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LONG-TERM DEVELOPMENTS IN MFI LOANS TO HOUSEHOLDS IN THE EURO AREA: MAIN PATTERNS AND DETERMINANTS

Identifying and understanding the main patterns and determinants of developments in loans that euro area monetary financial institutions (MFIs) grant to households is an important element in the overall assessment of economic and monetary developments, as well as of the monetary policy transmission mechanism.

Historical time series for MFI loans to households have recently become available for the period since the early 1980s. They demonstrate that borrowing by households has risen consistently more strongly than disposable income, reflecting to a large extent strong borrowing for house purchase. This also implies that asset price and wealth developments have, over time, assumed a larger role in determining household loan dynamics. At the same time, assessing the historical pattern of household loan developments purely on the basis of the macroeconomic determinants of loan demand remains to some extent inconclusive, given that loan developments over the past two decades are also likely to reflect a number of structural influences, such as financial innovation and changes in mortgage market regulation, as well as the shift to a low-inflation and credible monetary policy environment in the euro area in the context of EMU.

I INTRODUCTION

One important element in the ECB's recent assessment of economic and monetary developments, and of the impact that changes in official interest rates have had on these developments, has been the moderation in the growth of household borrowing observed since the spring of 2006. More specifically, the annual growth rate of MFI loans to households declined from almost 10% in March 2006 to just above 7% in June 2007. In order to gain an appreciation of the factors behind such developments and assess the possible implications for other economic variables of major interest to a central bank, knowledge and understanding of the historical developments in borrowing dynamics are necessary. However, until recently, official euro area data on MFI loans by sector were only available for the period since 1998. These data have now been complemented with historical time series dating back to 1980 (see the box entitled "New euro area historical series on MFI loans to households and non-financial corporations" in this issue of the Monthly Bulletin).
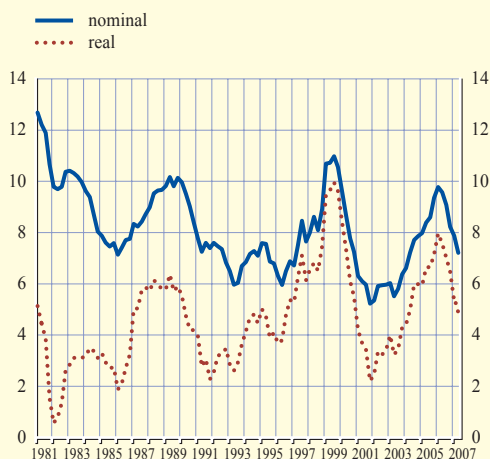
MFI loans to households account for a substantial part of the overall financing of the euro area household sector and of liquidity creation in the domestic economy more generally. This can be shown by a number of simple ratios. In early 2007 the outstanding amount of loans taken from MFIs accounted for 90% of the euro area household sector's loan financing and for 84% of its total liabilities. In recent years the new business in MFI loans to households has amounted to almost 30% of the household sector's disposable income, and by early 2007 the stock of MFI loans had reached a level of around 85% of disposable income. Finally, looking at loans to households from the perspective of bank balance sheets, they account for more than 50% of all MFI loans to the private sector and are thus a very important source of money creation.

Understanding the dynamics and determinants of MFI loans to households is a necessary first step in the process of gauging their influence on, for instance, households' investment and consumption activities, debt servicing costs and the associated impact on disposable income net of interest payments, or developments in asset prices. However, it should be borne in mind that the historical time series for the euro area can reflect very diverse developments at the country level, given that markets for household debt financing have remained more segmented than, for instance, goods markets, and that they have seen quite different degrees of liberalisation and deregulation over the past decades. The usual caveat that caution is required in interpreting "synthetic" euro area data for the period prior to the start of Stage Three of EMU in January 1999 therefore needs

nominal
real

MFI loans-to-GDP ratio (left-hand scale)
nominal MFI loans (right-hand scale)
nominal GDP (right-hand scale)

to be given even more weight than usual in this context.

The remainder of this article is structured into four sections. Section 2 describes the stylised facts of growth in loans to households for the period since 1980.[1] Section 3 discusses developments in total household loans in the light of the evolution of their likely macroeconomic and structural determinants. Section 4 examines the extent to which developments in individual loan categories can be better understood by relating them to more specific determinants. Section 5 offers some concluding remarks.

Overall, this article discusses developments in MFI loans to households from the perspective of explaining trends in financing. Loans to households constitute a large share of banks' assets and the credit risk potentially associated with household borrowing thus also makes understanding household loan dynamics an important issue for the monitoring of financial stability. Financial stability issues, however, such as the risk content of MFIs' loan portfolios associated with households' ability to repay
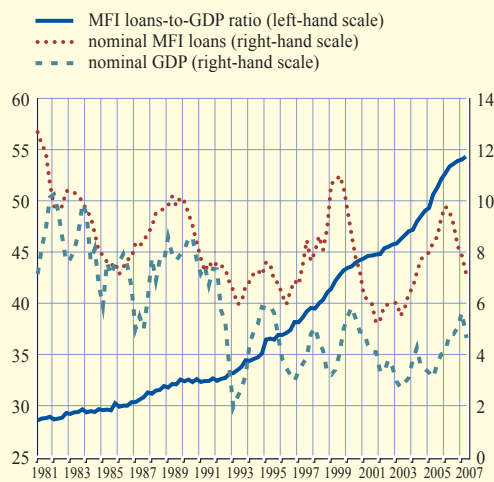
debt, are regularly discussed in the ECB's Financial Stability Review.

2 LOANS TO HOUSEHOLDS: SOME STYLISED FACTS

Over the period since 1980, MFI loans to households in the euro area have increased at an average annual rate of around 8%. This average expansion can be examined and put into perspective in several ways.

First, over the period under review, the annual growth rate of total nominal loans to households has seen three discernible cyclical peaks, each at around 10%, at the end of the 1980s, at the end of the 1990s and, more recently, in early 2006 (see Chart 1). In between these peaks, loan growth moderated to cyclical troughs of around 6%.

