the IFRS template. The new accounting standards and practices on provisioning also required the replacement of the "provisions" items with those of "impairment losses (net) of financial and of non-financial assets".

A few items were suppressed where IFRS accounting offers fewer breakdowns than local GAAP (e.g. by debt securities issued by public and private bodies). For this reason, only one liquidity ratio is calculated for the IFRS reporting countries (liquid assets over short-term liabilities).

Asset quality indicators (Table 6) should be interpreted with caution owing to some differences between national definitions of impaired assets (non-performing and doubtful assets) and provisions. Due to data integrity issues, the table for the set of IFRS countries is not published in this year's report.

Country-level tables and aggregation

Although the EU Banking Sector Stability Reports aim to analyse banking sector developments at the aggregate EU level, additional information at the country level is provided in the Statistical

4 Domestic banking data from Sweden (non-IFRS) does not comprise data on a significant number of micro banks that represent around 5% of total domestic assets (data from Belgium has always excluded micro-banks). Domestic banking data from Cyprus also excludes data on cooperative credit institutions (this is not related to the introduction of the IFRS since the new standards were adopted in Cyprus in 1981).

Annex for reference. When analysing the data presented in these tables, and especially when attempting a comparison across countries, it should be borne in mind that country-level indicators reflect differences both in coverage and in definitions; in addition, differences in the banking sector structures across the EU should be taken into consideration. Finally, country-level information presented in Tables 9 to 16 may differ from that published in individual countries' reports on account of the differences in the reporting populations.

Using the aggregated EU consolidated banking data presented in Tables 2 to 8, split between the two reporting groups – IFRS and non-IFRS – two sets of country-level tables have been produced: the first (Tables 9 to 12) includes only domestic banks operating in each EU-27 country, while the second (Tables 13 to 16) includes both domestic and foreign banks operating in each country (all banks). Tables 9 to 12 present a disaggregated view of the data used in the computation of the averages for the IFRS countries and non-IFRS countries reported in Tables 2 to 8. Country-level information is weighted in the computation of aggregate indicators (or averages). A small number of aggregate indicators do not comprise data from all IFRS reporting countries due to the unavailability of certain reporting breakdowns at the country level.

The country-level data in Tables 13 to 16 are presented for "all banks", i.e. the group of both domestic and foreign banks in each country. For this reason, the data are affected by double-counting if cross-country aggregation is attempted, and are moreover not directly comparable with the data presented in Tables 2 to 8. Nonetheless, given the extensive foreign ownership of the banks operating in some EU Member States, Tables 13 to 16 offer a more realistic picture of country-level banking developments in these countries.

Table 1 EU consolidated banking data reporting population

(2006)

	IFRS reporting countries	*Change from 2005*	non-IFRS reporting countries	*Change from 2005*
Number of credit institutions				
Stand-alone credit institutions	1,430	*-85*	2,729	*-113*
Banking groups	307	*3*	128	*5*
Credit institutions	1,737	*-82*	2,857	*-108*
Domestic credit institutions	1,204	*-35*	2,473	*-105*
Foreign-controlled subsidiaries and branches	533	*-47*	384	*-3*
Total assets of credit institutions in the sample (EUR billions)				
Domestic credit institutions	15,594	*1,611*	14,563	*956*
of which (%):				
Large	76.4	*-0.6*	72.2	*-1.4*
Medium-sized	22.7	*0.5*	23.5	*1.3*
Small	0.9	*0.1*	4.3	*0.1*
Foreign-controlled subsidiaries and branches	2,664	*401*	2,322	*230*

Source: BSC.

Table 2 EU banks in IFRS reporting countries: profitability and efficiency

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Income (% of total assets)										
Net interest income	1.21	*0.00*	1.05	*0.02*	1.73	*-0.08*	2.43	*-0.28*	1.20	*0.03*
Interest receivable	4.54	*0.99*	4.71	*1.19*	4.02	*0.35*	4.18	*-0.21*	5.89	*1.55*
Interest payable	3.33	*0.98*	3.66	*1.17*	2.28	*0.42*	1.75	*0.07*	4.68	*1.52*
Net non-interest income	1.26	*0.14*	1.24	*0.18*	1.28	*0.00*	2.37	*0.02*	0.91	*0.10*
Fees and commissions (net)	0.65	*0.02*	0.62	*0.04*	0.73	*-0.06*	1.44	*-0.12*	0.52	*0.02*
Trading and forex results / gains (losses) on financial transactions	0.38	*0.08*	0.42	*0.09*	0.24	*0.05*	0.52	*-0.06*	0.25	*0.06*
Other operating income (net)	0.23	*0.04*	0.20	*0.05*	0.32	*0.00*	0.41	*0.20*	0.13	*0.03*
Total income	2.47	*0.14*	2.29	*0.20*	3.02	*-0.08*	4.80	*-0.26*	2.11	*0.13*
Expenditure structure (% of total assets)										
Staff costs	0.82	*0.01*	0.75	*0.06*	0.94	*-0.12*	1.62	*-0.15*	0.69	*0.06*
Administrative costs	0.54	*0.02*	0.52	*0.05*	0.55	*-0.06*	1.10	*-0.09*	0.49	*0.01*
Other	0.10	*-0.01*	0.09	*-0.01*	0.11	*-0.02*	0.20	*-0.05*	0.00	*0.00*
Total expenses	1.42	*0.01*	1.35	*0.07*	1.60	*-0.19*	2.90	*-0.27*	1.18	*0.05*
Profitability (% of total assets)										
Operating profits	1.05	*0.13*	0.93	*0.14*	1.41	*0.11*	1.90	*0.02*	0.95	*0.08*
Impairment losses (net) on financial assets	0.15	*0.02*	0.12	*0.03*	0.27	*-0.05*	0.10	*-0.12*	0.13	*0.04*
Profit from discountinued operations	0.01	*0.00*	0.01	*0.00*	0.01	*0.01*	0.00	*-0.02*	0.01	*0.00*
Tax charges	0.24	*0.04*	0.21	*0.03*	0.34	*0.07*	0.38	*-0.01*	0.18	*0.03*
Profits (before tax and profit from discontinued operations)	0.96	*0.15*	0.88	*0.13*	1.21	*0.19*	1.80	*0.08*	0.81	*-0.01*
Profits (after tax) (ROA)	0.73	*0.11*	0.68	*0.11*	0.88	*0.12*	1.42	*0.08*	0.63	*-0.04*
Return on equity										
Profits (after tax) (% Tier 1) (ROE)	18.75	*2.73*	20.40	*3.07*	15.88	*2.17*	13.10	*1.68*	14.78	*-1.18*
Income structure (% of total income)										
Net interest income	49.10	*-2.93*	45.78	*-3.43*	57.44	*-1.03*	50.70	*-2.97*	57.09	*-2.37*
Net non-interest income	50.90	*2.93*	54.22	*3.43*	42.56	*1.03*	49.30	*2.97*	42.91	*2.37*
Fees and commissions (net)	26.17	*-0.78*	26.92	*-0.62*	24.04	*-1.32*	29.93	*-0.76*	24.92	*-0.65*
Trading and forex results	15.32	*2.49*	18.36	*2.52*	7.85	*1.95*	10.75	*-0.61*	11.73	*2.06*
Other operating income (net)	9.41	*1.22*	8.94	*1.53*	10.67	*0.41*	8.63	*4.33*	6.26	*0.96*
Expenditure structure (% of total costs)										
Staff costs	54.76	*-0.05*	52.84	*0.26*	58.35	*-0.09*	55.39	*0.14*	53.12	*2.19*
Administrative costs	36.11	*0.90*	36.92	*1.02*	34.46	*0.51*	37.68	*0.66*	38.08	*-0.97*
Other	9.13	*-0.85*	10.24	*-1.28*	7.20	*-0.42*	6.93	*-0.80*	8.80	*-1.22*
Efficiency										
Cost-to-income ratio (% of total income)	57.51	*-3.10*	59.15	*-2.52*	53.13	*-4.85*	60.38	*-2.34*	55.67	*-1.15*
Asset share of banks with a cost-to-income ratio of over 80%	0.25	*0.04*	0.00	*0.00*	0.80	*0.24*	7.97	*-2.03*	2.10	*-3.46*

Source: BSC.
Note: For some items (e.g. "net interest income"), the sum of the sub-components might be smaller than the total amount of the item because some countries only provided information on the total amount.

