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LIST OF COUNTRY ABBREVIATIONS

AT	Austria
BE	Belgium
BG	Bulgaria
CA	Canada
CH	Switzerland
CN	China
CY	Cyprus*
CZ	Czech Republic*
DE	Germany
DK	Denmark
EE	Estonia*
ES	Spain
FI	Finland
FR	France
GR	Greece
HU	Hungary*
IE	Ireland
IT	Italy
JP	Japan
LT	Lithuania*
LU	Luxembourg
LV	Latvia*
MT	Malta*
NL	Netherlands
NO	Norway
PL	Poland*
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia*
SK	Slovakia*
UK	United Kingdom
US	United States
EEA	European Economic Area (18 countries; EU-15 plus Norway, Iceland, and Liechtenstein)
EU (EU-25)	European Union (25 countries, after enlargement on 1 May 2004)
EU-15	European Union (15 countries, before enlargement on 1 May 2004)
MU-12	Monetary Union (12 countries participating to the euro area)
NMS	New Member States (10 countries, marked with *)
Extra-EU	countries outside of the European Union



EXECUTIVE SUMMARY

The EU banking structures report contains the yearly review of the structural developments in the EU banking sector. The analysis is based on a wide range of indicators and on an exchange and assessment of qualitative information by the Banking Supervision Committee (BSC) of the European System of Central Banks (ESCB). The BSC is composed of representatives of banking supervisory authorities and central banks of EU countries and the ECB. This is the fifth report since 2002.

The report begins with an overview of the main regulatory initiatives and general trends in the banking sector regarding market consolidation, integration and internationalisation, market structures, and developments in intermediation. The analysis focuses on developments that took place in 2005 and until mid-2006. This overall analysis is followed by two special features addressing emerging issues related to the banking sector: the impact of ageing on EU banks, and the changing structure of EU banks' funding and its implications for their activities.

Following the completion of the Financial Services Action Plan (FSAP), aimed at creating a single market in financial services in Europe by 2005, developments in the EU regulatory framework focused on furthering the implementation of the measures approved under the FSAP. In this context, the main legislative initiatives include the new Capital Requirements Directive implementing the Basel II framework, the publication of a regulation requiring that all listed companies publish their consolidated accounts in accordance with International Financial Reporting Standards (IFRS), and the revision of corporate governance frameworks.

Consolidation, integration and internationalisation are important factors that affect the structure of the EU banking system. Domestic consolidation and concentration levels continued to rise in 2005. Integration appears more advanced in the wholesale than in the retail sector. However, the recent pick-up in EU cross-border M&As has increasingly involved retail market intermediaries. This

reflects a desire amongst banks for more diversified revenue sources, and a possible higher demand by households for consumer and mortgage credit. Increased cross-border banking tends to strengthen competition, improve service quality and foster innovation. However, it may also result in new challenges for both banks and supervisors. Governance rules, internal procedures and risk management techniques should be adequate and consistent with the types of risks to which internationally active complex financial groups are exposed.

This section also includes the results of a survey conducted on a set of large European banking groups with significant cross-border banking activities (see Box 1). The survey aimed at monitoring the major developments in EU banks' cross-border presence, comparing data collected in 2001, 2003 and 2005. Over the years, the banking groups involved in the exercise experienced significant growth in total assets, a trend reinforced by the current expansion process. Although trends differed across countries, the degree of internationalisation increased, in terms of both presence in foreign markets and the share of foreign total assets. In the New Member States (NMS), the market share owned by foreign banking groups remains very high, reaching almost complete control of the banking sector in some countries.

EU banking markets are still characterised by important structural differences across member states (reflecting cultural diversity and distinct legislative and supervisory systems). Notwithstanding, all countries show strong growth in banking assets, especially in certain Central and Eastern European Countries where a catching up process is taking place.

At the same time, financial institutions' non-bank assets are also growing rapidly. Banks appear to be exploiting this trend towards disintermediation by developing fee-earning activities, including investment banking and asset management businesses. From a financial stability perspective, this process may lead to

greater diversification of income sources, which may in turn help lower banks' risks and stabilise profits, provided that the different income subcomponents are not perfectly correlated. Conversely, channelling risks away from banks to other financial intermediaries (often less regulated) might make risks more opaque.

The chapter on the impact of ageing on EU banks identifies the relevant links between demographic change and bank profitability. The analysis was restricted to the EU and to retail banking. The overall impact of demographic change on banks is difficult to assess, as different factors may have a partly counterbalancing impact on balance sheets and profitability. Indeed, demographic change may exert downward pressure on bank intermediation ratios, demand for consumer credit and mortgages, and net interest income; but it may also spur the development of new services and new products tailor-made for senior customers (e.g. reverse mortgages). This could partly outweigh the decreasing demand for bank loans to younger customers. Furthermore, non-interest income may increase, and cooperation and/or cross-shareholding involving banks, insurance companies and investment companies is likely to foster. Banks may also respond to demographic changes in domestic markets by diversifying internationally towards emerging market economies with different population cohorts. The potential burgeoning of new products may be accompanied by new risks (i.e. longevity risk), which will require banks to adapt their risk management.

The chapter on the changing structure of EU banks' funding and its implications for their activities reports limited aggregate changes since 2000. Customer deposits still constitute the largest part of banks' funding base, though they have become more diversified, both at a sectoral – with an increase in wholesale deposits – and geographic level. This is making the EU financial system more stable because greater diversification should improve resilience against exogenous shocks.

There has been a slight shift towards short-term market funding, which can be related to: changes in banks' asset portfolios; banks' desire to adjust their asset-liability mismatch position or to diversify their funding base; changes in the interest rate environment or in banks' risk management; and to the availability of new instruments.

The shortening of the average maturity of banks' funding may affect profitability and stability. Banks' recourse to specific instruments, such as mortgage bonds and securitisation, improves their asset and liability management but entails a larger dependence on money and capital markets, which are characterised by a higher cyclical demand compared with retail deposits, which are relatively stable and interest rate insensitive.

The increase in wholesale deposits, namely when replacing the more stable retail deposits, may: expose banks to greater interest rate and liquidity risks; increase the effective monitoring by informed debt holders; and impact negatively on banks' profitability. The latter may be partly offset by the fact that banks which engage more in non-deposit funding channels tend to benefit from a high rating and hence lower funding costs. Indeed, the increasing importance of wholesale funding sources may put large banks in a more comfortable position, as scale advantages are likely to be more important in obtaining such funding than in the case of deposit collection.

Intra-group lending is also rising. This may lower the cost of financing the activities of banking groups' subsidiaries, because it limits the need to resort to more expensive market funding, hence, improving the banking group's profitability. Notwithstanding the benefits associated with a more efficient functioning of groups' internal capital flows, central liquidity management may increase intra-group and cross-border contagion risks, with a potential impact on financial stability.

I OVERVIEW OF DEVELOPMENTS IN THE EU BANKING SECTOR IN 2005

I.1 DEVELOPMENTS IN THE REGULATORY FRAMEWORK

This section focuses on regulatory developments in Europe and relevant initiatives at the international level.

Following the completion of the Financial Services Action Plan (FSAP) aimed at creating a single market in financial services in Europe by 2005¹, regulatory developments in the EU in the second half of 2005 and the first half of 2006 focused on further advancing the implementation of the measures adopted under the FSAP and on laying out objectives and priorities for the next five years. Among the main FSAP regulatory initiatives that will impact on the EU banking system, the following measures stand out: the new Capital Requirements Directive (CRD), namely Directives 2006/48 and 2006/49 adopted on 14 June 2006 which implement the Basel II framework in the EU; the Markets in Financial Instruments Directive (MiFID), aimed at reinforcing competition between investment services providers and enhancing investor protection; the regulation introducing the International Financial Reporting Standards (IFRS); and the review of company law and corporate governance frameworks in the EU².

The CRD in particular will have an important impact on the structural developments in the banking system. The new framework gives banks an incentive to achieve higher efficiency by improving their risk management systems and bringing them in line with good market practices. It also introduces lower capital requirements for certain types of businesses (e.g. residential mortgages), which may lead banks to rebalance their portfolios in the future. The short-term impact of lower capital requirements is expected to be rather limited due to the introduction of capital floors in a transition phase.

The implementation of the MiFID will enhance investor protection. The new rules are expected to further increase market efficiency and

improve the quality of the services offered by intermediaries and markets. The adoption of IFRS and the measures addressing corporate governance issues respond to the need for improving transparency, strengthening investor confidence and promoting market discipline.

The Lamfalussy committees have stepped up their efforts towards implementing the legislation adopted under the FSAP. In that context, the Committee of European Banking Supervisors (CEBS), has issued several important documents providing guidance on the implementation of the CRD. The main documents, published in the form of guidelines, are as follows. First, the guidelines on supervisory cooperation for cross-border banking and investment firm groups establish the respective responsibilities and the mechanisms for cooperation between the involved authorities. A second set of guidelines introduce a minimum harmonised reporting framework, which aims at reducing the reporting burden of institutions interacting with different authorities. A third set deals with the application of the supervisory review process under the CRD that sets out the modalities of the dialogue and the interaction between intermediaries and supervisors as well as the supervisory tools available for corrective interventions. A fourth set covers supervisory procedures for validation and assessment of banks' internal models for capital adequacy purposes with a view to streamlining the approval process and contributing to a level playing field. The final batch of guidelines, regarding the development of a common European supervisory disclosure framework, is expected to make supervisory

1 By the end of 2005, 41 out of the 42 planned measures were adopted, with the exception of the proposed 14th Company Law Directive on Cross-border Transfer of Registered Office, on which a consultation was launched in September 2005.

2 See the adoption on 25 November 2005 of the Cross-Border Mergers Directive, considered key in facilitating cross-border mergers; the adoption on 14 June 2006 of Directive 2006/46/EC amending the 4th and 7th Company Law Directives addressing issues of transparency and management statement of responsibility for company accounts; the ongoing revision of the 2nd Company Law Directive modifying rules relating to companies' capital structures; and the proposal of 5 January 2006 for a directive regarding the exercise of voting rights by shareholders.

practices more transparent and promote the convergence of supervisory approaches. More recently, the CEBS has initiated work on operational networking procedures which will focus on issues arising from the implementation of both the CRD and the CEBS guidelines. Such procedures are aimed at enhancing a consistent day-to-day supervision and at supporting the exchange of information and experiences between consolidating and host supervisors of cross-border banking groups. Moreover, the CEBS published the results of the fifth quantitative impact study, or QIS 5, on the impact of the CRD's introduction in the EU³.

With regard to the priorities for the next five years, the Commission published in December 2005 its White Paper on Financial Services 2005-2010, outlining as main objectives the pursuit of "better regulation" (entailing, in particular, transparent consultation procedures and the undertaking of timely ex-ante impact assessments of new regulatory proposals), consolidation of existing legislation, strengthened supervisory co-operation and convergence, and increased competition in the offer of retail financial services. In particular, the Commission has identified two areas where carefully targeted initiatives might bring benefits to the EU economy: retail financial services and investment funds. To this end, the Commission has put forward two Green Papers for consultation highlighting possible areas of intervention with regard to mortgage credit and asset management. The latter Green Paper reviews the functioning of the legislative framework for investment funds provided for by the UCITS⁴ Directive and highlights some concrete short-term measures to ensure consistent implementation and more efficient operation of the management company passport. Furthermore, the viability of some longer-term improvements (i.e. to allow fund mergers and pooling, rationalisation of depository and custody services) are investigated with a view to making the cross-border market for UCITS more efficient.

The Commission is also investigating a number of supervisory procedures with a view to facilitating the conduct of cross-border banking and furthering the integration of the EU banking and financial market. This effort includes a number of parallel work streams. Among them, a proposal for a Directive amending Article 19 of the Codified Banking Directive (2006/48/EC)⁵, which covers the procedural rules and evaluation criteria for the prudential assessment of acquisitions and increase of shareholdings in a bank, aims at increasing the transparency and consistency of approval procedures, thus further facilitating cross-border consolidation⁶. A review of the Deposit Guarantee Schemes Directive (94/19/EC) is also under way in the banking sector. This review intends to assess whether the current rather heterogeneous framework needs further adaptation, in light of the increased cross-border business and of possible changes in arrangements concerning liquidity supervision, crisis management, winding-up and bankruptcy procedures. Also worth mentioning are: the revision of the Consumer Credit and Payment Services Directives, which will foster greater harmonisation of provisions in these areas; the creation of a Single Euro Payments Area (SEPA); and possible initiatives for improving the operation of clearing and settlement infrastructures at the EU level.

Moreover, the European Commission also started preparatory work on the review of the rules on banks' and investment firms' own funds, which should be developed in parallel with the efforts carried out at the international level, namely within the Basel Committee on

3 See CEBS website for related published documentation (www.c-eps.org).

4 Undertakings for Collective Investment in Transferable Securities.

5 Formerly Article 16 of the re-cast banking directive 2000/12/EC. Note also that the Commission's proposal provides for the amendment of all pertinent sectoral Directives as regards procedural rules and evaluation criteria for the prudential assessment of acquisitions and increase of shareholdings in the financial sector.

6 A number of EU countries, though, oppose the view that existing approval procedures create obstacles to cross-border consolidation.

Banking Supervision. At the same time, the Commission is undertaking a review of the large exposures' regime contained in the Codified Banking Directive. Looking ahead, these initiatives may have important structural implications for the banking system, by affecting industry practices in the selection of capital instruments and in the measurement and management of concentration risk.

At the international level, the Basel Committee on Banking Supervision (BCBS) worked in 2005 to further refine the new capital framework by providing more precise asset classification criteria for the trading and banking books. The BCBS also provided guidance on the treatment of the so-called double default issue, on the methodologies for estimating "loss given default" parameters under the scenario of an economic downturn, and on the treatment of counterparty credit risk. In 2006 the BCBS also published the results of its latest quantitative impact study of the revised capital rules and guidelines on enhancing corporate governance and home-host information sharing⁷.

Looking forward, the BCBS, with the publication of the revised capital framework, signalled its intention to revisit the definition of regulatory capital. As mentioned previously, the work at the European level should be carried out in parallel with the BCBS's work.

A new strand of work was recently initiated at the international level on the new challenges facing liquidity management in an increasingly complex financial world. These challenges require a thorough assessment of new potential emerging risks and inadequacies. The Joint Forum published a paper in May 2006⁸ based on the work of the ad hoc Working Group on Liquidity Risk established in 2004; the Basel Committee is planning to start a revision of its "Sound Practices for Managing Liquidity in Banking Organisations", issued in 2000. At the EU level, the European Commission is contemplating work on liquidity supervision, with the assistance of the European Banking

Committee (EBC) and the CEBS, in the context of its post-FSAP strategy in banking.

1.2 MARKET CONSOLIDATION

The aggregate number of credit institutions continued declining, confirming the trend of market consolidation (Chart 1)⁹. At the end of 2005, there were 6,308 credit institutions in the euro area, a decrease of 2.8% relative to the previous year and 12.5% since 2001. At the EU level, there were 8,684 institutions at year-end 2005, representing a decrease of 1.7% compared with the previous year and 10.9% relative to 2001. These figures show that internal consolidation has proceeded slightly faster in the euro area than in the EU-25, driven mainly by reductions in DE, FR and the NL¹⁰. In particular, the number of credit institutions declined in 14 countries, whereas 2004 levels were confirmed in FI, GR and LV. The number of credit institutions increased slightly in the remaining 8 countries, the only exception being PL, which showed a relevant increase (from 658 to 739). Overall, the number of credit institutions in the NMS has changed little relative to the EU-15 and 2004 figures, except for CZ (-20%) and PL (+12.3%) (see Table 1 in the Annex).

Conversely, the aggregate number of branches increased slightly from 2004 to 2005, as did the number of bank employees in several countries (Tables 1 and 2 in the Annex).

It may be argued that the domestic consolidation and rationalisation process, initiated in the 1990s and still quite strong in some countries

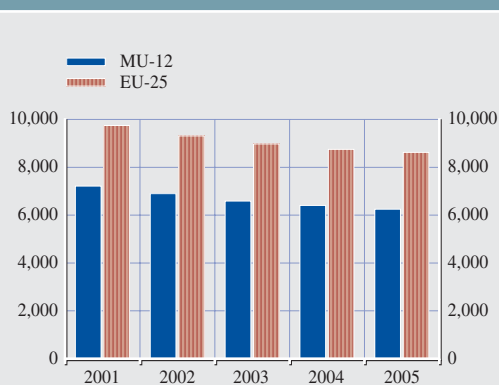
⁷ See *Results of the fifth quantitative impact study (QIS5)* on the BIS (www.bis.org) and CEBS websites; *Enhancing corporate governance for banking organisations*, February 2006; *Home-host information sharing for effective Basel II implementation*, June 2006 (both on www.bis.org).

⁸ *The management of liquidity risk in financial groups*, The Joint Forum, Basel, May 2006.

⁹ The trend has been uninterrupted since 1997.

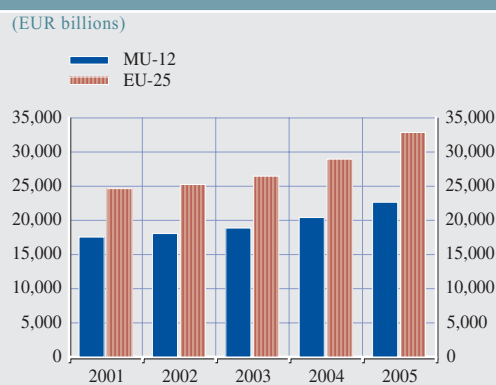
¹⁰ In the euro area only ES and IT inverted the declining trend observed in the past 5 years.

Chart 1 Number of credit institutions



Source: ECB. Computation based on figures in Annex 1

Chart 2 Total assets of credit institutions



Source: ECB. Computation based on figures in Annex 1.

(notably DE), though less pronounced in others, is still producing downsizing effects at the aggregate level.

Despite the decrease in the number of credit institutions, growth in banking assets is accelerating in the EU (Chart 2). At the end of 2005, banking assets stood at €32,882 billion, up 13.5% from the previous year. In the NMS, the increase of total assets was an even more striking 21.7%.

According to the existing empirical literature, the impact of consolidation on banking-sector performance remains controversial¹¹. While evidence of efficiency gains within banks that have consolidated is not clear-cut (also due to the difficulties in measuring efficiency improvements), a number of analyses suggest that banking consolidation tends to increase customer welfare by improving lending rates and credit access for borrowers, as well as – in the longer run – raising deposit rates.

In past years, concentration operations in the EU banking sector have been predominantly of a domestic nature. Between 1993 and 2003, the number of mergers and acquisitions involving domestic credit institutions represented about 80% of total consolidation activity in the EU¹². Apart from 1992, when cross-border mergers and acquisitions increased markedly in the run-

up to the Single Market, the share of cross-border concentrations has never come close to that of domestic operations.

European cross-border M&A activity picked up in the second half of 2005 and early 2006, subsequent to the slowdown registered after 2000 (Charts 3 and 4). As a result, the relative importance of cross-border M&As in the EU (compared with domestic consolidation) continued to grow in 2005 in terms of deal value, following the trend started in the previous year. In the period 1999-2003 EU cross-border consolidation concerned primarily intermediaries active in asset management and investment banking, whilst more recently it has involved retail-oriented institutions with well developed distribution networks.

A substantial number of EU cross-border mergers and takeovers were completed in 2005, including (listed by size): Unicredit-HypoVereinsbank; ABN-AMRO-Banca Antonveneta¹³; Föreningsparbanken¹⁴-

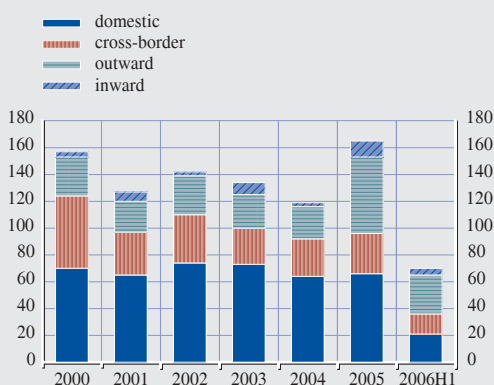
11 For a survey, see Amel, Barnes, Panetta and Salleo (2004), *Consolidation and efficiency in the financial sector: A review of the international evidence*, Journal of Banking & Finance, Volume 28, Issue 10, 2493-2519.

12 Walkner and Raes (2005), *Integration and consolidation in EU banking - an unfinished business*; European Economy – Economic Papers, no. 226.

13 The deal was completed in April 2006.

14 Föreningsparbanken changed its name to Swedbank in 2006.

Chart 3 M&As – number of deals

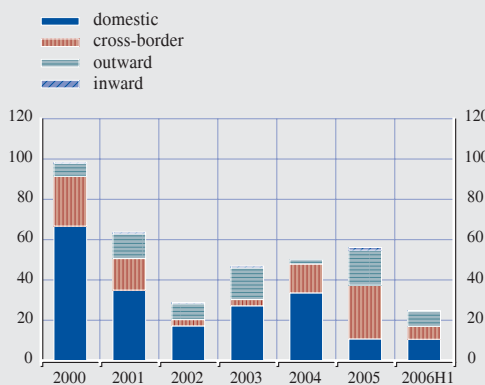


Source: Bureau Van Dijk, Zephyr.

Note: M&As include both controlling and minority stakes. For some of the deals, data is not reported. Cross-border M&A refers to inter-EU-25 transactions involving a non-domestic acquirer. *Inward* refers to M&A by a non-EU-25 bank in the EU-25 and *Outward* indicates M&A of EU-25 banks outside the EU-25.

Chart 4 M&As – deal values

(EUR billions)



Source: Bureau Van Dijk, Zephyr.

Note: M&As include both controlling and minority stakes. For some of the deals, data is not reported. Cross-border M&A refers to inter-EU-25 transactions involving a non-domestic acquirer. *Inward* refers to M&A by a non-EU-25 bank in the EU-25 and *Outward* indicates M&A of EU-25 banks outside the EU-25.

Hansabank. The success of the tender offer for the German group Bayerische Hypo-und Vereinsbank AG (HVB) launched in June 2005 by UniCredit created a group with a market value of about €60 billion and total consolidated assets of more than €700 billion. The year 2006 began with an important deal, as France's BNPP acquired the Italian group BNL (deal value of €10 billion)¹⁵.

Chart 3 shows that M&As involving institutions outside the EU also played a significant role in 2005 and early 2006. In particular, British banks were involved in relevant deals in South Africa, Malaysia and Korea. Austrian banks did the same in Romania. Such developments may imply that EU banks are finding more value for M&A activities outside the EU and/or that they are in a stronger position to carry out M&As than they were a few years ago.

Along with cross-border and extra-EU mergers, some relevant internal consolidation operations also took place in FR, DE, IT and ES¹⁶. Nevertheless, the large European deals appear to be dominated by cross-border deals.

Several possible drivers could have played an important role in the development of relevant cross-border M&A deals. The goal of improving the risk profile through regional diversification and the quest for access to new (and potentially more profitable) markets are certainly important factors in banks' choice to go abroad, particularly when domestic markets are mature or exhibit a high degree of concentration. When M&As are followed by adequate reorganisation processes, shareholder value can arise as a result of cost cutting and the development of complementary business lines – which carries the potential of increasing revenues and enhancing customer loyalty. However, implicit or explicit barriers (such as, for example, differences in language, culture, and regulatory or supervisory requirements) may limit the potential for improving efficiency.

In the coming years, the trend towards cross-border consolidation may receive further

¹⁵ Source: PwC and Bureau Van Dijk; only deals with ascertained or relevant value are reported.

¹⁶ Acquirers: Société Générale, Deutsche Postbank and Commerzbank, Capitalia and Banco Sabadell.



impulse from increasingly converging regulatory and accounting standards and EU institutions' determination for increasing market openness.

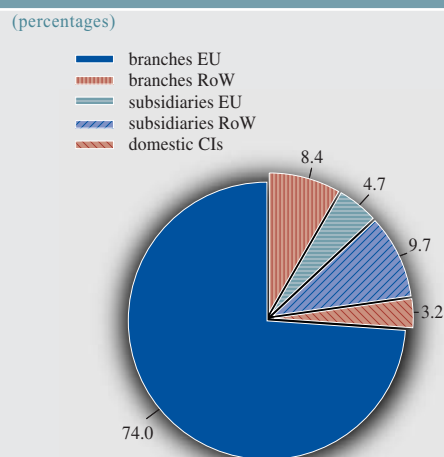
As far as the host market is concerned, the entry of foreign banks strengthens competition and tends to induce incumbent banks to improve their services. Existing empirical analyses document that, for most countries, a larger foreign ownership of banks is correlated with a reduction in domestically owned banks' profitability and margins¹⁷. Moreover, foreign bank entry appears to enhance customer welfare. This result is supported by additional evidence showing that restricting foreign bank entry boosts banks' net interest margins¹⁸. The entry of foreign banks in a domestic market also appears to improve service quality and foster innovation¹⁹. However, in highly information-sensitive activities (such as small business lending) and if local practices rely on informal mechanisms, foreign banks may face greater difficulties in effectively competing with domestic intermediaries. From a financial stability perspective, foreign bank entry can also improve the banking sector's resilience to economic shocks, provided that non-domestic intermediaries have more diversified portfolios and are therefore less prone to domestic downturns. According to a recent study²⁰, foreign banks – particularly green-field ones – increase the stability of host countries' total credit supply, especially during crisis periods.