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1   See also the article entitled "Developments in the debt financing of the euro area private sector" in the November 2003 issue of the Monthly Bulletin, which presented a first analysis of longer-term developments in household debt financing in the broader context of private sector debt financing.

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Second, the average annual rate and the cyclical peaks and troughs in loan growth are quite different when looking at loan dynamics adjusted for price developments. In particular, the period of high inflation in the first half of the 1980s implies that in real terms (using the GDP deflator) annual loan growth has been much lower than in nominal terms, and that the peak observed at the end of the 1980s was much lower than the peaks at the end of the 1990s and in early 2006. Splitting the sample into two parts of equal length in mid-1993 shows that average loan growth was higher in the first half of the sample than in the second when looking at nominal series, while the opposite holds when looking at loan growth in real terms.

Third, the expansion of nominal loans to households has on average been stronger than that of nominal GDP or nominal disposable income of the household sector and thus implies a rise in the respective debt ratios. For instance, in 1980 the outstanding amount of MFI loans to households amounted to somewhat less than 30% of GDP, while in early 2007 the ratio stood at around 55% (see Chart 2). In the first half of the sample up to mid-1993, the rise in indebtedness was still relatively muted, but in the second half it accelerated and the ratio increased by around 1½ percentage points per annum. However, while this increase was strong from a historical perspective for the euro area, it was less pronounced than, for instance, in the United Kingdom, where the corresponding ratio between MFI loans to households and GDP rose by around 2 percentage points per annum from the mid-1990s, reaching somewhat more than 70% in early 2007.

Fourth, the new historical data on MFI loans to households provide a breakdown by purpose into the following categories: loans for house purchase; consumer credit; and other lending, which is a residual item (some conceptual issues regarding the classification of loans to households by purpose are discussed in Box 1).

CONCEPTUAL ISSUES REGARDING THE CLASSIFICATION OF LOANS TO HOUSEHOLDS BY PURPOSE

Banks grant loans for a number of very different purposes. In the case of households, the statistical classification in place distinguishes between loans for house purchase, consumer credit and "other lending". While, with the exception of the unspecific other lending, these purposes appear prima facie to be clear-cut, there may nevertheless be different connotations when it comes to judging where loans for specific purposes might be recorded. This complication is compounded by the fact that the MFI granting the loan will not always be aware of the ultimate purpose of the loan the client is taking out. As an understanding of which types of loan are recorded under which of the three loan categories is important to meaningfully assess the respective loan developments, this box briefly highlights some conceptual issues against the background of the relevant ECB regulations.[1]

Loans for house purchase

This category accounts for the bulk of total MFI loans to households (71% in the second quarter of 2007) and comprises credit extended for the purpose of investing in housing, including purchasing an existing residential property (for own use or to let); purchasing land; building residences; and home improvements. In principle, this loan category comprises all loans for house

1 See Regulation ECB/2001/13 of 22 November 2001 concerning the consolidated balance sheet of the monetary financial institutions sector (OJ L 333, 17.12.2001, p. 1), as amended.

purchase, regardless of whether they are secured on residential property or not. On the other hand, loans that are secured on residential property but not extended for the purpose of investing in housing should in principle not be included in this category. This implies that loan instruments that allow homeowners to withdraw equity from their residential property (mortgage or housing equity withdrawal) should in principle not be recorded as loans for house purchase.[2]

Consumer credit

This category corresponds to 13% of total MFI loans to households (as at the second quarter of 2007) and includes loans granted for the purpose of personal use in the financing of consumption of goods and services, such as motor vehicles; furniture, appliances and other consumer durables; holiday travel, etc. In the case of consumer credit, the distinction between purpose and collateral may be greater than in the case of loans for house purchase, as the purchase of consumer goods and services by means of credit may well be secured by residential property (especially for credit with longer original maturity). Credit card loans and overdrafts on current accounts are also typically included in this category.

Other lending

This category accounts for 16% of total MFI loans to households (as at the second quarter of 2007). It is a residual item and includes loans granted for purposes such as education (student loans), the acquisition of financial assets and debt consolidation. Moreover, given that the household sector also includes unincorporated businesses (sole proprietors and partnerships), other lending also comprises credit that in principle may reflect business purposes such as the financing of working capital or the purchase of capital goods, rather than pure consumption or residential investment purposes. In addition, loans granted to non-profit institutions serving households are normally also classified in this category, except for loans extended to housing associations that are used to acquire residential property, which should be recorded as loans for house purchase, to the extent that they can be identified.

In practice, these classification principles cannot always be strictly followed across all euro area countries. For example, in some national statistical frameworks the overriding classification principle is the type of security against which the loan is granted rather than its actual purpose, leading for instance to the classification of all loans secured on residential property as loans for house purchase. In addition, household current account overdrafts may in some countries be recorded under other lending, irrespective of whether they mainly finance consumption expenditure. While such classification issues should not distort the main patterns of development in the individual loan categories, they need to be borne in mind, especially when it comes to assessing shorter-term developments. It should be noted, however, that work is ongoing to further harmonise these loan categories across countries.

2 The replies to an ad hoc question included in the July 2006 round of the Eurosystem's bank lending survey suggest that, at the euro area level, mortgage equity withdrawal is not quantitatively significant (see Box 2 entitled "The results of the July 2006 bank lending survey for the euro area" in the August 2006 issue of the Monthly Bulletin).

Charts 3 and 4 show that similar developments in the annual growth of total loans to households over time can reflect different dynamics and contributions from these loan categories. Loans for house purchase have historically accounted for the bulk of annual loan growth, reflecting

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Chart 3 Contributions to growth in MFI loans to households

(annual percentage changes; percentage points)

- house purchase
- consumer credit
- other lending
- total loans to households
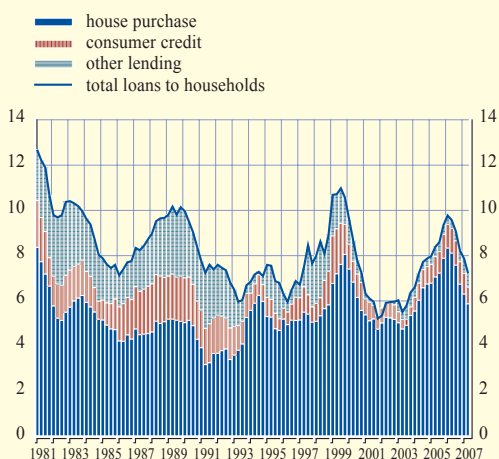
Source: ECB.