Table 3 EU banks in non-IFRS reporting countries: profitability and efficiency

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Income (% of total assets)										
Net interest income	1.20	*0.01*	1.12	*0.06*	1.23	*-0.14*	2.24	*-0.13*	0.76	*0.01*
Interest receivable	4.26	*0.22*	3.92	*0.09*	5.29	*0.64*	4.44	*-0.08*	4.52	*0.74*
Interest payable	3.06	*0.21*	2.79	*0.02*	4.06	*0.79*	2.20	*0.05*	3.75	*0.73*
Net non-interest income	0.90	*0.13*	0.91	*0.15*	0.77	*0.07*	1.41	*0.14*	0.76	*-0.01*
Fees and commissions (net)	0.64	*0.04*	0.65	*0.06*	0.54	*0.00*	0.88	*-0.07*	0.73	*-0.03*
Trading and forex results	0.24	*0.04*	0.31	*0.06*	0.05	*-0.01*	0.04	*0.00*	0.16	*-0.01*
Other operating income (net)	0.03	*0.05*	-0.05	*0.03*	0.18	*0.07*	0.49	*0.21*	-0.13	*0.03*
Total income	2.09	*0.14*	2.03	*0.21*	2.00	*-0.07*	3.65	*0.01*	1.53	*0.00*
Expenditure structure (% of total assets)										
Staff costs	0.75	*0.04*	0.74	*0.07*	0.66	*-0.05*	1.50	*-0.07*	0.52	*-0.02*
Administrative costs	0.30	*0.00*	0.23	*0.00*	0.41	*0.00*	0.77	*-0.06*	0.20	*-0.01*
Other	0.05	*0.00*	0.02	*0.00*	0.09	*-0.02*	0.20	*-0.02*	0.04	*-0.03*
Total expenses	1.10	*0.03*	0.99	*0.07*	1.17	*-0.07*	2.47	*-0.15*	0.76	*-0.06*
Profitability (% of total assets)										
Operating profits	1.00	*0.11*	1.04	*0.14*	0.83	*0.00*	1.17	*0.17*	0.77	*0.06*
Specific provisions	0.22	*0.05*	0.20	*0.06*	0.23	*-0.01*	0.55	*0.13*	0.07	*-0.04*
Funds for general banking risks	0.08	*0.01*	0.03	*0.01*	0.18	*0.00*	0.37	*0.11*	0.07	*0.00*
Extraordinary items (net)	-0.01	*-0.02*	-0.02	*-0.01*	-0.01	*-0.02*	0.01	*-0.22*	0.03	*0.00*
Tax charges	0.19	*-0.01*	0.21	*0.01*	0.14	*-0.03*	0.17	*-0.08*	0.12	*-0.01*
Profits (before tax and extraordinary items)	0.77	*0.07*	0.84	*0.09*	0.58	*0.02*	0.51	*0.00*	0.69	*0.10*
Profits (after tax and extraordinary items) (ROA)	0.56	*0.05*	0.61	*0.08*	0.44	*0.03*	0.36	*-0.14*	0.60	*0.11*
Return on equity										
Profits (after tax and extraordinary items) (% Tier 1) (ROE)	15.51	*0.91*	18.55	*1.47*	10.86	*0.65*	5.44	*-2.33*	15.70	*3.74*
Income structure (% of total income)										
Net interest income	57.16	*-3.61*	55.30	*-3.08*	61.52	*-4.71*	61.43	*-3.71*	49.98	*0.47*
Net non-interest income	42.84	*3.61*	44.70	*3.08*	38.48	*4.71*	38.57	*3.71*	50.02	*-0.47*
Fees and commissions (net)	30.35	*-0.01*	32.12	*-0.30*	26.96	*1.14*	24.02	*-2.12*	47.99	*-1.57*
Trading and forex results	11.28	*1.29*	15.16	*1.68*	2.60	*-0.25*	1.06	*0.11*	10.72	*-0.90*
Other operating income (net)	1.21	*2.33*	-2.58	*1.70*	8.92	*3.82*	13.49	*5.71*	-8.69	*2.00*
Expenditure structure (% of total costs)										
Staff costs	68.67	*1.56*	74.46	*2.20*	56.68	*-0.72*	60.71	*1.00*	69.21	*2.77*
Administrative costs	26.95	*-0.98*	23.09	*-2.01*	35.30	*2.03*	31.33	*-0.59*	25.85	*0.92*
Other	4.38	*-0.58*	2.45	*-0.19*	8.02	*-1.31*	7.96	*-0.41*	4.94	*-3.69*
Efficiency										
Cost-to-income ratio (% of total income)	52.39	*-2.14*	48.81	*-1.88*	58.38	*-1.39*	67.81	*-4.47*	49.66	*-3.88*
Asset share of banks with a cost-to-income ratio of over 80%	1.52	*-5.61*	0.00	*-7.25*	4.86	*0.03*	8.67	*-8.26*	1.47	*0.54*

Source: BSC.

Table 4 EU banks in IFRS reporting countries: balance sheet and off-balance-sheet items

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Assets (% of total assets)										
Cash and balances	1.36	*0.01*	1.17	*0.01*	1.91	*0.00*	3.40	*-0.04*	1.85	*0.08*
Loans to credit institutions	9.34	*-0.07*	9.35	*-0.15*	9.02	*0.18*	16.49	*-0.13*	18.02	*0.59*
Financial assets at fair value through profit or loss	27.82	*-1.53*	32.31	*-1.37*	13.27	*-1.52*	12.87	*-3.93*	27.23	*-3.09*
Debt securities including fixed-income securities	5.56	*-2.02*	5.52	*-2.32*	5.59	*-0.98*	8.64	*-2.35*	13.05	*0.25*
Shares and other variable-yield securities	1.34	*-2.25*	1.09	*-2.90*	2.15	*-0.06*	1.83	*-0.64*	1.01	*-0.96*
Loans to customers	52.79	*1.94*	48.37	*1.85*	68.90	*1.85*	59.83	*2.20*	44.81	*2.81*
Tangible and intangible assets	1.80	*0.04*	1.69	*0.08*	2.08	*-0.09*	3.42	*0.28*	0.81	*0.01*
Other assets	6.04	*-0.21*	6.44	*-0.16*	4.78	*-0.38*	3.36	*1.23*	4.31	*-0.33*
Liquidity (% of amounts owed to credit institutions)										
Liquid asset ratio (cash and loans to cred. inst.)	71.35	*4.14*	64.93	*3.49*	98.75	*5.90*	176.68	*-23.44*	64.80	*2.33*
Liabilities (% of total assets)										
Amounts owed to credit institutions	14.99	*-1.01*	16.19	*-1.15*	11.07	*-0.50*	11.25	*1.23*	30.67	*-0.07*
Amounts owed to customers	38.31	*-0.90*	35.04	*-1.08*	48.19	*-0.61*	67.54	*-2.28*	31.34	*1.49*
Debt certificates	18.77	*1.73*	17.55	*1.79*	23.47	*1.45*	4.22	*0.88*	16.20	*0.25*
Other liabilities	20.41	*0.23*	24.40	*0.55*	7.64	*-0.46*	3.74	*0.10*	15.19	*-2.02*
Provisions for liabilities and charges	0.66	*-0.10*	0.67	*-0.08*	0.62	*-0.17*	0.32	*-0.02*	0.32	*0.05*
Subordinated liabilities	1.89	*-0.16*	1.81	*-0.26*	2.17	*0.13*	0.97	*0.15*	1.09	*0.03*
Equity (including valuation adjustments)	3.93	*0.09*	3.35	*0.11*	5.62	*-0.03*	10.77	*-0.36*	4.47	*0.19*
Minority interests in own funds	0.38	*-0.01*	0.38	*-0.01*	0.36	*0.01*	0.25	*0.09*	0.09	*-0.02*
Profit or loss for the financial year	0.67	*0.16*	0.60	*0.15*	0.87	*0.18*	0.93	*0.22*	0.63	*0.10*
Selected off-balance sheet items (% of total assets)										
Credit lines	16.51	*1.96*	18.24	*2.74*	10.97	*-0.53*	8.89	*0.36*	12.04	*0.24*
Guarantees and other commitments	10.48	*2.69*	8.22	*2.49*	18.03	*3.30*	12.16	*-0.99*	9.83	*2.05*

Source: BSC.

