

## ARTICLES

### HOUSING FINANCE IN THE EURO AREA



*Developments in housing finance play an important role in the analyses carried out by the ECB, notably the analysis of the transmission of monetary policy, the monetary analysis and the monitoring of the integration of financial markets. This article presents an overview of relevant developments in housing finance since 1999, as regards both the granting of loans for house purchase to households and the way in which banks have funded these loans. The growth of housing loans was strong in the period 1999-2007, causing an increase in household indebtedness, but has been moderating since 2006 and became very slow in 2008. While the characteristics of housing loans continue to differ across euro area countries, an increase in market-based funding, including securitisation, was witnessed in most countries in the period 1999-2007. However, the recent financial turmoil has caused some reversal of this development in favour of more traditional deposit-based funding. The increase in households' interest burden owing to higher indebtedness tends to strengthen the transmission of monetary policy, whereas a rise in market-based funding for MFIs tends to work in the opposite direction. Finally, despite a process of deregulation and liberalisation of financial markets over the past two decades, which has led to a greater availability of mortgage products, differences in mortgage loan characteristics across euro area countries indicate some potential for further mortgage market integration.*

#### I INTRODUCTION

The monitoring and assessment of developments in housing finance plays an important role in the analyses carried out in the ECB and the Eurosystem. This reflects the fact that financing the purchase of a home is typically the largest financial transaction a household conducts over its lifetime, and the loans taken out for that purpose constitute by far the largest liability of the household sector.<sup>1</sup> In the euro area, most housing loans are provided by banks, and in aggregate they account for about one-third of total lending by MFIs.<sup>2</sup> Broadly speaking, there are at least three main areas from which the ECB's interest in housing finance issues arises.

First, mortgage financing plays a direct role in transmitting changes in monetary policy to aggregate spending, via residential investment and private consumption. Its importance to some extent depends on whether loans for house purchase have fixed or variable interest rates, as the monetary policy transmission will in principle be quicker in the latter case.

Second, understanding developments in housing finance is important for assessing the nature of monetary trends as part of a broad-based monetary analysis. In this respect, it is for instance relevant whether strong growth

in loans and indebtedness reflects business cycle-related or structural influences, and/or whether it reflects fundamental determinants.

Third, cross-country differences in mortgage financing terms, mortgage practices and relevant institutions have an effect on the level of integration in the euro area financial system. From a monetary policy point of view, closer integration of housing finance markets, as regards both housing loan characteristics and the funding of such loans, in principle fosters convergence in the speed and strength with which monetary policy affects the real economy and prices in the various national economies.

All three areas of interest have come to the foreground with the housing crisis that started in the United States and has led to a global financial crisis. Substantial price decreases in some housing markets, unfavourable household income prospects and increasing difficulties for banks in accessing bond markets to finance mortgage loans have characterised

1 The data in this article are taken to a large extent from the ECB Occasional Paper entitled "Housing finance in the euro area", No 101, 2009, which was prepared by a task force of the Monetary Policy Committee of the ESCB.

2 This article uses the terms "housing loans", "loans for house purchase" and "mortgages" interchangeably. As the analysis underlying the article refers to the period from 1999 to 2008, it excludes Slovakia.

developments in the euro area and raised questions as to the current strength of this channel of monetary policy transmission, as well as to the sustainability of current debt levels.

The analysis and assessment of developments in housing finance require an in-depth knowledge of such developments over time as well as of differences between countries. This article describes the evolution of housing finance, looking at housing loans granted to households and the way in which banks have funded these loans. Section 2 reviews the dynamics of mortgage indebtedness and loans for house purchase over the period since the start of EMU (1999-2007) and their main characteristics. Section 3 then focuses on developments in the way banks have funded the growth in mortgage lending, and Section 4 draws some conclusions. To the extent possible, the article also analyses developments in housing finance after 2007.

## 2 DEVELOPMENTS IN LOANS FOR HOUSE PURCHASE AND UNDERLYING FACTORS

Lending to households in euro area countries is predominantly provided by MFIs, reflecting the bank-oriented structure of the financial system. This is also true for loans for house purchase, more than 90% of the stock of which was originated by euro area MFIs. In those euro area countries where historically non-MFIs, most notably insurance corporations, have played a significant role as providers of housing loans (Belgium, Germany and the Netherlands), their market share has shrunk over the course of the past decade. In view of this, the remainder of this article will focus on loans for house purchase granted by MFIs.<sup>3</sup> This section outlines developments in MFI lending to households for house purchase in the euro area since 1999, focusing initially on the period from 1999 to 2007 and then on more recent developments in 2008. The factors that have contributed to the trends observed over this period are subsequently discussed, and the section concludes with a description of the main features of loans for house purchase in euro area countries.

## 2.1 DEVELOPMENTS IN LOANS FOR HOUSE PURCHASE SINCE 1999

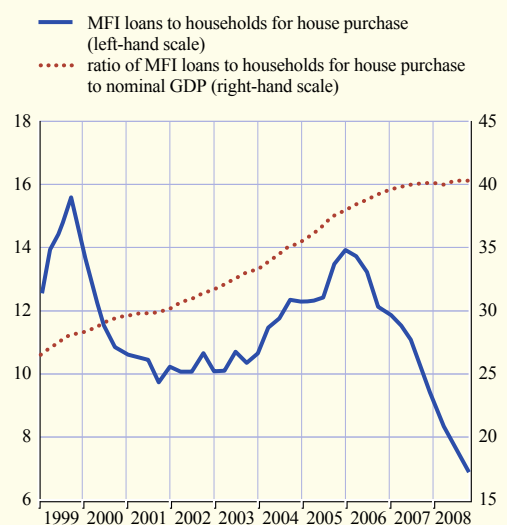
Mortgage debt is clearly the largest liability of euro area households, accounting for approximately 70% of their total financial liabilities at the end of 2008. Moreover, focusing in particular on MFI loans to households, the share of loans for house purchase in total household debt has been on an increasing trend, rising by approximately 20 percentage points since the early 1990s, to reach 72% in 2008.

The annual growth rate of MFI lending to households for house purchase in the euro area remained at double-digit levels throughout the 1999-2007 period, with the average annual growth rate standing at 11½% (see Chart 1). Over this period two cyclical peaks are discernible: the first occurred in the fourth quarter of 1999,

3 It should be noted that cross-border provision of mortgages in the euro area is very limited, representing only a small percentage of total mortgage lending.

**Chart 1 Growth and level of MFI loans to households for house purchase in the euro area**

(annual percentage changes; percentages; not adjusted for seasonal and calendar effects)



Sources: ECB and Eurostat.