Chart 4 Loans to households by purpose

(annual percentage changes)

- consumer credit
- house purchase
- other lending
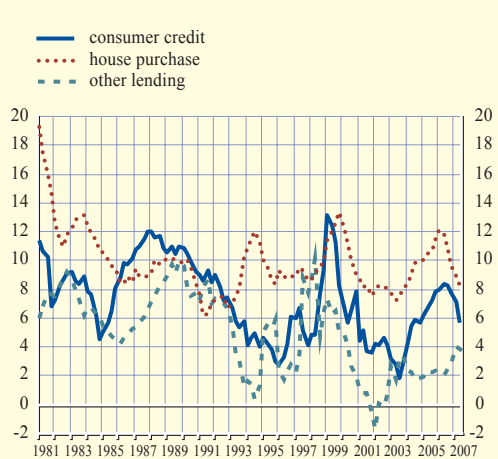
Source: ECB.

the fact that they represent the largest share of the total outstanding amounts of loans and that on average they have also exhibited the strongest growth rates. This is particularly evident for the second half of the review period, when the annual average growth rate of loans for house purchase was almost double that of consumer credit and almost three times that of other lending, and accounted for almost 6 percentage points out of the 7½% average annual growth of total loans to households.

In the first half of the review period, consumer credit and, in particular, other lending to households still played an important role in shaping household sector loan dynamics, with a joint contribution to total loan growth almost equal to that of loans for house purchase. This reflects the initially high combined share of other lending and consumer credit in total loans to households, of more than 50% in the early 1980s. Over time, this has diminished to less than one-third in recent years. Thus, although the movements in growth of other lending were quite pronounced in the second half of the period, this did not have a strong impact on the pattern of growth in total loans to households.

The cyclical movements of growth in the respective loan categories have shown varying degrees of synchronisation in the period since 1980. While in the second half of the period developments in the growth rate of loans for house purchase were relatively closely aligned with those of consumer credit, this was not the case in the first half of the period. A lack of co-movement was particularly apparent in 1993 and 1994, when growth in loans for house purchase strengthened, while growth in consumer credit declined further. The opposite was observed in 1985 and 1986, when growth in consumer credit strengthened, while growth in loans for house purchase continued to decline (see Chart 4).

Such a lack of co-movement can obviously reflect a number of factors. First, the various loan categories may simply be influenced by different determinants which themselves follow diverse cyclical patterns (see Sections 3 and 4). Second, there may have been specific developments in individual countries of the euro area which had a strong impact on particular loan categories and may have distorted the relationship with more fundamental

Chart 5 Loans to households by lender

(annual percentage changes)

— total loans
····· MFI loans
- - - non-MFI loans
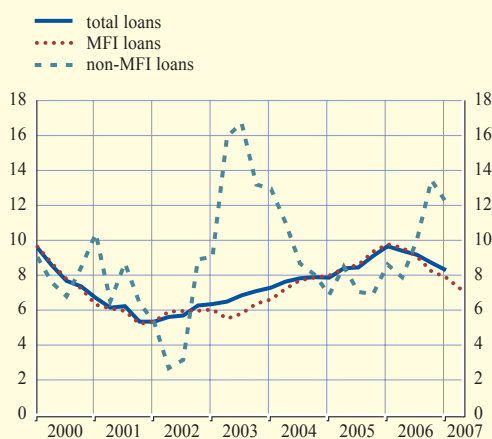
Source: ECB.

determinants. One example is the strong increase in the growth of loans for house purchase at the euro area level in 1993 and 1994, which to a large extent can be explained by the impact of government programmes in Germany following German reunification, in a period when developments in consumer credit and other lending were still negatively affected by the economic downturn.[2] Another example is the strong increase in the growth of consumer credit at the euro area level in 1985 and 1986, which may reflect to a large extent the impact of structural changes in the banking sector, such as the 1984 Banking Act and the 1985-86 financial reforms in France.[3]

A final issue in the assessment of the growth pattern of MFI loans to households is the degree to which it is influenced by a shift in the source of borrowing from MFIs to other sectors, such as insurance corporations or specialised lending corporations. The available data from the euro area sector accounts suggest that, on balance, such influences have been limited in the past few years. One exception in this respect has been associated with large-scale, "true-sale" securitisation operations in 2003, where MFIs shifted loan portfolios off their balance sheet by selling them to special-purpose vehicles,

which are part of the other financial intermediaries sector. In such instances, developments in loans held by non-MFIs may need to be analysed in conjunction with those in MFI loans to better understand the pattern of the latter (see Chart 5).

Overall, the stylised facts described in this section show that the developments in MFI loans in the period since 1980 have been multifaceted, and they suggest that it is unlikely that a limited set of traditional macroeconomic determinants can provide consistent explanations across the full period.

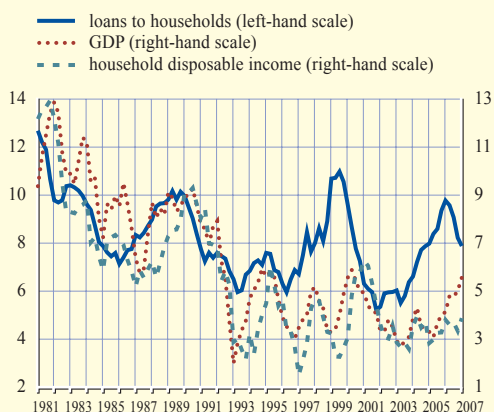## 3 TOTAL LOANS TO HOUSEHOLDS AND THEIR DETERMINANTS

Developments in household borrowing are the outcome of the interaction of both demand and supply-side forces. However, the classification of factors as demand or supply-side is not always straightforward, as some variables can affect loan dynamics from both sides. This section therefore identifies and groups together the main determinants of total loans to households in the following broad categories: (i) scale variables; (ii) variables related to financing terms; (iii) variables related to the broader household balance sheet position; (iv) factors related to structural changes in the banking sector; and (v) other factors. It should be noted that, while this distinction between factors may be useful for presentational purposes, it is their interaction that jointly determines household borrowing dynamics. Indeed, the borrowing capacity of households depends inter alia on their income, the financing conditions they face, their existing debt level, the typical duration of the loans available to them, and their financial and housing wealth.