Table 5 EU banks in non-IFRS reporting countries: balance sheet and off-balance-sheet items

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Assets (% of total assets)										
Cash and balances	0.81	*0.04*	0.56	*-0.03*	1.36	*0.22*	2.06	*0.07*	0.57	*-0.24*
Short-term government debt	1.30	*-0.04*	1.39	*0.16*	1.13	*-0.70*	0.72	*0.02*	0.91	*-0.03*
Loans to credit institutions	14.63	*-0.60*	13.52	*-1.01*	18.14	*0.34*	14.08	*0.18*	24.50	*0.40*
Debt securities	15.96	*-0.27*	15.40	*-1.23*	17.95	*2.76*	14.57	*-0.04*	10.85	*-0.19*
Debt securities (public bodies)	1.07	*-0.14*	1.39	*-0.19*	0.29	*0.09*	0.04	*0.00*	3.15	*-0.59*
Debt securities (other borrowers)	2.56	*0.04*	2.50	*0.05*	3.03	*-0.02*	0.91	*-0.01*	7.70	*0.40*
Loans to customers	48.26	*-0.04*	46.74	*0.40*	51.17	*-1.70*	57.89	*-0.63*	44.52	*0.13*
Shares and participating interest	4.58	*0.52*	4.09	*0.52*	5.64	*0.50*	6.96	*0.11*	5.15	*0.37*
Tangible and intangible assets	1.65	*-0.01*	1.85	*0.03*	1.06	*-0.07*	1.66	*-0.08*	0.75	*-0.30*
Other assets	12.80	*0.40*	16.45	*1.17*	3.55	*-1.35*	2.07	*0.37*	12.74	*-0.14*
Liquidity (% of amounts owed to credit institutions)										
Liquid asset ratio 1 (cash and short-term government debt)	11.23	*0.07*	10.60	*0.84*	11.98	*-2.54*	18.76	*0.88*	3.91	*-0.86*
Liquid asset ratio 2 (ratio 1 + loans to cred. inst.)	88.87	*-2.53*	83.91	*-3.34*	99.10	*-2.23*	114.04	*3.32*	68.48	*-1.62*
Liquid asset ratio 3 (ratio 2 + debt sec. by public bodies)	94.58	*-3.22*	91.46	*-4.24*	100.49	*-1.81*	114.30	*3.34*	76.78	*-3.45*
Liabilities (% of total assets)										
Amounts owed to credit institutions	18.84	*-0.13*	18.44	*-0.30*	20.82	*0.32*	14.78	*-0.19*	37.94	*1.05*
Amounts owed to customers	39.45	*1.26*	36.13	*2.02*	43.83	*-1.56*	71.16	*-0.37*	30.37	*-0.95*
Debt certificates	19.98	*-0.64*	19.80	*-1.20*	23.60	*0.91*	3.30	*0.26*	9.74	*0.40*
Accruals and other liabilities	14.17	*-0.50*	18.26	*-0.36*	3.84	*-0.13*	1.88	*-0.01*	15.27	*-0.20*
Funds for general banking risks	0.08	*0.01*	0.03	*0.01*	0.18	*0.00*	0.37	*0.11*	0.07	*0.00*
Provisions for liabilities and charges	0.78	*-0.11*	0.65	*-0.13*	1.11	*-0.09*	1.12	*0.01*	0.52	*-0.05*
Subordinated liabilities	1.59	*0.02*	1.58	*-0.01*	1.82	*0.08*	0.66	*0.08*	1.01	*-0.29*
Equity	4.40	*0.03*	4.23	*-0.12*	4.52	*0.46*	6.58	*0.11*	4.64	*-0.02*
Other liabilities	0.39	*0.02*	0.52	*0.04*	0.06	*0.00*	0.00	*0.00*	0.02	*-0.01*
Profit or loss for the financial year	0.31	*0.05*	0.35	*0.06*	0.22	*0.01*	0.15	*-0.01*	0.41	*0.06*
Selected off-balance sheet items (% of total assets)										
Credit lines	16.88	*-0.87*	21.06	*-0.72*	6.47	*-0.55*	3.55	*-0.30*	14.58	*0.56*
Guarantees and other commitments	3.87	*0.22*	4.44	*0.33*	2.35	*0.03*	2.55	*-0.05*	3.26	*-3.64*
Derivatives	3.72	*0.29*	4.62	*0.52*	1.58	*-0.22*	0.33	*0.03*	11.56	*-0.87*

Source: BSC.
Note: For the item "debt securities", some countries provided information only on the total amount and not on the split between the two sub-items, i.e. "issued by public bodies" and "issued by other borrowers", so that the sum of these two sub-items is smaller than the total amount.

Table 6 EU banks in non-IFRS reporting countries: non-performing assets and provisioning

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Asset quality (% of loans and advances)										
Non-performing and doubtful assets (gross)	1.69	*-0.27*	0.83	*-0.33*	3.19	*-0.18*	5.87	*-0.70*	0.81	*-0.16*
Asset quality (% of own funds)										
Non-performing and doubtful assets (gross)	29.47	*-6.61*	15.21	*-7.29*	55.01	*-4.69*	64.50	*-10.44*	14.64	*-1.74*
Non-performing and doubtful assets (net)	12.32	*-1.14*	0.79	*-3.99*	33.53	*3.71*	38.72	*4.57*	5.90	*-2.35*
Provisioning (stock) (% of loans and advances)										
Total provisions	0.99	*-0.25*	0.79	*-0.12*	1.25	*-0.44*	2.35	*-1.23*	0.48	*0.00*
Provisioning (stock) (% of non-performing and doubtful assets)										
Total provisions	58.20	*-4.48*	94.78	*16.05*	39.04	*-11.01*	39.97	*-14.46*	59.71	*10.07*

Source: BSC.
Note: The corresponding table for IFRS reporting countries is not included due to data integrity problems not allowing for a meaningful aggregation of the figures.

Table 7 EU banks in IFRS reporting countries: regulatory capital ratios and risk-adjusted items

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Overall solvency ratio	11.13	*-0.10*	10.88	*-0.07*	11.44	*-0.16*	16.13	*-0.95*	12.31	*-0.67*
Tier 1 ratio	8.06	*-0.10*	7.86	*-0.05*	8.19	*-0.20*	14.77	*-1.10*	10.49	*-0.51*
Risk-adjusted items (% of total risk-adjusted assets)										
Banking book	85.35	*0.96*	82.54	*0.74*	91.34	*1.19*	83.62	*1.36*	81.77	*0.93*
Off-balance-sheet items	10.00	*-0.37*	12.45	*-0.27*	4.82	*-0.33*	10.68	*-0.88*	9.87	*0.25*
Trading book	4.64	*-0.60*	5.01	*-0.47*	3.83	*-0.85*	5.71	*-0.48*	8.36	*-1.19*

	All banks	*Change from 2005*
Overall solvency ratio	11.28	*-0.15*
Tier 1 ratio	8.37	*-0.12*
Distribution of over all solvency ratio		
Overall solvency ratio < 7%	0.03	*0.01*
Overall solvency ratio 7%-8%	0.20	*0.16*
Overall solvency ratio 8%-9%	1.24	*-1.83*
Overall solvency ratio 9%-10%	13.95	*2.54*
Overall solvency ratio 10%-11%	27.78	*-10.89*
Overall solvency ratio 11%-13%	50.40	*15.04*
Overall solvency ratio > 13%	6.41	*-5.03*
Overall solvency ratio below 9%		
Number of banks	50	*-1*
Asset share (% of total banking sector assets)	0.78	*-0.44*

	All banks	*Change from 2005*
Risk-adjusted items (% of total risk-adjusted assets)		
Banking book	84.89	*0.92*
Off-balance-sheet items	9.99	*-0.29*
Trading book	5.12	*-0.63*
Composition of trading book own funds requirement (% of total trading book own funds requirement under CAD)		
Own funds requirement for traded debt instruments	44.99	*-6.45*
Own funds requirement for equities	11.36	*-0.88*
Own funds requirement for foreign exchange risk	8.89	*0.06*
Own funds requirement for other trading book items	34.76	*7.27*

Source: BSC.

Table 8 EU banks in non-IFRS reporting countries: regulatory capital ratios and risk-adjusted items

(2006; changes from 2005 in percentage points)

	All domestic banks	*Change from 2005*	Large domestic banks	*Change from 2005*	Medium domestic banks	*Change from 2005*	Small domestic banks	*Change from 2005*	Foreign banks	*Change from 2005*
Overall solvency ratio	12.43	*0.20*	12.32	*0.25*	12.34	*0.04*	14.08	*0.27*	14.86	*-1.33*
Tier 1 ratio	7.93	*0.23*	7.57	*0.26*	8.27	*0.04*	10.81	*0.59*	10.78	*-0.82*
Risk-adjusted items (% of total risk-adjusted assets)										
Banking book	81.50	*-0.29*	77.10	*-0.37*	90.64	*-0.72*	94.70	*0.09*	69.13	*-0.97*
Off-balance-sheet items	10.51	*0.22*	12.55	*0.28*	6.21	*0.36*	4.67	*-0.03*	9.47	*0.12*
Trading book	7.99	*0.07*	10.35	*0.09*	3.15	*0.36*	0.63	*-0.06*	21.39	*0.85*

	All banks	*Change from 2005*
Overall solvency ratio	12.70	*0.04*
Tier 1 ratio	8.24	*0.13*
Distribution of over all solvency ratio		
Overall solvency ratio < 7%	0.06	*-0.19*
Overall solvency ratio 7%-8%	0.03	*0.03*
Overall solvency ratio 8%-9%	3.63	*-1.08*
Overall solvency ratio 9%-10%	10.27	*0.04*
Overall solvency ratio 10%-11%	20.49	*-2.38*
Overall solvency ratio 11%-13%	40.13	*-5.18*
Overall solvency ratio > 13%	25.40	*8.76*
Overall solvency ratio below 9%		
Number of banks	74	*-8*
Asset share (% of total banking sector assets)	2.49	*-1.90*

	All banks	*Change from 2005*
Risk-adjusted items (% of total risk-adjusted assets)		
Banking book	80.14	*-0.40*
Off-balance-sheet items	10.39	*0.21*
Trading book	9.46	*0.20*
Composition of trading book own funds requirement (% of total trading book own funds requirement under CAD)		
Own funds requirement for traded debt instruments	23.90	*-4.41*
Own funds requirement for equities	35.04	*2.02*
Own funds requirement for foreign exchange risk	5.07	*0.05*
Own funds requirement for other trading book items	35.80	*2.33*

Source: BSC.