Notes: MFI loans to households for house purchase have been adjusted for the derecognition of loans from the statistical MFI balance sheet as a result of their sale or securitisation. Owing to the absence of data on derecognised loans by sector and purpose of the loan, all derecognised loans are assumed to relate to loans to households for house purchase.

underpinned by the “new economy” boom and favourable financing conditions. The second peak, in the first quarter of 2006, was followed by a gradual tightening of financing conditions and the moderation – and in some euro area countries the reversal – of house price growth. Looking through the cyclical developments, the strong dynamics of mortgage lending during this period led to a significant rise in the indebtedness of euro area households as regards loans for house purchase, from approximately 25% of nominal GDP at the beginning of 1999 to 40% in the last quarter of 2007.

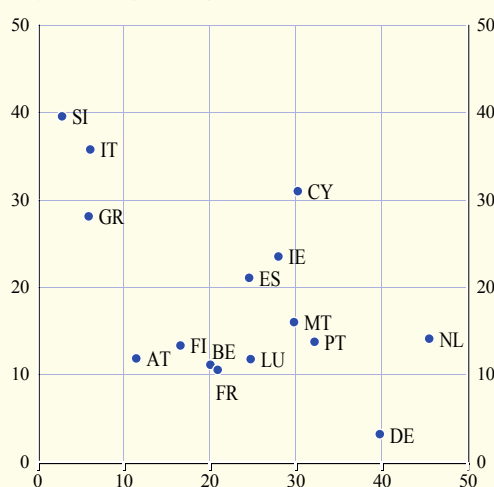
While the increase in mortgage debt is a feature shared among all euro area countries, the size of this increase has varied quite considerably. To some extent, this reflects the different initial levels of indebtedness, with some of the countries where indebtedness was low at the beginning of the period, such as Slovenia and Greece, witnessing very high average annual growth rates of MFI lending to households for house purchase (more than 25%; see Chart 2). This catching-up tendency is an adjustment process towards a new equilibrium level of indebtedness, although overshooting can occur along the adjustment path. While it is difficult to identify the level of such an equilibrium concept empirically, it is one of the aspects of the broad-based monetary analysis conducted by the ECB. In this respect, the exceptionally high growth rates of MFI lending for house purchase in some euro area countries in an environment of buoyant monetary growth in the 2005-07 period pointed to an accumulation of imbalances. These imbalances did not necessarily manifest themselves in consumer prices. They were, however, reflected in higher asset prices and housing prices in particular.

Increased household indebtedness – even if it can be viewed as a justified reaction on the part of households to a relaxation of credit constraints and to a lasting decline in inflation as well as in nominal and real financing costs – can have significant macroeconomic implications. Importantly, it implies that changes to interest rates, such as those engineered by monetary

**Chart 2 Growth and initial level of MFI loans to households for house purchase in the euro area countries**

(annual percentage changes; percentages; not adjusted for seasonal and calendar effects)

x-axis: mortgage debt-to-GDP ratio in 1999<sup>1)</sup>  
y-axis: average annual growth rate 1999-2007<sup>2)</sup>



Sources: ECB and Eurostat.

Note: See notes to Chart 1.

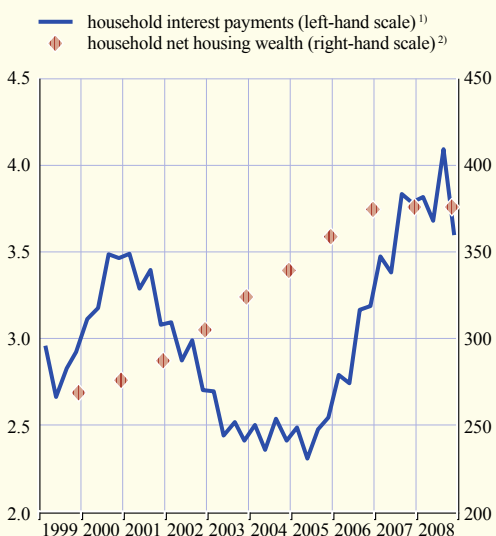
1) The ratio of MFI loans to households for house purchase to GDP is calculated for the first quarter of 1999, other than for Cyprus (fourth quarter of 2005), Malta (first quarter of 2005) and Slovenia (first quarter of 2004). Data on the outstanding amounts of derecognised loans in the first quarter of 1999 are not available for all countries; however, securitisation activity in euro area countries at the time was very limited, suggesting that any distortion owing to the unavailability of this information will be relatively minor. The ratio for Luxembourg overstates the indebtedness of households resident in this country owing to the considerable amount of loans to households resident in other euro area countries.

2) The average annual growth rate is calculated over the period 1999-2007, other than for Cyprus (2006-07), Malta (2005-07) and Slovenia (2004-07). The average annual growth rate for Italy is upwardly distorted owing to the unavailability of data on the redemptions of derecognised loans. If no adjustment were to be made for derecognised loans, the average growth rate for Italy over the 1999-2007 period would be 18%.

policy, will have a larger impact on households' discretionary spending. This suggests a strengthening of the channel of monetary policy transmission that operates through changes in interest rates. However, it also implies that the impact on consumption spending of changes in interest rates not initiated by monetary policy – such as those triggered by tensions in the financial markets – as well as in current and expected income is amplified. Chart 3 shows that while the interest payment burden of households in the euro area increased from 2.9% of their gross disposable income in the first quarter of 1999 to 3.6% in the fourth quarter of 2008, the rise was considerably more moderate than the

**Chart 3 Household interest payments and net housing wealth in the euro area**

(percentages of gross disposable household income; not adjusted for seasonal and calendar effects)



Sources: ECB and Eurostat.

1) Interest payments refer to all payments of interest made by households, regardless of the purpose of the underlying loan.

2) Household net housing wealth is calculated as household housing wealth (net of depreciation) less MFI loans to households for house purchase adjusted for the derecognition of loans (see notes to Chart 1).

rise in indebtedness. Moreover, the increase was not continuous throughout the period, as the interest payment burden decreased between 2001 and mid-2005 in the context of falling and then stable interest rates. From late 2005, by contrast, the gradual removal of monetary policy accommodation was reflected in a renewed rise in the interest payment burden, which was interrupted by the steep decline in key policy rates in the last quarter of 2008.