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2 See the article entitled "The development of bank lending to the private sector" in the October 2002 issue of the Monthly Report of the Deutsche Bundesbank.

3 See the study entitled "Developments in France's banking system since the late 1960s" in the 2002 Annual Report of the Commission Bancaire.

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Chart 6 MFI loans to households, GDP and income

(annual percentage changes)

— loans to households (left-hand scale)
····· GDP (right-hand scale)
- - - household disposable income (right-hand scale)

Sources: ECB and Eurostat.

SCALE VARIABLES

Households generally take out loans in order to finance consumption and investment expenditure that they cannot or do not want to finance from their current incomes and/or savings. According to the life-cycle hypothesis, households passively use such debt financing to smooth their expenditures over time in line with their expected lifetime income. In principle, there should thus be no visible co-movement between debt, on the one hand, and expenditures, which capture the size of the underlying transactions that generate households' financing needs (such as private consumption and residential investment), on the other. However, if capital markets are imperfect and households are therefore limited in the amounts they can borrow against their future income, liquidity constraints provide scope for a positive correlation between developments in household debt financing and scale variables.[4] In such a set-up, scale variables such as general economic activity or household disposable income reflect households' borrowing capacity, since higher levels of income can support a greater debt repayment burden, thus allowing households to acquire more debt.[5] At the same time, such scale variables also affect the supply of loans by influencing lenders' assessment of

macroeconomic risks and, hence, their willingness to lend.

Given that total MFI loans to households encompass borrowing acquired for a diverse set of purposes, their evolution would be expected to be related to developments in broad economic indicators and not to variables that are specific to a particular financing need. Indeed, Chart 6 illustrates that total loans to households followed relatively closely the evolution of general economic activity, as captured by nominal GDP, and household disposable income in the first half of the period reviewed, i.e. from 1980 to 1993. Thereafter, the influence of other factors of a conjunctural as well as a structural nature, which are discussed below, appears to have somewhat reduced the strength of this relationship.

TERMS OF FINANCING

The terms of financing encompass the cost of financing as well as other features of the loan contract, such as the maturity of the loan. The cost of financing comprises both interest and non-interest costs, such as fees and charges. Moreover, in some countries interest payments are influenced by direct or indirect subsidies and taxes, particularly in the case of loans for house purchase, which suggests that the cost of financing that is relevant for household borrowing decisions is an after-tax measure.[6] A higher cost of financing reduces both the willingness and the capacity of households to take on debt, and is thus likely to have a negative effect on households' demand for loans. Developments in the cost of financing can also affect lenders' willingness to finance

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4   By contrast with cyclical developments, even in the absence of capital market imperfections, the long-term trends in household borrowing should be related to long-term developments in scale variables, which shape households' expectations regarding their lifetime or permanent income.

5   This notwithstanding, it can be envisaged that households may take advantage of an increase in income, particularly a transitory one, in order to reduce their indebtedness.

6   See G. Wolswijk (2005), "On some fiscal effects on mortgage debt growth in the EU", ECB Working Paper No 526, September.

Chart 7 Household sector debt-to-disposable income ratio and interest rates

(percentages; percentages per annum)

— debt-to-income ratio (left-hand scale)
····· short-term market interest rate (right-hand scale)
- - - long-term market interest rate (right-hand scale)

Sources: ECB and Eurostat.
Note: Household sector debt refers to the outstanding amounts of total MFI loans to households.

households, although in this case the direction of the effect is not clear-cut. While a higher lending rate can in principle increase the supply of loanable funds, it may have an adverse effect on lenders' assessment of the risks attached to lending to households, thereby reducing their willingness to provide funding.

Information on bank lending rates applicable to loans to households in the euro area is not available for a large part of the period under review. Given this limitation, the cost of borrowing is proxied in Chart 7 by short and long-term market interest rates. As illustrated in the chart, the relationship between the cost of borrowing and household debt dynamics in the euro area is clearly negative: the overall downward trend of short and long-term market interest rates in the period since 1980 is mirrored by the continued increase in the debt-to-income ratio. In addition, episodic increases in interest rates during this period appear to coincide with a stabilisation of household indebtedness (e.g. between early 1980 and early 1982, between mid-1989 and late 1992 and in 2001). The faster increase in household indebtedness since 1993 seems to be related, inter alia, to the sharp fall in interest rates in the context of the

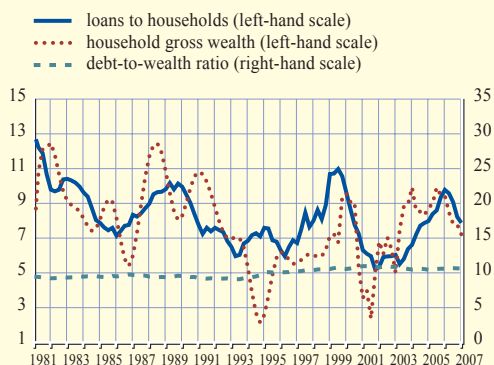shift to a low-inflation and credible monetary policy environment in the context of EMU.

HOUSEHOLD BALANCE SHEET POSITION

Household borrowing dynamics are likely to bear a close relationship to developments on the assets side of the sector's balance sheet. For instance, higher household wealth (housing wealth in particular) can boost households' capacity to borrow and lenders' willingness to provide finance since, by being used as collateral, it can partly alleviate the informational frictions that the lending process entails, thereby enabling a greater flow of funds to households on more favourable terms. At the same time, higher wealth may also be the mirror image of increased financing needs if, for instance, it reflects a rise in house prices and thus the requirement to raise more funding to acquire the same amount of assets. In addition, higher wealth increases the possibility to raise or smooth consumption and investment expenditure, where at least part of this smoothing will be financed by greater recourse to the loan market. Mortgage equity withdrawal is a case in point.

