

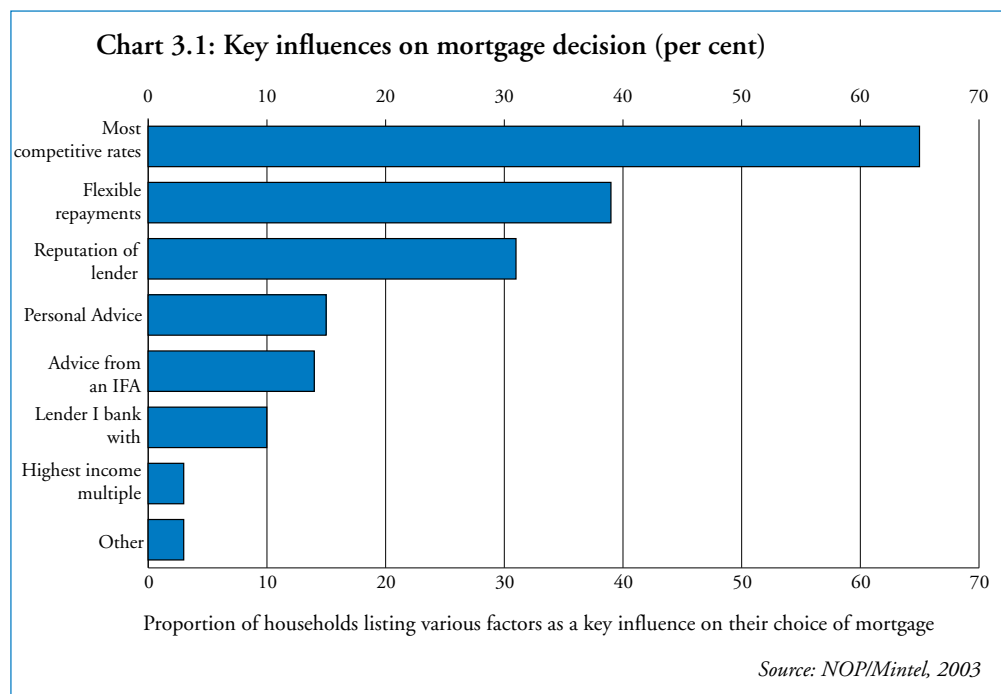
# 3

## Consumer behaviour

3.1 In choosing a mortgage consumers will ideally consider the pattern of repayments over the life of the mortgage, taking account of both current and expected future repayments, the degree of uncertainty over the level of future repayments and of how they might vary with their ability to repay. For the great majority of households mortgage debt will last a long time – many people may move or re-mortgage but most are unlikely to pay off a large part of their debt and when they do re-mortgage they will do so in the light of what interest rates then are. So people need to look ahead and think about risk. A common view put to the Review is that the lack of longer-term fixed-rate lending in the UK is wholly explained by an absence of demand. A critical question is whether or not consumer choices are based on an informed assessment of the likely overall pattern of repayments on different types of debt. This section analyses that issue.

### KEY FACTORS IN MORTGAGE CHOICE

3.2 A range of factors seem to influence household choices over mortgages in the UK. Surveys consistently find that many borrowers say that the rate of interest paid on the mortgage is the critical factor in their decision. In listing factors that might be the most important most survey questionnaires are not precise about exactly what is meant by “the interest rate” and phrases such as “most competitive rate” are also vague. Chart 3.1 shows that about two thirds of a large sample of borrowers said that a key factor was “the most competitive rate”. Professional advice and the reputation and convenience of a particular lender also score consistently high as important factors. (CML Annual Mortgage Surveys; NOP/Mintel 2003).



3.3 There is considerable evidence that many consumers focus excessively on the initial cost of a mortgage (and by implication understand the term “most competitive rate” in terms of the initial cost). A review of research into the mortgage buying process, commissioned by the Financial Services Authority (FSA), finds that:

‘In practice, the available research on the mortgage buying process indicates that borrowers’ behaviour is more limited [than is rational] and their stated information needs are predominantly focused on the immediate financial cost of taking a mortgage. ...Thus, longer-term benefits, as well as potential tie-ins, etc. did not form a significant part of borrowers’ information needs’ (FSA, 2001).