The increase in household indebtedness related to loans for house purchase is mirrored in the acquisition of housing wealth by households. Despite the strong rise in household indebtedness since 1999, net housing wealth (i.e. housing wealth net of loans for house purchase) has increased. This reflects both a valuation effect stemming from the robust house price dynamics throughout most of this period as well as the fact that households in euro area countries typically need to complement the funds borrowed with

own resources in order to acquire housing (in other words, loan-to-value ratios are typically well below 100%).<sup>4</sup>

The monitoring of developments in household indebtedness, interest payment burden and net wealth is crucial not only in view of the macroeconomic considerations outlined above but also for assessing the vulnerability of the household sector.<sup>5</sup> This, in turn, has implications for the stability of the MFI sector, which is the largest lender to households. At the same time, aggregate developments for the household sector as a whole can mask risk concentrations arising from a skewed distribution of debt across individual households and mismatches between the levels of assets and liabilities among households, suggesting that this analysis needs to be complemented by an examination of household-level data provided by surveys.<sup>6</sup>

When tensions erupted in the financial markets in the summer of 2007, the dynamics of MFI lending to households for house purchase were already on a moderating path, as house price growth was losing steam and lending rates were rising in response to the gradual tightening of monetary policy after December 2005. The rapid deterioration in the macroeconomic environment and the sharp increase in uncertainty that ensued further weakened demand for mortgage loans. Developments in the housing market and the macroeconomic environment also affected credit institutions' attitudes towards lending, leading to a marked tightening of their credit standards. Moreover, factors relating to the condition of the banking sector, such as balance sheet constraints as

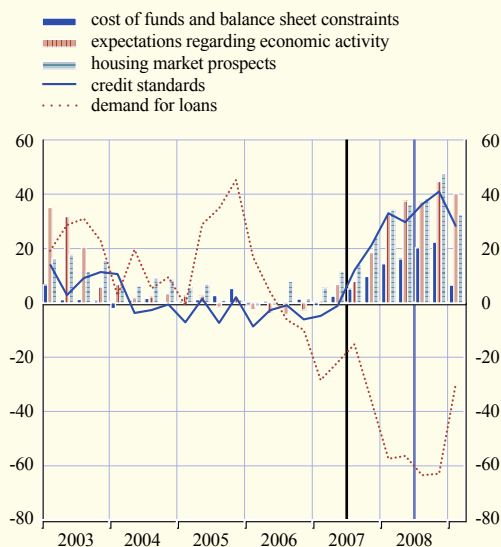
4 For a review of developments in housing wealth in the euro area and their link with private consumption, see the article entitled "Housing wealth and private consumption in the euro area" in the January 2009 issue of the Monthly Bulletin.

5 An assessment of the vulnerability of the household sector on the basis of, among other things, these indicators is made regularly in the ECB's Financial Stability Review.

6 An analysis of the available survey data from euro area countries is presented in the box entitled "Distribution of mortgage debt across the population: indications from national household surveys" in "Housing finance in the euro area", ECB Occasional Paper No 101, 2009.

**Chart 4 Changes in credit standards applied to loans to households for house purchase, contributing factors and changes in perceptions of loan demand**

(net percentages)



Source: ECB.

Notes: Vertical lines denote the start of the financial market turmoil (black line) and its intensification following the collapse of Lehman Brothers (blue line). The series shown refer to net percentages of answers to the relevant questions as reported in the respective bank lending surveys for the euro area.

well as funding and liquidity considerations, reinforced this tightening (see Chart 4). As a result, the moderation in MFI lending dynamics continued unabated, resulting in annual growth rates that were lower than those observed during the trough of the previous cycle at the end of 2001. Indeed, in nominal terms the growth rate observed in the first quarter of 2009 for MFI loans to households for house purchase was the lowest since the series began in 1980. However, in real terms (using the GDP deflator) the annual growth rate of MFI loans to households for house purchase has not dropped to the levels observed in 1982 and 1991. In any case, the weak dynamics in such lending over the most recent quarters should be put into perspective against the unprecedented level of household indebtedness and the exceptionally high growth rates witnessed in some euro area countries in the preceding years. In this respect, the current weakness of mortgage lending could be viewed as part of a warranted unwinding of past imbalances.

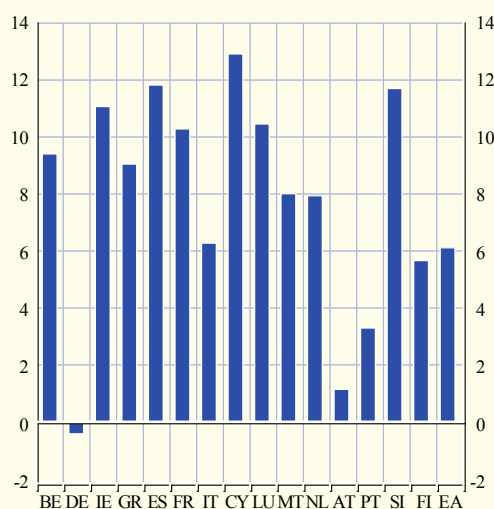
## 2.2 DETERMINANTS OF TRENDS IN LOANS FOR HOUSE PURCHASE

Besides the level of household indebtedness, other factors have clearly been instrumental in shaping the dynamics of mortgage lending in the euro area. These factors relate to, among other things, housing market developments, the macroeconomic environment (as reflected in the level and volatility of income growth and inflation as well as in the level of interest rates), demographic developments and the characteristics of the financial systems in terms of their degree of liberalisation and efficiency. Moreover, cross-country heterogeneity in these factors is crucial for understanding the disparity in the average rate of increase of household indebtedness across euro area countries.

The evolution of household borrowing for house purchase is closely linked to housing market developments. Between 1999 and 2007 residential property prices increased at an average annual rate of 6.1% in the euro area, which implies a cumulated increase of around 70% (see Chart 5). Considerable heterogeneity was observed among euro area countries, however, with particularly high average annual growth in housing prices in Ireland and Spain, countries where household borrowing for house purchase also increased very markedly. In Germany, housing prices declined at an average annual rate of 0.4% during the period under consideration, which is consistent with the very weak loan growth dynamics also observed. In principle, higher property prices tend to lead to higher funding needs and therefore increased borrowing. In addition, the amount of borrowing that households can obtain is typically constrained by the value of the collateral they can offer. Increased property prices raise the value of borrowers' collateral and therefore their borrowing capacity. At the same time, the increased availability of credit can also exert an upward influence on house prices, particularly in the short run when the supply of housing cannot fully adjust. A bi-directional causal relationship is most plausible; however, this is ultimately an empirical question.