1.3 INTEGRATION AND INTERNATIONALISATION

This section focuses on foreign ownership in the EU banking sector, the cross-border provision of financial services and the level of financial integration.

As a result of progressing cross-border consolidation, the market share of foreign branches and subsidiaries in the EU banking sector stood at exactly 26% in 2005 (Chart 5), compared with 24.7% the previous year.

Chart 5 Share of foreign bank branches and subsidiaries in the EU



Source: ECB. Computations based on figures in Annex 1.
Note: *RoW* refers to rest of world. *CIs* refers to credit institutions.

However, this figure hides significant differences in banking sector ownership structure across European countries. In the euro area countries, only 16.3% of total banking assets are foreign-controlled, compared with 68.1 % in the NMS. In the latter countries, institutions whose parent is based in a EU country play a dominant role, with a market share of 60%²¹. In this context, Box 1 provides the main findings from a survey regarding the developments of large European banking groups with significant cross-border banking activities for the year 2005.

It is worth noting that intra-EU cross-border bank integration takes place mainly through the

17 Claessens, Demirgüç-Kunt and Huizinga (2001), *How does foreign entry affect domestic banking markets?*, Journal of Banking & Finance, Volume 25, Issue 5, pp. 891-911.

18 Levine (2003), *Denying foreign bank entry: implications for bank interest margins*, Central Bank of Chile Working Papers, No. 222.

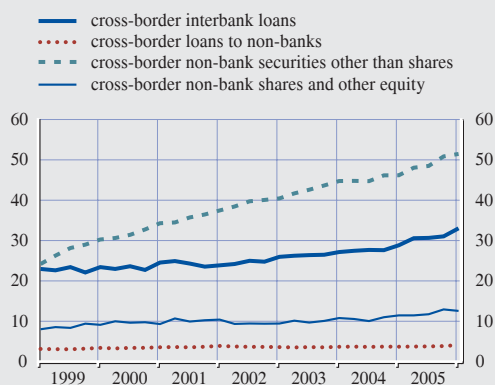
19 Lensink and Hermes (2004), *The short-term effects of foreign bank entry on domestic bank behaviour: does economic development matter?*, Journal of Banking & Finance 28, pp. 553-568.

20 De Haas and Van Lelyveld (2006), *Foreign banks and credit stability in Central and Eastern Europe. A panel data analysis*, Journal of Banking & Finance 30, 1927-1952.

21 The figures refer to the weighted average.

Chart 6 Cross-border provision of financial services in the euro area – assets side

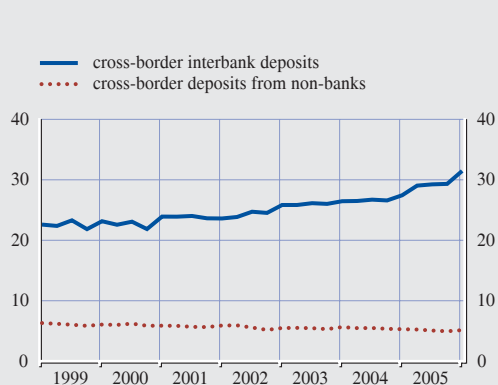
(as a percentage of total)



Source: ECB.
Note: Cross-border activity is expressed as a percentage of the total euro area provision of financial services.

Chart 7 Cross-border provision of financial services in the euro area – liabilities side

(as a percentage of total)



Source: ECB.
Note: Cross-border activity is expressed as a percentage of the total euro area provision of financial services.

establishment and acquisition of subsidiaries, especially in the NMS. In these countries, the market share of EU subsidiaries averages 56.2%, compared with 4.6% for EU branches. This evidence is somewhat puzzling given that Community law provides an incentive to create branches, which are subject to home-country supervision, whereas subsidiaries are supervised by the host-authority. One possible explanation is that establishing a subsidiary offers the parent company other kinds of advantages, such as the ability to better insulate risks and to have a separate stock listing for the subsidiary²². Furthermore, when a subsidiary is established via the acquisition of a domestic intermediary (see Section 1.2), foreign banks can quickly gain market share and maximize the value arising from customers' recognition of local brands²³.

Available evidence also shows that the euro area interbank market is almost fully integrated. Cross-border holdings of interbank loans increased further in 2005, emphasising the trend of previous years (Chart 6).

Analysis of the liability side of the cross-border provision of financial services highlights that cross-border interbank deposits have been growing almost continuously, with a pronounced

increase to over 30% of all funding in the past year. Conversely, the direct collection of cross-border deposits from customers has been flat, and recently even turned slightly negative (Chart 7). Reflecting the lower cross-border integration of customer deposits, an analysis of bank interest rates shows that there is greater dispersion among EU countries for these deposits than for any other type of banking product.

Chart 6 also shows that cross-border lending to customers as a percentage of total customer loans has remained stable over the years, confirming that customers still exhibit a crucial preference for institutions based in their country of residence. Barriers to the provision of cross-border banking services take the form of country-specific market differences, which relate to taxation, language, cultural preferences and considerations of geographical proximity. While such factors appear to be rather persistent, developments in recent years have mitigated their effect. For example, barriers related to

22 For a comprehensive discussion see Walkner and Raes (2005), *Integration and consolidation in EU banking – an unfinished business*, European Economy – Economic Papers, no. 226.

23 This reward-of-recognition effect, however, might be mitigated by the possibility for branches, in some cases, to retain the local brand name.

geographical distance or higher cross-border information asymmetries have been alleviated by the progress in information and communication technology and by lower telecommunication prices due to liberalisation.

Furthermore, the fact that these trends are also characteristic of the regional banking markets in the United States suggests that the high degree of importance that customers place on proximity is not only due to language or cultural factors. The importance of legal differences and/or constraints and the relevance of personal knowledge should not be underestimated. In that respect, while the FSAP process has certainly helped promote greater regulatory convergence, other fundamental obstacles such as national differences in tax regimes, the difficulty of transferring and using collateral across borders and differences in consumer protection requirements are likely to play an important role in holding back EU retail banking market integration.

A trend towards greater integration is also identifiable for banks' cross-border holding of non-bank shares and other equities. The slope

of the curve shows that the phenomenon is growing at a faster pace when compared with direct loans, mostly due to the growth in geographically mixed investment portfolios pursued by banks. However, both the level and growth rate of equity holdings still remain far below the figures observed for the cross-border holdings of other securities, mainly bonds.

Summing up, there remain substantial differences, in terms of the degree of integration, between wholesale and retail activities²⁴. This is also witnessed by the difference in dispersion of wholesale and retail interest rates across the countries of the euro area. In general, a greater cross-country dispersion can be found for loans to households than for loans to non-financial corporations; at the same time, however, a lower dispersion is observed for loans to households for house purchase and large loans to non-financial corporations²⁵.

24 See ECB *The contribution of the ECB and the Eurosystem to European financial integration*, pp. 61-73 and in particular Chart 4, Monthly Bulletin, May 2006.

25 The consistency of this trend across all periods of initial rate fixation might deserve further checking.

Box I

MAIN FINDINGS OF THE MAPPING OF LARGE EUROPEAN BANKING GROUPS WITH A SIGNIFICANT CROSS-BORDER BANKING ACTIVITY FOR THE YEAR 2005

The BSC performed a mapping exercise on a set of European banks to monitor their cross-border presence in the EU. The survey collected data on the foreign establishment of branches and subsidiaries by a selected sample of banks. The purpose of the investigation was to examine the major developments in the cross-border banking activities of these groups and compare the results of the survey with those of the previous mapping exercises carried out in 2002 and 2004 (based on 2001 and 2003 data). For confidentiality reasons this summary reports only aggregate and anonymous data; the total number of banking groups surveyed was 41 in 2001, 43 in 2003 and 46 in 2005.

It should be emphasized that the exercise was performed on a set of large and medium-sized banking groups that develop a significant cross-border banking activity and that have their (legal) headquarters in one of the 15 European countries indicated in Chart 12. In the other member states major banking groups are either foreign controlled or do not have a significant cross-border presence.

Chart 8 Distribution of banks across different asset categories

(x-axis: EUR billions; y-axis: percentages)

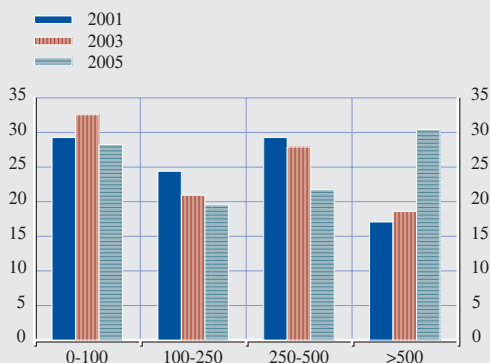
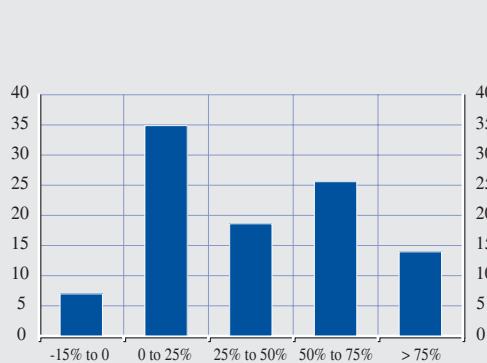


Chart 9 Distribution of banks across growth in asset categories

(y-axis: percentages)



Note: Percentage growth over two years.

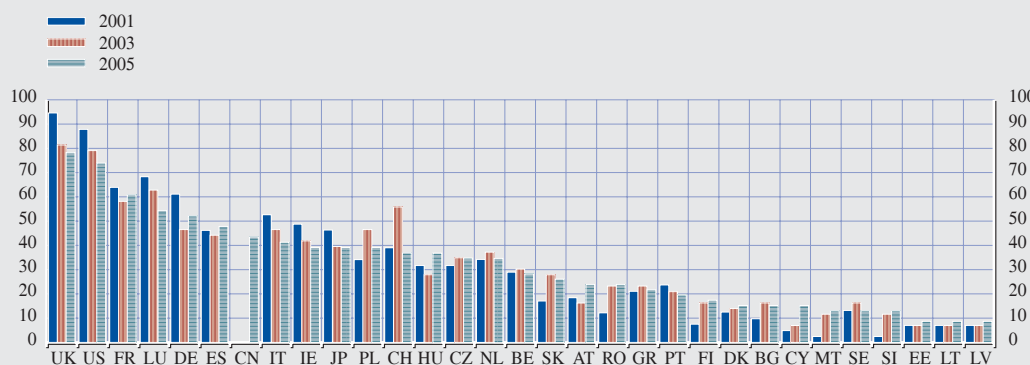
The composition of the sample changed only marginally over time. However, as a consequence of the recent spate of large cross-border mergers, there was a significant increase in the total assets of the involved banking groups, resulting in a change in the specific distribution across banks and countries (see Charts 8 and 9).

Whereas sharp growth in total assets was reported mainly by the largest banking groups, some of the medium-sized and smaller institutions also grew considerably over the past two years. One of the main drivers of this trend might be identified with the current expansion of several banking groups via the acquisition of other entities, a development consistent with the EU banking system's ongoing consolidation process. Some banking groups may also have introduced IFRS reporting schemes, which may have led to an increase in balance sheet totals (due e.g. to the increased use of market values, inclusion of derivatives). Moreover, the increased demand for loans in the recent years also produced remarkable asset growth. Nevertheless, the impact of consolidation is confirmed in the following paragraphs.

Chart 10 Provides evidence of the new expansion in host countries by the banking groups in the sample. It is interesting to remark that for the surveyed institutions, foreign presence in

Chart 10 Banks in the sample with at least one establishment (branch or subsidiary) in the indicated countries

(percentages – home country excluded)



traditional financial hubs, particularly in the UK and US (but also in LU and DE) though still very high – almost 80% of the banks are present in the UK and 74% in the US – has steadily diminished since 2001. At the same time, the opposite trend can be observed in less mature economies, especially since 2003. The highest relative increase in the percentage of domestic banks controlled by foreign parents has been reported in the NMS, AT and DE (possibly due to the acquisition of domestic credit institutions by foreign owned groups). HU, PL and the CZ continue to attract a large number of foreign banks, but they have been overtaken by CN, newly reported in 2005, which ranked 7th in the list of countries attracting the highest number of foreign establishments, with a substantial 43% of surveyed EU institutions being present there. Note that the percentage of foreign banks established in a country does not necessarily account for the importance of the market shares owned in the same market. Indeed, an individual banking group, in certain local markets, might control a large part of the banking system.

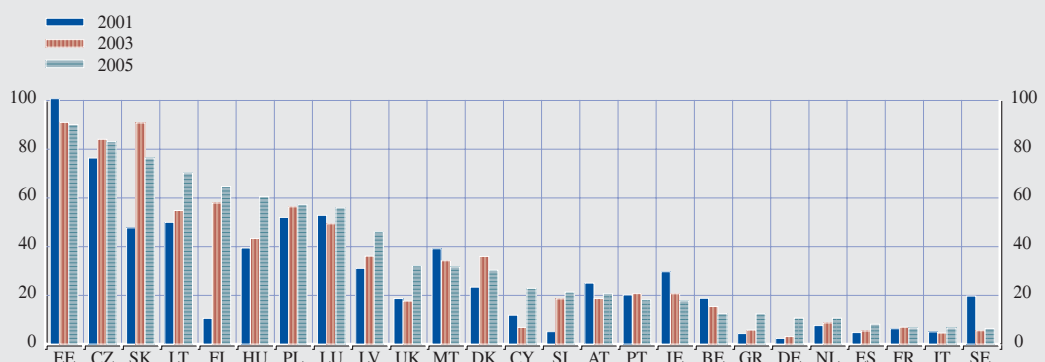
The data collected was analysed from an “inward and outward Europeanisation” perspective. This approach consists of comparing, for each of the countries where the banking groups of the sample have their legal headquarters (see list in Chart 12), the total assets held by domestic banks in other EU countries (“outward Europeanisation”) with the assets held by foreign EU bank in that country (“inward Europeanisation”). The analysis shows the following interesting results.

Recent M&A activity had an impact on the general features of the sample. In broad terms, all countries reported a general higher level of cross-border assets, but the difference between “inward and outward Europeanisation” proves that trends diverge across countries. As an example, the data confirm that the United Kingdom is a typical case of “inward Europeanisation”, since the total assets held by EU banks in UK are notably higher than the total assets held by UK banks in the EU. In this context, LU reflects the unique situation of a high level of “inward Europeanisation” without any relevant “outward Europeanisation”. By contrast, Germany, previously mirror image of the UK, saw a substantial reduction of the gap between the assets owned by domestic banks in the EU and those controlled by foreign banks. In Italy¹ and Spain, outward “Europeanisation” increased more sharply relative to inward

1 Data collected for this exercise include M&A completed by the end of 2005 only. Deals announced and/or initiated in 2005 but completed in 2006 have not been reported. Accordingly, some observations may no longer be representative of the current situation (mid-2006).

Chart 11 Market share (by total assets) of banking groups in the host country's banking sector

(percentages)

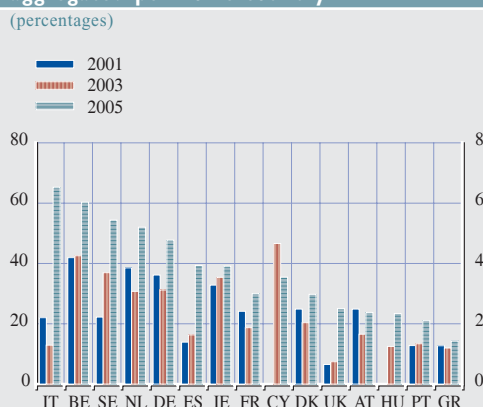


“Europeanisation”, amplifying the gap between the two. Dutch, Belgian and Swedish banks are confirmed to be holding a large amount of assets abroad. Moreover, French banks also appear to have become more outward looking in the past two years.

Turning to the magnitude of the selected banking groups’ cross-border activity, Chart 11 shows that these banking groups are particularly active in the NMS, where their market shares range from almost complete control of the banking system in EE, with a market share of 90%, to a substantial 35% in MT. Moreover, their market shares in NMS increased steadily from 2001 with the only significant exception being SK, where they control practically the whole banking sector anyway. By contrast, in SI and CY only around 20% of the banking sector is controlled by the banks participating in the mapping exercise.

The greatest changes relate to the degree of the selected banking groups’ internationalisation, obtained by measuring the total assets of foreign branches and subsidiaries against the consolidated assets of the banking group (see Chart 12). The chart simplifies matters by grouping the individual figures according to the group’s ultimate home country, with the aim of improving comparability. A relevant observation refers to the overall general sustained increase in the reporting banking groups’ internationalisation. Comparing 2003 data with those of 2005, the list of “most internationally orientated” banks has changed dramatically, as did the countries’ average values that show an exponential growth. In 2003 the degree of internationalisation varied from 7% for the UK to 47% for CY, with a cluster of 5 countries between 31% and 43% and an average of 24%. In 2005, the minimum value increased to 16% for GR and the highest reached a maximum of 65% for IT; the average percentage rose by 14 percentage points to 38%, with a cluster of 7 countries between 38% and 60%. In addition to IT, also NL, ES and IE dramatically improved their ranking. Whereas BE, SE, DE, FR and HU maintained their relative position in the list, they still reported increases ranging between 10% and 19%.

Chart 12 Assets in foreign establishments related to the banking groups’ total assets, aggregated per home country



1.4 MARKET STRUCTURE

As in last year’s report, the data shows that there are common trends in the EU banking sector’s development. However, national conditions still vary considerably across countries or clusters of countries. This is reflected, for instance, in the rather diverse market structures of the retail banking industry, where the major players differ from one Member State to another. Indeed, as shown in a recent analysis by the EU Commission, apart from

some limited cases where regional integration appears more advanced, there is hardly one bank that ranks among the top three leading groups in different Member States²⁶.

In 2005, the degree of concentration in the banking sector increased further. Since 2001,

26 EU Commission (2006), *Interim Report – Current Accounts and Related Services – Sector Inquiry under Article 17 Regulation 1/2003 on retail banking*. The reported observation does not necessarily relate to the market structure of individual Member States.

Table 1.1 EU banking sector capacity indicators relative to population (2005)

	Number of credit institutions	Population per credit institution	Population per ATM*	Population per employee	Population per branch	Population density	Assets per employee
BE	100	104,733	789	151	2,295	341	15,188
CZ	56	182,540	3,712	269	5,601	130	2,766
DK	197	27,508	1,838	114	2,563	126	15,177
DE	2,089	39,475	1,568	117	1,872	232	9,683
EE	11	122,500	1,738	268	5,859	29	2,352
GR	62	178,870	1,887	181	3,101	84	4,585
ES	348	124,707	771	172	1,034	85	8,506
FR	854	73,422	1,426	146	2,316	110	10,284*
IE	78	53,160	1,385	110	4,557	59	24,983
IT	792	73,902	1,465	174	1,858	193	7,471
CY	391	1,938	1,761	70	797	90	5,590
LV	23	100,013	2,628	220	3,925	36	1,486
LT	78	43,773	3,402	447	4,154	53	1,715
LU	155	2,945	1,133	20	1,856	180	34,121
HU	215	46,918	3,063	270	3,231	109	2,000
MT	18	22,443	2,675	119	3,706	1,271	8,039
NL	401	40,703	2,136	138	4,355	392	14,213*
AT	880	9,347	1,026	109	1,913	98	9,568
PL	739	51,613	4,743	249	7,511	119	995
PT	186	56,801	832	196	1,947	114	6,672
SI	25	80,034	1,437	171	2,887	97	2,563
SK	23	234,222	3,166	271	4,717	110	1,834
FI	363	14,449	1,506	208	3,246	16	9,313
SE	200	45,150	3,201	230	4,728	20	16,647
UK	400	150,545	1,100	125	4,397	246	17,230
MU-12**	6,308	64,376	1,327	143	2,529	159	12,882
EU-25**	8,684	75,268	2,015	182	3,377	174	9,319

* 2004 data

** unweighted average

Source: Computations based on figures in Annex 1, ECB Blue Book and United Nations data.

Notes: Population density is expressed as inhabitants per square kilometers. Assets per employee are measured in EUR thousands.

the weighted Herfindahl index²⁷ has risen from 504 to 601 in the EU countries (from 543 to 641 in the euro area). In the same period, the five largest credit institutions increased their share of total assets from 37.8% to 42.3% in the EU (from 39.1% to 43% in the euro area). Concentration levels are generally higher in the smaller countries; they remain low in DE, IT, LU, UK and ES. However, according to the European Commission research mentioned above, national markets may be too large to be considered as reference markets for analysing competition, at least for retail banking products. The inquiry examined concentration at the regional level and found that, in some Member

States (e.g., in DE), concentration at this level may be higher than the national figures suggest.

In 2005, after four years of steady decline²⁸, the number of branches started to increase again, ascending to 201,259, almost reaching the same level as in 2002. The number of branches has risen in 16 countries; the figure for 2005 is largely attributable to developments in the

27 For a definition of Herfindahl index see the methodological notes in Annex 2.

28 A steady decline for four years was only observed in MU-12, whereas in EU-25 the number of branches also increased slightly in year 2004.

Spanish market. Consolidation and restructuring have not always resulted in downsized distribution networks, as banks recognize the importance of client proximity. Proximity appears to be particularly crucial when banks are expanding their provision of retail services such as consumer credit and mortgage lending in response to increasing demand from households and when faced with intensified competition. Staff levels also rose in a number of countries in 2005.

There are still significant differences in EU banking sector capacity across countries (Table 1.1). Population per bank employee ranges between 20 (LU) and 447 (LT); population per branch between 797 (CY) and 7,511 (PL). However, since 2001, the dispersion of the former indicator has been declining, possibly as a result of stronger competition in progressively integrated markets.

1.5 DEVELOPMENTS OF INTERMEDIATION

The strong growth of credit institutions' total assets in 2005 was driven by the corresponding proportionate growth of customer loan portfolios, which registered an increase of 10.8%. There were two primary determinants for this growth: the sustained growth in lending to non-financial corporations (+10.5%), and an

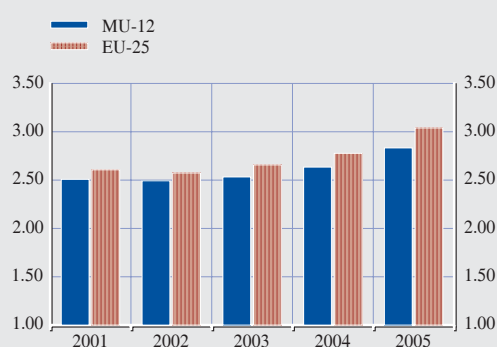
even larger increase of lending for house purchases (in both absolute and relative terms), which rose by more than 13% in the past year, with the highest growth rates being observed in the NMS (42.6%). These two factors led to an exceptional increase in the major intermediation indicators: total assets to GDP was above 300% for the first time in the EU (Chart 13), and the ratio of customer loans to GDP showed a marked increase, reaching 125.9% in the EU and 123.5% in the euro area (Chart 14).

According to recent analyses which focused on a number of Central and Eastern European countries, credit growth in these markets is largely due to a catching-up process; the ratio of credit to GDP in the NMS (47% at end-2005), while rising fast, is still below the levels consistent with macroeconomic fundamentals. However, in some of these countries, credit is growing much faster than what would be justified by the run-up to long-run equilibrium and may therefore pose problems in terms of excessive risk-taking²⁹.

Together with the growth in lending activity, customer deposits also increased sharply, with an aggregated rise of 12.3% since the end of 2004 in the EU-25 (23.5% in the NMS). While

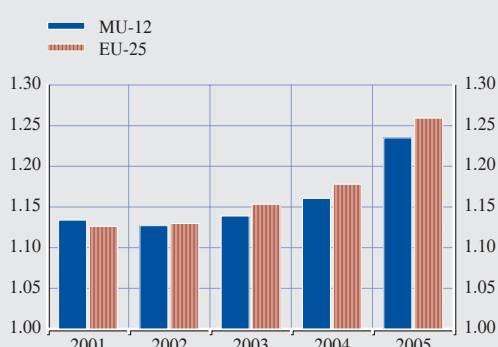
²⁹ Kiss, Nagy and Vonnak (2006), *Credit Growth in Central and Eastern Europe: Trend, Cycle or Boom?*, forthcoming Magyar Nemzeti Bank working paper.

Chart 13 Total assets/GDP



Source: ECB.
Note: Computations based on figures in Annex 1.

Chart 14 Total loans to customers/GDP



Source: ECB.
Note: Computations based on figures in Annex 1.

customer deposits still constitute by far the largest part of banks' funding, in the past five years banks have slightly increased the use of other funding instruments, including inter-bank and money and capital market funding (for details on the evolution of banks' funding, see Chapter 3 of this report).

Non-banking financial intermediaries' assets under management grew considerably in 2005: investment funds' total assets registered an increase of 14% in the EU-25 and pension funds expanded by almost 20%.