Chart 8 illustrates the relationship between growth in total MFI loans to households and growth in households' gross wealth (i.e. the sum of housing and financial wealth). This relationship appears to be a relatively close one, especially in the period since 1996. Around the turn of the century in particular, the IT-driven boom and bust in the equity markets appear to have influenced loan dynamics via their effect on household wealth, the annual growth rate of which increased markedly until mid-2000 and subsequently declined sharply. Nevertheless, the slowdown in wealth and loan growth in the aftermath of the IT-driven bust was moderated by the continued strong increase in residential property prices. Moreover, the robust growth in household loans in the period from mid-2003 was broadly in line with the evolution of total wealth. The close link between the two sides of the household balance sheet is

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Chart 8 MFI loans to households and wealth

(annual percentage changes; percentages)

— loans to households (left-hand scale)
...... household gross wealth (left-hand scale)
--- debt-to-wealth ratio (right-hand scale)

Source: ECB.
Notes: Household gross wealth comprises gross financial wealth and housing wealth. Financial wealth data are based on a number of sources. They have been constructed on the basis of euro area quarterly integrated accounts and financial accounts data as well as national data sources. For more information on the methodology underlying the estimates of housing wealth data, see Box 5 entitled "Estimates of housing wealth for households in the euro area" in the December 2006 issue of the Monthly Bulletin.

Chart 9 Household indebtedness in the euro area and selected countries

(percentage of nominal GDP)

■ 1995
▥ 2006
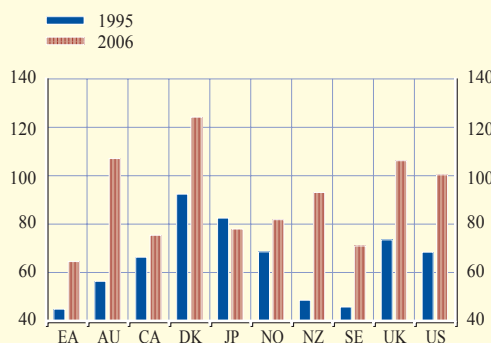
Sources: ECB, Eurostat, BIS, OECD, Federal Reserve, Bank of Japan, Reserve Bank of New Zealand and Sveriges Riksbank.
Notes: EA stands for "euro area". Household indebtedness is defined here as the outstanding stocks of total liabilities of households and non-profit institutions serving households, rather than just MFI loans. Moreover, the figures are not necessarily fully comparable across countries owing to differences in institutional sectoral classification. Data for Denmark are available only for the period since 1998.

also evident in the relatively stable debt-to-wealth ratio, which has hovered around 10% throughout the review period.

An additional factor related to households' broader balance sheet position that affects the demand for loans is the level of debt that households have already taken on. More specifically, the higher the level of existing debt, the lower the capacity of households to service additional debt and, as a result, the lower their demand for new loans. In this respect, the strong rise in household debt in the period since 1993 is also partly related to the still relatively low level of household indebtedness, compared with industrialised countries such as the United States, the United Kingdom or Japan, as shown in Chart 9. Nevertheless, while the level of indebtedness is an important factor affecting household loan growth, differences in other determinants, such as housing market dynamics, also need to be taken into consideration when making cross-country comparisons.

FACTORS RELATED TO STRUCTURAL CHANGES IN THE BANKING SECTOR

Most of the factors outlined thus far influence both the demand for and the supply of loans to households. Factors that tend to exert an influence on household borrowing dynamics mainly from the supply side are those relating to developments in the banking sector. Such developments pertain to gradual changes, of a structural nature, in the markets for loans to households. A significant example of such changes is the process of deregulation and liberalisation of financial markets that occurred in euro area countries, mainly in the 1980s and early 1990s.[7]

Prior to this, loans to households were often only available through specialised institutions with preferential status (e.g. benefiting from tax or funding subsidies, or implicit or explicit government guarantees). Furthermore, lending,

7 For a discussion of the deregulation of mortgage markets in OECD countries, see N. Girouard and S. Blöndal (2001), "House prices and economic activity", OECD Economics Department Working Paper No 279.

and for that matter deposit, interest rates were often regulated. In addition, the amounts of loans were often subject to quantitative limits or to a maximum duration. As a result of such extensive regulation, a considerable share of households were in effect excluded from the credit market and developed a significant pent-up demand for loans. The lifting of the restrictions on household lending in the context of the deregulation and liberalisation of the financial markets allowed previously credit-constrained households, following a period of "learning", to satisfy this demand.

The increased competitive pressures faced by providers of credit to households as a result of the opening-up of the market, which have been accentuated by the process of European financial integration, are also likely to have improved the financing conditions for households. For the period since 2003, these improvements have been visible in the results of the Eurosystem's bank lending survey for the euro area. At the same time, increased competition has spurred a wave of financial innovation leading to a wider array of loan products, for instance loans for house purchase with flexible repayment options, variable rate loans with fixed instalments (so-called "accordion" loans), and loan products that allow households to withdraw mortgage equity.[8] In addition, in the case of loans for house purchase, changes in specific bank practices – regarding, for instance, the maximum amount of finance banks are willing to provide against the value of the property acquired (i.e. the loan-to-value ratio) – are also likely to have affected household borrowing.

Against this background, credit market participation has increased, a development that is confirmed by survey data from the European Community Household Panel (ECHP). The survey only covers the years from 1994 to 2001, but shows that over this period the share of euro area households that assumed some debt rose by approximately 3 percentage points.[9]

Financial innovations have also affected the ways that lenders fund themselves (e.g. through securitisation) and manage their risks (e.g. using credit default swaps), thereby also having an upward impact on the supply of loans to households. However, it should be noted that, while the relevance of these factors cannot be ignored, their measurement is complex and as a result their influence is often disregarded in the empirical literature.