And that:

‘The research confirms that, taking consumers as a whole, information needs are limited and primarily focused on immediate cost factors. Most consumers tend not to trade off different aspects of a mortgage or compare products or consider long-term benefits’ (FSA, 2001).

3.4 In summarising both that research review and the results of a separate bespoke research exercise into mortgage purchase the FSA states:

‘Both studies highlight that the information that consumers say they need is predominantly focused on the immediate monthly mortgage costs in order to assess initial affordability, and that they do not have longer-term horizons’ (FSA, 2001).

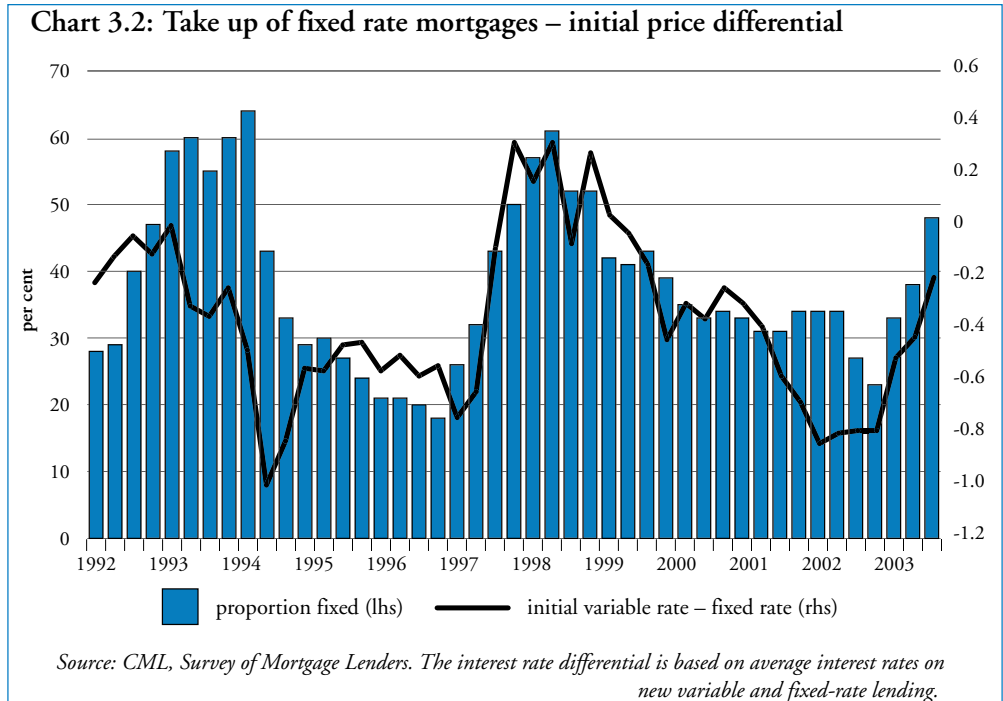
### MISUNDERSTANDING OF INTEREST RATE RISK

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3.5 Fixed and variable-rate mortgage products have very different risk characteristics. Fixed-rate products are not without risk but they do give certainty over the nominal profile of monthly payments. No such certainty exists with variable-rate products. Many of the lenders and financial intermediaries that the Review has consulted say that most borrowers – and particularly first-time borrowers – tend to focus excessively on the monthly repayments on a mortgage at current interest rates to the exclusion of a measured assessment of the risks involved. This view is consistent with the FSA evidence described above. There is a range of other pieces of evidence which point in the same direction.