**Chart 5 Residential property prices**

(average annual percentage changes)

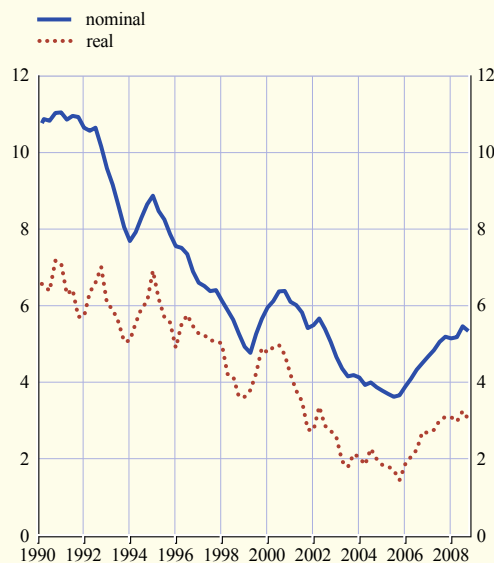


Source: ECB.

Notes: Average annual growth rates are calculated over the period 1999-2007, other than for Cyprus (2003-07), Luxembourg (1999-2006), Slovenia (2005-07) and Finland (2001-07). EA denotes the euro area.

**Chart 6 Interest rates on loans to households for house purchase**

(percentages per annum)



Sources: ECB and ECB estimates.

Notes: The interest rate is a composite lending rate for loans for house purchase, using new business volumes to weight the individual series. The real series has been calculated using the GDP deflator.

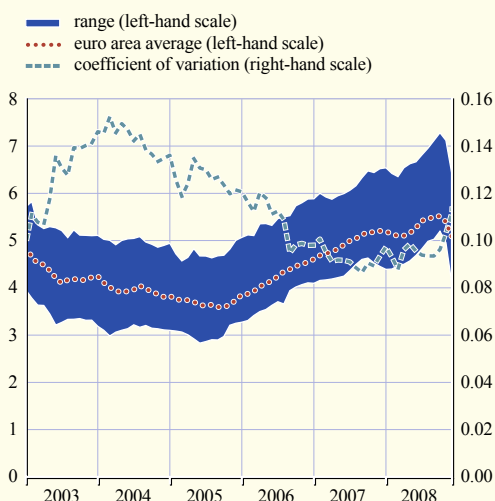
Macroeconomic conditions in euro area countries have also been conducive to a further increase in household borrowing. The volatility of real GDP growth was relatively low during the period under review, thereby reducing the income uncertainty of households. This, combined with the fact that the level and volatility of inflation had declined markedly in the run-up to Stage Three of EMU and remained modest throughout the period under consideration, shaped a stable macroeconomic environment that was supportive of debt accumulation. In addition, real disposable income of households rose relatively rapidly between 1999 and 2008, particularly in some of the euro area countries where household borrowing for house purchase increased at exceptionally high rates, such as Ireland, Greece and Spain. Higher household disposable income implies improved living standards, which in turn generate increased housing needs in terms of both quantity and quality. Moreover, higher incomes can support a larger

debt repayment burden, thus increasing the borrowing capacity of households.

Importantly, the low level and volatility of inflation contributed greatly to the reduction of nominal as well as real interest rates. Chart 6 shows that from 1999 the cost of household borrowing for house purchase was particularly low from a historical perspective, in both nominal and real terms, despite a reversal of the overall downward trend from late 2005 in the context of the gradual rise in policy rates. The low level of interest rates raised households' willingness and capacity to increase their indebtedness as it improved the affordability of borrowing. The impact of this factor is particularly visible in euro area countries such as Greece, Italy and Portugal, which in the context of entry into the euro area experienced a switch to a regime of permanently lower interest rates. However, despite the broad trend of convergence in lending rates across euro area countries, dispersion remains, as shown in

**Chart 7 Dispersion of interest rates on loans to households for house purchase across euro area countries**

(percentages per annum)



Source: ECB.

Notes: The coefficient of variation is calculated as the standard deviation of interest rates across countries divided by the average interest rate for the euro area. Owing to limited data availability, Cyprus, Luxembourg and Malta are not included in the calculations.

Chart 7.<sup>7</sup> Interestingly, the dispersion of lending rates across countries, as measured for instance by their coefficient of variation, decreased during the period when policy rates were broadly stable, while it has tended to increase following changes to these rates, particularly when such changes were rapid. This suggests the existence of cross-country differences in the speed with which changes in policy rates are passed through to lending rates, which may have been exacerbated by the recent turmoil in financial markets.<sup>8</sup>

Demographic factors such as the growth of the population and its composition in terms of age affect developments in household borrowing through the demand for housing. An increase in the demand for housing owing to population growth will lead, to some extent, to increased demand for loans for house purchase, thereby impacting on the level of household debt. Between 1999 and 2008 the population of the euro area expanded at an average annual rate of just above 0.4%. In addition, the share of the 35 to 44 age group in the population – which

is typically associated with first-time house purchases – increased to 24% in 2008 from 22% at the beginning of this period. In some euro area countries, such as Ireland, Spain, Cyprus and Luxembourg, annual population growth exceeded 1% on average, partly owing to strong immigration flows. In the first two countries in particular, demographic factors are viewed as having played a significant role in determining the brisk pace of household borrowing for house purchase.

The process of deregulation and liberalisation of financial markets has changed housing finance in euro area countries over the past two decades. While this process was for the most part completed in the majority of the euro area countries by the early 1990s, its effects were still shaping developments in the period from 1999 to 2007, as the adjustment involved for market participants meant that the full impact of the process only came about with some lag. The process involved the lifting of a number of restrictions that had previously limited the capacity of the market for housing finance to meet household demand for borrowing and had resulted in a number of households being rationed out of the market.<sup>9</sup> As a consequence, household participation in the mortgage market increased and borrowers were allowed to expand their indebtedness to levels commensurate with income and affordability factors. In addition, the entry of new mortgage providers increased competition in the mortgage markets. As a result, better financing

<sup>7</sup> The differences between MFI interest rates in euro area countries and the factors that explain them are discussed in “Differences in MFI interest rates across euro area countries”, ECB, 2006.

<sup>8</sup> The heterogeneity in the interest rate pass-through in euro area countries is confirmed by formal empirical analyses, see for instance C. Kok Sørensen and T. Werner, “Bank interest rate pass-through in the euro area – a cross country comparison”, ECB Working Paper No 580, 2006.