OTHER FACTORS

In addition to the determinants of household loan developments outlined above, there are some important factors that do not fall under any of these categories. One such factor is expectations regarding future income. A household's decision to take out a loan is essentially a decision to engage in spending in the current period that will be paid for out of future income. It follows that households' expectations regarding their future employment and income prospects, to a large extent, shape their current demand for loans. Similarly, lenders' assessment of households' income prospects influences their willingness to extend credit. Household expectations are not directly observable, but indicators such as consumer confidence and unemployment rates may be useful proxy measures for households' inclination to finance current expenditure out of future income.

Chart 10 shows that household loan growth appears to have moved fairly closely in line with consumer confidence over the past two decades, also in periods such as 1998-2000, when loan growth was exceptionally high, significantly above the levels that other determinants, such as GDP growth, would have implied. The buoyant dynamics of household

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8 See Box 7 entitled "The influence of mortgage product innovations on risks to household debt sustainability" in the December 2005 issue of the ECB's Financial Stability Review.
9 The ECHP survey ceased in 2001. The regulations for its envisaged successor as a source of relevant information, the EU Statistics on Income and Living Conditions (EU-SILC), only became fully applicable in 2007.

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Chart 10 MFI loans to households and consumer confidence

(annual percentage changes; percentage balances)

— loans to households (left-hand scale)
······ consumer confidence (right-hand scale)
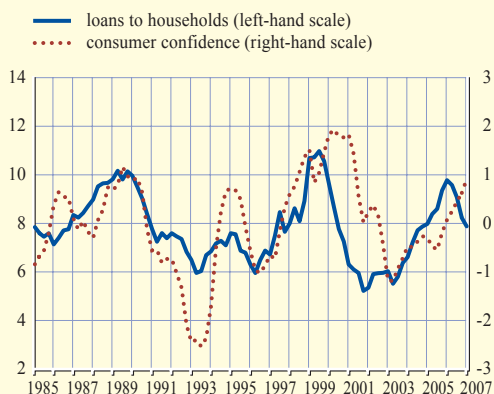
Sources: ECB and European Commission.
Note: The consumer confidence series has been normalised.

Another factor that can have a significant bearing on longer-term developments in household borrowing is demographic characteristics. For instance, a larger population or, for a given population size, a shift towards a smaller average household size will tend to imply a higher demand for housing and thus a higher demand for housing loans, not least because of the possibly increased property prices. Moreover, the age distribution of the population can affect household loan developments; for example, young households, which have not yet accumulated significant wealth and still have low income relative to their future income, tend to have greater recourse to credit in order to finance current expenditure.

loan growth in this period were arguably related to households' positive expectations regarding future economic and income growth in the context of the IT-driven boom in the equity markets.

Some tentative evidence on the quantitative impact of the various determinants of total loans to households in the euro area discussed in this section is provided in Box 2.

Box 2

GAUGING THE RELATIVE IMPORTANCE OF DETERMINANTS OF LOANS TO HOUSEHOLDS

The discussion in the main text has highlighted the main factors that appear to be relevant for interpreting developments in household borrowing in the euro area. However, on the basis of this descriptive analysis, it is not possible to gain a clear understanding of the relative importance of each factor at each point in time. It is therefore necessary to complement this presentation with additional techniques. This box thus provides some insights into the quantitative impact of the main determinants of loan dynamics and how this has evolved over time.

The approach adopted in this box is to calculate the contributions to the growth of total MFI loans to households in the euro area of a selected set of variables, on the basis of estimates obtained from a simple econometric model. The variables in the model cover the main types of determinant identified in the main text for which data are available, and are in line with common practice in the relevant literature. More specifically, loans to households (l) are regressed on GDP (y), short-term market interest rates (str), long-term market interest rates (ltr) and the household wealth ratio (w).[1, 2] Loans to households and GDP are expressed in logs, and all variables are in first differences and in real terms. Two lags of the dependent variable are also

1   The household wealth ratio has been calculated as total nominal household gross wealth (financial plus housing wealth) over nominal GDP.
2   Other factors suggested in the main text, for instance demographics and consumer confidence, are not included in the final estimated equation as they did not yield significant results.

used in the estimation, which covers the period from the first quarter of 1981 until the first quarter of 2007. The estimated equation[3] (*t* statistics are provided in brackets) is:

$$\Delta l_t = 0.23\Delta y_t - 0.11\Delta str_{t-1} - 0.14\Delta ltr_{t-2} + 0.04\Delta w_t + 0.55\Delta l_{t-1} + 0.24\Delta l_{t-2} + \varepsilon_t$$
$$\quad (2.1) \qquad (-2.5) \qquad (-3.7) \qquad (2.5) \qquad (5.2) \qquad (2.3)$$

It should be noted that short and long-term market rates enter the estimated equation with one and two lags respectively, reflecting the length of the pass-through process from market to bank lending rates as well as the typically slow reaction of household loan demand to changes in lending rates.

The coefficients obtained from the estimated equation can then be used to decompose the annual growth rate of total loans to households into the contributions of the various determinants. As illustrated in the chart, developments in real GDP and household wealth are the main drivers of household borrowing dynamics throughout the period. However, as also noted in the main text, the impact of real GDP appears to dominate during the first part of the period, while its relative importance declines in the second half, particularly from 2002 onwards when wealth explains most of the loan growth in the context of strong increases in residential property prices. The contribution of developments in real interest rates has been predominantly positive from 1994 onwards, reflecting the marked decline in interest rates in the run-up to Stage Three of EMU and their low level thereafter.