The growing importance of non-bank savings, alongside the increase in banks' customer deposits, is the result of both economic and demographic factors (for a comprehensive analysis of the impact of population ageing on banks and references to the related development of new products – e.g. reverse mortgages and annuities – see Chapter 2 and Boxes 2 and 3 of this report). This trend towards disintermediation, however, does not necessarily imply a reduced role for credit institutions. Indeed, banks are increasingly involved in fee-earning activities and rely to a larger extent on capital market and asset management activities. Moreover, insurance activities are becoming more integrated within banking groups in some countries³⁰. This diversification process by banks could potentially promote risk-reduction and profit stability, provided that the different income subcomponents are not perfectly correlated³¹.

1.6 CONCLUSIONS AND OUTLOOK

Consolidation, integration and internationalisation are important factors affecting the structure of the EU banking market. Domestic consolidation and concentration levels continued to rise in 2005, as did EU cross-border M&As. Integration appears to be more advanced in the wholesale than in the retail sector. However, the recent pick up in EU cross-border M&As has

increasingly involved intermediaries active in the retail market.

Existing empirical analyses suggests that increased cross-border banking activities tend to strengthen competitive conditions, improve service quality and foster innovation. However, it also results in new challenges for both banks and supervisors. Increased cross-border banking requires banks' governance rules, internal procedures and risk management techniques to be adequate and consistent with the types of risks to which internationally active complex financial groups are exposed.

Although the EU banking markets continue to be characterised by different structures, reflecting significant diversity in language, culture, legal and supervisory frameworks, they all show a strong rise in banking assets. This is more pronounced in countries where a catching up process is taking place, entailing an expansion of financial activities to levels more in line with macroeconomic fundamentals. At the same time, non-bank assets are also growing rapidly. Banks appear to be capable of harnessing this trend towards disintermediation by developing their fee-earning activities, including investment banking and asset management businesses. From a financial stability perspective, this process may be beneficial as greater diversification and complementary income sources may contribute to lower aggregate risks and to more stable profits provided that the various income subcomponents are not perfectly correlated. On the other hand, channelling risks away from banks to other financial intermediaries (often less regulated) might make risks more opaque.

30 Empirical evidence of this trend has been reported, for example, in BE, FI, FR, IT and NL. See also the list of conglomerates published by the Commission in April 2006, http://ec.europa.eu/internal_market/financial-conglomerates/docs/20060424_conglomerates_bycountry_en.pdf

31 Smith, Staikouras and Wood (2002), *Non-interest income and total income stability*, Bank of England – Working Paper, no. 198.

2 THE IMPACT OF AGEING ON EU BANKS

2.1 INTRODUCTION

The following chapter outlines some issues deemed important when analysing the impact of demographic change on banks and banks' strategy. It identifies the relevant links between demographic change and bank profitability. To give the analysis focus, it was restricted to the impact of demographic change at the EU level and on retail banking rather than on wholesale, investment and interbank activities³².

A recent G-10 report³³ emphasises that demographic change may significantly increase the influence of non-bank financial intermediaries in inter-temporal trade. Although this could imply pessimistic outlooks for banks³⁴, the report does not tackle the ensuing implications for banks. In this chapter we attempt to close that gap and investigate whether and how demographic change may have an impact on banks.

Demographic variables do not play any role in any theory of financial intermediation³⁵. Therefore, it doesn't appear feasible to investigate the direct impact of demographic change on banks using the available models. Instead, we have used an indirect approach: first, we investigated the impact of demographic change on the environment in which banks operate. The environmental components considered relevant include: the macro-economy, financial markets, residential real estate markets and household savings behaviour. Second, we identified how changes in the environment might affect banks. This analysis is also based on interviews with some major EU credit institutions, the available literature, EU supervisory entities, and national central banks' contributions on the topic. Potential consequences for bank profitability are addressed within the framework of a stylised bank profit function.

The study does not aim at forecasting future developments in the banking sector, but rather outlines potential channels via which demographic change might affect banks. As

demographic change is gradual, a long-term perspective is inevitable, meaning that the results are inherently speculative.

The chapter is organised as follows: Section 2.2 provides an overview of demographic developments in the EU until 2050. Section 2.3 discusses the impact of demographic change on the four areas of the banking environment (macro-economy, financial markets, real estate markets and household savings behaviour). Section 2.4 identifies the variables relevant to banks and presents examples of their potential impact on banks. Section 2.5 briefly discusses potential risks for banks and Section 2.6 summarises the results.

2.2 DEMOGRAPHIC DEVELOPMENTS IN THE EU

*Most countries will experience significant demographic shifts in the coming decades due to changes in life expectancy, fertility and migration*³⁶. While population growth has been slowing in industrialised countries and the ageing process is well under way, developing countries show a rather mixed picture and will probably not experience significant population ageing until a later stage. Overall, the median age for the world population increased from 24 years in 1950 to 28 years in 2005 and is expected to rise to 38 years in 2050³⁷.

32 The European Commission estimates that retail banking services offered to consumers and small firms account for about 50% of total banking activity in Western Europe, for a total of €250-275 billion in 2004 or about 2.5% of EU GDP. European Commission, 2006, Interim Report II – Current Accounts and Related Services, Brussels.

33 G-10 report, *Ageing and pension system reform: implications for financial markets and economic policies*, Paris, 2005.

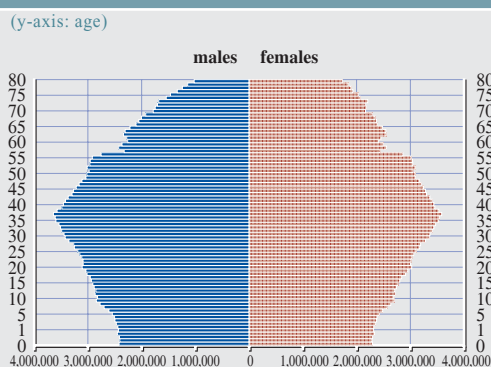
34 Such pessimistic outlooks are put forth in press statements by the consulting firm Booz Allen Hamilton (May 9 2006) for several Member States (i.e. AT, DE).

35 For an overview of the theoretical literature on financial intermediation by banks, see Freixas, X. and J.-C. Rochet 1998, *Microeconomics of Banking*, MIT Press: Boston.

36 It is worth noting that demographic projections are subject to a large number of assumptions and are highly uncertain (Maddaloni, A., A. Musso, P. Rother, M. Ward-Warmedinger and T. Westermann, *Macroeconomic implications of demographic developments in the euro area*, European Central Bank, Occasional Paper 51, August 2006.

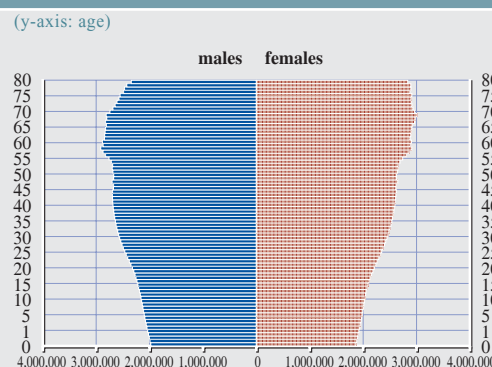
37 United Nations, *World Population Prospects: The 2004 Revision*, 2005, New York.

Chart 15 Age pyramids for the EU-25 in 2004



Source: EPC/EC (2006).

Chart 16 Age pyramids for the EU-25 in 2050



Source: EPC/EC (2006).

According to projections by the European Commission and the Economic Policy Committee³⁸, the EU's population is expected to grow from 457 million in 2004 to 470 million in 2025 and then decline to 454 million in 2050, with a sharp increase in the elderly population. This scenario will change the current ratio of four people of working age for every elderly person to a ratio of only two to one by 2050. The main reasons for this development are: a fertility rate persistently below the natural replacement rate, increasing life expectancy, and a slowdown in inward migration flows, which, therefore, can only partly offset the mentioned trends. The aggregate figure conceals large differences among the various EU Member States. Likewise, the total population of some countries is expected to increase, whereas a significant fall is likely in others³⁹.

Although it is projected that the *fertility rate in the EU-25 will rise from 1.48 in 2004 to 1.60 in 2030*, remaining constant at that level until 2050, that figure remains below the natural replacement rate of 2.1 that would be necessary to stabilise the population size and structure. Again, substantial differences in the fertility rates might be seen across Member States, with an increase in the rates of all countries except FR, IE and MT.

At the same time *life expectancy at birth is expected to increase by 6.3 years for males and*

5.1 years for females until 2050, resulting in a life expectancy for the EU-25 of 81.6 and 86.6 years, respectively, in 2050. These changes are primarily attributable to lower mortality rates at older ages. The largest gains in life expectancy will probably be seen in the NMS, but their values will still remain below the EU-15.

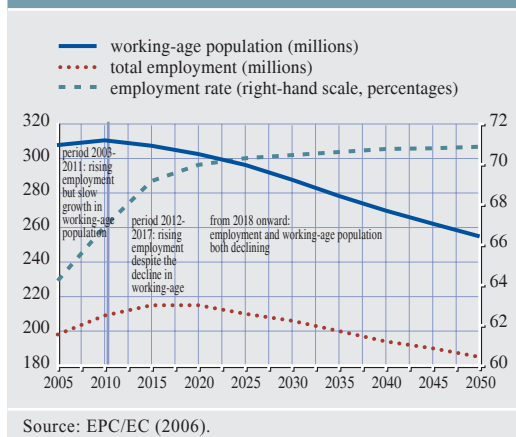
Migration to the EU is expected to continue in the coming decades, albeit on a lower level than current registered inflows: the net migration inflow into the EU-25 amounted to 1.3 million people annually (0.35% of the population) in 2004 and is expected to fall to 800,000 by 2015 and stabilise at approximately 850,000 afterwards (0.2% of the population)⁴⁰.

38 Economic Policy Committee and the European Commission (EPC/EC), *The impact of ageing on public expenditure: projections for the EU-25 Member States on pensions, health care, long-term care, education, and unemployment transfers (2004-2050)*, Special Report No. 1/2006, 2006, Brussels.

39 The population is expected to grow in the following countries between 2004 and 2050: BE (+4%), DK (+2%), ES (+1%), FR (+9%), IE (+36%), LU (+42%), NL (+8%), AT (+1%), SE (+13%), UK (+8%), CY (+34%), MT (+27%). It is projected that the following countries will experience a decline in population: DE (-6%), GR (-3%), IT (-7%), PT (-4%), CZ (-13%), EE (-17%), HU (-12%), LT (-16%), LV (-19%), PL (-12%), SK (-12%), SI (-5%). The population in FI is expected to remain stable.

40 However, it has to be noted that migration flows are extremely difficult to project, methodologically complex and depend on a variety of factors related to the host as well as to the home country which can rarely be directly influenced (e.g. natural disasters, war, political instability, etc).

Chart 17 Projected working-age population and total employment



A change in the overall employment rate (within the 15-64 age group) will temporarily mitigate the ageing effect on the labour force. In the EU it is expected to rise from 63% in 2003 to 70% in 2025 and to stabilise at approximately 71% in 2050. Major reasons for the increase are a rise in the female employment rate (from 55% in 2003 to 66% in 2050) and a rise in the employment rate of older workers (age group 55 to 64 years – from 40% in 2003 to 59% in 2050).

The EPC/EC project *three phases in the development of employment and labour supply*. Between 2004 and 2011 the working age population and labour supply are both expected to increase. From 2012 to 2017, employment rates are still likely to increase as more women and older workers participate in the working process. This will offset the nascent decline in the working-age population caused by the retirement of the baby-boom generation. From 2018 onwards, however, the ageing effect will dominate, as the employment rates of women and older people stabilise, and both working age population and labour supply are expected to decline.

2.3 THE IMPACT OF DEMOGRAPHIC DEVELOPMENTS ON THE BANKING ENVIRONMENT

This chapter investigates the impact of demographic change on the four components of the banking environment that we regard as particularly relevant: the macro-economy, financial markets, real estate markets and household savings behaviour.

2.3.1 IMPACT ON THE MACRO-ECONOMY

A number of recent studies analyse the impact of demographic change on the macro-economy⁴¹. The main issues they investigate are: how ageing might affect GDP growth per capita, labour productivity, the structure of consumption, and age-related public spending.

The OECD analyses the impact of demographic change on economic growth in FR, DE, JP and

41 Inter alia, Börsch-Supan, A., F. J. Köke and J. K. Winter, *Pension Reform, Savings Behaviour and Capital Market Performance*, The Mannheim Research Institute for the Economics of Ageing, Working Paper 53-2004, Mannheim; Economic Policy Committee and the European Commission (EPC/EC), 2006; Koza, T., Y. Sato and M. Inada, *Demographic Changes in Japan and their Macroeconomic Effects*, Bank of Japan Working Paper Series No. 04-E-6, 2003, Tokyo; McCarthy, D. and A. Neuberger, *Pensions Policy: Evidence on Aspects of Savings Behaviour and Capital Markets*, Centre for Economic Policy Research (CEPR), 2003, London; OECD, *The impact of ageing on demand, factor markets and growth*, Economics Working Paper No. 240, 2005, Paris; Young, G., *The implications of an ageing population for the UK economy*, Bank of England Working Paper Series, 2002, London. All of the studies' approaches are very similar. They use a general equilibrium approach based on an overlapping generations-model (OLG). The supply side of the economy is modelled as standard aggregate production function based on two inputs (capital and labour) and increases in aggregate labour productivity (capital deepening and total factor productivity) as well as in the quality of labour. Assuming perfect competition on output and input markets, the real wage and the real rate of interest are the marginal productivities of labour and capital, respectively. The household sector is partitioned into overlapping generations. Each generation is modelled as maximising lifetime utility based on a standard utility function and an intertemporal budget constraint under certainty. The rationality assumptions underlying this approach are extreme, as is the convention of abstracting from uncertainty. The simulations based on these OLG-models use demographic projections until 2050.

Table 2.1 Sources of average aggregate labour productivity growth per annum in the European Union (EU-15)

(from 1980-2001 and from 2004 to 2050; in percentages per annum)

	1980-1990*	1990-1995*	1995-2001*	2004-2050**
Average labour productivity	2.28	2.43	1.37	1.7
of which				
Contribution of capital deepening	1.16	1.3	0.9	0.6
Contribution of total factor productivity	1.12	1.14	0.46	1.1

Sources: *Timmer, Ypma, van Ark (2003) (excl. LU) and **EPC/EC (2005).

the US. It forecasts that demographic change will have a *modestly negative impact on GDP growth per capita*. In order to take into account policy responses to demographic change, the study analyses the impact of pension reforms that encourage personal long-term savings and policies that aim at increasing participation rates, individual labour productivity and the quality of labour. In all four countries, GDP growth per capita is expected to average about +1.4% to +1.6% per annum until 2050⁴², which implies a doubling of living standards over the next 50 years. A comparison of these results with a baseline scenario with an average GDP growth rate of about 1% highlights the significant positive impact of policy responses designed to increase participation rates, individual labour productivity and the quality of labour⁴³. In the EU-25, EPC/EC projects average GDP growth per capita of +1.7% until 2050. More specifically, it is expected to decline from 2.4% (2004-2010) to 1.9% (2011-2030) and, finally, to 1.2% (2031-2050).

According to EPC/EC and the OECD, the contribution of a declining labour input (employees × average hours worked per year) to GDP growth per capita will be very modest⁴⁴. In addition, the data published in Timmer, Ypma and van Ark⁴⁵ show that the growth contribution of labour input in the EU-15 was negative over the period 1980-1995 (-0.2 of a percentage point per annum on average). Daveri estimates the growth contribution of labour to be, on average, -0.46 of a percentage point p.a. in the period 1991-99⁴⁶. The modest impact on demographic variables is largely due to the fact that population growth affects GDP growth per capita only via the growth rate of labour input,

i.e. the participation rate among the working age population, the unemployment rate, and hours worked⁴⁷.

What accounts for the decline in GDP growth per capita if not demographic change directly? Latzer and Schmitz reviewed studies on growth accounting which show that GDP growth in the EU in 1980-2001 was driven by the dynamics of the capital stock and labour productivity (capital deepening and total factor productivity) rather than by labour input trends⁴⁸. The low contribution of labour input was largely due to

42 This is roughly in line with average GDP growth per capita in Western Europe (AT, BE, DK, FI, FR, DE, IT, NL, NO, SE, CH, UK, GR, IE, PT, ES) in 1973-1998, i.e. 1.78 % per annum. See Maddison A., *The World Economy – A millennial Perspective*, OECD Development Centre Studies, 2001, Paris; Table A1-d.

43 See also Maddaloni et al. (2006).

44 In the EU-25 the contribution of the declining share of working age population is -0.3 of a percentage point and is mostly offset by an increase in the employment rate (+0.2 of a percentage point). In FR and the US, the direct impact of labour input growth rate on GDP growth per capita amounts to +0.1 and +0.6 of a percentage point per annum until 2050. The corresponding values for DE and JP are -0.1 and -0.7 of a percentage point, respectively.

45 Timmer M., Ypma G. and van Ark B., *IT in the European Union: Driving Productivity Divergence?*, Groningen Growth and Development Centre Research Memorandum GD-67, 2003, Groningen.

46 See: Daveri F., *Information Technology in Europe*, paper presented at the ZEW Conference: the Economics of Information and Communication Technologies, 18-19 June 2001, Mannheim.

47 In 1950-1998 the employment rate in 12 Western European countries (AT, BE, DK, FI, FR, DE, IT, NL, NO, SE, CH, UK) remained stable at around 43.5% of the population, while the hours worked per capita dropped by 27.3% (Maddison 2001, Table 3-7). The development of working hours outweighed the impact of population growth on total hours worked per year (-8.5% over the entire period), so that the 12 Western European countries already experienced a decreasing labour input from 1950 to 1998.

48 Latzer M. and Schmitz S. W., *Die Ökonomie des eCommerce – New Economy, Digitale Ökonomie und realwirtschaftliche Auswirkungen*, Metropolis Verlag, 2002, Marburg.

a low utilisation of labour in the EU. Comparing the data in EPC/EC and OECD with the results in Timmer, Ypma and van Ark⁴⁹ shows that the lower growth rates in the projections until 2050 are largely based on two assumptions: (i) the lower projected growth of labour productivity (Table 2.1) and (ii) the lower contribution of the growth of capital services relative to the past. The latter derives from the assumption that capital per efficiency unit remains constant.

Börsch-Suppan, Düzgün and Weiss discuss a large number of studies from different fields on ageing's impact on *labour productivity*. They conclude that neither gerontological nor organisational or economic analyses reveal a systematic relationship between ageing and individual labour productivity⁵⁰. Furthermore, studies that investigate the effects of potential ageing-induced changes in individual labour productivity on aggregate labour productivity could not identify a direct relationship.

EPC/EC contains long-term projections on the impact of demographic change on *public finances* – the share of age-related spending (as a percentage of GDP) – in the EU-25 based on the current policy stance in each country. Until 2030, public pensions (+1.3%), health care (+1.0%), and long-term care (+0.2%) are responsible for higher public spending. Unemployment benefits (-0.3%) and education expenditure (-0.7%) are expected to decline, though without fully compensating for the projected increases in the other areas. Consequently, public spending would increase modestly by 1.6% between 2004 and 2030, from 10.6% to 12.2%. The differences across individual Member States are very large⁵¹. Compared to increases in public spending over the period 1950 to 1998 the overall impact would remain modest⁵².

To sum up, the quantitative studies of the impact of demographic change on the macro-economy conclude that GDP per capita growth is likely to be lower in 2004-2050 than in previous decades. This is mainly due to the assumption of low productivity growth, while the

contribution of the development of labour input is considered to be only negligibly negative and in some countries even positive. They also emphasise the expected positive impact of policies that aim at increasing participation rates, individual labour productivity and the quality of labour.

2.3.2 IMPACT ON LONG-TERM REAL INTEREST RATES AND ON FINANCIAL MARKETS

We distinguish two main approaches to investigating the impact of ageing on financial markets: one rests on simulations based on highly stylised general equilibrium OLG models and the other on the econometric analysis of historical data⁵³.

Using the simulation approach, the OECD finds that the impact of demographic change on the *long-term real interest rate* relies largely on policy responses in the area of public “pay-as-you-go” pension systems. If the burden of adjustment in public pension systems rests

49 Timmer M., Ypma G. and van Ark B., 2003, pp. 49-50.

50 Börsch-Suppan A., Düzgün I. and Weiss M., *Alter und Produktivität: Zum Stand der Forschung*, WP 73-2005, Mannheim Research Institute for the Economics of Ageing, University of Mannheim.

51 While public spending is expected to fall by 6.1% in PL, it is projected to rise by 5.4% in LU in 2030. The share of age-related public spending in GDP will amount to 4.4% in EE and more than 15% in IT, LU and FI.

52 E.g. aggregate total government expenditure as a percentage of GDP in FR, DE, the NL and the UK at 1998 prices rose from an average of 29.8% in 1950 to 45.9% in 1998, an increase of 16.1% (Maddison 2001, Table 3-9).

53 Bosworth B., R. C. Bryant and G. Burtles, *The Impact of Ageing on Financial Markets and the Economy: A Survey*, The Brookings Institution, Washington D. C., 2004; Davis E. P., C. Li, *Demographics and Financial Asset Prices in the Major Industrial Countries*, Working Paper No. 03-07, Department of Economics and Finance, Brunel University, 2003; England R. S., *Global Ageing and Financial Market – Hard Landing Ahead?*, Center for Strategic and International Studies, 2002, Washington D. C.; Geanakoplos J., Magill M. J. P. and M. Quinzii, *Demography and the Long-term Predictability of the Stock Market*, Research Paper No. C02-21, 2002, University of Southern California, CLEO Davis; Maddaloni et al. (2006); Miles D., *The Influence of Ageing on Capital Accumulation*, in Siebert H. (eds.), *Economic Policy for Ageing Societies*, 2002, Springer, Berlin, pp. 131-154; Poterba J. M., *Population Ageing and Financial Markets*, paper presented at the conference “Global Demographic Change: Economic Impacts and Policy Challenges” organised by the Federal Reserve Bank of Kansas, 2004, Jackson Hole, Wyoming; Young (2002).

entirely on rising contribution rates, the simulated real interest rate would fall in all countries by 0.3-0.7 of a percentage point until 2025, starting from around 4.5% in 2000. In FR and in the US it would again increase thereafter. In DE and JP it would basically flatten out at 3.7-4.0%. If the burden of adjustment in public pension systems rests on significant reductions of the replacement ratio for new beneficiaries, perfectly rational households would adjust their savings rates immediately⁵⁴. This would amplify the substitution of labour by capital (capital deepening) and reduce real interest rates by 0.9-1.2 percentage points to 3.3-3.6% until 2025. Real rates would tend to stabilise at these lower levels in FR and in the US, but continue to decline markedly in DE and JP. The results suggest that if shifts to funded pensions increase long-term savings, they would have a non-negligible, negative impact on real interest rates.

The simulations do not allow for international diversification of financial assets or for international integration of input and output markets. Börsch-Supan, Köke and Winter suggest that international diversification would further reduce the impact of ageing on financial markets, but that this would come at the price of increased uncertainty, due to political and exchange rate risk⁵⁵. International diversification in the accumulation phase would be accompanied by a balance of trade surplus and by a balance of trade deficit in the de-accumulation phase to avoid adverse effects of ageing on the terms of trade.

McCarthy and Neuberger conclude that the results of the simulation studies on the impact of *financial markets* are very sensitive to the way policy responses are accounted for in the models. In most studies, demographic change is believed to reduce real returns by 0.2-0.45 of a percentage point by 2020, which appears to be a small decrease when compared with the volatility of real returns in the past. The modest impact on financial markets is due to the effects of two opposing forces. On the one hand, the net marginal product of capital is expected to

decline due to an increase in capital intensity, and, on the other hand, the long-term real interest rate is projected to increase owing to the impact of structural change in the population on savings. Most simulation studies find that the first effect outweighs the second. However, given the impact of real returns on funded pensions and ensuing annuities over a period of up to 60 years, even a modest, negative impact of ageing on long-term real interest rates might lead to non-negligible losses for funded pensions beneficiaries, compared with a scenario without demographic change⁵⁶.

Econometric studies of the relationship between demographic variables and the *prices/returns of financial assets* yield ambiguous results. In some studies the forecasted impact is implausibly high; in others the coefficients of demographic variables are not significant at all⁵⁷.

To sum up, at this juncture, the econometric analyses could not identify a systematic relationship between ageing and prices/returns

54 The OECD assumes that the replacement ratio was optimal for households in the previous regime, which is not obvious, as participation in the public system was not voluntary.

55 However, one has to bear in mind that many of the companies listed on national stock exchanges represent portfolios of internationally diversified activities themselves. Thus, the focus on the portfolio shares of national markets underestimates the degree of diversification.

56 Schmitz S. W., *Demographic Developments, Funded Pension Provision and Financial Stability*, OeNB Financial Stability Report No. 9, 2005, pp. 93-109.

57 The econometric studies encounter a number of methodological problems. (1) The specification of the variables representing demographic change (e.g. absolute or relative cohort sizes, average age) is not trivial and strongly influences the results. (2) The number of observations and thus the statistical validity of the results in the econometric analysis tend to be overstated. The time series studies that cover the period after WWII usually include some 50 to 60 years of yearly data. As demographic change is gradual, yearly data on demographic change in this period does not represent 50 to 60 independent data points on ageing. (3) The studies attempt to correct for other determinants of savings or prices/returns on financial markets, such as GDP growth and real interest rates. The simulation studies discussed above identify a systematic relationship between demographic change and these variables. Therefore, the inclusion of demographic variables and macro-variables violates the assumption of explanatory variable independence in regression analysis. (4) As demonstrated above, policy responses have a significant impact on the relationship between demographic change and growth. The econometric studies fail to account for this result.

on financial markets. Moreover, the simulation studies projected downward pressure on the long-term real interest rate and real returns on financial markets.