Table 9 Key country-level indicators for banks in IFRS reporting countries: all domestic banks

(2006)

	BE	BG	CY	CZ	DK	EE	ES	FI	FR	GR	IE
Profitability (% of total assets, if not otherwise indicated)											
Net interest income	0.87	2.57	2.04	1.14	0.99	12.01	1.54	1.50	0.80	2.72	1.06
Net non-interest income	1.03	1.84	0.87	1.64	0.77	2.44	1.29	1.31	1.39	1.24	0.62
Total expenses	1.03	3.23	1.42	1.02	0.94	4.27	1.37	1.57	1.33	1.98	0.76
Profits (after tax) (ROA)	0.74	1.13	0.88	1.20	0.70	9.29	1.03	0.95	0.62	1.22	0.76
Profits (after tax) (% Tier 1) (ROE)	25.77	16.50	14.63	14.42	14.11	41.76	20.33	14.34	20.24	19.49	19.86
Net interest income (% of total income)	45.65	58.24	70.14	40.94	56.18	83.13	54.46	53.50	36.49	68.80	63.02
Net non-interest income (% of total income)	54.35	41.76	29.86	59.06	43.82	16.87	45.54	46.50	63.51	31.20	36.98
Cost-to-income ratio (% of total income)	54.19	73.20	48.73	36.63	53.30	29.55	48.41	55.80	60.56	50.03	44.98
Solvency											
Overall solvency ratio	11.49	13.97	13.57	25.21	12.04	30.41	11.33	14.24	11.22	12.62	10.58
Tier 1 ratio	8.06	11.13	10.72	24.39	9.37	29.60	7.34	11.87	8.43	10.16	7.71
Liquidity (% of amounts owed to credit institutions)											
Liquid asset ratio (cash and loans to credit institutions)	70.30	378.51	608.78	134.05	54.78	340.34	80.64	410.73	66.88	101.80	62.27
Balance sheet structure (% of total assets)											
Debt securities	26.42	16.29	18.59	19.06	13.02	0.00	16.22	4.42	50.40	20.79	24.27
Loans to customers	41.12	47.18	53.72	44.72	70.50	53.83	69.08	70.50	34.82	60.56	61.74
Amounts owed to credit institutions	29.51	8.70	3.81	25.80	17.97	9.59	11.44	3.01	12.02	11.85	18.00
Amounts owed to customers	38.74	80.46	80.40	34.83	25.91	24.03	50.75	47.59	26.78	60.17	30.38
Subordinated liabilities	1.95	1.83	2.07	0.29	1.77	5.36	2.71	2.17	1.41	1.97	2.77

	IT	LT	LV	MT	NL	PL	PT	RO	SI	SK
Profitability (% of total assets, if not otherwise indicated)										
Net interest income	1.79	2.48	2.62	2.16	1.05	3.17	1.77	4.32	2.35	3.51
Net non-interest income	1.67	2.08	2.72	0.81	1.01	1.86	1.51	3.22	1.66	4.26
Total expenses	2.04	2.15	2.82	1.33	1.43	3.15	1.76	5.09	2.31	2.62
Profits (after tax) (ROA)	0.81	1.23	2.19	1.07	0.45	1.37	0.99	1.80	0.99	4.02
Profits (after tax) (% Tier 1) (ROE)	17.68	15.15	29.28	16.43	14.16	19.63	18.18	19.67	17.64	30.43
Net interest income (% of total income)	51.73	54.35	49.05	72.79	50.99	62.97	54.00	57.29	58.68	45.18
Net non-interest income (% of total income)	48.27	45.65	50.95	27.21	49.01	37.03	46.00	42.71	41.32	54.82
Cost-to-income ratio (% of total income)	58.74	47.11	52.71	44.72	69.62	62.56	53.69	67.46	57.48	33.71
Solvency										
Overall solvency ratio	10.08	13.64	11.31	15.49	11.35	13.00	10.95	15.96	10.65	20.43
Tier 1 ratio	7.03	10.80	10.60	13.24	9.13	13.12	7.99	12.55	7.61	20.70
Liquidity (% of amounts owed to credit institutions)										
Liquid asset ratio (cash and loans to credit institutions)	75.59	308.22	158.90	96.41	62.65	199.27	100.88	1679.17	43.69	215.86
Balance sheet structure (% of total assets)										
Debt securities	18.69	17.90	14.57	39.93	18.03	20.49	13.69	3.32	26.14	20.30
Loans to customers	59.84	47.53	54.21	41.18	58.21	53.38	69.06	59.00	57.82	60.70
Amounts owed to credit institutions	15.71	7.98	17.40	16.25	16.07	11.46	11.49	1.99	26.24	6.93
Amounts owed to customers	41.75	74.50	64.71	72.34	41.60	71.98	48.42	83.34	56.17	70.57
Subordinated liabilities	2.11	0.86	0.63	0.79	1.34	0.16	3.08	2.05	3.45	0.00

Source: BSC.

Table 10 Key country-level indicators for banks in non-IFRS reporting countries: all domestic banks

(2006)

	AT	DE	HU	LU	SE	UK
Profitability (% of total assets, if not otherwise indicated)						
Net interest income	1.60	0.84	4.36	0.69	0.98	1.61
Net non-interest income	0.87	0.91	2.34	1.85	0.91	0.86
Total expenses	1.53	1.14	3.64	1.09	1.03	0.99
Profits (after tax and extraordinary items) (ROA)	0.71	0.31	2.01	1.14	0.72	0.80
Profits (after tax and extraordinary items) (% Tier 1) (ROE)	16.75	10.24	32.50	22.13	20.59	19.04
Net interest income (% of total income)	64.97	47.96	65.08	27.30	51.91	65.09
Net non-interest income (% of total income)	35.03	52.04	34.92	72.70	48.09	34.91
Cost-to-income ratio (% of total income)	62.02	65.19	54.38	42.94	54.31	39.94
Solvency						
Overall solvency ratio	11.53	11.67	12.34	18.60	9.81	13.66
Tier 1 ratio	7.69	7.69	9.35	15.19	7.18	8.24
Liquidity (% of amounts owed to credit institutions)						
Liquid asset ratio 1 (cash and short-term government debt)	33.97	6.49	170.12	20.73	7.07	15.58
Liquid asset ratio 2 (ratio 1 + loans to credit institutions)	127.68	74.21	305.86	142.82	105.65	134.00
Liquid asset ratio 3 (ratio 2 + debt securities issued by public bodies)	127.74	74.21	306.50	161.62	105.65	169.92
Debt securities	2.66	24.16	2.27	25.05	10.56	8.55
Loans to customers	49.13	41.48	55.58	22.45	59.93	54.75
Shares and participating interest	12.36	5.33	1.61	2.32	2.07	3.14
Amounts owed to credit institutions	20.97	28.72	10.56	31.69	12.78	7.39
Amounts owed to customers	40.51	35.22	59.90	44.32	31.19	45.72
Subordinated liabilities	3.25	1.35	2.93	1.98	2.37	1.53

Source: BSC.

Table 11 Key country-level indicators for banks in IFRS reporting countries : all domestic banks

(2006; changes from 2005 in percentage points)

	BE	BG	CY	CZ	DK	EE	ES	FI	FR	GR	IE
Profitability (% of total assets, if not otherwise indicated)											
Net interest income	-0.06	-0.22	-0.18	-0.06	-0.14	7.36	-0.01	0.00	-0.08	-0.06	0.10
Net non-interest income	0.37	-0.20	-0.06	-0.59	0.13	0.79	0.11	0.38	0.15	-0.02	0.03
Profits (after tax) (ROA)	0.29	-0.14	0.40	-0.10	0.04	6.65	0.14	0.16	0.07	0.18	0.15
Profits (after tax) (% Tier 1) (ROE)	10.44	-2.63	6.27	-3.29	0.09	33.13	3.13	2.73	1.54	3.86	0.52
Net interest income (% of total income)	-12.55	0.55	-0.44	6.00	-7.60	9.31	-2.26	-8.31	-5.02	-0.05	1.15
Net non-interest income (% of total income)	12.55	-0.55	0.44	-6.00	7.60	-9.31	2.26	8.31	5.02	0.05	-1.15
Cost-to-income ratio (% of total income)	-10.72	0.56	-8.97	-16.46	-1.64	-23.28	-4.93	-2.32	-1.88	-4.87	-6.29
Solvency											
Overall solvency ratio	-0.23	-0.62	-0.02	1.79	0.38	-11.57	-0.43	0.24	0.17	-0.71	-0.52
Tier 1 ratio	-0.46	-0.14	0.23	2.28	0.15	-10.35	-0.59	0.04	0.48	-0.84	0.03
Liquidity (% of amounts owed to credit institutions)											
Liquid asset ratio (cash and loans to credit institutions)	4.18	64.77	-259.67	11.04	-13.75	-94.68	14.81	164.44	1.96	3.61	5.92
Balance sheet structure (% of total assets)											
Debt securities	0.43	-4.35	-0.61	3.19	-1.86	-0.04	-4.10	-0.30	-1.05	0.86	-2.29
Loans to customers	-1.72	1.21	-0.29	-3.92	2.34	-9.43	4.98	-0.23	1.22	0.72	4.96
Amounts owed to credit institutions	0.21	-0.75	1.03	-1.59	1.68	2.63	-3.07	-1.67	0.09	-1.44	-4.09
Amounts owed to customers	-8.60	1.18	-3.94	-0.19	-0.12	-10.31	-0.56	-2.90	-0.18	-1.39	3.22
Subordinated liabilities	0.02	-0.19	-0.94	-0.27	-0.05	3.82	-0.04	0.09	-0.15	0.29	0.45

