

Box 8

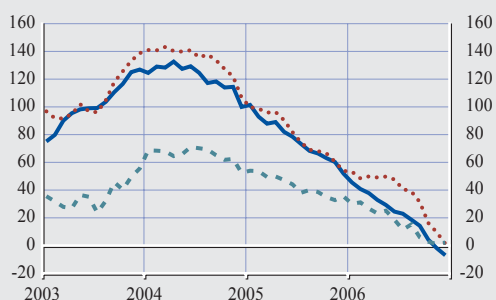
**TERM SPREADS AND FLOATING RATE LENDING TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS IN THE EURO AREA**

The degree of interest rate variability or the length of the initial period of interest rate fixation on bank loans determines whether the interest risks associated with them are predominantly borne by borrowers or by lenders. When loans are extended at variable interest rates, the bulk of the interest rate risk is carried by the borrowers. By contrast, when lending rates are fixed, borrowers are shielded from interest rate risk, yet banks can be left exposed to the risk of divergence between the cost of funding the loan and the interest earned on it, unless they hedge with appropriate market instruments. Hence, information on the distribution of new lending according to the degree of interest rate flexibility in the contracts can shed light on how interest rate risks are spread between borrowers and lenders. Moreover, the degree of interest rate risk borne by borrowers can have implications for banks' exposure to credit risk. When most loans are contracted at variable rates, the proportion of borrowers who could find themselves in difficulty when seeking to service their loans will tend to be larger in the event of an interest

**Chart B8.1 Spreads between rates on new MFI loans for house purchase with a longer initial rate fixation period and floating rate loans in the euro area**

(basis points, interest rate difference vis-à-vis rates on loans with floating rates or rates fixed for a period of up to one year)

- rate fixed for a period of more than 10 years
- ... rate fixed for a period of more than 5 and up to 10 years
- - - rate fixed for a period of more than 1 and up to 5 years

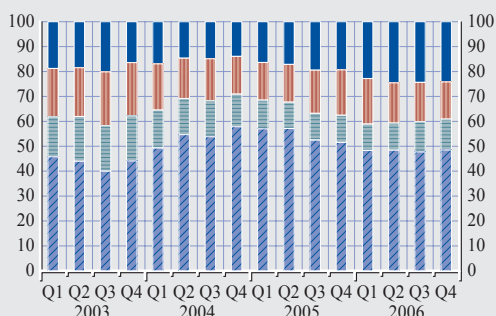


Source: ECB.

**Chart B8.2 Breakdown of new MFI loans for house purchase by length of initial rate fixation period in the euro area**

(%)

- rate fixed for a period of more than 10 years
- rate fixed for a period of more than 5 and up to 10 years
- rate fixed for a period of more than 1 and up to 5 years
- rate fixed for a period of up to 1 year



Source: ECB.

rate increase. Against this background, this Box assesses the extent to which changes in bank lending rates for loans with different periods of initial rate fixation affect the relative share of these loans in total new monetary financial institution (MFI) loans in the euro area.<sup>1</sup>

Reflecting increases in key ECB and market interest rates, nominal rates of interest on new loans to households for house purchase<sup>2</sup> began to rise in the euro area at the end of 2005. As the term structure of euro area market interest rates flattened during 2006, the increase in interest rates on floating rate loans (loans with a floating interest rate or a period of initial rate fixation of less than one year) was more pronounced than for loans with longer initial rate fixation periods. As a result, the spreads of interest rates paid on loans with longer periods of initial rate fixation over floating rates on new loans for house purchase, or term spreads, all practically disappeared, regardless of the length of the initial rate fixation period (see Chart B8.1).