#### Historic take-up of fixed and variable-rate mortgages

3.6 The historic take-up of (largely short-term) fixed and variable-rate mortgages in the UK suggests there is a tendency to focus on the initial cost of the mortgage. Chart 3.2 shows the proportion of new loans on fixed-rates and the initial rate differential between fixed and variable rates i.e. the relative cost of the first monthly payment. Broadly, when the differential of the variable rate over the fixed rate has been rising (falling) the proportion of fixed-rates in new lending has been rising (falling). From 1992 Q2 to 2003 Q2 the correlation coefficient of the two series shown in chart 3.2 is 0.58. The choices of borrowers seem to be sensitive to changes in the differential in initial monthly repayments. Changes in the shape of the yield curve at the short end are a powerful factor driving changes in the initial price differential. If borrowers looked at the likely relative cost of a fixed and variable-rate mortgage over the life of the fixed period then, on the assumption that the yield curve reflected the likely future path of short rates, there would be no reason to expect a relation between the current rate differential and relative demand. Chart 3.2 suggests many borrowers do not pay great attention to the likely *future* relative costs of different mortgages.



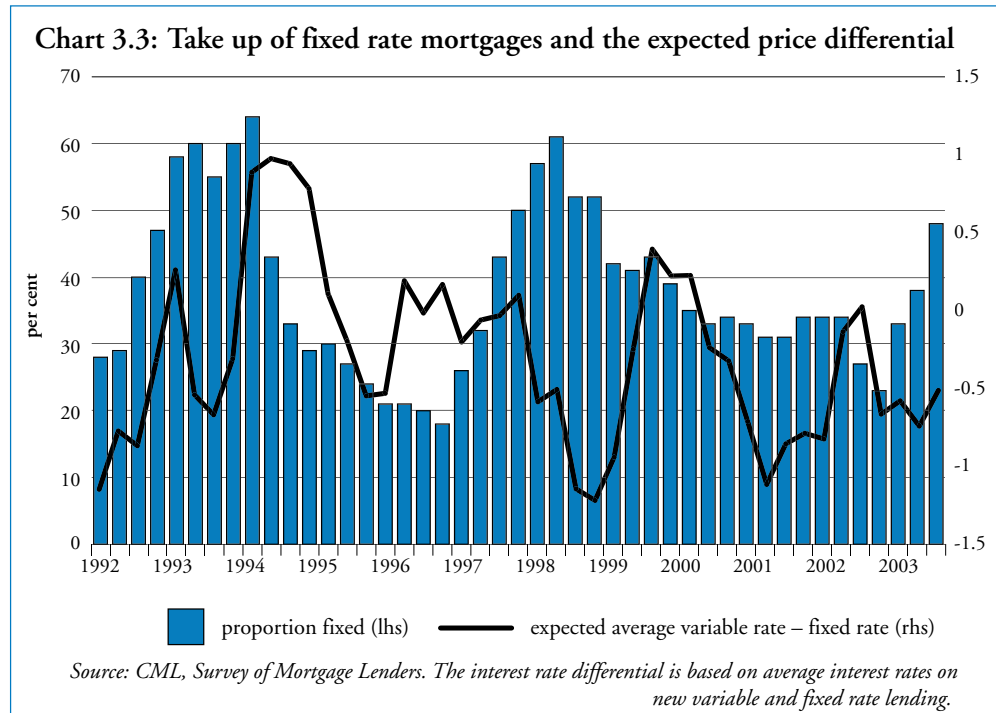
3.7 Because the interest paid on a variable-rate contract will vary over the life of the contract, expectations of future variable-rates should be a factor in determining take-up. The majority of fixed-rate lending in the UK has rates fixed for close to two years. Chart 3.3 shows the proportion of new loans on fixed rates and the fixed-rate differential to an *expected* two-year average variable-rate. The two-year spot rate from the government yield curve is used as a proxy for the average base rate expected over the next two years.<sup>1</sup> An assumption is made that the spread of future variable mortgage rates over future base rate is the same as the spread of the current variable-rate over the current base rate. So to construct a measure of the expected average cost of a variable-rate mortgage over two years the current two-year spot rate is added to the current differential between the base rate and the variable-rate. The differential between that measure and the average fixed-rate offered by lenders is graphed against the share of fixed-rate mortgages taken out. Chart 3.3 reveals that there is no obvious relationship between the two series – the correlation coefficient is -0.01. This suggests that many borrowers do not consider the likely level of future interest rates in choosing between variable and short-term fixed rates.