<sup>9</sup> Such restrictions related, for instance, to interest rate ceilings, limits on the size and maturity of mortgage loans, regulatory barriers to entry to the market for housing finance and limitations on the portfolio allocation of credit institutions such as a requirement to hold significant amounts of government bonds. The deregulation of mortgage markets in OECD countries is discussed in N. Girouard and S. Blöndal, “House prices and economic activity”, OECD Economics Department Working Paper No 279, 2001.

conditions were offered to households, in terms of pricing as well as other aspects. As regards pricing in particular, this is illustrated by the reduction in the spreads between the rates on typical housing loans and the respective indexation rates – or opportunity costs – in nearly all euro area countries since 2003, when the relevant interest rate series begin.<sup>10</sup> The results of the bank lending survey for the euro area also confirm the relevance of competitive pressure for the relaxation of lenders' credit standards during this period. Increased competitive pressure also led to greater innovativeness on the part of mortgage providers, resulting in a more varied range of mortgage products (see next sub-section). The result was that households were better able to match their borrowing needs, again leading to greater mortgage market participation and higher indebtedness.

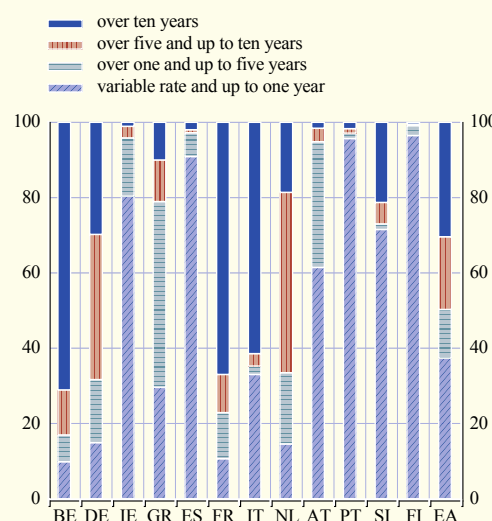
### 2.3 FEATURES OF LOANS FOR HOUSE PURCHASE

The prevailing features of loans for house purchase are often linked to long-established market practices that for historical reasons have differed across euro area countries. However, as discussed above, developments in the market for housing loans over the past two decades have in general resulted in a greater availability of mortgage products. Nevertheless, there remains considerable cross-country heterogeneity in mortgage loan characteristics. This sub-section outlines the current landscape in terms of the features of loans for house purchase in euro area countries, focusing on the aspects that are particularly relevant from a monetary policy perspective.

Perhaps the most pertinent characteristic of mortgage loans for monetary policy is whether their interest rate is variable or fixed and, if fixed, over what period. Under variable interest rates, changes in policy rates affect the interest payment burden – and therefore the income available for spending – of not only new but also existing borrowers, thus having a larger and more immediate impact on consumption.<sup>11</sup> This implies a quicker and stronger monetary

**Chart 8 New business volume of loans to households for house purchase by period of initial rate fixation**

(percentages of total)



Source: ECB.

Notes: The shares are calculated on the basis of new business volume in 2008. Owing to limited data availability, Cyprus, Luxembourg and Malta are not included. EA denotes the euro area.

policy transmission but also suggests that the interest rate risk is borne by households rather than mortgage lenders, which are typically better placed to mitigate it. In the euro area, loans for house purchase carrying a floating rate or a rate fixed for a period of at most one year accounted in 2008 for 38% of all new loans for house purchase granted (see Chart 8). This share had declined from a peak of nearly 60% at the end of 2004 and has been increasing again more recently, indicating that the direction of changes in policy rates is having an impact on the choice of interest rate fixation period, although this is not the only relevant factor.

Looking at individual euro area countries, in Ireland, Spain, Portugal, Slovenia and Finland, variable rates are dominant. In another group of countries – Belgium, Germany, France and the

<sup>10</sup> See Chapter 5 of "Housing finance in the euro area", ECB Occasional Paper No 101, 2009.

<sup>11</sup> This effect is reduced in the case of loans with rates which are variable but capped. Similarly, it is neutralised where loans have a varying maturity in order to maintain a fixed monthly amortisation payment in the face of interest rate changes; see below.



Netherlands – loans with an initial rate fixation period of more than five years account for well above 60% of all new loans for house purchase granted. While the breakdown for this country grouping has remained relatively stable over time, in Italy and particularly Greece the share of loans with a floating rate or a rate fixed for a period of up to one year has decreased sharply since 2007. The reference rate used for adjusting variable rates is in most cases the EURIBOR (at the three, six and twelve-month maturities), although in some countries other reference rates are also used, notably the rate on the main refinancing operations of the Eurosystem. While under normally functioning money markets the choice of reference rate is not of great importance, since the onset of the financial market turmoil it has become a matter of some consequence as the unprecedented increase in the spread between market and policy rates, which was not priced in, has implied a relatively lower interest rate for borrowers with loans indexed to the rate on the main refinancing operations of the Eurosystem.

From a monetary policy perspective, fixation of interest rates on loans for house purchase needs to be considered in conjunction with the existence and cost of the option of early repayment. This is because even borrowers with loans carrying a fixed interest rate can benefit directly from a reduction in interest rates if they are able to refinance their loans. In addition, these borrowers are shielded from upward movements in interest rates, which implies that the effects of monetary policy in tightening and loosening phases can be asymmetric. The ability of borrowers to refinance depends on whether early repayment of their existing loan is possible and at what cost. Partial and total early repayments are in principle possible in all euro area countries. Whereas in several countries early repayment is free of charge in the case of variable rate loans, the repayment of fixed rate loans typically carries a fee, the size of which depends on factors such as the amount to be repaid and the remaining maturity of the loan. While in some countries such fees are capped

by law, in others they are too high to make early repayment attractive to borrowers. Finally, in some cases no fee is charged upon repayment but the inclusion of the option to repay in the mortgage contract implies an increase in the interest rate of about 50 basis points.

The typical maturity of loans for house purchase in euro area countries ranges between 20 and 30 years and has increased on average since 1999, reflecting the impact of higher house prices, increased life expectancy and greater availability – at least before the emergence of the financial market turmoil – of longer-term funding sources for mortgage lenders. An interesting development has been the introduction of loans with variable maturity, i.e. a maturity that is extended or reduced so as to maintain a constant monthly instalment in the face of changes in interest rates. These loans allow households to smooth the effect that changes in interest rates have on their discretionary spending.