2.3.3 IMPACT ON RESIDENTIAL REAL ESTATE MARKETS

The impact of demographic changes on residential real estate markets is multifaceted given the interaction of different long-term historical trends, such as increases in the number of single households and housing demand per person on one side, and lower projected population growth exerting downward pressure on housing demand and potentially triggering a change in its composition on the other. Indeed, in several major EU countries (e.g. DE, FR, ES), recent evidence⁵⁸ shows a positive relationship between housing demand (in terms of units and space) and the number, size, and age structure of households, rather than to the overall size of the population⁵⁹. These findings might indicate that *the impact of a fall in population size on real estate markets should be outweighed by the effects stemming from the structural (i.e. socio-demographic) changes in the population.*

Indeed, in many EU countries, the number of households is expected to continue to grow, mirroring the increasing proportion of single and 2-person households, of small, elderly households, and the so-called “remanence” effect. This last term refers to elderly people remaining in relatively large family homes after their children have left, which implies an increase in average living space. In particular, these issues have been underscored by, among others, an analysis of the French (Jacquot) and German (Robischon) real estate markets.

The ageing of the EU population may also engender *regional discrepancies on real estate markets* in the face of increasing regional and cross-border movements of people, which may trigger a widening gap between rural/peripheral areas and urban centres. In FR, a survey conducted on behalf of a French credit

institution⁶⁰, has pointed out that, in 2004, 6% of second-hand properties were already being purchased by foreigners, especially in coastal areas, and this trend is expected to gain momentum. Indeed, the tendency of people to move after retirement to improve their quality of life is a fundamental change in habits started in the 1990s, and it is expected to contribute to increasing cross-border migration within the EU. However, such a development might be counterbalanced by the tendency of people over the age of 75 to move back closer to urban areas in response to the geographical distribution of medical care infrastructures or to rejoin family.

Paralleling these movements of people stemming from the ageing of population, dynamic centralised regions will tend, on the whole, to be demographically younger and to be targeted by external migration, exerting downward pressure on housing demand in de-industrialised, peripheral areas (such as currently in the eastern part of DE, see Robischon). Furthermore, in regions where population is shrinking and declining, a vicious circle could emerge as fixed public infrastructure costs would have to be borne by fewer tax payers. This could result in a rising cost of living and a deteriorating quality of infrastructure. Furthermore, increasing mobility and greater diversity in lifestyles and cultural backgrounds might lead to a very dynamic housing market, with local oversupply (or supply shortages), increasing regional price dispersion and, consequently, growing residential real estate investment risk⁶¹.

58 Jacquot A., *La demande potentielle de logements*, INSEE Première – n°875 – décembre 2002, Division Logement; Robischon T., *The impact of demographic change on real estate demand*, presentation at the OeNB Workshop “Ageing and its implication for banks and bank strategy I”, 4 April 2006, Vienna; Tourdjman A., *Demographic change and the future of banking*, presentation at the OeNB Workshop “Ageing and its implication for banks and bank strategy I”, 4 April 2006, Vienna.

59 Maddaloni et al. (2006).

60 M. Tourdjman, Economic Studies Caisse Nationale des Caisses d'Épargne, Chief editor of «L'Observatoire des Caisses d'Épargne», 2006.

61 UBS, Research Focus, *Demographics: a coming age*, 2006, London.

2.3.4 IMPACT ON HOUSEHOLD SAVINGS BEHAVIOUR

McCarthy and Neuberger review the econometric literature dealing with the impact of demographic change on the *aggregate savings rate and on household savings*. The results suggest that a 1% shift in the population from working age to pension age reduces the aggregate savings rate by 0.5% in OECD countries. But they also stress that the coefficients of the demographic variables are often insignificant, and that demographic variables explain only about 10% of cross-country variation. Cook emphasises that the positive effect of population growth on the aggregate savings rate is outweighed by the negative impact of a larger share of young dependents, so that countries with faster population growth save less⁶². The micro evidence suggests that wealth does not decline after retirement, which contradicts the life-cycle hypothesis. One offered explanation is that households receive pensions, which are treated as factor income. In fact, these pensions are partly equivalent to the consumption of annuities stemming from rights accrued in the past, i.e. a form of wealth, so wealth is really run down.

Contrary to the life-cycle hypothesis, which suggests that individuals smooth consumption relative to their income (incurring debt at a young age, saving during working-age and reducing savings in retirement)⁶³, survey data suggest that *pensioner households spend significantly less than economically active households* even after controlling for household income, size, and structure⁶⁴.

The recent *growth of institutional investors* (pension funds, insurance companies, mutual funds and hedge funds) in the EU can be traced back to a variety of factors, including, inter alia, regulation and fiscal incentives, pension reforms, financial and technological progress, internationalisation and increasing (international) competitive pressure, and, in particular, changing demand from customers⁶⁵. The last factor is being spurred by cuts in the

expected rate of return of “pay-as-you-go” pension systems for future pensioners. In many Member States, this has already resulted in higher contributions, lower replacement rates and/or later retirement, which may provide incentives for current contributors to invest more in pension provision products (to maintain their desired lifestyle and/or to cover potential health care and long-term personal care costs).

Against this background, the recent development in Euro area households’ net acquisitions of financial assets shows that *net acquisitions have indeed increasingly shifted from currency and deposits towards investments in insurance products, shares and other equity*⁶⁶. The interest in equities was, however, dampened recently by the stock market downturn at the beginning of the century. The elements underlying the growth of equity and insurance products⁶⁷ were mainly mutual fund shares and net equity in life insurance and pension funds. Despite this clear trend in aggregate figures, large differences between various countries remain⁶⁸.

To summarize, household savings behaviour is evolving towards increasing demand for products offered by non-bank financial intermediaries. Furthermore, the hypothesis that elderly households run down their wealth to maintain their living standard after retirement is not supported by empirical data (not reflecting, however, potentially changing cohort behaviour).

62 Cook C. J., *Population Growth and Savings Rates: some New Cross-Country Estimates*, International Review of Applied Economics n. 19, 2005, pp. 301-320.

63 See e.g. UBS (2006).

64 OECD (2006), UBS (2006), and Url T. and M. Wüger, *Die Konsumausgaben österreichischer Haushalte*, WIFO Monatsberichte 11, 2005, pp. 775-782.

65 Maddaloni et al. (2006).

66 Source: ESCB Monetary Union Financial Accounts (MUFA) database.

67 In some NMS life capital insurance and unit-linked insurance have started only a few years ago.

68 OECD, Table I.4., 18.

2.4 THE IMPACT OF DEMOGRAPHIC DEVELOPMENTS ON EU BANKS

As discussed in Chapter 2.3, demographic change may have an impact on the macro-economy, financial markets, residential real estate markets and household savings behaviour. In the following section these potential changes are investigated, together with their likely influence on the various items of the banks' balance sheet and profit and loss statements, relative to a world without demographic change and under a *ceteris paribus* assumption.

On the *asset side*, the focus is on loans to customers (mortgage loans, consumer loans, SME loans) and debt securities (especially long-term government bonds); on the *liability side*, the analysis is restricted to deposits, debt certificates, and loan loss provisions. Among the off-balance sheet items, the report examines guarantees and hedging instruments at large (such as derivatives). The analysis is structured along the lines of a stylised *P&L account* (Table 2.2). On the income side, interest income is distinguished from non-interest income; on the expense side, the focus is on interest payable, staff costs and loan loss provisions, which jointly account for the lion's share of banks' expenses⁶⁹.

Table 2.2 Selected items of a stylised P&L account

	Income	Expenses
Interest receivable	Mortgage loans $\times r_{ML}$ Consumer loans $\times r_{CL}$ SME loans $\times r_{SMEL}$ Debt securities $\times r_{DS}$	
Interest payable		Deposits $\times r_D$
Net-non-interest income	Net-fees and commissions Dividends from subsidiaries	Staff costs
Operating profit		Loan loss provisions
Profit		

2.4.1 POTENTIAL IMPACT OF LOWER GDP GROWTH RATES

Demographic change is likely to increase competitive pressure in the market for banking intermediation. Roughly speaking, this market's growth is determined by: (1) GDP growth per capita, (2) the population growth rate and (3) changes in the banking intermediation ratio. In Section 2.3.1, it is argued that demographic change might have a modestly negative effect on GDP growth per capita. In addition, the population growth rate will decrease and even turn negative in 2025 (see Section 2.2). Demographic change is likely to have a negative impact on the banking intermediation ratio due to the growing importance of non-bank financial intermediaries (e.g. insurance companies, pension funds, investment funds), as discussed previously. In sum, demographic change is likely to exert downward pressure on the demand for bank intermediation (loans and deposits). In order to sustain growth or even maintain revenue, banks may choose more competitive strategies. More intense competition might put pressure on interest margins. *The downward pressure on bank intermediation and interest margins could negatively impact interest receivable and payable, as well as the net-interest income in the stylised P&L account.* Banks may react to these developments by expanding their intermediation services internationally to encompass emerging markets, which expect dynamic demographic developments⁷⁰. However, this could expose banks to increased exchange rate, country, and political risk⁷¹.

69 This implies that we have to neglect a number of additional items such as interest income/expenditure on net interbank positions and income/expenditure on tangible and intangible assets. In addition to space restrictions, we also consider the impact of demographic change on these items to be of secondary importance.

70 DB Research, Current Issues, Demography Special, 28 October 2003, Frankfurt/Main.

71 UBS (2006) argues that the political risk in some emerging markets will decrease in the future due to policy reforms, but that, at the same time, these markets' increasing integration into the international financial system may also increase their correlation with international financial markets.

Lower population growth (negative population growth after 2025) and smaller cohorts of young, non-banked individuals might also increase competitive pressure to secure new customers and thus increase customer acquisition costs for banks. At the same time, competition for existing clients could intensify due to the aforementioned trend in the bank intermediation ratio. This, in turn, would increase customer retention costs. Furthermore, as higher marketing expenditure (among other factors) exerts upward pressure on costs, efficiency and/or income must increase to keep a sound cost-income ratio. Thus, banks may face incentives to increase revenue and value added per customer, i.e. *through higher net-fee and commission income* (e.g. by cross-selling non-bank financial products and/or by focusing on services with higher value added, such as more advice-intensive, complex products).

In the past, lower GDP growth has been correlated with higher loan losses. Nevertheless, while this was a cyclical phenomenon, the potentially lower GDP growth rates resulting from demographic change would constitute a trend, so that we cannot directly infer an increase in loan loss provisions (credit risk) from demographic change⁷². In an environment of lower banking intermediation market growth, however, corporate customers' demand for credit might decline as well. As a consequence, competition in the credit market could intensify, which may lead to increased credit risk tolerance by banks, to decreasing risk premia and credit spreads, and, as an overall result, to an *indirect negative impact on loan loss provisions*, which might exert upward pressure on the cost-income ratio.

2.4.2 POTENTIAL IMPACT OF LOWER LONG-TERM REAL INTEREST RATES

In the simulation studies discussed in Section 2.3.2, demographic change is forecast to exert downward pressure on long-term real interest rates⁷³. These studies do not reveal an impact on short-term rates, since these are largely determined by monetary policy decisions. The ensuing flattening of the yield curve might have

negative repercussions on banking profitability by decreasing the revenue from liquidity and duration transformation, i.e. by depressing interest margins over fixed costs. Again, this might *negatively impact the net interest income* in the stylised P&L account. Moreover, this factor would reduce stability by increasing exposure to shocks and eventually lead to *increasing efforts to expand non-interest income*. Whatever their long-run effects, these changes could be temporarily destabilising while banks explore new lines of activity. In the longer term, though, these dangers are likely to diminish, as banks adapt to the new environment.

2.4.3 POTENTIAL IMPACT OF CHANGES IN RESIDENTIAL REAL ESTATE MARKETS

The impact of a shrinking proportion of young customers might *negatively impact the demand for mortgage loans and exert downward pressure on interest receivable* by banks. At the same time, *new products* such as reverse mortgages (see Box 2), may gain momentum, as they enable clients to withdraw liquidity from their equities (housing).

As discussed in Section 2.3.3, increasing downward pressure on housing demand in de-industrialised, peripheral areas could expose small banks with a locally concentrated mortgage portfolio to *rising mortgage credit risk and potentially increasing loan loss provisions*. If local price dispersion and volatility are expected to increase, an in-depth analysis of local housing markets and local real estate price indices might be required to ensure that efficient hedging instruments are being developed. At the same time, households could face increased real estate investment risk.

⁷² Wood, G. E., *The implications of an ageing population for the banking sector*, Issue paper for the OeNB Workshop "Ageing and its implication for banks and bank strategy I", 4 April 2006, Vienna.

⁷³ Since neither the empirical nor the simulation studies revealed a significant relationship between ageing and asset prices/returns, the analysis in this section is confined to the impact of changes of long-term real interest rates on banks.

Box 2

REVERSE MORTGAGES

A reverse mortgage is a loan against a borrower's house that need not be paid back as long as the borrower occupies the home as his or her principal residence. Payments to households are structured like an annuity. Reverse mortgages enable elderly homeowners to convert part of their home equity into tax-free income (though with some exceptions, for instance in the UK) without having to sell the property, give up their title or take on a new monthly mortgage payment. The funds from a reverse mortgage can be used for any purpose: e.g. daily living expenses, health care expenses, or repayment of existing debt. The costs of these loans (fixed or variable interest rates and fees) are relatively high due to their inherent risks (i.e. longevity, interest rate and real estate price risk), and the amounts granted are generally very limited relative to the value of the underlying collateral.

Reverse mortgages were launched in the 1980s in California and grew in importance from 2002 due to better knowledge of the product, the growing share of the elderly, a change in mentality concerning bequest motives, the low level of interest rates and the sharp increase in the level of home prices in some countries. Nevertheless, overall figures are still relatively low (25,000 new loans in the UK [lifetime mortgages], 18,000 in the US [Home Equity Conversion Mortgage], and 1,200 in CA in 2003)¹.

In most EU countries, with the exception of the UK, the reverse mortgage market is non-existent or still at very early stages of development (ES, FR, SE, FI). FR recently passed a new law² to introduce this new product together with other home equity loans. Similarly, reverse mortgages have just been reintroduced in ES and the government is currently considering introducing specific regulation which will provide tax incentives to boost demand. In DE and BE, a similar legal concept, called *Leibrente/Lijfrente/Rente viagère* (life annuity), is based on the immediate sale of a house. This means that the purchaser has to pay interest and capital amortization to the seller, who has the right to stay in his home for his lifetime. However, these life annuities are not offered by banks³, although there is anecdotal evidence that some DE credit institutions might develop a product similar to the reverse mortgage.

In the UK, lenders began applying limitations after some instances of the total amount of debt exceeding the value of the underlying collateral in the late 1980s. Given the legal environment at that time, banks could force borrowers to repay the loan prematurely and thus to sell their homes. During that period, the compounding effect of interest charges combined with a fall in home prices caused debtors some problems. Since then, however, borrowers' risks have been contained, mainly by the principle of "no negative equity", referring to the fact that the amount of the debt ultimately due cannot exceed the loan granted. UK banks' also agreed upon a set of best practices guidelines. In addition, the FSA began taking statutory responsibility for regulating reverse mortgages in October 2005. However, the new protection principles have increased the overall cost of the loan while reducing the obtainable amount (e.g. 30% of the value of a home for a 75-year old borrower).

1 Rapport de l'Inspection Générale des Finances, France, June 2004.

2 The regulation in question was released in March 2006.

3 In CZ these products, which also benefit from government tax incentives, are distributed by insurance companies and pension funds.

In the US, reverse mortgages are more closely regulated⁴.

For many EU households, real estate equity constitutes a large, rather illiquid share of their net worth. The potentially increasing need for liquidity may therefore increase the demand for reverse mortgages, as these instruments help solve a liquidity shortage. This increasing need for liquidity is demonstrated, for instance, by the growing share of short-term lending in FR, where 6% of the people 65 and older were granted short-term loans in 1980 against 15% in 2003 and 17% in 2005⁵.

Risks for financial institutions

Lenders could be endangered by a fall in the level of home prices, depending on the size of the loan granted relative to the value of the property. In a worst-case scenario, houses could become worth less than the amount borrowed. However, this risk could easily be covered by insurance. In addition, if borrowers live longer than the bank has estimated, the total amount of annuities paid could exceed the value of the collateral (longevity risk). Lastly, financial institutions may encounter reputational risks associated to these products. This risk stems from a potential lack, from the customer's viewpoint, of information related to the risks associated with these products or their specificities (e.g. in most cases, the descendants will not inherit a house that is subject to a reverse mortgage). This issue is all the more important given that reverse mortgages are intended for the elderly, a population which can be considered relatively vulnerable.

Accordingly, as reverse mortgages entail more risk for the lender than common mortgages, specific prudential treatment may be needed.

4 In particular, the maximum amount granted is limited according to the borrower's age and the specific terms of the loan. Currently, 90% of reverse mortgages are granted through the Home Equity Conversion Mortgage (HECM) scheme, covered by a mortgage insurance premium (MIP) which guarantees payment to the borrower by a State Agency in case of a bankruptcy of the bank. Furthermore the MIP guarantees that the borrower will never owe more than the value of his home. In order to avoid any risk to the borrower arising from the amount of the loan exceeding the value of the home, legislation requires that the lender does not have legal recourse to anything other than the home value.

5 "Observatoire de l'endettement des ménages", 18ème rapport annuel, March 2006.

Some bankers, interviewed on the issue, have suggested that the regional segmentation of real estate markets and the internal migration of pensioners towards coastal areas are incentives for their institutions to open new branches in those areas. Regarding cross-border pensioner migration, anecdotal evidence suggests that foreign credit institutions have already opened branches and representative offices in the coastal regions of ES and FR to follow their customers. Thus, the trend for increasing cross-border branching might promote the integration of the EU retail banking market.

2.4.4 POTENTIAL IMPACT OF CHANGING HOUSEHOLD DEMAND FOR BANK PRODUCTS

The impact of demographic change on individual saving behaviour could have direct influences on the activities and profitability of EU credit institutions. This analysis distinguishes between age-related and cohort effects, as they might have different consequences for banks. At the same time, these effects are also likely to differ across business lines and trigger strategic responses by banks.

On the asset side of banks' balance sheets, the shrinking proportion of young customers could exert *downward pressure on the demand for loans to individuals*, such as borrowing for current consumption⁷⁴. However, it is difficult to assess whether the extent of these developments would adversely impact banks' retail banking activities, since the decreasing demand for loans from younger customers could be partly compensated by the increasing demand from pensioners (through, for instance, reverse mortgages), as mentioned in the previous section. The underlying assumption of the analysis carried out by financial institutions (i.e. Deutsche Bank, 2003) is that the baby boomer cohort will be more likely to subscribe consumer loans than current pensioners. However, some observers have challenged this assumption, arguing that the baby boomer cohort will also face incentives to save for the increasing costs of old age and dependency that will result from their increasing life expectancy. Alongside these developments, credit institutions might *increase their offering of loans targeted towards "senior" customers*, such as ones specifically suited to the increasing demand of financing health and long-term personal care. On the whole, these products will be shaped in accordance with the specific needs of the elderly (e.g. financing of long-term nursing care and servicing needs or care in case of illness⁷⁵).

Survey evidence suggests that older cohorts are less likely to start new businesses⁷⁶. Furthermore, potentially lower GDP growth per capita might also reduce incentives to start new businesses. Thus, *loans to SMEs and venture capital financing might be affected negatively* by demographic change, thereby reducing *interest receivable* for banks.

On the liability side of banks' balance sheets, following the general trend described in Section 2.3.4, the prospect of an ageing population may favour the *development of new long-term savings products*⁷⁷. In this respect, many governments provide substantial tax incentives and subsidies to increase the conversion of long-term savings (for certain pre-specified products) into annuities at retirement age. However, it is worth highlighting that, in some EU countries, such as FR, annuities are mostly provided by insurance companies. These instruments allow the buyer of the annuity to hedge against the risk of longevity (see Box 3 for more details).

74 DB Research (2003) and UBS (2006).

75 Raab, T., *Demographic Change and the Future of Financial Services*, Presentation at the OeNB Workshop "Ageing and its implication for banks and bank strategy I", 4 April 2006, Vienna.

76 Minniti, M., Bygrave, W. D. and Autio, E., *Global Entrepreneurship monitor 2005*, Executive Report, 2005.

77 There could be a timing difference in households' demand for long-term saving products and annuities: households may first demand savings products (up to retirement) and then turn to annuities (dissaving).

Box 3

THE ANNUITY MARKET IN THE EU

Life annuities are financial products which, in exchange for an initial premium, pay beneficiaries a periodic return as long as the annuitant lives.

In most European countries, the annuity market is still underdeveloped. According to Fornero and Luciano¹, annuity markets are characterized by imperfect and incomplete information and by significant disparities in risk assessment and in pricing compared with other financial assets. According to several studies, the following factors might have caused this underdevelopment:

1 Fornero, E. and Luciano, E., (Eds.) *Developing an annuity market in Europe*, E. E. Cheltenham, 2004, London.

- The current level of “pay-as-you-go” pensions is sufficiently high for many households to maintain their desired lifestyle in retirement.
- Households perceive the costs of annuities to be high and prefer to have liquidity buffers at old age.

Proposals to promote annuities combine demand and supply side measures:

- On the demand side, researchers suggest improving consumer awareness of longevity risk, the likelihood of disability, and the private annuity plans that are available.
- On the supply side, researchers suggest making annuities more flexible and reducing prices by fostering competition.

Furthermore some governments, like AT, already provide substantial tax-incentives and subsidies to increase the demand for annuities. Others, like NL, are planning to do so. Annuities products were introduced in FR in 2003, both on an individual basis (PERP, Plan d’Epargne Retraite Populaire) and on a collective basis (occupational pension funds; PERCO, Plan d’Epargne pour la Retraite Collectif). PERP is the only long-term saving product which restricts pay-out options to annuities. Its launch has encountered mixed success, mainly due to competition with financial products (e.g. life insurance) that offer better tax advantages.

On the whole, in most EU countries, as with the mortgage market, the annuity market is still in its early stages of development and there seems to be significant potential left for further growth. In DE, for instance, although the size of the whole annuity market is very hard to estimate because it is split between different kinds of suppliers, the latest statistics report a stock of 6.2 million Riester Rente contracts (government subsidized private pension plans), most of which are contracts with insurers.

Risks for financial institutions

Annuity pricing is extremely sensitive to interest rates and longevity, and therefore requires sophisticated pricing models, robust risk management capabilities and data on mortality rates². In particular, when rates are low, credit institutions (and insurers) have a limited ability to generate satisfactory returns apt to cover actuarial risk in assessing longevity. Moreover, some universal banks (and insurers) have pointed out that it has become extremely difficult to hedge longevity risk, given the fading of the related reinsurance market and the difficulties of establishing a longevity derivatives market. However, according to some market participants, investment risk (which can be broken down into interest rate risk and credit risk) is also challenging. In this respect, annuities seem to be best matched by investing in long-duration bonds of high quality.

2 Neville, L. and Ho, H., *Buying in bulk*, Risk, May 2006, pp. 54-56.

Demand for more sophisticated/flexible products and advisory services is expected to increase. Banks may respond by offering products and services tailored to the specific requirements of each stage of the life cycle. Thus, some analysts expect a return to a modified customer relationship model⁷⁸. The recent rise in households' demand for structured products (e.g. long-term guaranteed investment/savings products) in some European countries (e.g. FI, NL, NO, SE, CZ) is a reflection of this trend, although these products still account for a small share of total market size (around 15% according to empirical data)⁷⁹.

Different financial intermediaries are likely to offer long-term investment/savings products, so a shift of household savings behaviour from, predominantly, bank deposits towards more sophisticated investments could increase competition among banks, pension funds and insurance companies and potentially *reduce banks' deposits*. Alternative forms of finance for banks may be more costly, possibly exerting *downward pressure on net interest income*. However, banks may also profit from the increased demand for non-bank financial products through *increases in non-interest income*. For example, banks often distribute non-bank products and earn sales commissions; they own non-bank intermediaries which pay dividends to their parent companies; non-bank intermediaries trade through (investment) banks, which earn brokerage fees; banks provide guarantees for some products and charge related fees; and the increased supply of non-bank financial products boosts the demand for sophisticated advice to households, which generates fees for banks.

Eventually, the asset management business line (including wealth management and private banking) may benefit from demographic change by increasing financial advice to large clients, such as corporate pension funds, and to individuals. In light of these considerations, the ageing of the EU population is already perceived by many commercial banks as an *opportunity to expand their product range and offer new*

services, which would potentially *increase the share of non-interest income relative to interest income*. EU banks might also attempt to attenuate the impact of demographic change through international diversification, as not all countries and regions age at the same pace. This strategy also entails risks, such as country, exchange rate, political and legal risks. However, anecdotal evidence suggests that so far few European banks have implemented strategies specifically addressing demographic change.