### Evidence from models of house prices

3.8 If households chose to take out predominantly variable-rate debt but took into account the likely future path of interest rates in deciding how much to borrow and which house to buy, then house prices would depend more on longer interest rates than on short rates. Longer rates embody expectations about the future path of short rates. In fact, econometric models of UK house prices nearly always use a measure of the short-term variable mortgage rate as an explanatory factor. The Treasury model equation for house prices uses the short-term variable mortgage rate as do those used by the National Institute of Economic and Social Research (NIESR) and Oxford Economic Forecasting (OEF). The published version of the Bank of England large-scale econometric model of the economy, which appeared in September 2001, lists two versions of a house price equation. The one used in the model does include a measure of long-term interest rates, but this equation fits the data less well than a version which has the short-term variable-rate.<sup>2</sup>

<sup>1</sup> The two year spot rate is not identical to expected rates over the next two years. Risk and term premia can drive a small wedge between expected short rates and spot rates.

<sup>2</sup> Bank of England (2001), equations 6.4.15a and 6.4.15c



3.9 The Review commissioned Oxford Economic Forecasting (OEF) to investigate whether house prices in the UK were more closely linked to short-term interest rates, medium-term rates or long-rates. A stylised version of the models they consider is shown below:

*House price equation*

$$\Delta hp = \beta_0 + \beta_1 r + \beta_2 z$$

Where

$\Delta hp$  = the change in the log of house prices (roughly the percentage change)

$r$  = the relevant interest rate variable

$z$  = other demand and supply variables, such as household income, that influence house prices.

$\beta_1 + \beta_2$  are coefficients to be estimated which measure the sensitivity of house prices to interest rates and other factors

3.10 The average mortgage rate (a short-rate, since over the relevant period it was overwhelmingly based on variable mortgage rates), 5 and 10-year gilt yields rates were used in the equation. The results are summarised in table 3.1. The best fitting model is that which includes short rates. A direct test of which is the most relevant measure of interest rates for house prices involves including a short rate (first variable shown in blue) and the difference between that short rate and longer rates in a statistical model. The lower panel of Table 3.2 shows that in such a specification the difference between short rates and five and ten year rates (final two variables shown in blue) is statistically insignificant. OEF summarise the results thus:

‘First, the overall fit of the equations falls as the maturity length [of the interest rate variable] increases. Second, the coefficient on the mortgage rate is noticeably larger than those on the two bond yields. The evidence seems clear that households are myopic and are concerned more with current (variable) mortgage interest rates.’

Table 3.1: Summary results of different interest rate variable in UK house equations

	Short rate	5 year rate	10 year rate
Coefficient	-0.0084	-0.0049	-0.0056
T-statistic	5.3	3.7	3.1
Adjusted R-squared	0.77	0.74	0.73

Sample: 1969 Q3 to 2002 Q4.

Source: Oxford Economic Forecasting (OEF).

Table 3.2: Oxford Economic Forecasting Model House Price Equation

Variable	Coefficient	t-Statistic	
Constant	-1.952	-3.54	
Seasonal Dummy 1	0.020	5.33	
Seasonal Dummy 2	0.030	8.35	
Log of real house prices, lagged	-0.142	-6.34	
One period dummy, 1988 Q3	0.067	3.86	
One period dummy, 1988 Q4	0.042	2.38	
Three period dummy, 1981 Q4 to 1982 Q2	-0.018	-2.57	
Measure of mortgage rationing prior to financial liberalisation, lagged three quarters	-0.008	-2.05	
Log of real household wealth	0.049	2.29	
Log of personal disposable income	0.278	3.60	
Change in log of personal disposable income	0.228	2.51	
Log of owner-occupier housing stock, lagged	-0.172	-1.59	
Post 1990 dummy	0.120	1.67	
Share of wages in household income post 1990	0.311	2.64	
Nominal capital gain on housing, lagged	0.002	7.90	
<b>Post tax mortgage rate and other costs<sup>1</sup></b>	<b>-0.008</b>	<b>-3.33</b>	
<b>Yield on 5 year Government bonds minus post tax mortgage rate and other costs<sup>1</sup></b>	<b>0.003</b>	<b>0.63</b>	
<b>Yield on 10 year Government bonds minus post tax mortgage rate and other costs<sup>1</sup></b>	<b>-0.002</b>	<b>-0.48</b>	
R-squared	0.795	Mean dependent var	0.009
Adjusted R-squared	0.765	S.D. dependent var	0.034
S.E. of regression	0.017	Akaike info criterion	-5.221
Sum squared resid	0.032	Schwarz criterion	-4.832
Log likelihood	367.807	F-statistic	26.484
Durbin-Watson stat	1.891	Prob (F-statistic)	0