While for most of the period under review the fundamental determinants used in the estimation appear to account for the bulk of the growth in household borrowing, there are occasions when the part of loan dynamics not

Decomposition of household loan growth

(annual percentage changes; percentage points)

- real GDP
- wealth ratio
- real interest rates
- unexplained
- real loan annual growth rate
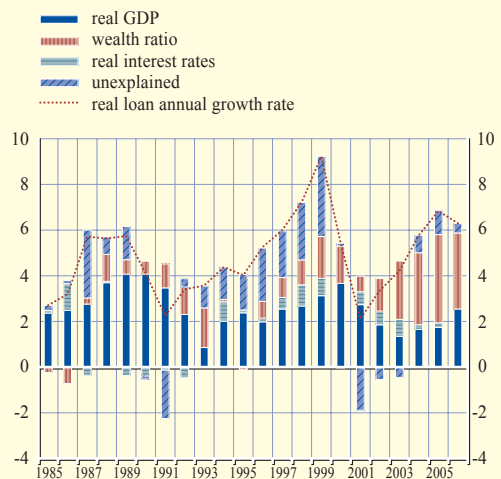
Sources: ECB and ECB calculations.
Notes: Real interest rate effects incorporate the impact of changes in both the short and the long-term market rates. The effect of the lagged dependent variable (Δl_{t-1} and Δl_{t-2}) has been recursively allocated to the other explanatory variables used in the estimation. Owing to the lagged data requirements that this calculation imposes, the period shown in the chart has had to be reduced to 1985-2006.

explained by these factors is quite large. To the extent that such episodes relate to isolated exceptional events, this should not necessarily be a cause for concern, given the purpose of the exercise. However, it appears that the model systematically underestimates household loan growth in the period from 1993 to 1999. This is arguably due to the influence of some factors not captured by the variables included in the estimation. Indeed, in the main text it is argued

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3 A more elegant and rigorous modelling approach would involve the estimation of a vector error correction model, as for instance estimated in the case of total loans to the private sector in the euro area in A. Calza, M. Manrique and J. Sousa (2003), "Aggregate loans to the euro area private sector", ECB Working Paper No 202. Such a model is not, however, currently available for loans to households. It should also be borne in mind that the relationship between the credit aggregate and some of its determinants may be subject to non-linearities; see for example S. Kaufmann and M. T. Valderrama (2004), "Modeling credit aggregates", Oesterreichische Nationalbank Working Paper No 90.

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that the process of financial market deregulation and liberalisation is likely to have affected loan dynamics during this period. Moreover, the transition towards an environment of low inflation and credible monetary policy in anticipation of EMU entry, at least in some euro area countries, stimulated loan growth over and above the direct effect of short-run changes in interest rates. Finally, the inflated expectations regarding future income prospects in the context of the IT-driven boom in the latter part of this period appear to have also encouraged households to acquire more debt.

Overall, the results presented above suggest that while the relative importance of the factors underlying household loan dynamics has changed during the period considered, real GDP and wealth remain the main drivers of household borrowing. At the same time, factors omitted from the analysis appear to have had a significant bearing on loan growth developments in the 1993-99 period. Unfortunately, however, quantitative measures of these factors are not readily available for the euro area.

4 LOANS TO HOUSEHOLDS BY PURPOSE AND SOME SPECIFIC DETERMINANTS

The factors discussed in the previous section were not specific to any particular borrowing purpose. However, when the focus of the analysis is shifted to the individual components of total loans to households, it is conceivable that determinants which are more specific to the purpose of individual loan categories may be more informative. This section assesses whether such potential purpose-specific determinants can provide additional insights compared with the more general determinants.
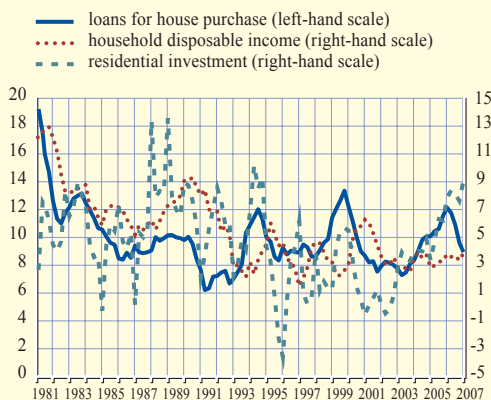
LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE

Loans to households for house purchase, given their specific purpose, should in principle move in line with variables capturing developments in housing market activity. Chart 11 illustrates the relationship between the growth rate of loans for house purchase and that of residential investment. It appears that while the two series move broadly together, their relationship is not that close – indeed, it is weaker than that between loans for house purchase and more general scale variables such as household disposable income. This reflects the high volatility of residential investment as well as the fact that this series does not capture transactions in the secondary market for

housing, which typically represent the bulk of overall property transactions. A more appropriate variable capturing housing market activity would be total housing market turnover, reliable estimates for which are not, however, available for the euro area.

Turning to determinants related to households' broader financial position, Chart 12 shows that a more encompassing view of household balance sheets, such as the one offered by total wealth, is more successful in explaining developments in loans for house purchase than

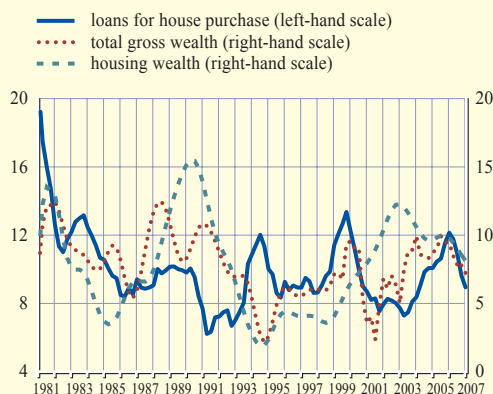### Chart 11 MFI loans to households for house purchase, income and investment

(annual percentage changes)

- loans for house purchase (left-hand scale)
- household disposable income (right-hand scale)
- residential investment (right-hand scale)

Sources: ECB and Eurostat.

Chart 12 MFI loans to households for house purchase and household wealth

(annual percentage changes)

— loans for house purchase (left-hand scale)
····· total gross wealth (right-hand scale)
– – – housing wealth (right-hand scale)
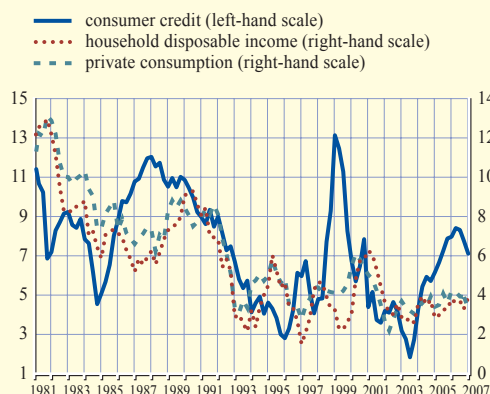

Source: ECB.
Note: See notes to Chart 8.