	IT	LT	LV	MT	NL	PL	PT	RO	SI	SK
Profitability (% of total assets, if not otherwise indicated)										
Net interest income	0.31	0.46	-0.08	-0.03	-0.04	-0.38	0.02	0.01	-0.18	0.20
Net non-interest income	0.21	0.51	0.23	-0.33	0.09	-0.12	0.00	0.94	-0.04	2.97
Total expenses	0.24	0.00	-0.12	-0.26	0.06	-0.52	-0.18	1.03	-0.10	0.05
Profits (after tax) (ROA)	0.20	0.40	0.29	0.15	-0.03	0.06	0.18	-0.13	0.05	2.57
Profits (after tax) (% Tier 1) (ROE)	4.51	2.81	2.05	2.90	-0.67	1.52	2.63	0.08	-1.78	20.91
Net interest income (% of total income)	1.36	-1.89	-2.96	6.93	-3.12	-1.17	0.30	-8.07	-1.25	-26.83
Net non-interest income (% of total income)	-1.36	1.89	2.96	-6.93	3.12	1.17	-0.30	8.07	1.25	26.83
Cost-to-income ratio (% of total income)	-2.50	-12.89	-3.78	-3.16	1.30	-3.76	-5.90	5.93	0.66	-22.17
Solvency										
Overall solvency ratio	0.09	0.31	-0.09	-1.88	-0.24	-1.60	-0.37	0.81	0.98	-1.27
Tier 1 ratio	-0.10	1.27	0.14	-0.93	-0.18	-1.78	0.37	-2.32	1.06	-2.71
Liquidity (% of amounts owed to credit institutions)										
Liquid asset ratio (cash and loans to credit institutions)	3.90	-11.88	-118.26	20.77	3.55	-32.51	-9.85	1465.85	-2.91	40.80
Balance sheet structure (% of total assets)										
Debt securities	-1.76	5.71	-1.97	-6.66	-1.95	-3.39	0.78	-9.47	-4.03	-2.55
Loans to customers	1.08	3.57	9.12	2.59	2.66	3.77	0.65	9.90	3.04	3.00
Amounts owed to credit institutions	-0.28	-1.35	4.86	1.01	-1.73	1.56	0.53	-12.86	3.26	-2.01
Amounts owed to customers	0.77	-1.39	-6.88	-0.55	-0.76	-1.80	-2.31	21.77	-2.57	3.10
Subordinated liabilities	-0.64	0.61	-0.02	-0.10	-0.20	-0.18	-0.29	2.05	0.83	0.00

Source: BSC.
Note: Figures for BE should be interpreted with caution since 2005 data are based on Belgian GAAP.

Table 12 Key country-level indicators for banks in non-IFRS reporting countries: all domestic banks

(2006; changes from 2005 in percentage points)

	AT	DE	HU	LU	SE	UK
Profitability (% of total assets, if not otherwise indicated)						
Net interest income	*0.05*	*-0.02*	*-0.88*	*-0.10*	*-0.04*	*0.03*
Net non-interest income	*0.01*	*0.15*	*0.69*	*0.51*	*0.07*	*0.12*
Total expenses	*0.00*	*0.03*	*0.35*	*-0.16*	*0.00*	*0.05*
Profits (after tax and extraordinary items) (ROA)	*0.10*	*0.04*	*-0.65*	*0.57*	*0.07*	*0.04*
Profits (after tax and extraordinary items) (% Tier 1) (ROE)	*1.85*	*0.80*	*-2.92*	*12.30*	*1.08*	*0.48*
Net interest income (% of total income)	*0.31*	*-5.02*	*-10.94*	*-9.75*	*-3.13*	*-2.96*
Net non-interest income (% of total income)	*-0.31*	*5.02*	*10.94*	*9.75*	*3.13*	*2.96*
Cost-to-income ratio (% of total income)	*-1.69*	*-3.45*	*6.60*	*-15.89*	*-1.19*	*-0.55*
Solvency						
Overall solvency ratio	*0.06*	*0.22*	*-0.72*	*-0.75*	*-0.10*	*0.25*
Tier 1 ratio	*-0.03*	*0.21*	*-3.27*	*-0.83*	*0.11*	*0.33*
Liquidity (% of amounts owed to credit institutions)						
Liquid asset ratio 1 (cash and short-term government debt)	*-3.68*	*0.70*	*-62.95*	*-4.24*	*3.19*	*-5.33*
Liquid asset ratio 2 (ratio 1 + loans to credit institutions)	*2.43*	*-3.20*	*-99.66*	*-13.74*	*0.00*	*-16.36*
Liquid asset ratio 3 (ratio 2 + debt securities issued by public bodies)	*2.34*	*-3.20*	*-99.61*	*-1.71*	*0.00*	*-31.27*
Balance sheet structure (% of total assets)						
Debt securities	*-0.52*	*0.32*	*1.03*	*-0.38*	*1.22*	*-0.57*
Loans to customers	*-0.52*	*-0.01*	*0.47*	*0.29*	*2.13*	*-0.89*
Shares and participating interest	*1.72*	*0.45*	*0.37*	*1.49*	*0.65*	*0.49*
Amounts owed to credit institutions	*-1.89*	*-0.37*	*1.66*	*2.00*	*-0.39*	*1.19*
Amounts owed to customers	*0.39*	*0.96*	*-4.83*	*1.64*	*1.51*	*1.38*
Subordinated liabilities	*0.49*	*-0.01*	*1.99*	*0.48*	*-0.09*	*-0.04*

Source: BSC.

Table 13 Key country-level indicators for banks in IFRS reporting countries: all banks

(2006)

	BE	BG	CY	CZ	DK	EE	ES	FI	FR	GR	IE
Profitability (% of total assets, if not otherwise indicated)											
Net interest income	0.90	3.74	1.77	2.38	1.01	2.29	1.49	1.33	0.77	2.64	0.89
Net non-interest income	0.99	1.78	0.77	1.52	0.77	1.18	1.25	0.92	1.33	1.18	0.54
Total expenses	1.06	3.07	1.20	2.15	0.95	1.49	1.34	1.07	1.26	2.06	0.65
Profits (after tax) (ROA)	0.71	1.82	0.82	1.23	0.70	1.67	0.96	0.93	0.60	0.92	0.64
Profits (after tax) (% Tier 1) (ROE)	23.34	24.07	14.55	23.48	14.27	24.40	20.26	14.40	20.15	16.44	14.63
Net interest income (% of total income)	47.54	67.73	69.67	61.05	56.53	66.02	54.46	59.23	36.80	69.06	62.25
Net non-interest income (% of total income)	52.46	32.27	30.33	38.95	43.47	33.98	45.54	40.77	63.20	30.94	37.75
Cost-to-income ratio (% of total income)	55.76	55.62	47.45	55.13	53.58	43.02	48.95	47.46	60.15	53.82	45.64
Solvency											
Overall solvency ratio	11.62	14.51	13.22	10.78	11.74	10.79	11.32	15.31	11.20	12.20	12.01
Tier 1 ratio	8.44	11.80	10.20	9.62	9.17	8.65	7.38	13.03	8.47	9.87	9.76
Liquidity (% of amounts owed to credit institutions)											
Liquid asset ratio (cash and loans to credit institutions)	71.55	211.91	223.60	209.77	56.48	40.20	59.30	180.65	62.34	107.46	70.26
Balance sheet str ucture (% of total assets)											
Debt securities	26.06	12.94	22.19	24.50	13.22	5.47	17.66	11.90	49.86	18.52	32.32
Loans to customers	41.64	52.91	47.66	45.78	69.70	77.89	67.02	54.67	35.20	60.82	48.91
Amounts owed to credit institutions	29.16	14.69	11.67	12.21	18.95	35.12	17.09	14.78	13.14	13.70	22.71
Amounts owed to customers	39.20	72.23	65.55	66.02	26.34	47.47	47.77	35.98	25.36	61.83	27.00
Subordinated liabilities	1.81	1.38	2.20	0.77	1.72	1.72	2.50	1.61	1.39	1.79	2.00