Dependent Variable: Change in log real house prices.

Method: Least Squares.

Sample (adjusted): 1969:3 2002:4

Included observations: 134 after adjusting endpoints.

<sup>1</sup>Other costs are stamp duty, maintenance expenditures and depreciation (ie the user cost excluding the capital gain on housing).

3.11 There are macroeconomic implications of housing demand and house prices in the UK depending more on short rates than upon longer-term rates. Movements in short rates have been more variable than movements in long rates in the UK over the past forty years. Short rates are likely to be more volatile than long rates if monetary policy is successful in controlling inflation. The aggregate implications of this upon volatility in the housing market and in the wider economy are considered in Section 6. For the moment the relevant point is that the statistical modelling of UK house prices adds to the evidence that many households do not take a forward-looking view when they borrow to finance house purchase.

3.12 Choosing the mortgage product with the lowest initial monthly repayment rate could be a rational choice for credit constrained households. As an explanation of the increasing focus on the cheapest up-front deals in the UK and the rising significance of initial discounts (which started to feature in the mid 1990s) this is not very convincing. Credit constraints have eased considerably over the last few decades in the UK. Financial liberalisation progressively eased credit constraints though the 1980s (HM Treasury, 2003). UK household sector debt as a proportion of disposable income more than doubled during the course of the 1980s (Meullbauer and Lattimore, 1995). Steep rises in unsecured debt, the growth of the sub-prime market and in flexible repayment mortgages are also evidence of this. Across Europe, the UK stands out as having liberal access to mortgage credit for many types of higher risk borrowers, for example those that self-certify their income, have impaired credit histories or low equity stakes (see Figure 1.2, section one). And yet it is in the UK that short-term discounted-rate mortgages are so popular.

### Survey evidence

3.13 Consumer research suggests that an assessment of the risk characteristics of different mortgage products plays a secondary role for most borrowers. It appears that many consumers do not take a view on the likely path of future rates. For example, research commissioned by the FSA into consumers' knowledge of interest rates in the early stages of mortgage purchase concludes that:

‘Overall, consumers were unable to say which type of interest rate they would choose as they had no view on whether interest rates would go up or down in the future.’ (FSA 2001)<sup>3</sup>

3.14 Research into mortgage choice, commissioned by the Financial Services Consumer Panel, found that questions as to,

‘... the future performance of interest rates caused most respondents to laugh about second guessing the impossible.’ (FSCP, 1999)<sup>4</sup>

3.15 There is some evidence that where consumers do take a view on future interest rates there is excessive confidence that rates will stay low. The downward trend in nominal interest rates over the last ten years and the possibility of joining EMU may be influencing this view. Research commissioned by the FSA into consumers understanding of mortgage related information found that, while respondents tended to understand the effect of a 1 and 2 per cent change in rates, some respondents,

‘... could not imagine that an increase of 2 percentage points or more [in mortgage interest rates] could ever occur’. (FSA, 2002)<sup>5</sup>

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<sup>3</sup>The FSA's research consisted of a set of in-depth interviews with 90 respondents in the process of taking out a mortgage. The fieldwork was carried out August – September 2000.

<sup>4</sup>The FSCP's research consisted of in-depth interviews with 50 respondents either in the process of taking out a mortgage or having recently done so. The fieldwork was carried out May – June 1999,

<sup>5</sup>The FSA's research consisted of a 72 in depth interviews with respondents in the early stages of taking a mortgage. The fieldwork was carried out in August 2001.