The demand for more sophisticated advice requires a higher qualified workforce in banks, which would probably put *upward pressure on banks' staff costs*. This effect might be partly outweighed by lower demand for less qualified clerks combined with productivity gains, e.g. due to new technology. In addition, banks' obligations stemming from defined benefit schemes for employees may also increase upward pressure on staff costs⁸⁰. Thus, the net impact on staff costs appears ambiguous.

2.5 POTENTIAL RISKS FOR BANKS

2.5.1 COMPETITION/COOPERATION BETWEEN PENSION FUNDS, BANKING GROUPS AND INSURANCE COMPANIES

As discussed in Section 2.4, demographic change is likely to put downward pressure on the bank intermediation ratio's growth rate. Supply-side factors could suggest that institutional investors can offer better services than banks due, for example, to different regulatory requirements and innovations. But at the same time, demand-side factors might indicate that households increasingly seek advice on their financial transactions from sophisticated and specialised service providers.

⁷⁸ Raab (2006).

⁷⁹ Presentation at the *Colloque du Conseil scientifique des l'Autorité des marchés financiers: les risques portés par les ménages*, 15 May 2006.

⁸⁰ As a response to increasing risk and costs associated with defined benefit schemes, many banks have switched to defined contribution schemes for new employees.

Population ageing and the changing demographic environment will most likely support the growing importance of non-bank financial products and institutional investors. Further pension reforms and efficiency gains from specialisation, combined with increasing demand for financial advice and asset management services from more sophisticated households, will thus likely *increase competition* between banks, insurance companies, pension funds and mutual funds. A shift in household assets from bank deposits (still predominant) towards investments with, for example, pension funds and insurance companies, combined with pressures from economies of scale and scope, may provide further motivation for companies to form large financial groups (e.g. bancassurance groups) and/or for banks, insurance companies and mutual funds to cooperate more closely (a tendency already observed in most Member States). That said, the blurring of boundaries between financial sectors has regulatory implications. Indeed, regulation and supervision are increasingly likely to take into account the contagion risk between non-bank financial intermediaries and the banking sector, and the growing strategic importance of financial infrastructure.

Cooperation/cross-shareholdings between banks, insurance companies and investment companies may increase in the future and *may partly shield banks' income from the negative impact of increasing competition from non-bank financial intermediaries*. In addition, banks may exploit some comparative advantages over their non-bank competitors: they face lower funding costs because they are able to take in deposits (albeit at the cost of additional liquidity risk); they play a central role in the economy-wide payment system⁸¹; they maintain closer customer relationships (due to deposit and payment services) compared with non-bank intermediaries, which may enable them to extract higher value added from their customers by selling a broader range of services and products; and they traditionally enjoy a high level of trust among households due to

established brand names, the bank safety net, and industry regulation and supervision.

2.5.2 BANKS, RISK MANAGEMENT AND INCOMPLETE MARKETS

The reform of public pension systems and the shift from defined benefit to defined contribution schemes in funded pension provision has substantially increased households' risk exposure⁸². They now bear far larger risks associated with pension provision, but financial institutions' and banks' long-term risk exposure with respect to e.g. inflation risk and longevity risk has also substantially increased. It is difficult to hedge these risks for individual households, whereas banks (and other financial institutions) have a comparative advantage (relative to households) in this respect. Therefore, households can respond to this trend by increasing demand for products assisted by guarantees⁸³. Banks frequently offer such guarantees, which increasingly expose them to risks usually born by non-bank financial intermediaries (i.e. insurance companies). They can hedge against some of these risks, i.e. market risk, but not against others (i.e. longevity risk⁸⁴), as markets are incomplete. Market incompleteness means that it is not possible to replicate a portfolio that exactly matches banks' long-term contingent liabilities. This impedes perfect hedging, so banks are forced to bear

81 Despite ongoing changes in economy-wide payment systems (e.g. new payment instruments and payment institutions) there is no evidence that banks will lose their prominent role in the economy-wide payment system. See Schmitz, S. W. and Wood, G. E. (eds.), *Institutional Change in the Payments System and Monetary Policy*, 2006, Routledge, London.

82 Households' exposure to market and interest rate risk will increase, as will their individual career risk (G-10, 2005), while their exposure to political risk might slightly decrease, although funded systems are also subject to political risk Schmitz, S. W., *The Governance of Occupational Pension Funds and the Politico-Economic Implications: The Case of Austria*, in P. Mooslechner, H. Schubert, B. Weber (eds.), *The Political Economy of Financial Market Regulation: The Dynamics of Inclusion and Exclusion*, E. E. Cheltenham, (forthcoming), 2006.

83 Bodie, Z. and Crane, D. B., *The Design and Production of New Retirement Savings Products*, Harvard Business School Working Paper 98-070, 1998, Boston.

84 Neville and Ho (2006).

these risks at least partly themselves and have an appropriate capital cushion. However, *market incompleteness results in non-negligible costs*: De Jong⁸⁵ estimates that unhedgeable wage risk alone increases the value of wage-linked pension liabilities for financial institutions by about 10%. Governments are starting to step in and offer financial assets that reduce market incompleteness. In recent years, some EU Member States (e.g. FR, UK) saw an increase in (partly index-linked⁸⁶) government bonds issued with maturities of more than 30 years, which were in great demand by the market. Further initiatives in the area of longevity bonds were taken by the EBRD (European Bank of Reconstruction and Development). Governments are in a preferential position to spread risks across society and across time due to their power to tax; thus, they retain an advantage as ultimate risk bearers over the long-term, on which banks rely for efficient risk management.

2.6 CONCLUSIONS

The overall impact of demographic change on banks is difficult to assess, as a wide range of partly counterbalancing forces may have an impact on banks' balance sheets and profitability. On the one hand, demographic change may exert downward pressure on the bank intermediation ratio, demand for consumer credit and mortgages, and net interest income. The potential flattening of the yield curve may enhance this effect by decreasing revenue from liquidity and duration transformation. In addition, increasing competition within the banking sector and from non-bank financial intermediaries may exert downward pressure on interest margins. On the other hand, banks may react to these developments by offering new products tailored to senior customers (e.g. reverse mortgages), which may partly outweigh decreasing demand for bank loans to younger customers. The (further) growing demand for asset management and advisory services may lead to increasing non-interest income. This may be reinforced by the increasing role that

non-bank financial intermediaries play in banks' income – from the trading activities of non-bank financial intermediaries on financial markets, such as net-fee, commission and dividends – and by cooperation/cross-shareholding involving banks, insurance companies and investment companies.

In sum, demographic change may boost the share of non-interest income relative to interest income. In this respect, many EU banks see the changes as an opportunity to expand their product range and offer new services. However, anecdotal evidence suggests that only a few EU banks have so far implemented specific strategies to address demographic change.

The potential rise of new products may be accompanied by new risks (i.e. longevity risk), which will require banks to adapt their risk management. Whether or not the diversification of bank income streams has a stabilising effect on bank income will depend on the future variability and correlation of interest and non-interest revenues⁸⁷. In addition, banks might respond to demographic change in their home markets by diversifying their activities internationally into some emerging market economies.

As a consequence of the above analysis, the increasing blurring of boundaries between banks, insurance companies and investment companies, and the trend towards international diversification of banks' activities, call for an ongoing adaptation of regulatory approaches and supervisory practices to take into account, additionally, the potential increase in cross-sector contagion.

85 De Jong, F., *Valuation of pension liabilities in incomplete markets*, Mimeo, 2005, Tilburg University, University of Amsterdam and Netspar, Amsterdam.

86 It is worth noting that the German Federal government issued the first inflation-linked bond in March 2006 with a 10-year-maturity and a current volume of €5.5 billion. In 2004 the Italian government also issued a 30-year inflation-linked bond.

87 For the banking systems of the EU countries, Smith, Staikouras, Wood (2003) find that the rising share of non-interest income stabilised profits in the period from 1994 to 1998 for most but not all categories of banks. See Smith, R., Staikouras, C. and Wood, G. E., *Non-interest income and total income stability*, Bank of England Working Paper n. 198, 2003, London.

3 THE CHANGING STRUCTURE OF EU BANKS' FUNDING AND ITS IMPLICATIONS FOR THEIR ACTIVITIES

3.1 INTRODUCTION

The role of banks as monetary intermediaries involves the transfer of funds from economic agents with a financial surplus to economic agents with a financial deficit. Banks traditionally attract customer deposits as a funding source to finance lending activities. These deposits still account for the largest part of their liabilities. However, banks also access wholesale funding sources, including interbank borrowing and money and capital market issuance. The composition of banks' liabilities and their changes has an important impact on profitability and exposure to market and liquidity risks.

This chapter aims at analysing the funding structure of EU banks and changes that have been observed since 2000⁸⁸. Therefore, it uses Bankscope data for a sample of the 500 largest EU banks to obtain a broad picture for the EU as a whole, and data from the ECB for the euro area⁸⁹ to analyse in greater detail the recent developments in the deposit base. While Bankscope data are on a consolidated basis, thus including the activities of the parent banks and their subsidiaries, ECB data use a territorial base, which means that the data do not include banks' operations – through branches or subsidiaries – outside the euro area. The analysis also draws heavily on a qualitative questionnaire filled out by supervisors and national central banks represented in the BSC.

The paper is organised as follows. The main developments in banks' funding structure are discussed in Section 3.2. Section 3.3 presents the changes within the deposit base, while Section 3.4 describes the developments in non-customer funding sources, such as interbank deposits, market funding and securitisation. Financial stability issues are discussed in Section 3.5.

3.2 MAIN DEVELOPMENTS IN BANKS' FUNDING STRUCTURE

Overall, there have been very few changes in banks' funding structure over the past five years (Chart 18). Based on our sample of 500 banks from Bankscope, customer deposits are still the main part of EU banks' liabilities. Their share stood at 33% at the end of 2005, compared with 32% at the end of 2000. These deposits are mainly constituted by households, but also include wholesale deposits from non-financial corporations and non-bank financial institutions. Conversely, interbank liabilities dropped from 23% to 17% of total liabilities between 2000 and 2005. Market funding can be broken down in shorter-term money market funding (e.g. certificates of deposit, commercial paper and short-term bonds) and longer-term capital market funding (e.g. mortgage bonds, subordinated debt and other bonds). While money market funding rose from 10% to 13%, capital market funding remained constant at around 23% of total liabilities. Overall, the share of market funding rose from 34% to 36%. Finally, other funding sources, which are mainly linked with banks' financial market (trading) operations, rose from 7% to 10%.

However, the above breakdown does not take into account the fact that the interbank market is typically a reciprocal market, where banks simultaneously engage in short-term borrowing and lending activities (see Section 3.4.1). Therefore, interbank liabilities are largely matched by the same kind of assets. As a result, it might be more interesting to look at interbank funding on a net basis (i.e. interbank liabilities minus interbank assets).

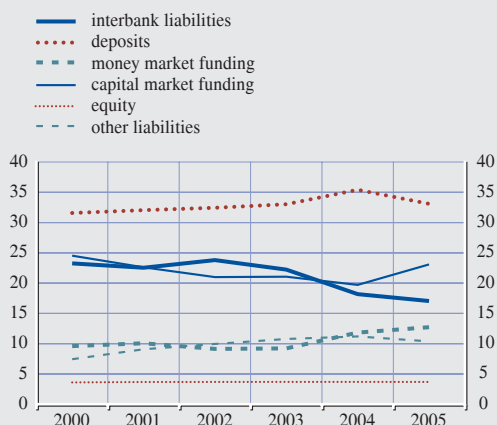
Chart 19 provides banks' liability structure using their net interbank position. Whereas banks' gross interbank liabilities sharply

⁸⁸ The study will not look into the developments regarding banks' own funds, which have also been subject to important changes in recent years, as witnessed for instance by the growing importance of hybrid forms of capital. These changes are driven by specific factors which fall outside the scope of this study.

⁸⁹ Detailed data on developments in the deposit base of NMS banking sectors' are not available.

Chart 18 European banks' liabilities, including gross interbank liabilities

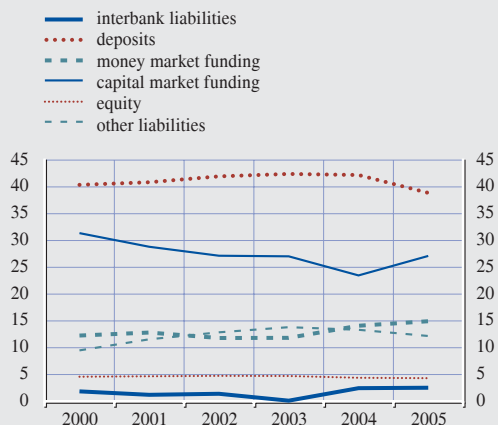
(percentages of total liabilities, consolidated data)



Source: Bankscope.
Note: Set of the 500 largest European banks. Consolidated data include the parent bank and its subsidiaries.

Chart 19 European banks' liabilities, using the net interbank position

(percentages of total liabilities, consolidated data)



Source: Bankscope.
Note: Set of the 500 largest European banks. Consolidated data include the parent bank and its subsidiaries.

declined between 2000 and 2005, their net interbank position remained more stable at around 3% of total liabilities. Using this concept, the deposit base accounts for 39% of banks' total liabilities at the end of 2005, down slightly from 40% at the end of 2000. The share of capital market funding also declined slightly, from 31% to 27% of total liabilities. Money market funding, on the other hand, increased from 12% to 15%. Thus, total market funding declined slightly from 43% to 42%. Finally, other funding channels rose from 10% to 12%. Banks' shift towards shorter-term funding may be related to the rise in the euro area's interest rate curve slope observed between 2001 and 2004. Such a development makes it more rewarding for banks to finance long-term assets with short-term liabilities. Moreover, short-term funding enables banks to benefit more quickly from a decline in market interest rates. More recently, the interest rate curve started to flatten in the euro area, as short-term rates rose more than long-term rates. This may induce banks to step up funding sources with longer maturities in order to lock in current low rates for a longer period of time.

All in all, banks' overall funding structure has not changed significantly over the past five

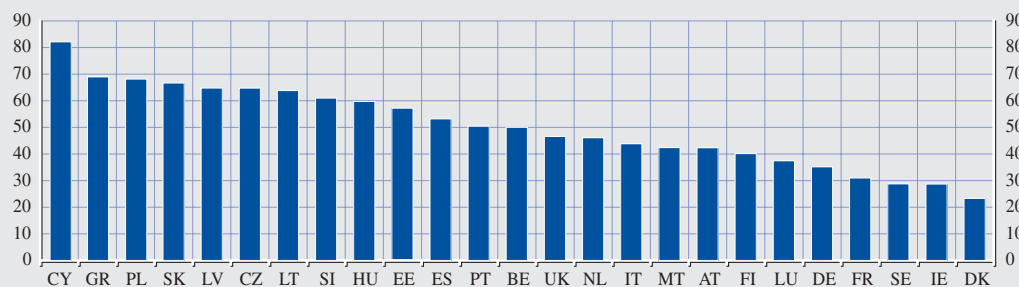
years. However, changes may have taken place within these broad funding categories. These will be looked at in the subsequent sections. Furthermore, the fact that aggregate figures do not reveal significant changes in banks' liability structure does not mean that important changes did not take place at individual banks. Certain banks may for instance have suffered a decline in the deposit base as a result of smaller banks' aggressive pricing strategies and may have been forced to turn to other funding channels, potentially with a bearing on their profitability and risk profile. The nature and scale of such developments, however, do not appear to have been of systemic relevance.

Looking in greater detail at the structure of banks' liability side, it is observed that there are significant differences from one bank to another. Two determining factors – the bank's country of residence and its specialisation – are dealt with in more detail below.

First, banks' recourse to deposit financing differs across countries (Chart 20). Deposit funding is especially important in the new member states and GR (up to 80% of total liabilities), while in DK, IE, SE and FR, deposits account for less than 30% of total liabilities.

Chart 20 Share of customer deposits in total liabilities

(percentage of total liabilities at the end of 2004, consolidated data)



Source: BSC.

These variations in banks' overall funding structure may result from differences in banking system structure, the size and development of the local financial market, the legislative environment, and, finally, the proportion of foreign ownership.

Differences in the structure and development of a country's financial sector may have led to diversity in banks' activities. In countries where bank lending is well developed, banks are more likely to face funding constraints in the deposit base. In these countries, banks can thus be expected to turn to other funding channels to a greater extent. On the other hand, where bank lending is less developed, deposit funding is expected to be more important. This may explain why the share of deposits in new member states is relatively high compared with the EU average.

Another structural factor that may differ across countries is household saving behaviour. Indeed, household saving levels differ from one country to another. In countries where saving levels are high, customer demand for deposits is likely to be higher. However, households' investment preferences also play an important role. While households in some countries mainly invest in deposits, households in other countries may prefer non-bank financial products, such as mutual funds and life insurance contracts.

The size of the national market may also influence banks' funding strategies. Banks in

smaller countries are often not very reliant on capital market funding, given the high costs associated with small issues. The same holds true for securitisation, where economies of scale are even more prominent.

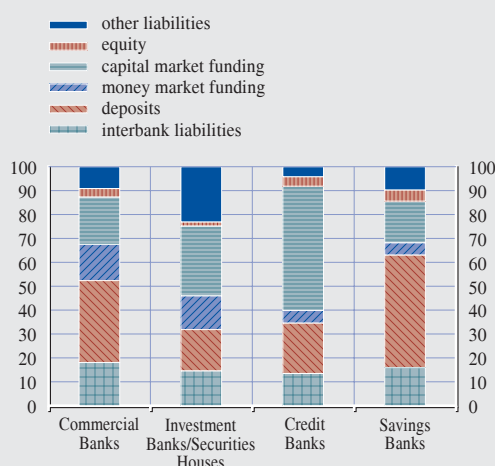
Variations between countries may also follow from differences in legislation, e.g. in the field of taxation of deposits, deposit insurance or the existence of covered bond frameworks. For instance, the existence of mortgage bond legislation in DK helps to explain the relatively lower importance of deposit funding in this country, as mortgage loans are financed through mortgage bonds.

Also, the proportion of foreign ownership of the banking sector may have an impact on the funding structure. In countries with a high proportion of foreign owned banks, the importance of intra-group (i.e. interbank) funding for the sector as a whole may be substantial. Thus, some banking systems of NMS not only have a higher degree of deposit funding, but also enjoy a relatively high level of interbank financing as a result of the high degree of foreign ownership of these sectors.

Banks' funding structures not only vary as a result of the above-mentioned national differences, but also reflect differences in individual banks' characteristics. Besides differences in size and ownership, already discussed above, banks' core activities may also

Chart 21 Funding structure according to the bank's activity

(percentage of total liabilities at the end of 2005, consolidated data)



Source: Bankscope.
Note: Set of the 500 largest European banks. Consolidated data include the parent bank and its subsidiaries. Credit banks include mortgage banks, real estate banks and medium- and long-term credit banks. The bulk of institutions in this group belong to the first type.

have an impact on their funding structure. Commercial banks with a broad base of activities generally have a diversified funding structure (Chart 21). Within that group, the smaller institutions tend to have more customer and interbank funding, while the larger institutions may have easier access to market funding and securitisation. Savings banks (i.e. liability driven) and building societies are mainly financed by client deposits (especially longer-term deposits), with less recourse to wholesale funding. Mortgage banks (i.e. asset

driven) are mainly financed by securitisation and other forms of market funding. Investment banks have a variety of “other” liabilities, mainly related to their financial market activities (e.g. short positions on their trading portfolio).

This demonstrates the clear links between a bank's choice of funding and its core activities. For instance, banks which are mainly active in mortgage lending reduce their liquidity and interest rate risk by using sources of matched funding such as mortgage or covered bonds. Banks that are heavily active in trading activities may prefer a large share of short-term money market funding. This matching may also take place by using derivatives, which are not taken into account in this paper due to lack of data. One may note that the differences in funding structure between individual banks seem to decrease as the relative importance of universal banks increases.

3.3 CHANGES WITHIN THE CUSTOMER DEPOSIT BASE

This section discusses the developments that occurred within the deposit base. It looks more specifically into the sources sector and domestic vs. foreign – of the deposit base and its maturity characteristics.

The main source within deposit funding is households. At end-2005, households account for almost 59% of total bank deposits in the euro area (Table 3.1) and reportedly remain the

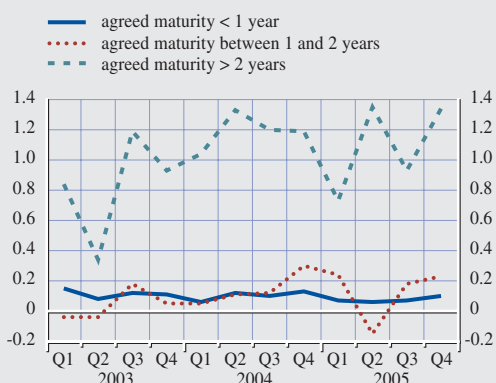
Table 3.1 Percentage of total deposits, euro area

	Central government		Other governments		Non-bank financial institutions		Non-financial institutions		Households	
		σ		σ		σ		σ		σ
2002	1.8	1.2	2.4	1.3	16.9	12.2	16.5	4.8	62.5	14.3
2003	2.1	1.2	2.2	1.1	17.4	12.2	16.5	4.7	61.8	14.3
2004	2.0	1.2	2.1	1.0	18.1	13.1	16.6	4.8	61.1	15.3
2005	2.1	1.2	2.2	1.1	20.4	14.7	16.6	4.3	58.8	16.0

Source: ECB.
Note: σ is the cross-country standard deviation in percentages for a given period

Chart 22 Difference between rates on deposits from households and non-financial corporations

(percentages, 2003-2005)



Source: ECB.

cheapest source of funding. Non-bank financial institutions and non-financial institutions are also important funding sources for banks, accounting for 37% of total customer deposits overall at the end of 2005. Central and other governments are less important as funding sources, together accounting for 4%.

Table 3.1 shows that, during the period 2002-2005, households as a funding source decreased by 3.7%, down to 58.8% at the end of 2005⁹⁰. The percentage decreased in almost all euro area countries. At the same time, non-bank financial institutions became a more important funding source for banks. Their share increased by 3.4%. The share of governments and non-financial institutions remained roughly stable during this period. The increased dispersion for non-bank financial institutions and households signals a difference in the pace at which the funding structure within the deposit base is developing across members of the euro area. The shift from household funding to funding from non-bank institutions affects banks' profitability and stability negatively because funding from non-bank institutions is more expensive and less stable compared with funding obtained from households (Chart 22).

One possible reason for the increasing importance of non-bank financial institutions

and non-financial institutions funding may be represented by increased cash holdings. Due to improved economic conditions, companies and non-bank financial institutions earn more revenues, which are partly deposited at banks. A second possible reason for the observed shift in funding sources is the low interest rate environment, which may have induced households in search of higher yields to invest more money in relatively high yield products, such as mutual funds, shifting their preferences away from traditional demand deposits. However, households in other countries continued to prefer deposits, reflecting the sustained risk aversion that followed the bursting of the stock market bubble in 2000. Another related factor for the changed investment opportunities for households could be disintermediation. Thanks to new (information) technologies, more transparency and, hence, a reduction in information asymmetries, transaction costs may be lower. These lower transaction costs make it cheaper for households to invest in mutual funds, stocks and other assets traded on the financial markets. Other forms of long-term investments, such as life insurance and pension products, are also gaining popularity. Banks try to recollect these funds by offering these products themselves through subsidiaries, by acquiring a share in non-bank financial institutions, by setting up joint ventures or by entering into distribution agreements.

Not surprisingly, over 70% of deposits are of a short-term nature, i.e. overnight deposits and deposits with agreed maturity up to 1 year and redeemable at notice up to three months (Chart 23). Overnight deposits are the main funding source, accounting for more than 30% of total deposits. The share of deposits with agreed maturity up to 1 year is roughly 15%. This reflects one of the traditional transformation function of banks, i.e. borrowing short.

In the past four years, the importance of overnight funding has increased steadily. However, this increase is partly offset by the

⁹⁰ For a country breakdown see Table 3.2 at the end of this chapter.

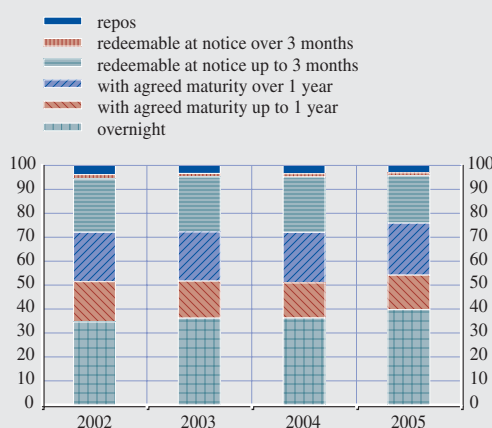
decrease in deposits with a maturity up to one year and redeemable at notice up to three months. Yet, eight of the MU-12 members have experienced an increase of deposits redeemable at notice up to three months⁹¹. All in all, banks have increasingly turned to very-short-term funding, which may have an impact on banks' profitability and risk profile. While this development has a positive impact on banks' interest rate margin, it may also lead to higher interest rate risk, as it entails a larger mismatch position. Banks' interest rate position, however, is to a large extent determined by derivatives, which are, under most EU member states' traditional national accounting standards, not recorded on the balance sheet. Observed balance sheet changes thus do not necessarily reflect a change in banks' risk profile. With the introduction of IFRS in 2005, the impact of derivatives will be more visible in banks' financial statements.