	IT	LT	LV	MT	NL	PL	PT	RO	SI	SK
Profitability (% of total assets, if not otherwise indicated)										
Net interest income	1.79	2.12	2.32	1.37	1.05	3.04	1.77	3.87	2.19	2.49
Net non-interest income	1.66	0.96	1.71	0.51	1.02	2.19	1.47	2.32	1.54	1.45
Total expenses	2.05	1.62	2.01	0.58	1.41	3.10	1.73	3.70	2.21	2.14
Profits (after tax) (ROA)	0.77	1.06	1.66	1.02	0.47	1.56	1.01	1.79	0.89	1.27
Profits (after tax) (% Tier 1) (ROE)	16.82	22.79	26.41	12.93	14.55	21.15	18.04	22.97	14.98	22.01
Net interest income (% of total income)	51.86	68.85	57.60	72.88	50.67	58.06	54.73	62.48	58.72	63.12
Net non-interest income (% of total income)	48.14	31.15	42.40	27.12	49.33	41.94	45.27	37.52	41.28	36.88
Cost-to-income ratio (% of total income)	59.42	52.57	49.87	30.75	68.09	59.26	53.23	59.80	59.29	54.37
Solvency										
Overall solvency ratio	10.12	9.78	10.08	22.05	11.46	13.24	10.93	13.34	10.78	10.93
Tier 1 ratio	7.06	6.62	8.68	20.81	9.25	12.93	8.10	11.53	8.27	11.17
Liquidity (% of amounts owed to credit institutions)										
Liquid asset ratio (cash and loans to credit institutions)	74.36	41.33	55.68	37.22	62.51	154.88	85.94	217.79	35.46	191.95
Balance sheet structure (% of total assets)										
Debt securities	18.22	12.04	7.57	39.98	16.84	23.40	12.73	2.26	23.37	23.82
Loans to customers	59.74	70.60	68.44	43.40	58.43	51.72	70.62	58.34	60.88	49.30
Amounts owed to credit institutions	16.55	34.17	37.97	36.44	17.48	13.67	13.24	15.98	33.11	11.62
Amounts owed to customers	41.36	50.66	48.22	34.89	40.77	67.65	46.41	67.13	50.93	69.57
Subordinated liabilities	2.09	1.82	1.07	3.88	1.31	0.43	2.93	1.20	2.69	0.09

Source: BSC.

Table 14 Key country-level indicators for banks in non-IFRS reporting countries: all banks

(2006)

	AT	DE	HU	LU	SE	UK
Profitability (% of total assets, if not otherwise indicated)						
Net interest income	1.60	0.84	3.82	0.49	1.01	1.42
Net non-interest income	0.98	0.91	1.81	0.99	0.91	0.81
Total expenses	1.59	1.14	3.32	0.60	1.05	0.91
Profits (after tax and extraordinary items) (ROA)	0.94	0.31	1.43	0.73	0.73	0.71
Profits (after tax and extraordinary items) (% Tier 1) (ROE)	22.52	10.24	21.47	18.35	20.38	17.50
Net interest income (% of total income)	62.05	47.96	67.83	33.32	52.46	63.73
Net non-interest income (% of total income)	37.95	52.04	32.17	66.68	47.54	36.27
Cost-to-income ratio (% of total income)	61.51	65.19	58.81	40.25	54.41	40.97
Solvency						
Overall solvency ratio	11.61	11.67	11.49	15.05	9.91	13.97
Tier 1 ratio	7.85	7.69	9.39	13.46	7.30	8.53
Liquidity (% of amounts owed to credit institutions)						
Liquid asset ratio 1 (cash and short-term government debt)	29.93	6.49	75.89	5.65	36.89	7.34
Liquid asset ratio 2 (ratio 1 + loans to credit institutions)	119.50	74.21	144.89	107.75	105.38	84.55
Liquid asset ratio 3 (ratio 2 + debt securities issued by public bodies)	119.76	74.21	145.48	124.09	105.38	103.42
Balance sheet structure (% of total assets)						
Debt securities	2.63	24.16	1.47	27.75	10.50	7.71
Loans to customers	48.61	41.48	61.93	20.91	60.10	54.66
Shares and participating interest	13.08	5.33	0.85	2.58	2.07	3.53
Amounts owed to credit institutions	23.18	28.72	19.64	41.92	12.77	13.25
Amounts owed to customers	40.19	35.22	57.60	38.24	31.37	41.56
Subordinated liabilities	2.64	1.35	2.32	1.33	2.37	1.41

Source: BSC.

Table 15 Key country-level indicators for banks in IFRS reporting countries: all banks

(2006; changes from 2005 in percentage points)

	BE	BG	CY	CZ	DK	EE	ES	FI	FR	GR	IE
Profitability (% of total assets, if not otherwise indicated)											
Net interest income	-0.06	-0.36	-0.16	0.12	-0.13	-0.01	0.00	0.05	-0.08	-0.04	0.08
Net non-interest income	0.35	-0.06	0.02	-0.21	0.13	-0.27	0.10	0.35	0.14	-0.01	0.02
Total expenses	0.00	-0.28	-0.37	-0.12	-0.02	-0.26	-0.08	0.07	0.00	-0.15	0.02
Profits (after tax) (ROA)	0.21	0.12	0.42	-0.06	0.05	-0.09	0.13	0.14	0.05	-0.02	0.08
Profits (after tax) (% Tier 1) (ROE)	6.55	1.89	7.51	-0.65	0.09	-0.15	3.19	4.16	1.09	0.62	-0.06
Net interest income (% of total income)	-12.44	-1.25	-2.36	4.38	-7.40	4.60	-2.16	-9.95	-5.05	-0.08	1.19
Net non-interest income (% of total income)	12.44	1.25	2.36	-4.38	7.40	-4.60	2.16	9.95	5.05	0.08	-1.19
Cost-to-income ratio (% of total income)	-9.85	-0.75	-11.34	-1.74	-1.42	-3.58	-4.96	-6.53	-1.85	-3.29	-2.00
Solvency											
Overall solvency ratio	0.13	-0.82	-0.17	-0.80	0.27	0.08	-0.48	-1.87	0.14	-1.04	-0.65
Tier 1 ratio	-0.04	-0.73	0.05	-1.48	0.10	-1.36	-0.61	-1.83	0.45	-1.03	0.07
Liquidity (% of amounts owed to credit institutions)											
Liquid asset ratio (cash and loans to credit institutions)	5.22	56.70	-14.67	-16.71	-19.71	-27.74	5.43	7.90	1.55	6.99	10.63
Balance sheet structure (% of total assets)											
Debt securities	0.68	-1.71	1.95	1.86	-2.43	0.21	-3.93	-2.31	-0.96	-0.01	-3.49
Loans to customers	-1.83	-1.58	-3.78	5.41	2.90	2.60	4.97	0.97	1.31	1.93	4.14
Amounts owed to credit institutions	-0.84	-2.97	0.78	-2.37	2.59	11.13	-2.66	0.30	0.61	-2.26	-4.00
Amounts owed to customers	-8.28	3.15	-5.21	1.41	-0.05	-7.80	-0.77	-1.01	0.08	-0.02	4.24
Subordinated liabilities	0.01	0.20	-0.67	0.39	-0.04	1.21	-0.04	-0.12	-0.15	0.28	0.20

	IT	LT	LV	MT	NL	PL	PT	RO	SI	SK
Profitability (% of total assets, if not otherwise indicated)										
Net interest income	0.29	0.13	-0.14	-0.01	-0.06	-0.14	0.02	-0.60	-0.21	0.37
Net non-interest income	0.20	-0.03	-0.22	-0.15	0.09	-0.13	0.02	-0.10	0.01	0.55
Total expenses	0.23	-0.13	-0.33	-0.13	0.04	-0.28	-0.14	-0.49	-0.14	0.15
Profits (after tax) (ROA)	0.17	0.19	-0.03	0.05	-0.03	0.00	0.16	-0.24	0.05	0.28
Profits (after tax) (% Tier 1) (ROE)	3.85	5.60	-0.88	-1.92	-0.49	1.19	2.43	0.66	-1.64	4.55
Net interest income (% of total income)	1.22	2.00	1.52	5.16	-3.64	0.26	-0.05	-2.41	-2.42	-6.95
Net non-interest income (% of total income)	-1.22	-2.00	-1.52	-5.16	3.64	-0.26	0.05	2.41	2.42	6.95
Cost-to-income ratio (% of total income)	-2.05	-6.41	-3.32	-3.95	0.99	-2.17	-5.06	-1.02	-0.49	-11.44
Solvency										
Overall solvency ratio	0.15	-0.05	0.09	1.59	-0.23	-1.30	-0.34	-2.64	0.83	-3.73
Tier 1 ratio	-0.09	-0.62	0.01	2.00	-0.16	-1.46	0.25	-2.77	1.14	-4.18
Liquidity (% of amounts owed to credit institutions)										
Liquid asset ratio (cash and loans to credit institutions)	3.67	-16.07	-25.32	4.78	5.86	-36.16	3.63	-85.52	-4.19	41.92
Balance sheet structure (% of total assets)										
Debt securities	-2.19	-0.06	-2.53	-4.01	-2.16	-2.39	0.84	-7.76	-4.61	-1.06
Loans to customers	1.00	3.23	5.71	2.72	2.05	3.69	0.66	8.10	4.37	11.35
Amounts owed to credit institutions	0.08	4.76	8.40	1.58	-1.47	2.08	-1.48	4.88	3.89	-11.54
Amounts owed to customers	0.97	-6.70	-8.75	-4.37	-0.94	-1.43	-2.33	-2.45	-3.36	9.79
Subordinated liabilities	-0.54	1.15	0.09	1.11	-0.19	-0.12	-0.33	0.21	0.48	0.01

Source: BSC.
Note: Figures for BE should be interpreted with caution since 2005 data are based on Belgium GAAP.