The gradual increase in the typical maturity of loans for house purchase since 1999 is also related to a rise in the loan-to-value (LTV) ratios that has been observed in most euro area countries during this period, as extended maturities allow larger amounts to be borrowed while maintaining the affordability of monthly amortisation payments. In 2007 the average LTV of new loans for house purchase<sup>12</sup> in the euro area was around 80%, with the typical ratios in individual countries ranging from 63% (in Malta) to 101% (in the Netherlands). Higher LTV ratios imply that house purchases become more attainable for first-time buyers, given that they are less constrained by the amount that they can offer as a downpayment. At the same time, higher LTV ratios entail an increased risk that adverse house price movements will push borrowers into negative equity on their property. This can be a particularly challenging situation when, for instance, the period for which the rate on the loan has been agreed is expiring and the pricing of the loan needs to be renegotiated.

12 This refers to the LTV ratio for a first-time buyer.

### 3 HOUSING FINANCE AND MFI FUNDING

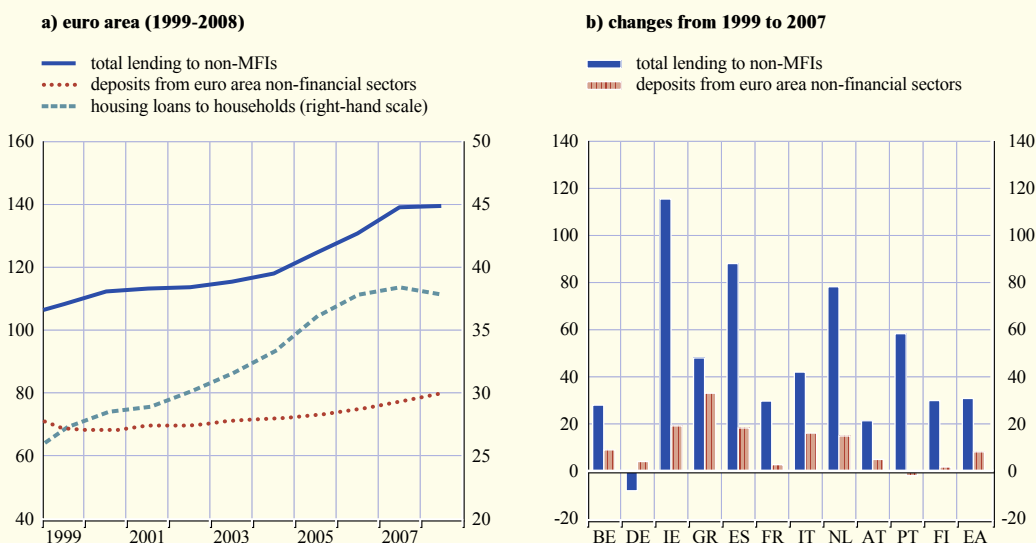
Turning to the funding of loans for house purchase, the last decade has seen a general trend towards the universal banking model, whereas banks specialised in mortgage finance have lost importance. In addition, the importance of non-bank financial institutions as a source of housing loans has declined (see Section 2). The increasing dominance of MFIs in the origination of housing loans is generally understated in statistics owing to the removal (derecognition) of mortgage loans from bank balance sheets in the context of securitisation activities. Against this background, this section provides estimates of derecognised loans in order to present a more complete picture of housing loan origination by MFIs. Apart from a small number of financing instruments which are directly linked to mortgage loans, MFIs rely on their general sources of funds to finance housing loans. For this reason, this section focuses on the overall funding of MFIs. It covers first the period from 1999 to 2007, before

discussing changes in the funding of MFIs in the context of the financial turmoil in 2008.

In the period from 1999 to 2007, MFIs increasingly used market-based funding. Both demand and supply effects can explain this development. With respect to loan demand effects, the strong growth in lending up to 2007 was not matched by corresponding growth of deposits on the liabilities side of MFIs' balance sheets (see Chart 9, panel a). The growing gap between loans and deposits was therefore financed by an increased use of market-based funding. As regards supply effects, financial market and institutional developments, including the introduction of legislation for the issuance of covered bonds in some euro area countries, as well as securitisation, helped to increase the role of market-based funding for euro area MFIs. The existence of alternative financing instruments alongside the traditional funding of MFIs via deposits made it possible for loans to grow rapidly over the past decade. As can be seen from Chart 9,

Chart 9 Loan-to-deposit gap of MFIs in the euro area

(percentages of GDP)



Source: ECB.

Notes: Data include estimates of derecognised loans. Luxembourg is omitted from panel b of the chart because, over the period under review, GDP rose more strongly than both loans to non-MFIs and retail deposits, so that the two ratios dropped sharply. EA denotes the euro area.

panel b, euro area countries with the highest growth in total loans (including derecognised loans) to non-MFIs in relation to GDP over the period from 1999 to 2007 (Ireland, Spain, the Netherlands and Portugal) were those that experienced the strongest increases in loan-to-deposit gaps. It was only in Germany that the growth of deposits from the euro area non-financial sectors slightly exceeded that of total loans, which was negative in relation to GDP in the period under review.

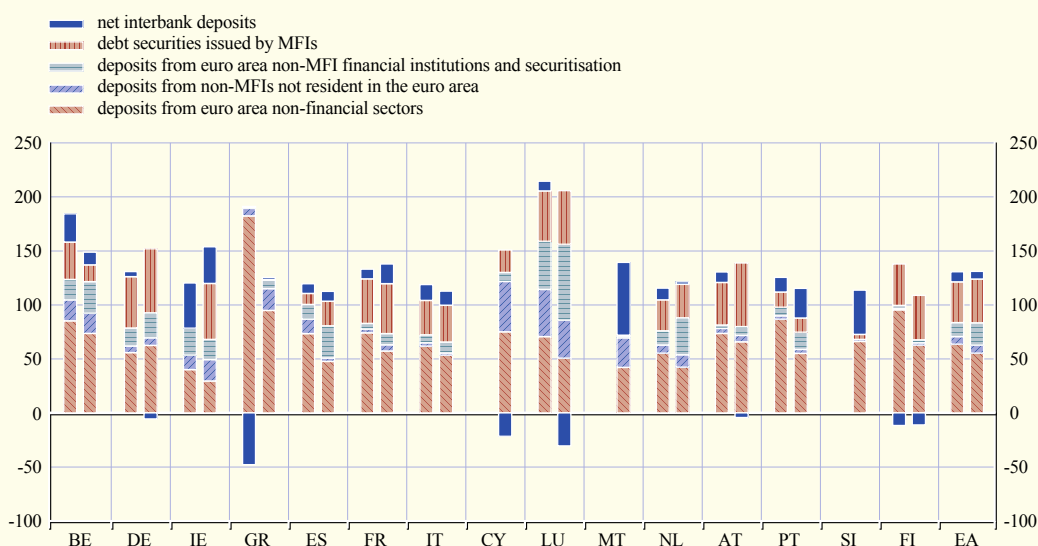
### 3.1 SOURCES OF FUNDING OF MFIs

To analyse MFIs' funding, bank liabilities have been classified into several categories (see Chart 10). Deposits from the euro area non-financial sectors can be seen as a proxy for retail deposits and represent a relatively stable source of funding for MFIs, but their maturity is on average much shorter than the maturity of housing loans. Retail deposits are generally less sensitive to changes in risk perceptions, and their remuneration is typically lower, compared with