Moreover, the increased importance of overnight funding is largely due to an increase in overnight deposits from households. Against this background, one has to bear in mind that the behavioural duration of these sight deposits is not equal to their contractual duration. In fact, the demand for these deposits is rather insensitive to changes in interest rates and thus they have a rather high duration. Hence, the rise in overnight deposits does not necessarily entail an increase in banks' interest rate risk.

On the other hand, banks have also acquired more funding with a maturity of over 1 year. Deposits within this maturity class increased by 1.1 percentage points to 21.8% in 2005. This development is entirely the result of the increased importance of these deposits constituted by other financial intermediaries. In fact, other sectors reduced their holdings of deposits with an agreed maturity of over 1 year. The changes may thus be related to this sector's demand for specific types of deposits, but may also follow from banks' desire to limit their interest rate and liquidity risks, especially as they also shortened the maturities of their other funding sources.

Chart 23 Maturity structure of deposits, 2002-2004

(percentage of total deposits, excluding deposits from central government)



Source: ECB.
Note: Deposits of central governments are not included due to lack of data.

Another structural factor influencing the deposit base may be the introduction of new deposit products. Banks across the MU-12 have introduced deposits linked to an index (including caps and floors). In search of yields, customers may have shifted their wealth from the traditional demand and saving deposits to these new deposit products. Overall, these types of products have a relatively long maturity compared with traditional demand and saving deposits.

Another interesting feature of deposit funding is the observed home bias. The weighted average of the domestic component for the members of the euro area fluctuates around 90%. The home bias varies across the area but is decreasing. At the lower end we find BE, IE, and LU with domestic funding of 85%, 87% and 48% respectively. Other countries record shares of domestic funding far above 90%. The observed home bias may be a reflection of European

91 Part of the decrease in deposits redeemable at notice up to three months and the increase in overnight deposits is influenced substantially by a reclassification between these categories of the statistics reported by ES. Although a correction is not possible, it seems that the observations remain valid excluding this reclassification.

retail banking's lower degree of integration compared with wholesale banking. Banks mention that they still experience hurdles when they set up cross-border retail activities within the euro area. Future initiatives to increase integration of the retail banking sector still further may therefore increase foreign retail funding as well. Another factor that may stimulate more foreign funding within the deposit base is internet banking. Through this medium, banks can attract overseas funding more easily.

3.4 DEVELOPMENTS IN BANKS' NON-DEPOSIT FUNDING

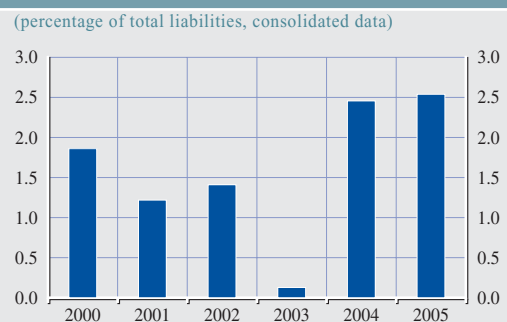
Non-deposit funding (excluding equity and "other" liabilities, mainly related to banks' financial market activities) accounted for around 42% of banks' total liabilities between 2000 and 2005. Three important non-deposit funding sources will be discussed in greater detail: interbank funding, money and capital market funding, and securitisation. While the relative importance of these channels has not changed dramatically of late, important shifts may have occurred within these broad sources of funding.

3.4.1 INTERBANK LIABILITIES

A first important non-deposit funding channel is banks' borrowing on the interbank market. Through this market, banks with excess funds can transfer them to banks experiencing a funding deficit. As a result, liquidity is redistributed among banks. It is clear that interbank transactions mainly serve short-term funding needs, to insure against short-term liquidity shocks. Consequently, these positions are rather volatile over time.

In most cases, banks both lend and borrow in the interbank market, as the interbank market requires reciprocity: a bank wanting to borrow must also be willing to lend at regular intervals. Therefore, the liabilities are largely matched by the same kind of assets. Interbank funding thus

Chart 24 Net recourse of EU banks to the interbank market



Source: Bankscope.
Note: Set of the 500 largest European banks. Consolidated data include the parent bank and its subsidiaries.

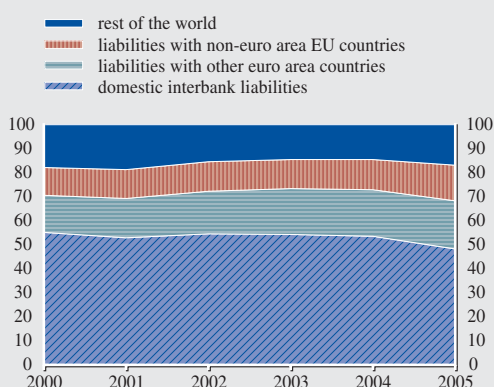
should be examined on a net basis. The figures for the set of 500 large EU banks point to a small net recourse of these banks to interbank funding (Chart 24). Large financial institutions may prefer to use the interbank market for funding purposes, since they often have (high) ratings and can obtain interbank financing at rather favourable conditions – compared with other funding channels – due to the economies of scale in interbank transactions. Individual banks' interbank positions may also be explained by the fact that not all banks have the same combination of activities. Some banks may be mainly active in deposit taking, while others are mainly lenders. Interbank markets balance the needs of these different types of institutions.

After a decline between 2000 and 2003, the net interbank liabilities of the sample of 500 banks increased to about 2.5% of their total balance sheet in 2004 and 2005⁹². Changes in the interbank position may have an impact on banks' liquidity and interest rate position. Hence banks' slightly higher recourse to interbank funding may result from changes in

⁹² The above-mentioned figures may however be distorted by the increasing importance of interbank-like (reverse) repurchase agreement transactions with non-bank financial institutions, which do not qualify as interbank assets or liabilities. These transactions should in fact be taken into account in assessing the importance of interbank funding. As these transactions appear to be more prominent on banks' assets side, the current figures could be an overestimation of banks' net recourse to interbank funding.

Chart 25 Geographical breakdown of interbank liabilities of euro area banks

(percentages of total interbank liabilities)



Source: ECB.

the characteristics of banks' assets, from lending growing more rapidly than the deposit base in certain countries, from banks' desire to adapt their interest rate and liquidity mismatch position, or from changes in market interest rates. In fact, the increasing importance of short-term activities on certain banks' asset side may have induced them to increase their interbank financing in recent years. Furthermore, the decline in short-term interest rates during the measured period may have increased banks' interest for short-term interbank financing. In the future, the pickup in short-term interest rates and the flattening of the yield curve may induce banks to reduce their mismatch position and to increasingly turn to more long-term funding sources.

Banks' interbank liabilities have become more internationalised over the past five years. Whereas domestic interbank liabilities accounted for 55% of euro area banks' total interbank liabilities in 2000, this share decreased to 48% at the end of 2005 (Chart 25). In turn, interbank liabilities towards other euro area banks and non-euro area member states of the EU increased, respectively, from 15% to 20% and from 12% to 15% of the total amount of interbank liabilities between 2000 and 2005. Interbank liabilities towards the rest of the world remained approximately stable at 18%.

While there are no harmonised figures available for the geographical breakdown of interbank liabilities of non-euro area banks, it would be reasonable to assume that the internationalisation of their exposures will at least be as important as that of MU-12 banks. This development illustrates the progressive integration of the European banking system. The increasing flows of liquidity between banks in different countries allow for a better distribution of funding throughout the European banking system. However, it could be argued that, in some cases, cross-border flows may be more volatile and more risk-sensitive than domestic interbank funding.

Moreover, in an important number of cases, these cross-border flows take place between banks belonging to the same group, i.e. between parents and subsidiaries. Intragroup funding flows have gained in importance in recent years as a result of the progressive consolidation of the EU banking market⁹³. These flows may be expected to be of a more stable and longer-term nature than traditional interbank transactions⁹⁴.

Cross-border flows within banking groups allow for funding transfers from markets with excess saving to those with a saving deficit compared with the growth in bank credit. In practice, funding flows in most cases occur from parent banks in "old" member states (where credit growth is lower, savings are higher and market interest rates are lower) to subsidiaries in new member states confronted with savings deficits and higher funding costs due to higher market interest rates. Regarding this connection, most NMS report large differences in the funding patterns of domestic and foreign owned institutions, as external interbank liabilities are much more important

93 Note that intragroup funding flows are not taken into account in the Bankscope figures as these are on a consolidated basis.

94 However, intragroup lending may be subject to regulatory limits. In IE for instance, the regulatory limit on intragroup lending is fixed at 15% of deposits. This may hamper banks' ability to make use of these financing channels. Also note the possibility of the Codified Banking Directive (now 2006/48/EC) to impose such limits (see Article 111.2).

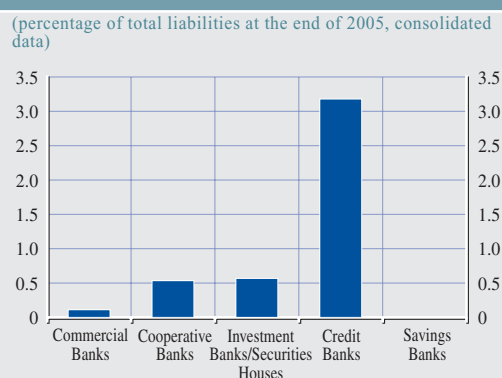
for the latter category of banks. Reportedly, up to 50% of these banks' liabilities come from parent banks. The increased pooling of funding is beneficial as it leads to a better exploitation of available funding, and enables banks to reduce funding costs and take advantage of profitable lending possibilities in new markets. On the other hand, it increases the scope for international contagion and contagion within banking groups.

3.4.2 MONEY AND CAPITAL MARKET FUNDING

Banks can also turn to non-bank financial market participants to obtain funding. Indeed, they traditionally issue a large range of money and capital market instruments such as: certificates of deposit, medium-term notes, floating rate notes, commercial paper and other types of bonds, characterised by a wide range of currencies, maturities and interest rates. The importance of money market funding increased from 12% to 15% of banks' total liabilities between 2000 and 2005, while capital market funding declined from 31% to 27%. Overall, the combined importance of these elements decreased slightly from 43% to 42% of banks' total liabilities. As already mentioned above, the observed shortening of maturities may be related to the steeper yield curve and the decline in interest rates.

The use of market instruments allows banks to diversify their funding base and may bring funding more in line with the assets' characteristics. For large, internationally active banks, which often have a high rating, market financing might also be a relatively cheap form of funding when compared with other wholesale sources, especially in the low interest rate environment that has prevailed during the last five years. In line with the above, NMS' banks, which often have lower ratings and are generally smaller, usually use less market financing and make greater use of deposit financing and funding from their parents. The growth of market funding has been supported by an increased demand for these securities from other (financial) sectors.

Chart 26 Share of mortgage bonds in EU banks' liabilities

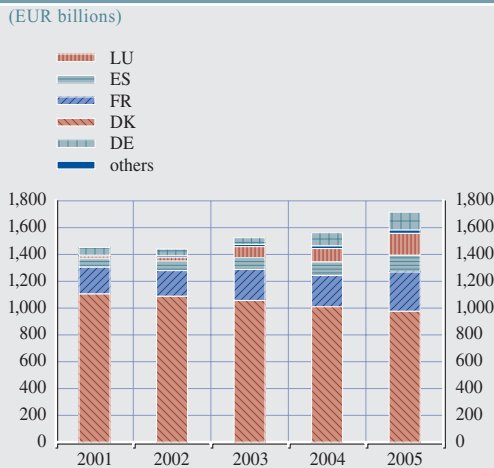


Source: Bankscope.
 Note: Set of the 500 largest European banks. Consolidated data include the parent bank and its subsidiaries. Credit banks mainly include mortgage banks and, to a lesser extent, real estate banks and other types of credit banks.

One specific type of debt security issued by a large and growing number of EU banks is the covered bond. This is a type of security collateralised by designated assets, based on a specific legislation that grants bankruptcy remoteness to the bond holders. In the case of covered bonds, a specific law regulates the entities that may issue such bonds. Unlike with securitisation, the assets involved remain on the bank's balance sheet and the bank retains the related credit risk. Covered bonds have so far been used mainly to finance mortgage loans. Through the issuance of such bonds, banks are able to increase the duration of their liabilities, and to reduce interest rate risk and funding costs. Naturally, mortgage banks are the biggest users of covered bonds as a source of funding, with slightly over 3% of these banks' liabilities consisting of mortgage bonds. For other types of banks, mortgage bonds account for about 0.5% or less of their total liabilities (Chart 26).

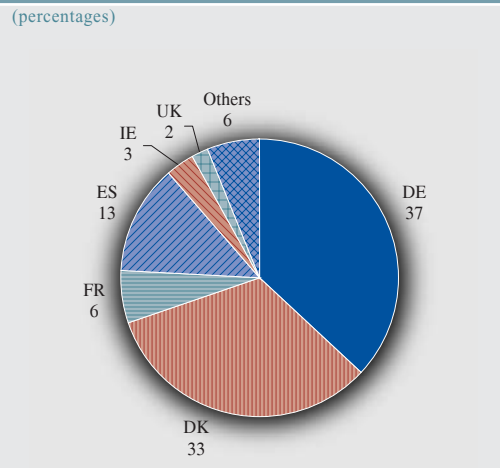
The oldest and largest market for covered bonds in the EU is DE. Almost all EU member states now have a legislative framework in place, although some of them are very recent (e.g. FI, IE, IT). According to data from the European Mortgage Federation – the representative body of the European mortgage industry that

Chart 27 Covered bonds outstanding in Europe



Source: European Covered Bond Council.

Chart 28 Covered bonds issued in Europe in 2004



Source: European Covered Bond Council.

embodies the vast majority of covered bond issuers – at the end of 2005, there was over €1,700 billion outstanding compared to an estimated stock of mortgage loans of over €5,000 billion (Chart 27). This accounts for about 15.8% of EU GDP and represents 17% of Europe's bond market. The largest market in terms of outstanding bonds is DE, followed by DK.

The growth in covered bonds issuance observed in recent years is the result of several factors. First, the increasing presence of legal frameworks for these bonds throughout the EU increases the possibility for banks to use this type of financing. Second, the growing importance of mortgage lending throughout the EU as a result of low interest rates, increasing house prices and a catch-up effect in NMS, supports banks' demand for specific instruments to finance these loans. Lastly, high investor demand for such securities – which offer a slightly higher return than other bonds with comparable characteristics – in a low interest rate environment, has also contributed to market growth. In the future, covered bonds are likely to be used in an even wider range of countries.

Although DE continued to account for most of the issuance in 2005, with 37% of the EU market, growth in recent years has mainly been driven by other EU countries, such as AT, DK, ES, and FR (Chart 28). The decline in issuance in a number of countries with a traditionally large covered bond market (DE) was more than compensated by the rise recorded in a number of other countries where the outstanding stock of covered bonds is currently still lower. As a result, the German share in the outstanding amount of covered bonds gradually fell.

Boundaries between covered bonds and mortgage backed securities have become blurred and the two types of instruments have started to converge. In some countries where structured covered bonds have been issued, securitisation techniques have been used to enhance the rating of the covered bonds (e.g. FR, ES and DK) or to enable the issuance of secured bonds against a pool of assets when no specific covered bond law is enforced (e.g. UK and NL). The huge interest elicited by these innovative transactions demonstrates a trend towards more homogenous funding instruments. Securitisation techniques applied to structured covered bonds may provide the necessary tools to level off legislative differences and to

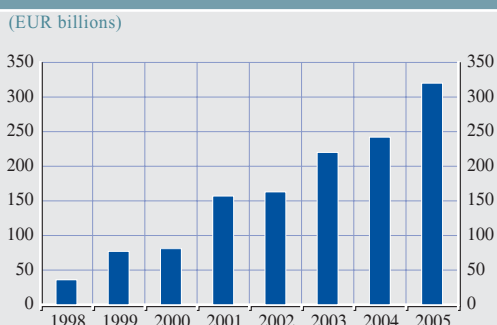
produce comparable covered bonds across countries. However, it should be noted that these techniques still differ extensively from securitisation transactions, which are discussed below.

3.4.3 SECURITISATION

Another instrument that plays a role in banks' funding strategies and has grown considerably in recent years is securitisation. There are many reasons for originators to securitise their assets, ranging from liquidity to capital adequacy reasons, and, in practice, banks often pursue a combination of benefits. It may be an efficient and cheap source of funding⁹⁵, as these bonds may achieve a higher credit rating than the banks' conventional bonds because they are segregated in tranches according to credit quality. Securitisation also allows issuers to diversify their financing sources, bringing them more in line with the characteristics of their assets. Finally, it helps originators to remove assets from their balance sheet and thus, essentially, to sell their exposure and release the regulatory capital assigned to it. Put more simply, they can use the money for more profitable purposes⁹⁶.

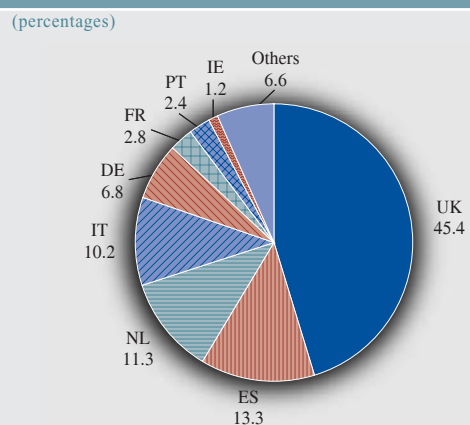
Data provided by the European Securitisation Forum show that issuance volumes grew considerably in recent years. In 2005, issuance in Europe as a whole increased by 31.1% compared with 2004, to €319.2 billion (Chart 29).

Chart 29 Growth of securitisation in Europe



Sources: JP Morgan Securities, Inc., Dealogic, Thomson Financial, Structured Finance International.

Chart 30 Securitisation issuance in Europe by country of collateral (2005)



Source: Dealogic, Thomson Financial, J.P. Morgan Securities Inc., Structured Finance International.

The UK still accounted for the largest share of collateral for new issues (45.4%), while ES, after a 300% issuance increase between 2002 and 2005, stood at 13.3%. NL and IT represented, respectively, 11.3% and 10.2% of collateral for new issues in 2005 (Chart 30). Conversely, in a number of countries, especially smaller ones and NMS, securitisation remained at low levels, inter alia because clear regulations were lacking or the market was small, which cause such operations to be too expensive (e.g. high transaction costs), especially compared with other financing sources such as deposits.

There are two large categories of instruments: asset backed securities (ABS) and collateralised debt obligations (CDO). ABSs typically comprise pools of relatively homogenous assets, such as residential mortgage loans⁹⁷, credit cards or car loans, while CDOs transfer credit

95 However, it has to be mentioned that the very first transactions executed by a bank are generally time and cost consuming due, for example, to lack of expertise, and that securitisation is on average more expensive than customer deposits.

96 Sometimes a bank retains part of the risk on its balance sheet, as it may invest in the more risky tranches.

97 This type of collateral in securitisation has obtained a separate label, i.e. MBS (mortgage backed securities) or even RMBS (residential mortgage backed securities), as opposed to CMBS (commercial mortgage backed securities).

risk on more diversified corporate bonds⁹⁸ or loan⁹⁹ portfolios.

While residential mortgages were the first financial assets to be securitised, non-mortgage related securitisations have grown to include many other types of financial assets, such as credit card payments, trade receivables, leases and car loans. In 2005, residential mortgage backed securities still accounted for 45% of European issuance, followed by collateralised debt obligations (15%), loans (12.3%) and commercial real estate bonds (11.8%) (Chart 31).

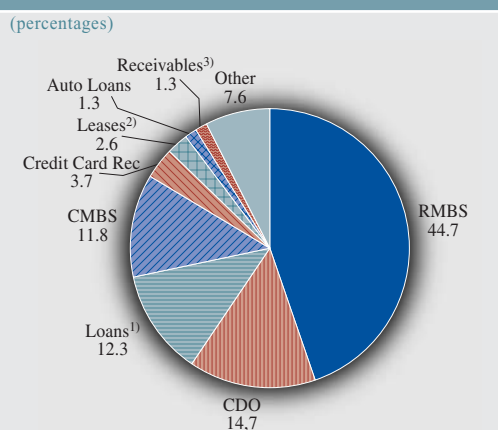
3.5 CONCLUSIONS AND FINANCIAL STABILITY IMPLICATIONS

It has been observed that, on aggregate, banks' funding has changed little since 2000. Customer deposits still constitute by far the largest part of banks' funding and have become more diversified, both at a sector – with an increase in wholesale deposits – and geographical level. Overall, this should improve the stability of the EU financial system.

However, there has been a slight shift towards short-term market funding, which can be attributed to: changes in banks' asset portfolios; banks' desire to adjust their asset-liability mismatch position or to diversify their funding base; changes in the interest rate environment or in banks' risk management; and to the availability of new instruments.

The shortening of the average maturity of banks' funding may have an impact on profitability and stability. So, while an increase in short-term funding has a positive impact on banks' interest rate margin, it may also lead to a higher interest rate risk, as it entails a larger mismatch position. However, the observed shift towards overnight deposit funding does not necessarily imply an increase in interest rate risk, as it is largely due to an increase in overnight deposits from households. In fact, the behavioural duration of such deposits is quite

Chart 31 Securitized issuance in Europe by collateral type (2005)



Sources: Dealogic, Thomson Financial, J. P. Morgan Securities Inc., Structured Finance International.

1) Includes leveraged, commercial, consumer, corporate SBL and other loans.

2) Includes equipment and other leases.

3) Includes account, health care, insurance, utility and other receivables.

long, as they are rather insensitive to changes in interest rates. Moreover, banks' interest rate position is to a large extent determined by derivatives, which are, under the traditional national accounting standards of most EU member states, not recorded on the balance sheet. With the introduction of IFRS in 2005, however, the impact of derivatives on banks' financial statements has become more visible.

With the increase in wholesale deposits and market funding, banks' funding sources tend to become more diversified, which may have a positive impact on their risk profile. Banks' use of specific funding instruments, such as mortgage bonds and securitisation, improves their asset and liability management. But that, in turn implies that banks become more dependent on money and capital markets, where the demand tends to be more cyclical than in the case of retail deposits, which are relatively stable and insensitive to interest rate developments. To the extent that more stable retail deposit financing has been replaced by short-term wholesale funding, banks may have

⁹⁸ CBO, collateralised bond obligations.

⁹⁹ CLO, collateralised loan obligations.

become more exposed to interest rate and liquidity risks.

The increasing importance of wholesale funding sources, as observed in recent years, also leads to a greater proportion of informed debt holders, who may be expected to monitor banks' risk taking behaviour more effectively, resulting in increased market discipline. It would lead to more accurate – but also more rapid – reactions if a bank is confronted with financial problems.

To the extent that wholesale funding is more expensive than retail deposit funding, the observed shifts may also negatively affect banks' profitability. However, it may be expected that banks relying more on non-deposit funding channels will enjoy high ratings

and, hence, relatively low market borrowing costs, which would partly offset the higher financing costs of wholesale funding.

Another specific point that deserves attention is the increasing importance of cross-border intra-group funding. Intra-group lending may lower the financing costs of banks' activities through subsidiaries, because these subsidiaries do not need to resort to more expensive market funding. Hence, this improves the profitability of the group as a whole. Notwithstanding the unarguable benefits associated with a more efficient functioning of groups' internal capital markets, central liquidity management may increase intra-group and cross-border contagion risks, with a potential impact on financial stability.

Table 3.2 Funding sources as a percentage of total deposits, by country

	BE	DE	GR	ES	FR	IE	IT	LU	NL	AT	PT	FI	EMU	σ
Central government														
2002	0.34	2.21	1.79	3.47	1.19	0.69	1.02	2.07	0.25	1.78	4.33	2.08	1.78	1.21
2003	0.97	2.07	1.89	2.40	3.48	1.38	1.10	3.54	0.41	1.45	3.20	3.98	2.11	1.16
2004	0.44	1.93	2.33	2.22	3.83	1.08	0.98	2.56	0.26	1.99	2.65	4.15	2.04	1.21
2005	0.90	1.78	2.23	2.19	3.99	1.71	1.15	1.88	0.31	1.76	3.03	4.57	2.06	1.23
Other government														
2002	2.07	3.18	1.13	3.01	0.34	0.73	2.40	2.39	2.03	3.67	1.98	5.25	2.36	1.34
2003	1.91	2.89	1.35	2.77	0.48	1.09	2.37	2.53	1.68	3.33	1.99	4.63	2.18	1.10
2004	1.70	2.74	1.27	3.21	0.37	1.08	2.49	2.78	1.68	2.93	2.05	3.80	2.15	0.99
2005	1.74	2.78	1.37	3.53	0.36	1.03	2.74	3.19	1.58	2.98	1.98	3.94	2.25	1.09
Non-bank financial institutions														
2002	21.27	24.27	0.95	13.20	5.46	31.30	12.29	40.09	20.07	4.49	7.98	3.13	16.93	12.22
2003	21.66	24.86	2.21	16.86	6.12	29.64	10.10	40.88	21.86	5.06	7.15	2.62	17.43	12.25
2004	22.63	24.96	1.71	20.47	6.92	30.20	9.31	45.15	22.22	5.95	7.87	3.60	18.12	13.07
2005	24.18	25.31	1.79	29.18	7.35	30.83	10.35	51.99	26.48	7.62	12.89	3.42	20.36	14.68
Non-financial institutions														
2002	18.64	11.80	16.72	19.04	15.76	26.47	16.25	23.40	28.60	18.95	17.73	22.13	16.48	4.76
2003	17.93	11.68	17.06	19.52	14.95	27.01	17.05	23.61	27.59	19.48	21.41	21.65	16.52	4.68
2004	17.38	11.71	17.06	18.64	15.01	26.69	18.67	24.51	26.91	15.93	23.05	20.32	16.55	4.77
2005	16.38	12.08	17.06	17.20	15.62	26.41	19.07	21.42	25.48	16.84	23.28	20.28	16.58	4.26
Households														
2002	57.69	58.54	79.41	61.28	77.25	40.81	68.04	32.05	49.04	71.10	67.99	67.41	62.46	14.30
2003	57.54	58.51	77.48	58.45	74.96	40.88	69.37	29.44	48.45	70.68	66.26	67.11	61.76	14.35
2004	57.85	58.65	77.63	55.46	73.87	40.96	68.56	24.99	48.94	73.20	64.38	68.13	61.14	15.28
2005	56.80	58.05	77.55	47.90	72.69	40.02	66.69	21.52	46.15	70.80	58.82	67.78	58.76	16.01

Source: ECB.