Throughout the period for which data are available, loans for house purchase contracted at floating rates constituted the largest share of new business (in terms of gross flows) in the euro area, although this share did fluctuate widely between 40% and 60% (see Chart B8.2).<sup>3</sup> This variation seems to be partly explained by changes in term spreads on loans, with the relative demand for floating rate borrowing increasing when it becomes comparatively cheaper. For instance, the proportion of floating rate loans for house purchase rose between Q3 2003 and Q4 2004, coinciding with a general rise in term spreads. Similarly, the decline in the share of floating rate loans after Q1 2005 was coupled with a steady narrowing and eventual elimination of these spreads, although the fall in these spreads had started a couple of quarters earlier. This seems to suggest that when choosing between taking out a floating rate loan or one with a longer period of initial rate fixation, households may focus on the initial interest rate, not fully taking into account the possibility that the rate paid on floating rate loans could increase over the term of the loan.<sup>4</sup> However, expectations may well differ between households and the financial markets regarding future interest rate movements, with households potentially taking the view that floating rate mortgages are likely to prove cheaper than fixed rate ones with comparable longer-term maturities, not least because of term premiums in longer-term rates.<sup>5</sup> If that is the case, it could partly explain why the share of floating rate loans remained at around 50% despite the elimination of term spreads over most recent quarters. That said, other factors, possibly of a structural or supply-side nature, might also explain this. For instance, it might be indicative of supply-side constraints on banks in extending fixed rate mortgages – such as shortages of hedging instruments or of willing counterparties or even the absence of covered bond or MBS markets.<sup>6</sup> To the extent that this is the case, then the willingness of banks to extend fixed rate mortgages and bear the interest rate risk might be lower. Indeed, a look at the

1 The share of variable rate loans in total loans may overestimate the interest rate risk borne by borrowers, to the extent that the relevant loan contracts include interest rate caps. However, this information is not generally available.

2 Loans for house purchase account for approximately 70% of all MFI loans to households.

3 Information on the share of total outstanding loans for house purchase which will be subject to an interest rate change in the year ahead is not regularly available, although for 2004 this share has been estimated at approximately one-third (see Box 1 in ECB (2004), *Monthly Bulletin*, November). It should be noted, however, that given the large share of floating rate loans in new business since then, this share may have increased.

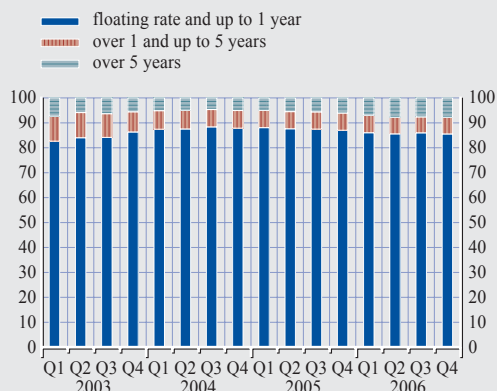
4 Indications of such myopic behaviour on the part of UK households are provided in D. Miles (2004), "The UK Mortgage Market: Taking a Longer-term View. Final Report and Recommendations", London: HM Treasury.

5 A perhaps more benign interpretation would perceive this behaviour as resulting from active risk management on the part of households that takes into consideration not only interest rate risk but also income risk. A stylised model where households engage in risk management of this kind is provided in J. Campbell and J. Cocco (2003), "Household Risk Management and Optimal Mortgage Choice", *Quarterly Journal of Economics*, 118, 1449-1494.

6 Although banks can hedge themselves relatively easily against interest rate risk using plain vanilla interest rate swaps, they can also be exposed to mortgage prepayment risk (to the extent that prepayment is possible), the hedging of which would require the use of more sophisticated instruments.

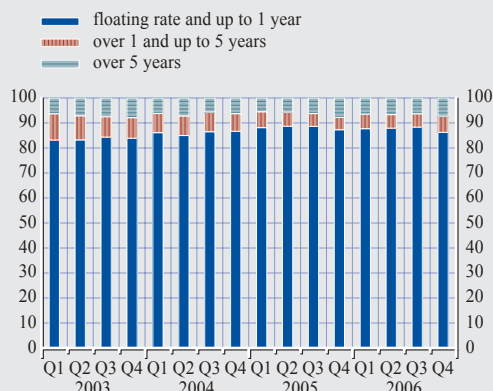
Chart B8.3 Breakdown of new MFI loans to non-financial corporations by length of initial rate fixation period in the euro area

(a) loans up to EUR 1 million, % points



Source: ECB.

(b) loans over EUR 1 million, % points



Source: ECB.

individual countries tends to provide some support for this view, as in some countries where such markets are well developed, a large share of loans for house purchase are contracted with long periods of rate fixation.<sup>7</sup>

With regard to non-financial corporations, sensitivity regarding the share of floating rate borrowing to bank term spreads can also be detected for loans of up to €1 million, but not for loans over €1 million.<sup>8</sup> The share of new loans up to €1 million with a floating rate or an initial rate fixation of up to one year in total new business has shown a positive correlation with term spreads (see Charts B8.3a and B8.4). The patterns of lending observed between firms and households are not immediately comparable because the purpose of lending differs. For example, housing is an asset with a long life which may be expected to be funded over the long term. By contrast, the data for total borrowing for non-financial corporations include borrowing for working capital. This will usually be funded in the short term, which explains why the share of floating rate borrowing is much higher in comparison to loans for house purchase. The volume of new business for loans to non-financial corporations at floating rate or up to one year initial rate fixation includes short-term debt that is rolled over more frequently than long-term debt.