wholesale deposits. At the same time, heightened competition from internet banks and mutual funds has helped to increase the remuneration of retail deposits in recent years. Deposits from non-MFIs not resident in the euro area, which can be characterised as wholesale deposits, are somewhat less stable, owing to foreign exchange risks and a greater dependence on economic sentiment. With few exceptions, they are placed by large firms or financial companies. Sources of funding such as interbank financing, the issuance of debt securities and securitisation are even less stable sources of funding, as they are either of a very short-term nature or are strongly dependent on market conditions, as has been experienced in the context of the recent financial turmoil. For the MFI sector as a whole, net interbank lending, which is the difference between inter-MFI deposits and inter-MFI loans, is generally of relatively limited importance, as it disregards the lending and borrowing positions within the MFI sector. The issuance of debt securities by MFIs, in the form of secured or unsecured bonds, is more

Chart 10 Alternative sources of funding

(Q4 1999 and Q4 2007; percentages of total MFI loan financing provided to non-MFIs)



Source: ECB.

Notes: For each country, the first bar refers to the fourth quarter of 1999 and the second bar to the fourth quarter of 2007. For Cyprus, Malta and Slovenia, data are not available for the fourth quarter of 1999. "Deposits from euro area non-MFI financial institutions and securitisation" includes deposits from OFIs and ICPFs and estimates of derecognised loans and represents an estimate of true-sale securitisation. EA denotes the euro area.

sensitive than deposits to market conditions. However, it helps to reduce the maturity mismatch between assets and liabilities as debt securities mostly have a longer-term maturity than deposits. Finally, true-sale securitisation is a source of funding for MFIs, one which is highly sensitive to market conditions. As a result of heterogeneous regulatory requirements across euro area countries, true-sale securitised loans are not always derecognised from banks' balance sheets but are booked as deposits from "other financial institutions" (OFIs). In order to take this into account, deposits from OFIs and, for the sake of simplicity, insurance corporations and pension funds (ICPFs) are added to the estimate of derecognised loans in order to obtain an estimate for true-sale securitisation.

From 1999 to 2007 there were remarkable changes in the composition of the funding of MFIs across euro area countries. In all euro area countries with the exception of Germany, the ratio of retail deposits to total bank loan financing provided to non-MFIs declined (see Chart 10).<sup>13</sup> For the euro area, the ratio fell from 63% in 1999 to 55% in 2007. However, retail deposits remained the most important funding source for MFIs, followed by debt securities, the ratio of which increased by 3 percentage points from 1999 to 2007. Securitisation, measured as described above, increased by 8 percentage points over the period under review. Hence, taking these two funding sources together, the importance of market-based funding increased by 11 percentage points in relation to total bank loan financing provided to non-MFIs from 1999 to 2007. Such developments have tended to weaken the transmission of monetary policy.

The importance of the funding alternatives varies considerably across euro area countries. For instance, the share of debt securities ranged from 1% in Greece to nearly 60% in Germany in 2007. Securitisation, measured as described above, was of significant importance particularly in Spain and the Netherlands in the period under review. In Greece and Finland, retail deposit-to-loan ratios were elevated in 1999, so these

countries did not have to resort extensively to market-based funding sources. In Germany, Ireland, Spain and Austria, the importance of debt securities increased considerably in the funding of MFI loans from 1999 to 2007. In Germany, this development was mainly due to weak loan growth and took place despite the fact that the amount outstanding of mortgage covered bonds declined from 2005 to 2007. In Spain, the increased importance of debt securities was accompanied by an increase in the importance of securitisation, linked to the need for greater market-based funding in view of the strongly rising loan-to-deposit ratio. In Belgium, Luxembourg and Portugal, securitisation also gained importance in the funding of the growing loan-to-deposit ratio over the period.

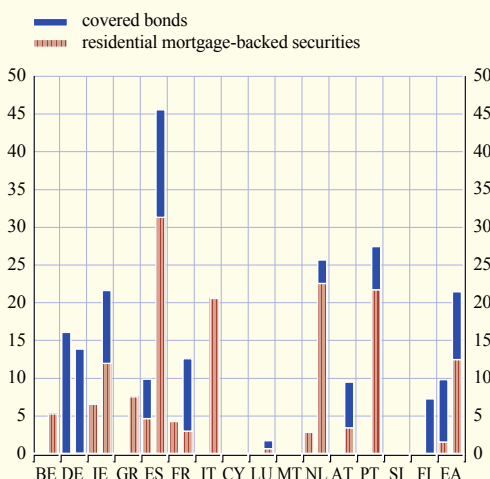
### 3.2 THE ROLE OF COLLATERALISED DEBT SECURITIES

The growing importance of debt securities issuance and securitisation in the funding of housing loans originated by MFIs becomes particularly visible in an analysis of debt securities collateralised by mortgage loans (see Chart 11). These collateralised debt securities, which are directly linked to the funding of housing loans, encompass both mortgage covered bonds and residential mortgage-backed securities (RMBSs). The two funding alternatives differ in that, in the case of covered bonds, which are among the debt securities issued by MFIs, the covered asset remains on the originator's balance sheet; in the case of RMBSs, the pooled collateral is transferred to a special purpose vehicle, which then issues the securities. RMBSs reflect the amount of true-sale securitisation of housing loans. Depending on accounting rules, RMBSs may allow the originator to remove loans from its balance sheet and thus obtain capital relief,

<sup>13</sup> Total bank loan financing includes an estimate of derecognised loans. Since total bank loan financing provided to non-MFIs does not include all bank assets, total funding may exceed total lending, the difference being other assets held by banks, which are mainly debt securities.

Chart II Secured funding

(Q4 1999 and Q4 2007; percentages of total loans to households for house purchase)



Sources: ECB, NCBs, European Securitisation Forum, European Covered Bond Council and Moody's.