Table 16 Key country-level indicators for banks in non-IFRS reporting countries: all banks

(2006; changes from 2005 in percentage points)

	AT	DE	HU	LU	SE	UK
Profitability (% of total assets, if not otherwise indicated)						
Net interest income	*0.05*	*-0.02*	*-0.41*	*0.02*	*-0.04*	*0.01*
Net non-interest income	*0.04*	*0.15*	*0.23*	*0.01*	*0.08*	*0.10*
Total expenses	*0.01*	*0.03*	*0.11*	*-0.15*	*0.00*	*0.03*
Profits (after tax and extraordinary items) (ROA)	*0.31*	*0.04*	*-0.37*	*0.22*	*0.07*	*0.03*
Profits (after tax and extraordinary items) (% Tier 1) (ROE)	*6.78*	*0.80*	*-3.28*	*5.72*	*0.86*	*0.57*
Net interest income (% of total income)	*-0.37*	*-5.02*	*-4.99*	*1.01*	*-3.19*	*-2.68*
Net non-interest income (% of total income)	*0.37*	*5.02*	*4.99*	*-1.01*	*3.19*	*2.68*
Cost-to-income ratio (% of total income)	*-1.78*	*-3.45*	*3.64*	*-10.97*	*-0.90*	*-0.78*
Solvency						
Overall solvency ratio	*-0.03*	*0.22*	*-0.49*	*-0.45*	*-0.08*	*-0.04*
Tier 1 ratio	*0.04*	*0.21*	*-1.24*	*0.36*	*0.12*	*0.09*
Liquidity (% of amounts owed to credit institutions)						
Liquid asset ratio 1 (cash and short-term government debt)	*-4.48*	*0.70*	*-2.87*	*-0.30*	*3.01*	*-2.17*
Liquid asset ratio 2 (ratio 1 + loans to credit institutions)	*2.77*	*-3.20*	*-4.93*	*2.95*	*-0.29*	*-6.13*
Liquid asset ratio 3 (ratio 2 + debt securities issued by public bodies)	*2.43*	*-3.20*	*-4.46*	*-0.13*	*-0.29*	*-11.90*
Balance sheet structure (% of total assets)						
Debt securities	*-0.61*	*0.32*	*0.36*	*-0.12*	*1.19*	*-0.39*
Loans to customers	*-1.05*	*-0.01*	*-0.25*	*-0.17*	*2.15*	*-0.78*
Shares and participating interest	*1.34*	*0.45*	*0.10*	*1.28*	*0.65*	*0.42*
Amounts owed to credit institutions	*-1.05*	*-0.37*	*-0.56*	*-1.46*	*-0.35*	*1.61*
Amounts owed to customers	*-0.19*	*0.96*	*-1.42*	*1.09*	*1.52*	*0.72*
Subordinated liabilities	*-0.26*	*-0.01*	*0.87*	*0.11*	*-0.09*	*-0.05*

Source: BSC.

Table 17 EU banks' ratings

(October 2007)

	Moody's	S&P	Fitch	Total
Ratings available out of sample	45	46	45	136
Outlooks/watch available	44	45	45	134
Rating average	Aa1	AA-	AA-	AA-
Outlook/watch average	0	0.13	0.2	0.11
Number of negative outlooks	4	1	1	6
Number of positive outlooks	4	7	10	21

Rating codes	Moody's	S&P	Fitch	Numerical equivalent
	Aaa	AAA	AAA	1
	Aa1	AA+	AA+	2
	Aa2	AA	AA	3
	Aa3	AA-	AA-	4
	A1	A+	A+	5
	A2	A	A	6
	A3	A-	A-	7
	Baa1	BBB+	BBB+	8
	Baa2	BBB	BBB	9
	Baa3	BBB-	BBB-	10
	Ba1	BB+	BB+	11
	Ba2	BB	BB	12
	Ba3	BB-	BB-	13

Sources: Moody's, Standard and Poor's, Fitch Ratings and ECB calculations.

Table 18 Characteristics of households broken down by mortgage debt servicing burdens in selected EU countries

(percentage of net income left after servicing mortgage debt; median values, except for the age group)

Country	Variable	Unit	< 0%	0-50%	50-70%	> 70%	all
Hungary (2007)	share of net income left	%		38.4	62.6	83.7	79.8
	loan-to-value ratio	%		40.7	44.0	23.4	26.7
	loan-to-net income ratio	%		576.6	344.0	108.3	142.7
	mortgage loan	EUR thousands		23.5	20.8	9.0	11.8
	maturity of mortgage loan	years		13.0	16.0	11.0	12.0
	net income	EUR thousands		5.9	6.7	8.3	7.7
	total debt	EUR thousands		23.5	22.2	10.2	12.9
	total assets	EUR thousands		9.8	1.0	1.0	1.0
	age group	years		2.0	2.1	2.2	2.1
	share of households	%	0.0	2.1	20.3	77.6	100.0
	share of total mortgage debt	%	0.0	4.9	35.3	59.9	100.0
Italy (2004)	share of net income left	%	-36.0	44.5	64.0	86.0	84.5
	loan-to-value ratio	%	100.0	100.0	85.0	65.0	66.7
	loan-to-net income ratio	%	1,496.4	802.3	449.1	159.4	175.7
	mortgage loan	EUR thousands	120.0	86.0	80.0	60.0	60.0
	maturity of mortgage loan	years	20.0	20.0	15.0	15.0	15.0
	net income	EUR thousands	11.0	16.2	20.3	35.8	33.1
	total debt	EUR thousands	120.0	95.0	64.0	38.0	40.0
	total assets	EUR thousands	505.5	194.8	195.0	211.1	206.0
	age group	years	2.2	2.1	2.0	2.2	2.2
	share of households	%	0.5	3.0	10.0	86.5	100.0
	share of total mortgage debt	%	0.7	4.5	12.7	82.1	100.0
Lithuania (2007)	share of net income left	%	-18.8	40.6	64.2	82.8	78.5
	loan-to-value ratio	%	n/a	n/a	n/a	n/a	n/a
	loan-to-net income ratio	%	1,041.7	750.0	427.6	195.3	242.4
	mortgage loan	EUR thousands	57.9	65.2	57.9	26.5	29.0
	maturity of mortgage loan	years	25.0	31.5	25.0	20.0	25.0
	net income	EUR thousands	5.6	10.4	12.3	13.9	13.2
	total debt	EUR thousands	58.4	65.8	58.4	27.1	29.5
	total assets	EUR thousands	n/a	n/a	n/a	n/a	n/a
	age group	years	1.0	1.4	1.6	1.9	1.8
	share of households	%	0.6	6.2	19.9	73.3	100.0
	share of total mortgage debt	%	1.0	14.6	28.4	56.0	100.0
Netherlands (2006)	share of net income left	%	-73.6	33.5	63.2	84.4	82.0
	loan-to-value ratio	%	75.3	80.8	74.3	37.9	42.8
	loan-to-net income ratio	%	420.9	1,109.9	656.2	312.4	358.1
	mortgage loan	EUR thousands	112.0	164.0	168.5	94.0	102.5
	maturity of mortgage loan	years	22.5	28.5	30.0	30.0	30.0
	net income	EUR thousands	26.8	14.8	27.0	30.2	29.5
	total debt	EUR thousands	112.0	164.0	169.5	95.0	106.5
	total assets	EUR thousands	171.8	229.6	270.4	285.0	279.4
	age group	years	3.0	2.2	2.2	2.6	2.6
	share of households	%	0.5	2.9	14.3	82.2	100.0
	share of total mortgage debt	%	0.5	4.2	21.9	73.4	100.0
Poland (2005)	share of net income left	%	-4.8	39.1	63.0	87.2	86.3
	loan-to-value ratio	%	n/a	n/a	n/a	n/a	n/a
	loan-to-net income ratio	%	759.0	450.8	269.2	92.2	99.7
	mortgage loan	EUR thousands	134.3	23.7	22.2	7.6	8.1
	maturity of mortgage loan	years	n/a	n/a	n/a	n/a	n/a
	net income	EUR thousands	17.7	5.4	8.5	8.4	8.4
	total debt	EUR thousands	134.3	24.7	22.2	8.1	8.6
	total assets	EUR thousands	n/a	n/a	n/a	n/a	n/a
	age group	years	2.0	2.6	2.0	2.1	2.1
	share of households	%	0.3	1.0	7.0	91.7	100.0
	share of total mortgage debt	%	1.8	4.0	16.7	77.8	100.0

Sources: BSC and ECB calculations.
Note: "Age group" is included as a qualitative variable in the dataset. Categories refer to the age of a household's head and are defined as follows: 1= 18-29 years, 2 = 30-49 years, and 3 = >49 years.