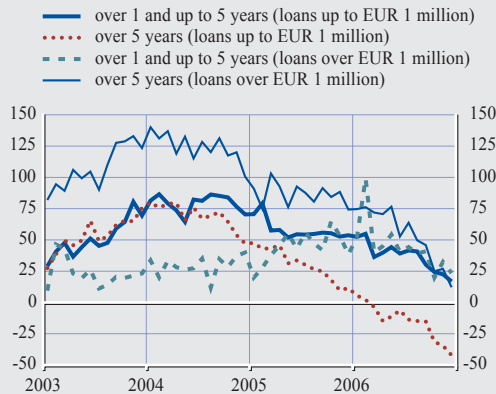
The share of floating rate loans over €1 million to non-financial corporations does not appear to be as sensitive to term spreads as is the case for smaller loans (see Charts B8.3b and B8.4). Large loans are typically associated with large enterprises, which presumably have better access to capital market borrowing. Over recent years, the share of debt securities issued by non-financial corporations at short-term interest rates – that is, short-term debt securities and long-term debt securities at floating rates – in total outstanding debt securities issued by the

7 Obviously, various other factors such as redemption fees for instance, might also affect the decisions of borrowers to undertake a fixed versus a floating interest rate loan. No data are available to allow the examination of their role explicitly. In any event, it is unlikely that such factors could have changed so dramatically during the period examined to the extent that they could explain the change in borrowers' behaviour.

8 The loan size is the available proxy for the firm size. In this respect, loans up to €1 million are typically associated with small and medium-sized enterprises (SMEs), while loans over €1 million are associated with large enterprises.

**Chart B8.4 Spreads between rates on MFI loans to non-financial corporations with a longer initial rate fixation period and floating rate loans in the euro area**

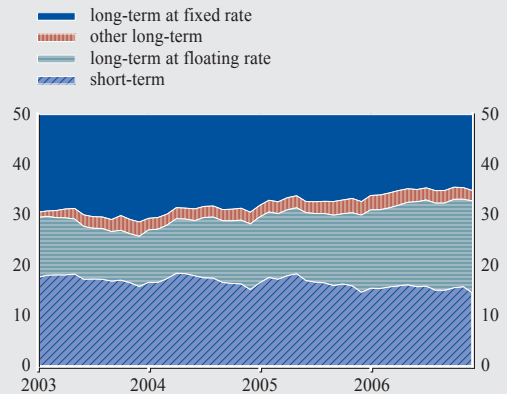
(basis points, interest rate difference vis-à-vis rates on loans with floating rates or rates fixed for a period of up to one year)



Source: ECB.

**Chart B8.5 Debt securities issued by non-financial corporations in the euro area**

(%)



Source: ECB.

Note: "Other long-term" comprises the residual difference between total long-term debt securities and fixed and variable rate long-term debt securities consisting of zero coupon bonds and revaluation effects.

sector increased from 30% in January 2003 to 33% in December 2006 (see Chart B8.5). A similar upward movement can be observed on the basis of the share of short-term debt securities and long-term debt securities at floating rate issued by non-financial corporations in total gross issues. Taken together, this suggests that large enterprises have increasingly borrowed at short-term rates – irrespective of whether the debt is intermediated or not. This may suggest that there is relatively strong investor demand for floating rate debt, particularly since the end of 2005, in an environment of generally rising interest rates.

All in all, there appears to be a relationship between term spreads on bank lending rates and the share of floating rate loans both for mortgage lending and for lending to small and medium-sized enterprises (SMEs). From a financial stability point of view, this may indicate that these borrowers bear the greater part of interest rate risk, but leave banks exposed to credit risk, especially in lending to SMEs. Moreover, the large share of debt that households and firms have contracted at variable rates may have left their balance sheets increasingly vulnerable to short-term interest rate changes. Greater opportunities for banks to shift these risks in financial markets to entities more willing to bear them – via derivatives or through the development of covered bond and MBS markets – could, in principle, mitigate some of these risks.