Notes: For each country, the first bar refers to the fourth quarter of 1999 and the second bar to the fourth quarter of 2007. Data include estimates of derecognised loans. In the case of Spain and Portugal, the overwhelming majority of securitisation does not entail derecognition. EA denotes the euro area.

whereas covered bonds are used mainly to raise funding in a cost-efficient manner.<sup>14</sup> Together, the two funding instruments represented about 21% of the amount outstanding of housing loans in the euro area at the end of 2007, up from 10% at the end of 1999.

The importance of the two types of collateralised debt security varies considerably across euro area countries. At the end of 2007, mortgage covered bonds were particularly important in relation to total housing loans in Germany and Spain (both at 14%) and Ireland and France (both at 10%), whereas they were of lesser importance in the other euro area countries. By contrast, RMBSs were of no importance in Germany but of considerable importance in Spain (31%), Italy, the Netherlands and Portugal (between 20% and 25% in these three countries) and Ireland (12%) in relation to total housing loans.

The increase in the share of RMBSs over the period under review, compared with a relatively stable share of mortgage covered bonds, shows

the growing importance of securitisation of housing loans in the euro area, although it remained at a low level compared with that in the United States (see the box entitled "Institutional differences between mortgage markets in the euro area and the United States" in this issue of the Monthly Bulletin). In addition, it shows that mortgage covered bonds already played a relevant role in the financing of housing loans in 1999, particularly in Germany, where covered bonds have long been used as a funding instrument for MFIs. The share of covered bonds in the funding of housing loans did not change considerably over this period, mainly as a result of equally strong growth in housing loans. This notwithstanding, there has been significant growth of this market in a number of euro area countries, helped by the introduction of a legislative framework for the issuance of covered bonds and by housing market developments.

### 3.3 IMPACT OF THE FINANCIAL TURMOIL ON MFI FUNDING

The financial turmoil which started in mid-2007 had a severe impact on banks' funding as the raising of new funds in financial markets was seriously hampered by investors' increased risk aversion and uncertainty about banks' exposure to distressed assets.

To some extent, the stronger market orientation of banks in their funding up to 2007 was reversed in the context of the financial turmoil in favour of the more traditional funding based mainly on deposits, for which banks competed intensively. The growing importance of deposits in MFIs' funding was supported by investors' reluctance to invest in debt securities and by the enhanced deposit guarantees provided by most euro area governments when the financial turmoil intensified after the Lehman Brothers bankruptcy in September 2008. The ratio of retail deposits to total MFI lending to non-MFIs increased by around 2 percentage

<sup>14</sup> For a detailed explanation of the institutional characteristics of covered bonds and securitisation, see Section 4.4 of "Housing finance in the euro area", ECB Occasional Paper No 101, 2009.

points, to 57%, in the euro area in 2008 compared with 2007. By contrast, market-based funding of MFIs declined considerably in 2008. The annual volume of debt securities issued by MFIs fell by around 40% in 2008 compared with 2007, when it had been relatively strong. At the same time, however, securitisation continued in the form of private placements of collateralised debt securities, issued by OFIs on the basis of loans originated by MFIs. MFIs bought back such debt securities (retained securitisation), to use them as collateral in central bank open market operations in order to gain liquidity. This is reflected in the slightly larger share of estimated securitisation in the total loan funding of MFIs in 2008. By contrast, the relative importance of funding via deposits from non-MFIs not resident in the euro area (wholesale deposits) declined, in line with their greater sensitivity to the economic environment.

Overall, during the financial turmoil, euro area banks have shifted away from market-based financing, owing to the difficulty of raising funds in financial markets. Consequently, the move up to 2007 towards the originate-to-distribute model, i.e. the repackaging and selling of credit which banks have originated to other market participants, has been to some extent reversed in favour of a more traditional banking model, where deposits play a major role in the funding. While the effects of the removal of loans from banks' balance sheets vary across euro area countries owing to different regulatory frameworks, the adoption of this model has been, overall, limited in the euro area, in part owing to accounting rules which make it more difficult to derecognise loans than in other major industrialised countries (see the box entitled "Institutional differences between mortgage markets in the euro area and the United States" in this issue of the Monthly Bulletin). A review of the rules governing the derecognition of loans, with a view to improving transparency and the incentives for credit monitoring, will be important for the normalisation of securitisation markets. At the same time, the experience during the financial turmoil may result in greater

recourse to alternative – existing or new – market-based types of bank funding. In this respect, on-balance sheet funding through the issuance of covered bonds is likely to play an increasing role in the funding of MFIs in the future.

#### 4 CONCLUSION

This article has presented an overview of the main developments in housing loans granted to households and their determinants, as well as in the funding of housing loans by MFIs, over the period from 1999 to 2007, and in 2008 where possible.

The strong growth in household mortgage debt during the past decade was supported by favourable financing conditions, rising house prices, increases in households' real disposable income and, in some countries, demographic factors. At the same time, differences in such factors resulted in considerable heterogeneity of housing finance developments across euro area countries. Differences in prevailing mortgage characteristics across euro area countries also remain, for instance as regards the dominance of variable or fixed rate mortgage contracts.

Funding developments over the past decade reflect the strong growth in lending. In most euro area countries housing lending was typically provided by banks, which increasingly used market-based funding, including securitisation. This, in turn, contributed to the easing of credit standards and the strong growth in housing loans.

Taken together, these developments seem to have had a limited effect on the transmission of monetary policy. It needs to be kept in mind that the euro area remains a predominantly bank-based financial system, where, in particular compared with the United States, non-bank financing plays a limited role. While higher household indebtedness points in the direction of a stronger effect of policy rates on spending, other developments, such as the increased role of

securitisation, are likely to have weakened the transmission.

The financial turmoil has changed the environment for housing finance considerably, strengthening the decline in the annual growth of housing loans that was already under way. The deterioration in macroeconomic conditions and, in some euro area countries, declining house prices have put strains on households' net wealth. At the same time, monetary policy has helped to lower households' interest payment burden, supporting consumer spending. With respect to banks' funding, the stronger market orientation of banks in their funding has to some extent been reversed in favour of more traditional deposit-based funding.

Overall, some of the features of the market for housing finance in the euro area, for instance the overall level of household indebtedness, the dominant mortgage contract characteristics and the funding practices of mortgage lenders, create a structure that makes households, banks and the economy as a whole more resilient to shocks than in economies where mortgage markets are more flexible. At the same time, further integration of mortgage markets across euro area countries would tend to increase the range of products available to households and promote competition in the supply of mortgages, with beneficial effects for borrowers as well as, from a broader perspective, the effectiveness of the monetary policy transmission mechanism.