Chart 13 Consumer credit, income and consumption

(annual percentage changes)

— consumer credit (left-hand scale)
····· household disposable income (right-hand scale)
– – – private consumption (right-hand scale)

Sources: ECB and Eurostat.

a more focused one that is limited to housing wealth only. This may be due to the closer alignment between total wealth and the business cycle. The relationship between housing wealth and loans for house purchase has been surprisingly weak throughout the period considered. This may to some extent reflect the fact that rising house prices, which largely drive developments in housing wealth, do not always coincide with increased transactions in the housing market, which underlie the demand for housing loans.
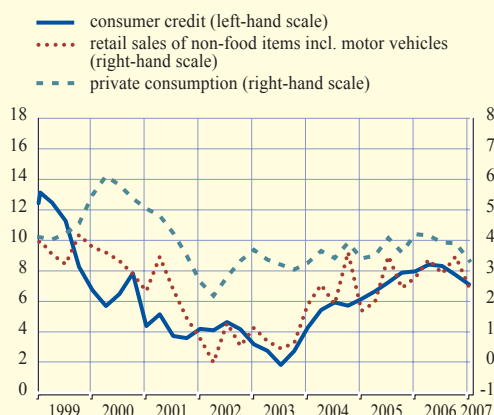
CONSUMER CREDIT

In principle, consumer credit is used to finance consumption expenditure and, unless this results in a full smoothing of consumption, developments in the two series should thus display a relatively close co-movement. Chart 13 suggests that the empirical evidence for such co-movement in the euro area is mixed. While the two series tend to move in tandem for most of the period under review, at times their dynamics diverge considerably, a pattern also observed in the relationship of consumer credit with a broader scale variable such as household disposable income. This is especially evident during episodes of strong asset price increases.

In these instances, it could be that households use more of their income and/or savings to finance the acquisition of financial and real assets. This implies increased recourse to consumer credit in order to maintain their desired level of consumption.

In addition, the weak correlation observed between consumer credit and private consumption is partly related to the fact that household consumption includes a substantial element that is not generally considered to be financed by debt, for instance purchases of small-ticket items such as food (including beverages and tobacco products) or regular expenditures such as rents. Indeed, households typically acquire consumer credit in order to finance the purchase of big-ticket items such as furniture, household appliances and motor vehicles. Chart 14 shows the relationship between consumer credit and a more relevant measure of consumer expenditure that is more likely to be financed by credit, which is only available from 1999. This measure, which comprises retail sales of non-food items and expenditure on motor vehicles, exhibits a considerably closer co-movement with consumer credit.

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Chart 14 Consumer credit, consumption and retail sales

(annual percentage changes)

- consumer credit (left-hand scale)
- retail sales of non-food items incl. motor vehicles (right-hand scale)
- private consumption (right-hand scale)

Sources: ECB, Eurostat and ECB calculations.
Note: The growth rate of retail sales of non-food items including motor vehicles is a weighted average of the growth rate of nominal retail sales of non-food items and that of an index of motor vehicle sales based on new car registrations adjusted by the relevant price index. The weights are based on the relative shares of these items in private consumption.

Chart 15 Other MFI lending to households, consumer credit and MFI loans to non-financial corporations

(annual percentage changes)

- other lending
- loans to non-financial corporations
- consumer credit
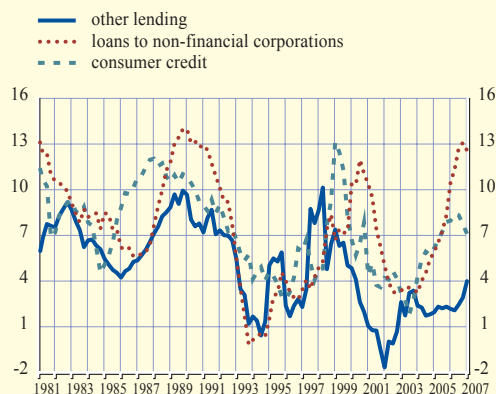
Source: ECB.

OTHER LOANS TO HOUSEHOLDS

As highlighted in Box 1, other lending to households covers loans acquired for heterogeneous purposes that can include, for example, the financing of consumption and business investment expenditure. This implies that the identification of an appropriate scale variable in the case of other lending to households is not straightforward.

Chart 15 illustrates the diverse purposes of loans classified as other lending to households by relating their evolution to that of consumer credit and of loans to non-financial corporations. Throughout the period considered all three series follow relatively similar patterns. However, while the relationship of other lending to households with loans to non-financial corporations is stronger in the first half of the review period, it subsequently appears to break down, and in the second half of the period the evolution of other lending is more closely related to that of consumer credit.

Overall, specific determinants that, prima facie, would be expected to have a close relationship with individual categories of MFI loans to households do not appear to be better suited to explaining loan dynamics than more general determinants. While a breakdown of loans to households by purpose provides important information in itself, it thus appears difficult to gain a better understanding of the factors driving aggregate loan dynamics by examining the factors driving individual loan categories.

5 CONCLUSION

This article has discussed the main patterns of the newly available historical data on MFI loans to households over the past two and a half decades. Looking through the cyclical fluctuations, household borrowing dynamics have on average been stronger than growth in disposable income, resulting in increased household indebtedness. At the same time, the dynamics of individual loan categories have differed substantially on occasion, with the role

of lending for house purchase becoming increasingly dominant over the years.

It appears that while standard macroeconomic determinants can adequately explain borrowing dynamics for a significant part of the period reviewed, there are episodes during which special factors also play a decisive role. These factors include structural changes related to the deregulation of banking markets and financial innovation, the shift to a low-inflation and credible monetary policy environment in the context of EMU, as well as the pronounced changes in income expectations during the IT-driven boom and bust in the equity markets.

Overall, general economic activity, as captured by GDP, appears to have been the main driver of loan developments in the first half of the review period. In the second half, however, the importance of this factor declined as household wealth assumed an increasingly prominent role. Against this background, an assessment of the strength of and developments in household borrowing in the past few years is inevitably conditional on the sustainability of asset price valuations, which to a large extent drive the evolution of household wealth.