Moving forward, the behavioural stability of new deposit instruments may differ from that of traditional deposit instruments, and as a result the dynamics of the deposit base might be altered. Banks may also be exposed to reputation risks if they commercialise new, complex deposit products to a wide investor base. Therefore, the ample availability of cheap deposits observed until now should not be taken for granted. Now that longer-term interest rates have started to increase, households' appetite for deposits may temporarily decline, especially if banks do not sufficiently increase their deposit rates. In such a context, banks may have to choose between a decreasing volume of deposits or a higher deposit funding cost. In addition, the increasing competition from non-bank financial institutions for households' savings may constitute a more structural challenge for banks in setting their funding strategies. However, wholesale funding may compensate for this decline, which could also lead to a beneficial diversification of funding sources. The increasing importance of wholesale funding sources may put large banks in a more comfortable position, as scale advantages are likely to be more important in obtaining such funding than in the case of deposit collection.

ANNEX I

STRUCTURAL INDICATORS OF THE EU BANKING SECTOR

Table I Number of credit institutions (CIs) and local units (branches) of CIs

	Number of credit institutions					Number of local units (branches)				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	112	111	108	104	100	6,168	5,550	4,989	4,837	4,564
Czech Republic	119	84	77	70	56	1,751	1,722	1,670	1,785	1,825
Denmark	203	178	203	202	197	2,376	2,128	2,118	2,119	2,114
Germany	2,526	2,363	2,225	2,148	2,089	53,931	50,868	47,244	45,331	44,044
Estonia	7	7	7	9	11	210	198	197	203	230
Greece	61	61	59	62	62	3,134	3,263	3,300	3,403	3,576
Spain	366	359	348	346	348	39,012	39,009	39,750	40,603	41,979
France	1,050	989	939	897	854	26,049	26,162	25,789	26,370	27,075
Ireland	88	85	80	80	78	970	926	924	909	910
Italy	843	821	801	787	792	29,267	29,948	30,501	30,950	31,498
Cyprus	406	408	408	403	391	1,009	993	983	977	951
Latvia	39	23	23	23	23	590	567	581	583	586
Lithuania	54	68	71	74	78	156	119	723	758	822
Luxembourg	189	177	169	162	155	274	271	269	253	246
Hungary	240	227	222	221	215	2,950	2,992	3,003	2,987	3,122
Malta	17	14	16	16	18	102	99	104	99	109
Netherlands	561	539	481	461	401	4,720	4,269	3,883	3,798	3,748
Austria	836	823	896	883	880	4,561	4,466	4,395	4,360	4,300
Poland	758	666	660	658	739	4,080	4,302	4,394	5,003	5,078
Portugal	212	202	200	197	186	5,534	5,348	5,397	5,371	5,427
Slovenia	69	50	33	24	25	717	721	720	706	693
Slovakia	21	20	21	21	23	1,052	1,020	1,057	1,113	1,142
Finland	369	369	366	363	363	1,571	1,572	1,564	1,585	1,616
Sweden	149	216	222	212	200	1,986	1,904	1,906	1,874	1,910
United Kingdom	452	451	426	413	400	14,554	14,392	14,186	13,902	13,694
MU-12	7,213	6,899	6,672	6,490	6,308	175,191	171,652	168,005	167,770	168,983
EU-25	9,747	9,311	9,061	8,836	8,684	206,724	202,809	199,647	199,879	201,259

Source: ECB.

Note: For SI, CIs are banks, savings banks and savings and loan undertakings (cooperative banks). Before 2004 the savings and loan undertakings did not report to the Bank of Slovenia the number of employees and local units (branches). For LT, the figure for CIs includes small credit cooperatives (41 in 2001, 54 in 2002, 58 in 2003, 62 in 2004 and 66 in 2005) and the number of branches includes small non-registered local units (since 2003). For CZ, credit unions are included in the number of CIs and excluded from the number of local units (branches). For LV, credit unions are included in 2001.

Table 2 Number of employees and total assets of CIs

	Number of employees of CIs					Total assets of CIs (EUR millions)				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	76,104	75,370	73,553	71,347	69,481	776,173	774,330	828,557	914,391	1,055,305
Czech Republic	42,999	40,534	39,658	38,666	37,943	78,188	79,232	78,004	86,525	104,950
Denmark	48,538	47,613	46,443	46,372	47,579	454,328	506,694	546,468	607,107	722,096
Germany	772,100	753,950	725,550	712,300	705,000	6,268,700	6,370,194	6,393,524	6,584,388	6,826,558
Estonia	3,949	3,934	4,280	4,455	5,029	4,372	5,221	6,314	8,537	11,830
Greece	59,624	60,495	61,074	59,337	61,295	202,736	201,608	213,171	230,454	281,066
Spain	244,781	243,429	243,462	246,006	252,829	1,247,998	1,342,492	1,502,861	1,717,364	2,150,650
France	424,615	428,438	425,041	429,347	n.a.	3,768,943	3,831,610	3,994,237	4,415,475	5,090,058
Ireland	40,928	36,585	35,658	35,564	37,702	422,106	474,630	575,168	722,544	941,909
Italy	341,299	340,440	336,661	336,354	335,910	1,851,990	2,024,156	2,125,366	2,275,628	2,509,436
Cyprus	10,115	10,613	10,480	10,617	10,799	42,268	40,943	41,890	46,540	60,366
Latvia	8,172	8,267	8,903	9,655	10,477	7,279	7,250	8,482	11,167	15,570
Lithuania	8,796	8,420	7,557	7,266	7,637	4,361	5,010	6,425	8,509	13,099
Luxembourg	23,894	23,300	22,513	22,549	23,224	721,001	662,615	655,971	695,103	792,418
Hungary	34,054	35,045	35,725	35,558	37,335	38,433	43,564	54,769	64,970	74,653
Malta	3,584	3,459	3,401	3,353	3,383	15,762	16,273	17,803	20,589	27,195
Netherlands	131,230	125,911	120,539	118,032	n.a.	1,265,906	1,356,397	1,473,939	1,677,583	1,697,708
Austria	74,606	74,048	73,308	72,858	75,303	573,384	554,528	586,459	635,348	720,534
Poland	168,529	161,814	154,569	150,037	152,923	133,476	116,044	103,659	131,904	152,086
Portugal	55,538	55,679	54,350	53,230	53,989	298,428	310,370	348,691	345,378	360,190
Slovenia	11,578	11,855	11,816	11,602	11,726	17,782	19,995	21,541	24,462	30,049
Slovakia	20,118	18,452	18,350	18,261	19,850	21,446	23,748	23,751	29,041	36,399
Finland	26,733	27,190	26,667	25,377	25,182	163,416	165,661	185,846	212,427	234,520
Sweden	42,001	42,357	40,169	39,181	39,237	452,289	474,841	506,493	582,918	653,178
United Kingdom	506,278	501,787	487,772	484,535	482,888	5,829,766	5,853,959	6,174,839	6,929,873	8,320,254
MU-12	2,271,452	2,244,835	2,198,376	2,182,301	n.a.	17,560,781	18,068,591	18,883,790	20,426,083	22,660,352
EU-25	3,180,163	3,138,985	3,067,499	3,041,859	n.a.	24,660,532	25,261,364	26,474,228	28,978,224	32,882,078

Source: ECB.

Table 3 Herfindahl index for CIs' total assets and share of the 5 largest CIs in total assets

(index ranging from 0 to 10,000 and in percent)

	Herfindahl Index for CIs					Share of the 5 largest CIs in total assets (in percent)				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	1,587	1,905	2,063	2,102	2,108	78.3	82.0	83.5	84.3	85.2
Czech Republic	1,263	1,199	1,187	1,103	1,155	68.4	65.7	65.8	64.0	65.5
Denmark	1,119	1,145	1,114	1,146	1,115	67.6	68.0	66.6	67.0	66.3
Germany	158	163	173	178	174	20.2	20.5	21.6	22.1	21.6
Estonia	4,067	4,028	3,943	3,887	4,039	98.9	99.1	99.2	98.6	98.1
Greece	1,113	1,164	1,130	1,070	1,096	67.0	67.4	66.9	65.0	65.6
Spain	532	513	506	482	487	43.9	43.5	43.1	41.9	42.0
France	606	551	597	623	758	47.0	44.6	46.7	49.2	53.5
Ireland	512	553	562	556	600	42.5	46.1	44.4	43.9	46.0
Italy	260	270	240	230	230	29.0	30.5	27.5	26.4	26.7
Cyprus	964	938	946	940	1,029	61.3	57.8	57.2	57.3	59.8
Latvia	1,053	1,144	1,054	1,021	1,176	63.4	65.3	63.1	62.4	67.3
Lithuania	2,503	2,240	2,071	1,854	1,838	87.6	83.9	81.0	78.9	80.6
Luxembourg	275	296	315	304	312	28.0	30.3	31.8	29.7	30.7
Hungary	892	856	783	798	795	56.4	54.5	52.1	52.7	53.2
Malta	1,835	1,806	1,580	1,452	1,330	81.1	82.4	77.7	78.5	75.3
Netherlands	1,762	1,788	1,744	1,726	1,796	82.5	82.7	84.2	84.0	84.8
Austria	561	618	557	552	560	44.9	45.6	44.2	43.8	45.0
Poland	821	792	754	692	650	54.7	53.4	52.3	50.2	48.6
Portugal	991	963	1,043	1,093	1,154	59.8	60.5	62.7	66.5	68.8
Slovenia	1,582	1,602	1,496	1,425	1,369	67.6	68.4	66.4	64.6	63.0
Slovakia	1,205	1,252	1,191	1,154	1,076	66.1	66.4	67.5	66.5	67.7
Finland	2,240	2,050	2,420	2,680	2,730	79.5	78.6	81.2	82.7	83.1
Sweden	760	800	760	854	845	54.6	56.0	53.8	54.4	57.3
United Kingdom	282	307	347	376	399	28.6	29.6	32.8	34.5	36.3
MU-12	543	552	580	600	641	39.1	39.3	40.5	41.6	43.0
unweighted	883	903	946	966	1,000	51.9	52.7	53.1	53.3	54.4
EU-25	504	520	547	569	601	37.8	38.3	39.7	40.9	42.3
unweighted	1,158	1,158	1,143	1,132	1,153	59.1	59.3	58.9	58.8	59.7

Source: ECB.

Note: Aggregate concentration figures display both weighted and unweighted averages.

Table 4 Loans of CIs to non-financial corporations and total loans of CIs for housing purchase

(EUR millions)

	Loans of CIs to non-financial corporations					Total loans of CIs for housing purchase				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	94,247	90,840	86,850	86,459	90,624	58,006	63,609	71,710	80,440	94,732
Czech Republic	n.a.	13,820	13,750	15,454	18,844	n.a.	3,550	4,793	6,890	9,737
Denmark	n.a.	n.a.	83,458	89,536	102,350	n.a.	n.a.	151,820	163,450	192,052
Germany	844,235	840,675	813,746	786,844	774,105	901,839	921,822	937,379	949,457	961,186
Estonia	1,133	1,240	1,490	2,005	3,212	387	593	954	1,495	2,602
Greece	48,603	52,294	58,319	63,004	69,140	15,517	21,064	26,364	32,944	43,001
Spain	306,019	340,980	387,804	454,715	579,687	206,815	236,388	277,573	335,665	448,266
France	540,083	548,866	534,666	566,937	610,937	320,761	347,954	385,078	432,396	495,105
Ireland	52,830	54,912	64,952	85,555	107,078	34,710	44,126	55,012	73,739	94,776
Italy	520,856	546,559	588,676	615,187	647,458	107,711	131,660	154,374	185,016	217,221
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	1,993	2,230	2,639	3,545	5,097	221	390	722	1,311	2,486
Lithuania	1,640	1,944	2,811	3,609	4,636	n.a.	286	553	999	1,874
Luxembourg	45,391	40,159	36,625	33,741	37,277	6,533	7,052	8,291	9,335	10,586
Hungary	13,632	14,547	16,074	20,805	23,058	1,504	3,639	6,093	7,765	9,029
Malta	5,644	6,258	2,999	3,169	3,345	761	898	1,061	1,276	1,523
Netherlands	213,284	205,966	214,011	223,999	241,969	259,812	282,937	302,392	331,742	370,968
Austria	134,059	132,166	131,263	114,015	121,566	29,631	35,998	39,746	48,078	53,815
Poland	40,704	29,435	25,845	30,856	32,208	6,018	6,885	8,258	8,779	13,180
Portugal	72,597	78,693	82,717	84,079	88,049	57,448	64,954	66,485	71,139	79,488
Slovenia	5,608	5,929	6,784	8,086	11,027	390	457	557	732	1,369
Slovakia	5,625	5,502	5,975	5,890	7,181	n.a.	1,040	1,427	2,266	3,137
Finland	30,943	32,991	34,719	37,708	41,181	27,329	30,960	36,049	41,544	48,490
Sweden	124,804	127,352	124,953	128,340	138,456	72,554	81,219	84,129	97,897	107,404
United Kingdom	439,698	439,500	408,605	426,883	539,984	966,258	1,035,540	1,100,272	1,239,442	1,407,251
MU-12	2,903,147	2,965,101	3,034,348	3,152,243	3,409,071	2,026,112	2,188,524	2,360,453	2,591,495	2,917,634
EU-25¹⁾	3,543,628	3,612,858	3,729,731	3,890,420	4,298,468	3,074,204	3,323,020	3,721,092	4,123,797	4,669,278

Source: ECB.

Note: Loans to NFCs include, for MU-12, DK and SE, loans to domestic and (other) euro area countries NFCs; loans for housing purchase include, for MU-12, DK and SE, loans to domestic and (other) euro area countries households and individual enterprises. For MT, data on loans to NFCs for 2001 and 2002 include public sector.

Table 5 Total loans of CIs for consumer credit and other household lending from CIs

(EUR millions)

	Total loans of CIs for consumer credit					Other household lending from CIs				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	8,472	8,651	8,648	8,013	8,533	18,799	17,372	15,524	17,201	18,218
Czech Republic	n.a.	1,396	1,679	2,243	3,089	n.a.	805	859	1,222	1,591
Denmark	n.a.	12,590	13,357	14,214	14,836	n.a.	n.a.	17,200	21,655	20,732
Germany	223,380	225,187	174,919	174,448	171,048	282,928	274,380	319,502	313,494	307,830
Estonia	54	75	95	170	278	149	163	181	203	284
Greece	7,854	9,757	12,386	17,025	20,821	324	518	1,260	1,456	1,649
Spain	48,819	53,800	55,603	62,367	77,235	58,136	65,597	77,598	84,804	95,923
France	118,108	121,118	128,415	134,094	141,980	63,730	75,512	71,938	73,018	73,640
Ireland	12,991	14,485	12,310	14,725	17,509	1,472	1,343	4,300	5,567	7,127
Italy	23,895	28,386	33,012	38,117	44,335	126,929	122,174	122,864	128,100	130,894
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	117	136	203	295	512	88	163	178	258	460
Lithuania	n.a.	n.a.	n.a.	217	441	n.a.	n.a.	n.a.	235	398
Luxembourg	1,097	1,114	1,185	1,269	1,289	12,085	14,088	13,502	12,820	12,936
Hungary	879	1,193	1,840	2,956	4,766	1,344	1,461	1,116	1,526	1,261
Malta	121	106	113	190	213	216	240	277	246	213
Netherlands	13,903	18,647	20,442	23,480	24,625	21,366	22,364	22,641	22,505	22,908
Austria	24,043	22,886	21,525	24,769	27,897	8,138	6,638	7,015	21,270	28,067
Poland	11,460	10,319	9,066	11,176	13,879	n.a.	6,170	5,372	8,536	9,803
Portugal	8,156	8,161	8,720	9,089	9,427	10,511	10,534	9,817	10,806	11,261
Slovenia	n.a.	n.a.	n.a.	1,794	1,969	n.a.	n.a.	n.a.	732	947
Slovakia	n.a.	142	214	512	653	n.a.	n.a.	n.a.	538	988
Finland	6,387	6,705	7,324	8,047	9,401	8,850	9,100	9,666	10,433	11,158
Sweden	n.a.	n.a.	9,528	10,418	11,161	39,822	43,252	44,716	46,927	49,674
United Kingdom	231,301	241,975	237,025	257,900	280,991	180,586	191,559	182,591	198,642	191,747
MU-12	497,105	518,897	484,489	515,443	554,100	613,268	619,620	675,627	701,474	721,611
EU-25¹⁾	741,037	786,828	757,610	817,527	886,889	835,473	863,432	928,118	982,194	999,709

Source: ECB.

Note: In 2003, DE amended the definition for the 'loans to households by purpose' (consumer credit, housing purchase, other) which caused a break in the time series (movement from 'consumer credit' to 'other lending'). Other household lending for PL is n.a. in 2001 because of reporting changes. For euro area countries, DK and SE, figures comprise loans to domestic and (other) euro area countries households and individual enterprises. For MT the data exclude loans to individual enterprises.

1) EU-25 total excludes n.a.

Table 6 Total loans and total deposits of CIs to/from non-CIs

(EUR millions)

	Total loans of CIs to non-CIs					Total deposits of CIs from non-CIs				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	263,488	279,079	287,359	304,112	362,765	326,154	345,106	367,543	405,143	458,099
Czech Republic	n.a.	29,516	31,310	33,554	40,959	n.a.	53,941	53,869	60,030	71,327
Denmark	261,579	274,981	306,266	334,230	384,854	96,354	102,919	107,116	122,372	143,245
Germany	3,051,658	3,021,886	3,025,616	3,009,309	3,023,001	2,380,289	2,401,166	2,447,673	2,511,278	2,593,143
Estonia	2,602	3,194	4,421	5,916	8,020	2,728	3,115	3,415	4,138	6,070
Greece	81,779	95,084	110,018	127,637	152,764	135,733	133,847	140,032	159,854	187,588
Spain	683,862	759,698	862,851	1,010,453	1,277,920	707,473	752,900	806,804	874,008	1,068,042
France	1,336,505	1,370,384	1,431,686	1,531,434	1,700,688	1,051,452	1,076,583	1,196,253	1,268,439	1,363,414
Ireland	190,891	198,836	207,917	261,797	333,378	131,066	142,957	160,192	182,210	228,505
Italy	1,009,773	1,065,791	1,128,503	1,188,949	1,280,350	681,266	741,205	744,497	782,696	845,125
Cyprus	20,889	21,545	21,804	24,769	28,162	25,963	27,846	28,155	30,062	37,819
Latvia	2,884	3,470	4,445	6,227	9,901	4,154	5,033	5,535	7,247	8,822
Lithuania	2,057	2,573	3,890	5,442	8,801	3,007	3,463	4,091	5,397	7,520
Luxembourg	148,113	131,989	118,528	119,919	144,882	218,234	198,934	205,909	220,554	239,907
Hungary	20,527	26,397	31,276	39,178	45,518	26,921	31,208	30,910	36,006	37,465
Malta	6,829	7,423	8,016	8,556	11,013	7,747	8,675	8,177	8,765	11,225
Netherlands	654,621	704,470	761,691	850,583	948,361	524,993	537,790	570,132	598,091	684,045
Austria	268,367	273,066	277,053	295,528	327,594	210,262	211,128	222,070	231,949	248,655
Poland	n.a.	61,000	57,000	67,092	77,666	n.a.	81,000	72,000	89,334	105,785
Portugal	170,615	183,212	185,829	194,798	209,241	134,368	133,801	137,423	145,576	161,650
Slovenia	8,649	9,317	10,461	12,372	16,887	12,724	13,910	14,154	14,812	16,393
Slovakia	n.a.	n.a.	n.a.	n.a.	14,757	4,232	4,726	5,833	7,181	22,254
Finland	81,058	85,991	94,137	103,944	117,289	68,977	71,530	75,634	79,669	85,267
Sweden	263,928	284,407	296,845	318,989	345,367	124,627	132,176	139,162	142,598	153,445
United Kingdom	2,124,211	2,194,551	2,223,330	2,437,210	2,752,458	1,850,979	1,819,695	1,846,639	2,011,427	2,440,720
MU-12	7,940,730	8,169,486	8,491,188	8,998,463	9,878,233	6,570,267	6,746,947	7,074,162	7,459,467	8,163,440
EU-25 ¹⁾	10,654,885	11,087,861	11,490,252	12,291,999	13,622,596	8,729,703	9,034,654	9,393,217	9,998,835	11,225,531

Source: ECB.

Note: For euro area countries, total loans are the sum of loans to government and other residents in the home country and the rest of the world. For euro area countries, total deposits are the sum of deposits from insurance companies and pension funds, non-financial corporations, households, other financial institutions and non-banks in the euro area.

1) EU-25 total excludes n.a.

Table 7 Gross issues of long-term and short-term debt securities by non-financial companies

(EUR millions)

	Long-term debt securities by non-financial companies					Short-term debt securities by non-financial companies				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	6,716	3,499	4,459	3,654	1,631	45,338	38,305	41,469	40,480	42,643
Czech Republic	126	382	389	250	221	0	0	0	0	0
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Germany	6,948	15,850	21,513	26,111	22,536	123,476	116,629	197,864	237,986	219,437
Estonia	6	13	16	48	70	13	34	8	10	27
Greece	69	133	584	1,682	6,212	0	0	0	22	0
Spain	379	572	1,427	1,319	1,061	10,095	9,815	7,293	7,020	6,959
France	55,599	31,227	53,577	28,157	29,605	545,855	449,687	403,855	483,393	474,171
Ireland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	15,298	10,328	7,166	14,982	5,784	5	2	20	0	1
Cyprus	6	8	28	0	2	0	0	0	0	0
Latvia	2	0	38	0	4	0	0	0	0	0
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Luxembourg	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	128	0	118	n.a.	n.a.	0	0	0
Malta	4	119	58	24	0	n.a.	n.a.	n.a.	n.a.	0
Netherlands	15,725	3,931	7,315	2,212	4,600	1,263	1,703	3,452	550	604
Austria	1,955	1,913	5,251	3,493	7,489	18	370	778	784	791
Poland	n.a.	n.a.	322	588	450	n.a.	n.a.	7,792	11,108	11,600
Portugal	1,649	392	1,135	951	2,642	33,227	42,649	54,400	70,180	97,026
Slovenia	50	51	11	130	225	n.a.	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Finland	1,978	1,236	1,722	1,842	1,316	58,481	57,940	62,860	68,116	90,185
Sweden	3,122	4,603	2,708	2,523	3,340	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	54,376	30,808	16,904	18,669	15,549

Source: ECB.

Note: For UK, figures refer to net short and long term issues (2004: long-term issues only, with maturity above 1 year).