Table 18 Characteristics of households broken down by mortgage debt servicing burdens in selected EU countries (cont'd)

(percentage of net income left after servicing mortgage debt; median values, except for the age group)

Country	Variable	Unit	< 0%	0-50%	50-70%	> 70%	all
United Kingdom (2005)	share of net income left	%	-20.0	34.2	63.8	82.4	77.5
	loan-to-value ratio	%	36.7	49.4	46.7	32.4	36.7
	loan-to-net income ratio	%	1,666.7	714.3	427.4	189.4	250.0
	mortgage loan	EUR thousands	116.7	129.9	102.1	73.0	84.6
	maturity of mortgage loan	years	n/a	n/a	n/a	n/a	n/a
	net income	EUR thousands	8.8	15.8	26.3	39.8	35.0
	total debt	EUR thousands	134.2	155.4	125.6	87.8	99.0
	total assets	EUR thousands	n/a	n/a	n/a	n/a	n/a
	age group	years	2.2	2.0	2.0	2.1	2.1
	share of households	%	1.7	7.5	19.4	71.4	100.0
	share of total mortgage debt	%	2.9	11.4	24.9	60.7	100.0
Total	share of households	%	0.7	3.9	14.4	80.9	100.0
	share of total mortgage debt	%	1.8	4.1	16.7	76.8	100.0

Sources: BSC and ECB calculations.
Note: "Age group" is included as a qualitative variable in the dataset. Categories refer to the age of a household's head and are defined as follows: 1= 18-29 years, 2 = 30-49 years, and 3 = >49 years.

Box 4

MICRO DATA ON HOUSEHOLDS THAT HOLD MORTGAGE DEBT

Seven EU countries have either submitted micro data (Hungary, Italy, Lithuania, Poland and the United Kingdom) to, or have shared results derived from analysing micro data (Denmark and the Netherlands) with, the ECB for the purpose of analysing balance sheet conditions of households with mortgage debt and of quantifying key vulnerabilities and risk in selected EU mortgage markets. Six of these countries (i.e. all countries except Denmark [1]) made micro data available either directly (Hungary, Italy, Lithuania, Poland and the United Kingdom) or indirectly (the Netherlands), thereby allowing the identification of vulnerable households by combining mortgage loan and borrower characteristics and by defining thresholds values for vulnerability indicators based thereon. However, despite initiatives like the Luxembourg Wealth Study and the EU Statistics on Income and Living Conditions (Eurostat; the European Community Household Panel series that started in 1994 were discontinued after 2001), no harmonised dataset covering household characteristics, or a harmonised approach to gathering these data through national household surveys, exists in the EU. Therefore, using micro data derived from different national household surveys to assess mortgage market risks inevitably limits the cross-country comparability of such risks. To the extent that the data gathered through these surveys contain similar variables, albeit with different underlying definitions, rough comparisons can be made, even so. This box reflects on differences in data definitions and availability.

Table A illustrates that the available data are rather heterogeneous in terms of (i) the year of reporting, (ii) the definition of the variables that constitute the vulnerability indicators and (iii) the coverage of the various variables themselves. Two of the four vulnerability indicators (i.e. the share of net income left after servicing mortgage debt and the LTI ratio) could be constructed for all six countries, while the other two could be calculated for four or five countries only. The LTI and LTV ratios differ from country to country in both the nominator and the denominator. The nominator primarily refers to the loan residual, which is available for all countries except Lithuania. The denominators refer to a household's net income and either the market value (current sale price estimated by the homeowner) or the book value (purchase price) of the residential property respectively. While the denominator for the LTI ratio seems to be homogenous across all countries, the actual definition of a household's net income may – without going into detail – differ considerably. At the same time, the variation in a household's net income tends to be larger than that in its gross income (due to e.g. changes in fiscal policy and welfare state contributions and provisions, and progressive income tax systems). However, as households' gross income is only available for two countries, and does not account for differences in the fiscal treatment of mortgage loans, net income is preferred here. Moreover, a household's net income is more instructive as it more accurately captures its budget constraint. Finally, the interest-only mortgage proxy could be calculated for all countries except Poland, for which data on mortgage interest rates are not available. For the countries for which data on the type of mortgage loan are available, the interest-only mortgage proxy has been adjusted for those loans that actually have been contracted as an interest-only mortgage loan (i.e. the United Kingdom and the Netherlands). Although clearly imperfect, as it does not correct for different incentives and, hence, demand and supply features due to e.g. the tax deductibility of mortgage interest payments, this measure – by virtue of the lack of data on interest-rate variability in

1 Te analysis for Denmark was based on tax return data from Statistics Denmark that could not be disclosed.

Table A Data availability

(number of observations per variable by country)

	United Kingdom	Netherlands	Italy	Lithuania	Hungary	Poland	total
characteristics dataset							
year	2005	2006	2004	2007	2007	2005	
source	Financial Services Authority	De Nederlandsche Bank Household Survey	Bank of Italy Survey of Household Income and Wealth	Bank of Lithuania	Magyar Nemzeti Bank	National Bank of Poland	
loan characteristics							
loan principal	na	546	628	161	na	na	1,335
loan residual	1,076	527	628	na	419	796	3,446
debt service costs	1,076	546	628	161	419	796	3,626
market value of property	1,073	536	628	na	419	na	2,656
book value of property	na	na	628	na	na	na	628
interest rate	762	519	609	125	419	na	2,434
duration interest rate fixation	na	471	na	na	na	na	471
maturity	na	517	628	160	419	na	1,724
borrower characteristics							
gross income	1,076	544	na	na	na	na	1,620
net income	1,076	546	628	161	419	796	3,626
age group	1,076	546	628	161	419	796	3,626
vulnerability indicators							
share of net income left asmd	1,076	546	628	161	419	796	3,626
loan-to-net income ratio	1,076	546	628	161	419	796	3,626
loan-to-value ratio	1,073	546	628	na	419	na	2,666
interest only mortgage proxy	80	241	39	0	20	na	380

Source: BSC and ECB calculations.
Note: Sample sizes reported here may differ from those originally submitted as a selection procedure has been applied to the data. Observations that did not include data on mortgage debt service costs, the size of the loan, or borrowers' income (gross or net) have been omitted. Furthermore extreme outliers that could not be reconciled with common sense have been omitted. All in all, some 25% of all observations have been excluded, leaving 3,626 country-household observations that could be used in the analysis.

mortgage contracts – approximates which loans entail significant borrower interest-rate risk. A consequence of the uneven availability of vulnerability indicators is that the number of countries included in the analysis declines with a rising number of vulnerability indicators used, implying that a trade-off exists between the accuracy of estimates and the coverage of countries. Therefore, the analysis initially concentrated on a key vulnerability indicator that is available for all six countries, a household's net income left after servicing mortgage debt, and subsequently refined the degree of vulnerability by adding vulnerability indicators one by one.

The heterogeneous nature of the data distorts the analysis presented in Section 5 in a number of ways. First, while useful for simple illustration purposes (as in Charts 5.9 and 5.11, for instance), aggregating seemingly identical items that are in fact differently defined and measured at different years does not make much sense. Any conclusion derived from comparative analysis using these data is indicative at best, and should not be interpreted as "hard" evidence. Second, country-level analyses of risks and vulnerabilities are also imperfect as country-specific factors that affect demand and supply conditions in housing and mortgage markets, both cyclical and structural, have not been taken into account. Moreover, the available data on loan and borrower

characteristics do not allow a detailed look at a borrower's default probability or a lender's actual exposure at risk, implying that the methodology and terms used to arrive at an estimation of mortgage credit risks remain rather crude. Finally, the risks and vulnerabilities identified and quantified do not reflect current or recent conditions in the selected EU mortgage markets, nor the change in these over time, as the data are only available at one point in time, about one to three years ago, and can, as such, only provide a snapshot of the risks and vulnerabilities at the time. A more meaningful analysis of risks and vulnerabilities in EU mortgage markets should include not only stock, but also flow variables, requiring some time-series data.