Table 8 Total investments of insurance corporations and total assets under management by investment funds

(EUR millions)

	Total investments of insurance corporations					Total assets under management by investment funds				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	115,669	123,080	140,040	163,653	n.a.	86,784	78,288	84,306	94,872	110,098
Czech Republic	5,213	5,068	5,464	7,296	8,554	2,787	4,021	3,431	3,699	5,055
Denmark	96,645	98,643	107,602	124,227	143,186	38,025	39,042	49,306	76,880	106,525
Germany	943,367	1,001,579	1,058,276	1,091,829	1,155,656	793,665	741,402	826,764	861,844	975,443
Estonia	152	182	233	311	451	57	104	158	313	614
Greece	12,308	9,053	10,143	10,908	11,992	17,392	14,742	14,342	15,908	22,490
Spain	148,847	168,196	184,567	203,744	220,119	158,249	144,150	178,858	207,570	239,726
France	836,635	868,444	945,942	1,029,348	1,206,087	648,548	600,803	703,192	799,207	943,231
Ireland	56,393	61,592	74,171	91,699	118,148	181,513	170,005	224,702	281,555	393,503
Italy	307,224	326,313	366,002	423,113	482,015	394,928	338,574	318,895	320,709	349,934
Cyprus	1,856	3,362	3,934	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	205	204	211	219	264	14	20	39	52	109
Lithuania	221	266	348	431	555	0	0	0	35	96
Luxembourg	28,631	28,941	33,448	39,503	49,677	854,000	725,781	818,462	974,685	1,425,804
Hungary	3,386	4,181	4,405	5,385	6,190	2,888	4,020	3,458	4,327	7,623
Malta	463	516	588	771	982	545	642	821	1,005	4,232
Netherlands	297,044	284,283	293,584	315,977	345,147	112,320	90,109	97,065	98,348	105,682
Austria	57,471	60,092	63,833	68,280	76,760	97,769	101,504	108,931	122,619	153,342
Poland	12,912	13,858	13,584	18,468	22,678	3,442	5,663	7,045	9,249	15,880
Portugal	26,550	29,559	32,471	36,024	43,624	25,588	25,421	28,456	31,261	36,692
Slovenia	1,334	1,700	1,980	2,315	2,710	2,542	2,249	1,856	2,085	2,221
Slovakia	1,328	1,543	1,954	2,449	2,944	n.a.	n.a.	887	1,641	3,253
Finland	32,362	32,576	34,965	38,109	43,433	12,300	11,573	15,429	21,517	32,981
Sweden	192	176	195	214	240	87,321	73,449	92,638	117,402	145,302
United Kingdom	1,740,000	1,557,000	1,509,000	1,629,000	1,884,000	362,155	347,219	376,195	409,547	n.a.
MU-12	2,862,501	2,993,708	3,237,442	3,512,187	3,752,658	3,383,056	3,042,352	3,419,400	3,830,096	4,788,926
EU-25¹⁾	4,726,407	4,680,408	4,886,940	5,303,274	5,821,914	3,882,832	3,518,781	3,955,234	4,456,331	5,079,836

Source: ECB.

Note: For IE data on total investments of insurance corporations refer to the Irish registered insurance companies only and excludes foreign insurance companies operating in the country on a branch basis.

1) EU25 total excludes n.a.

Table 9 Total assets under management by pension funds

(EUR millions)

	Total assets under management by pension funds				
	2001	2002	2003	2004	2005
Belgium	14,373	13,543	10,833	11,677	n.a.
Czech Republic	1,719	2,183	2,532	3,352	4,256
Denmark	41,807	42,281	45,682	50,868	54,707
Germany	n.a.	100	142	260	341
Estonia	2	15	71	172	329
Greece	0	0	0	0	0
Spain	44,606	49,610	56,997	64,186	75,721
France	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	51,149	44,810	55,451	62,334	77,933
Italy	10,282	11,709	16,836	17,461	16,210
Cyprus	n.a.	n.a.	n.a.	n.a.	0
Latvia	18	23	28	37	53
Lithuania	0	0	0	40	101
Luxembourg	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary	2,520	3,447	4,031	6,063	7,653
Malta	0	0	0	0	0
Netherlands	451,133	423,268	475,488	522,268	621,310
Austria	8,049	7,876	9,111	10,126	11,549
Poland	5,511	7,852	9,505	15,354	22,300
Portugal	14,826	15,552	16,283	15,186	18,901
Slovenia	208	241	339	529	729
Slovakia	n.a.	n.a.	n.a.	n.a.	701
Finland	0	0	0	0	0
Sweden	59	53	64	72	83
United Kingdom	1,180,000	951,000	1,023,000	1,107,000	1,349,000
MU-12 ¹⁾	594,418	566,468	641,141	703,498	821,965
EU-25 ¹⁾	1,826,263	1,573,563	1,726,393	1,886,985	2,261,877

Source: ECB.

Note: In GR and FR, all pension funds are state-owned. For SK, no data are provided because of a structural change in 2005 (social security reform).

1) MU-12 and EU-25 total exclude n.a.

Table 10 Number of branches of CIs from EU and third countries

	Number of branches of CIs from EU countries					Number of branches of CIs from third countries				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	35	36	38	36	41	11	10	10	9	9
Czech Republic	9	8	8	9	12	1	1	1	0	0
Denmark	9	8	16	15	17	2	2	2	2	2
Germany	57	62	64	62	69	23	21	20	21	20
Estonia	1	1	1	3	6	0	0	0	0	0
Greece	13	14	14	19	19	8	7	6	4	4
Spain	48	50	49	53	57	8	9	8	8	8
France	55	51	52	55	55	28	28	28	27	26
Ireland	32	31	31	31	31	1	1	1	1	1
Italy	50	47	49	50	59	13	13	13	10	10
Cyprus	5	5	5	4	4	16	19	19	19	18
Latvia	1	1	1	1	1	0	0	0	0	0
Lithuania	3	3	2	2	2	1	1	1	0	0
Luxembourg	55	48	41	38	36	8	7	9	9	8
Hungary	0	0	0	0	3	0	0	0	0	0
Malta	0	0	0	0	0	3	2	2	2	2
Netherlands	5	7	7	7	7	9	9	8	7	6
Austria	15	15	18	18	25	0	0	0	0	1
Poland	0	0	0	3	7	0	0	0	0	0
Portugal	23	21	22	26	24	2	1	1	1	1
Slovenia	1	1	1	2	3	0	0	0	0	0
Slovakia	2	2	3	3	5	0	0	0	0	0
Finland	18	19	18	19	19	0	0	0	1	1
Sweden	17	16	15	17	18	3	3	3	3	2
United Kingdom	86	84	79	81	81	114	105	97	91	89
MU-12	406	401	403	414	442	111	106	104	98	95
EU-25	540	530	534	554	601	251	239	229	215	208

Source: ECB.

Table II Total assets of branches of CIs from EU and third countries

(EUR millions)

	Total assets of branches of CIs from EU countries					Total assets of branches of CIs from third countries				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	29,844	27,221	25,909	29,225	29,348	13,109	10,971	12,928	11,901	20,235
Czech Republic	9,976	7,486	7,222	8,656	9,694	*	*	*	0	0
Denmark	19,835	22,710	24,575	26,533	34,932	*	*	*	*	*
Germany	90,409	75,663	67,391	69,962	79,512	39,436	32,899	20,464	23,257	23,834
Estonia	*	*	*	806	1,161	0	0	0	0	0
Greece	8,934	11,489	12,769	22,634	28,089	8,911	5,881	6,383	394	400
Spain	49,188	61,427	85,608	121,770	155,560	2,950	4,192	2,885	3,253	4,302
France	119,647	118,053	99,927	110,545	133,932	21,112	13,701	11,351	13,196	12,019
Ireland	58,411	60,167	69,773	80,804	94,974	*	*	*	*	*
Italy	68,171	77,982	84,187	105,320	132,856	11,057	10,102	9,731	6,357	6,140
Cyprus	1,741	1,085	929	476	1,044	2,704	2,612	2,602	2,798	3,275
Latvia	*	*	*	*	*	0	0	0	0	0
Lithuania	213	233	*	*	*	*	*	*	0	0
Luxembourg	130,562	108,816	89,884	108,821	128,504	7,438	6,264	5,116	5,902	16,973
Hungary	0	0	0	0	112	0	0	0	0	0
Malta	0	0	0	0	0	2,999	*	*	*	*
Netherlands	7,143	9,776	11,478	12,521	14,542	2,107	1,795	1,582	1,198	1,285
Austria	4,458	3,242	3,363	4,298	6,340	0	0	0	0	87
Poland	0	0	0	827	1,385	0	0	0	0	0
Portugal	14,808	15,839	16,923	20,340	19,542	*	*	*	*	*
Slovenia	*	*	*	*	523	0	0	0	0	0
Slovakia	*	*	3,034	3,859	8,055	0	0	0	0	0
Finland	10,404	14,345	13,030	14,364	12,668	0	0	0	*	11
Sweden	22,832	27,591	33,403	43,788	55,034	1,645	109	66	111	*
United Kingdom	1,362,000	1,284,000	1,344,000	1,543,000	1,813,000	1,210,000	1,128,000	1,124,000	1,156,000	1,447,000
MU-12	591,979	584,020	580,242	700,604	835,867	106,953	86,140	70,738	65,764	85,562
EU-25	2,011,337	1,930,665	1,994,954	2,330,257	2,762,853	1,324,631	1,221,062	1,202,707	1,230,999	1,546,925

Source: ECB.

Note: If the number of branches is less than three (indicated by *), underlying data are not disclosed because of confidentiality reasons.

Table 12 Number of subsidiaries of CIs from EU and third countries

	Number of subsidiaries of CIs from EU countries					Number of subsidiaries of CIs from third countries				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	22	22	21	20	23	7	7	6	6	5
Czech Republic	16	18	18	19	17	4	4	4	3	3
Denmark	9	10	10	8	7	1	1	1	3	3
Germany	21	22	20	21	22	33	27	25	21	19
Estonia	3	3	3	3	4	0	0	0	0	0
Greece	2	3	3	5	5	2	2	1	0	0
Spain	43	39	43	42	41	13	12	11	9	8
France	162	146	126	108	107	67	62	58	58	52
Ireland	25	25	20	21	22	11	12	11	11	10
Italy	7	7	7	6	10	2	2	2	3	3
Cyprus	7	10	9	9	9	2	2	2	1	1
Latvia	3	3	3	5	6	3	4	4	3	3
Lithuania	2	3	3	5	5	2	2	2	0	0
Luxembourg	86	82	80	79	75	40	36	35	32	32
Hungary	25	21	22	20	20	1	2	3	3	3
Malta	7	7	8	8	9	4	1	1	1	2
Netherlands	2	2	0	0	0	17	17	16	16	16
Austria	12	12	12	11	14	11	11	11	8	9
Poland	34	35	35	32	33	12	11	10	8	9
Portugal	9	9	11	9	9	3	4	4	4	4
Slovenia	4	5	5	5	6	0	0	0	0	0
Slovakia	13	14	15	15	15	1	1	1	1	1
Finland	3	3	3	5	5	0	0	0	0	1
Sweden	7	7	9	9	11	3	3	3	3	3
United Kingdom	16	16	14	19	17	77	79	75	70	69
MU-12	394	372	346	327	333	206	192	180	168	159
EU-25	540	524	500	484	492	316	302	286	264	256

Source: ECB.

Table 13 Total assets of subsidiaries of CIs from EU and third countries

(EUR millions)

	Total assets of subsidiaries of CIs from EU countries					Total assets of subsidiaries of CIs from third countries				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	146,339	141,749	150,464	167,047	192,811	3,707	6,280	6,887	3,835	3,809
Czech Republic	46,303	61,914	63,122	70,019	83,406	3,927	4,394	4,265	4,497	4,930
Denmark	85,457	94,853	100,871	87,858	103,034	*	*	*	9,328	11,276
Germany	110,717	225,310	227,597	254,257	549,261	57,191	52,062	65,009	42,868	74,233
Estonia	3,985	4,698	5,622	7,557	10,573	0	0	0	0	0
Greece	*	24,453	27,730	38,226	49,401	*	*	*	0	0
Spain	49,152	52,519	63,330	66,960	82,463	15,671	14,814	14,717	5,678	4,856
France	298,786	301,275	288,052	301,045	394,303	58,877	46,987	38,905	45,150	51,057
Ireland	148,322	114,580	132,402	182,235	234,560	46,361	59,508	61,448	65,317	79,533
Italy	20,416	23,348	26,389	29,115	96,247	*	*	*	3,280	3,096
Cyprus	4,024	4,561	5,346	8,272	12,338	*	*	*	*	*
Latvia	1,399	1,568	1,857	4,432	7,795	1,064	1,230	1,694	459	481
Lithuania	*	2,554	3,300	6,309	9,797	*	*	*	0	0
Luxembourg	505,170	478,106	493,547	509,080	563,136	38,573	29,738	27,350	30,193	40,565
Hungary	21,535	24,655	29,430	36,293	41,641	*	*	1,641	2,027	2,230
Malta	4,819	5,802	6,959	7,851	8,802	596	*	*	*	*
Netherlands	*	*	0	0	0	16,809	16,217	18,874	19,733	23,345
Austria	102,813	112,151	107,733	116,465	133,849	4,070	3,454	4,108	2,603	3,880
Poland	79,984	68,379	60,698	76,367	87,843	12,411	10,557	9,603	11,650	12,831
Portugal	68,275	69,150	72,796	67,356	58,962	3,669	3,335	2,563	2,540	3,047
Slovenia	2,604	3,194	3,828	4,596	6,234	0	0	0	0	0
Slovakia	17,052	19,351	19,203	23,502	27,383	*	*	*	*	*
Finland	722	741	716	111,950	124,034	0	0	0	0	141
Sweden	959	1,014	1,109	1,561	2,011	646	638	909	974	1,666
United Kingdom	72,000	62,000	61,000	295,000	315,000	298,000	298,000	543,000	572,000	734,000
MU-12	1,470,298	1,543,413	1,590,756	1,843,736	2,479,027	246,687	234,322	241,862	221,197	287,562
EU-25	1,812,242	1,897,956	1,953,102	2,473,353	3,194,883	571,926	557,100	807,319	824,685	1,059,882

Source: ECB.

Note: If the number of subsidiaries is less than three (indicated by *), underlying data are not disclosed because of confidentiality reasons.

Table 14 Population and GDP at market prices

	Population (thousands, number end of period)					GDP at market price (EUR millions)				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Belgium	10,281	10,330	10,374	10,418	10,473	258,884	267,578	274,582	288,089	298,180
Czech Republic	10,224	10,201	10,202	10,207	10,222	67,960	78,388	80,254	86,787	98,418
Denmark	5,357	5,376	5,390	5,403	5,419	179,226	184,744	189,641	197,222	208,610
Germany	82,340	82,482	82,520	82,501	82,464	2,113,160	2,145,020	2,163,400	2,215,650	2,247,400
Estonia	1,367	1,361	1,356	1,356	1,348	6,676	7,472	8,138	9,043	10,540
Greece	10,950	10,988	11,024	11,057	11,090	133,105	143,482	155,543	168,417	181,088
Spain	40,721	41,314	42,005	42,692	43,398	679,842	729,021	780,550	837,316	904,323
France	61,120	61,530	61,932	62,324	62,702	1,497,174	1,548,555	1,594,814	1,659,020	1,710,024
Ireland	3,859	3,926	3,991	4,059	4,146	117,114	130,515	139,097	148,556	160,322
Italy	56,978	57,157	57,605	58,175	58,530	1,248,648	1,295,226	1,335,354	1,388,870	1,417,241
Cyprus	702	710	723	740	758	10,599	11,073	11,667	12,469	13,417
Latvia	2,355	2,339	2,325	2,313	2,300	9,320	9,911	9,978	11,145	12,789
Lithuania	3,481	3,469	3,454	3,436	3,414	13,556	15,017	16,443	18,083	20,587
Luxembourg	442	446	450	453	456	22,572	24,028	25,684	27,056	29,324
Hungary	10,188	10,159	10,130	10,107	10,087	58,419	69,622	73,538	81,179	87,895
Malta	393	396	398	401	404	4,344	4,454	4,330	4,316	4,497
Netherlands	16,043	16,147	16,223	16,273	16,322	447,731	465,214	476,349	488,642	501,921
Austria	8,043	8,084	8,118	8,175	8,225	215,878	220,841	226,243	235,819	245,103
Poland	38,251	38,232	38,195	38,180	38,142	212,196	209,431	191,408	203,711	243,398
Portugal	10,293	10,368	10,441	10,502	10,565	129,308	135,434	137,523	143,029	147,395
Slovenia	1,992	1,995	1,996	1,997	2,001	22,018	23,699	24,860	26,146	27,373
Slovakia	5,403	5,379	5,380	5,382	5,387	23,570	26,034	29,229	33,863	38,138
Finland	5,188	5,201	5,213	5,227	5,245	139,868	143,974	145,938	151,935	155,320
Sweden	8,896	8,925	8,958	8,994	9,030	247,253	258,878	269,548	282,014	287,970
United Kingdom	59,051	59,322	59,554	59,835	60,218	1,602,840	1,667,312	1,598,172	1,715,942	1,768,549
MU-12	306,258	307,974	309,895	311,857	313,618	7,003,284	7,248,888	7,455,077	7,752,399	7,997,641
EU-25	453,917	455,837	457,956	460,208	462,349	9,461,261	9,814,922	9,962,284	10,434,318	10,819,823

Sources: ECB and Eurostat.

Table 15 Number of mergers and acquisitions (M&As) in the EU banking sector

	Number of domestic M&As							Number of cross-border EU M&As							Number of M&As from third countries						
	2000	2001	2002	2003	2004	2005	2006 H1	2000	2001	2002	2003	2004	2005	2006 H1	2000	2001	2002	2003	2004	2005	2006 H1
Belgium	1	1	1	1	1	5	0	0	1	0	0	2	3	0	0	0	0	0	0	0	0
Czech Republic	1	0	0	0	1	1	0	2	2	2	2	2	0	0	0	0	0	0	0	0	0
Denmark	0	1	1	0	3	0	0	1	1	1	1	0	0	0	0	1	0	0	0	1	0
Germany	2	13	10	13	6	9	3	2	3	4	0	1	3	1	0	1	0	1	0	0	0
Estonia	1	0	0	0	0	0	0	2	0	2	0	0	3	0	0	0	0	0	0	0	0
Greece	3	1	4	1	1	0	0	1	0	1	0	1	2	0	0	0	0	0	0	0	0
Spain	4	1	7	4	4	4	2	4	1	1	3	2	1	0	0	0	0	1	0	2	0
France	3	4	5	8	5	2	3	5	2	2	0	0	0	1	0	0	1	0	0	0	1
Ireland	0	0	0	1	0	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0
Italy	38	15	32	32	22	34	7	3	4	7	9	8	6	4	0	1	0	0	1	4	2
Cyprus	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0	1	1	0	0	2	3	0	0	0	2	1	0	0	2
Lithuania	2	0	0	0	0	0	0	3	1	1	0	1	0	0	0	0	0	1	0	0	0
Luxembourg	2	4	5	0	1	1	0	2	2	2	0	0	2	0	0	1	0	0	0	0	0
Hungary	2	3	0	1	2	0	1	5	1	0	3	0	0	2	1	0	0	1	0	0	0
Malta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	0	2	1	2	1	0	0	4	1	0	2	1	0	0	0	1	0	1	0	0	0
Austria	1	2	2	0	2	1	0	1	2	0	0	0	1	0	0	1	0	0	0	0	0
Poland	4	6	2	1	4	1	0	11	3	6	1	3	1	0	1	0	0	0	0	1	0
Portugal	4	2	1	5	1	1	1	4	0	1	4	2	1	2	1	0	1	0	0	2	0
Slovenia	0	1	0	1	0	0	0	1	1	3	0	1	1	1	0	0	0	0	0	0	0
Slovakia	0	1	0	1	0	0	0	1	4	2	2	0	0	0	0	0	0	0	0	0	0
Finland	0	0	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
Sweden	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
United Kingdom	2	7	1	1	5	5	4	0	1	0	0	1	1	0	1	1	1	2	1	2	0
MU-12	58	45	69	68	45	58	16	27	17	19	18	18	21	9	1	5	2	3	1	8	3
EU-25	70	65	74	73	61	65	21	54	32	36	27	28	31	13	4	7	5	8	2	12	6

Sources: Bureau Van Dijk Zephyr and ECB calculations.

Note: M&A figures have been revised, compared to last year's publication, owing to a change in the data provider from Thomson Financial SDC Platinum to Bureau Van Dijk.

ANNEX 2

METHODOLOGICAL NOTE ON THE STRUCTURAL INDICATORS

Data included in Annex 1 are derived from a variety of sources using different statistical concepts, collection techniques, etc. This makes it difficult to compare series across indicators, countries and – perhaps to a somewhat lesser extent – over time as well. The reader should keep this caveat in mind when interpreting and possibly using the data any further. The exchange rates applied for the conversion of data from non-euro countries are the official exchange rates referring to the last day of trading for each of the reported years. The set of indicators can be grouped according to the data source used, namely:

- indicators derived from data already available at the ECB;
- indicators that required a new data collection from the statistical departments of national central banks; and
- other sources, such as commercial databases.

The ECB's Directorate General Statistics was entrusted with establishing the second category of indicators. Guidelines for the compilation and transmission of these indicators are included in Annex VI of Statistical Guideline ECB/2003/2 (as amended).

NUMBER OF CREDIT INSTITUTIONS (TABLE 1)

Credit institutions are a subset of monetary financial institutions or MFIs, on which the ECB publishes more detailed information on its website (www.ecb.int) under "MFIs and Eligible Assets"/"Monetary Financial Institutions".

The number of credit institutions in each Member State includes the credit institutions under the law of that country, regardless of whether or not they are subsidiaries of foreign banks, and the branches of foreign banks in that Member State. If a foreign bank has several branches in a given country, then they are counted as a single branch. However, if the

same bank has several subsidiaries, the latter are counted separately because they are considered to be separate legal entities.

In the case of credit institutions that depend on a central organisation (such as groups of cooperative banks), these may be counted separately, in accordance with Statistical Regulation ECB/2001/13 (as amended).

NUMBER OF BRANCHES OF CREDIT INSTITUTIONS (TABLE 1)

A local unit or branch is an unincorporated entity (without independent legal status) wholly owned by the parent. Only branches that belong to credit institutions are included. The indicator refers to the number of branches at the end of the reference period.

The set of credit institutions considered in the calculation of the local units is consistent with the definition used for the indicator in Table 1. If the same foreign bank has several branches in a given country, these are counted as a single branch. For additional information, please consult the above mentioned ECB Regulation.

TOTAL ASSETS OF CREDIT INSTITUTIONS (TABLE 2)

The set of credit institutions considered in the calculation of this indicator is consistent with the definition of the indicator in Table 1.

Total assets are calculated on a residential basis, meaning that for each Member State, the credit institutions under the law of that Member State are included (independent of whether or not they are a subsidiary of a foreign bank). However, the activity of the foreign branches of these credit institutions is not included, as this is reported by the host country. For additional information, please consult the above mentioned ECB Regulation.

NUMBER OF EMPLOYEES OF CREDIT INSTITUTIONS (TABLE 2)

The indicator refers to the average number of staff employed during the reference year by the credit institutions mentioned in Table 1. Employees of financial institutions which are not themselves credit institutions are excluded, even if these institutions belong to the same group of the credit institution.

CR5 (TABLE 3)

The CR5 of a Member State is the percentage share of the five largest credit institutions, ranked according to assets, in the sum of the assets of all the credit institutions in that particular Member State. The set of credit institutions and the definition of assets used in the calculation are consistent with the definitions used for the indicators in Table 1. The set of five largest credit institutions may vary over time.

The ratio is calculated on the basis of a sub-set of the ECB list of monetary financial institutions (MFI) used for monetary policy purposes. The sub-set of the MFI list concern credit institutions only. This list follows a host country residence approach and a non-consolidated basis, meaning that banking subsidiaries and foreign branches of a particular credit institution are considered to be separate credit institutions resident in another EU Member State. Domestic banks' branches and subsidiaries resident outside the EU are not captured, while domestic branches and subsidiaries of credit institutions resident outside the EU are included.

HERFINDAHL INDEX (TABLE 3)

A Member State's Herfindahl index is calculated as the sum of the squares of all the credit institutions' market shares, according to total assets. The set of credit institutions and the definition of assets used in the calculation are consistent with the definitions used for the indicators in Table 1.

The ratio is calculated on the basis of a sub-set of the ECB list of monetary financial institutions (MFI) used for monetary policy purposes. The sub-set of the MFI list concerns credit institutions only. This list follows a host country residence approach and is on a non-consolidated basis, meaning that banking subsidiaries and foreign branches of a particular credit institution are considered to be separate credit institutions resident in another EU Member State. Domestic banks' branches and subsidiaries resident outside the EU are not captured, while domestic branches and subsidiaries of credit institutions resident outside the EU are included.

NUMBER OF BRANCHES/SUBSIDIARIES OF CREDIT INSTITUTIONS FROM EU/THIRD COUNTRIES (TABLES 10 TO 13)

Two distinctions are made in these tables. The first is according to the entry mode of the foreign credit institution in the Member State, i.e. as a branch (which is not considered to be separate legal entity) or as a subsidiary (which is considered to be separate legal entity). If the same foreign bank has several places of business, the latter are counted as a single branch. The second is according to the nationality of the foreign credit institution, i.e. from this year, either EU (European Union) or third countries. In fact, from the current report (2005 data) a new geographical breakdown for foreign branches and subsidiaries of banks was introduced. The rationale was the substitution of the concept of European Economic Area (EEA) with the EU coverage. This basically implies a transfer of foreign banks' presence via branches and subsidiaries from Norway, Liechtenstein and Iceland towards the 'third countries' category. The new breakdown has been made available backwards to enhance consistency and ease comparability.

The figures for a particular Member State only include the non-domestic component: the branches and subsidiaries of credit institutions under the law of that Member State are not included.

If less than three institutions are present, the underlying figures are not shown.

NUMBER OF M&As (TABLE 15)

Data on the number of mergers and acquisitions (M&As) in the banking sector have been retrieved from a commercial database, Bureau van Dijk Zephyr Database and are aggregated according to the domicile of the acquired entity.

The authorities represented on the Banking Supervision Committee have expressed reservations about the completeness of the data, especially where small to medium-sized deals are concerned. Hence, the figures for M&As provide only a lower bound.

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