3.16 A recent CML survey found that 4 per cent of mortgage holders did not know whether they had a repayment or interest only mortgage and 10 per cent did not know whether they had a variable or fixed-rate mortgage (MORI/CML, Annual Market Research 2002).

### Belief that borrowers can beat the market

3.17 One reason why consumers may underestimate the risk of variable-rate mortgages is that they believe that they can switch to a cheaper fixed-rate mortgage if and when short-term rates start to rise. This strategy is sometimes advocated in the mortgage press and by some professional advisors. This strategy assumes that when short-term rates start going up, borrowers will then be able to switch to a fixed-rate deal ahead of further interest rate rises. This is how a major broker's website describes a particular mortgage deal:

“A droplock mortgage is a discount or tracker mortgage which has an option to switch to a fixed-rate at any point within the initial discount or tracker period without paying any early repayment charges.

This provides an ideal way to benefit from base rates when they're low, with the option to switch easily to the protection of a fixed-rate should interest rates look set to rise significantly.”

The personal finance pages of a national broadsheet newspaper gave similar advice on 1st November 2003:

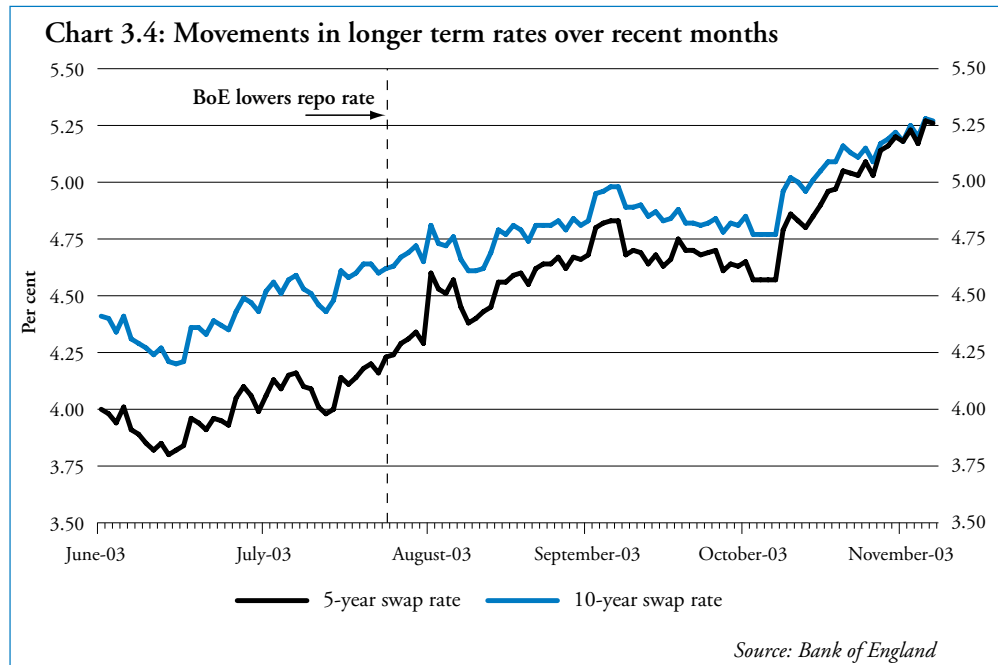
“We recommend discounted variable rates: 3.29 per cent. With the price of fixed rates rising, now is a good time to look at discounted variable rates.

There is now a difference of as much as one per cent between the price of two-year fixed-rate mortgages and discounted-rate mortgages, which makes them very good value.

Our favourite in this range is [a particular discounted variable rate mortgage]. As there are no penalties at any time, home buyers will always have the option to come out and fix at a later date should they wish”

3.18 In order for these strategies to work movements in long-term rates must lag behind movements in short-term rates or else individual borrowers must have an understanding of the yield curve that allows them to *beat the market*. Neither condition is likely to be met.

3.19 Longer-term interest rates rise when *expectations* of the level of future short-term interest rate rise, not when the short-term rates themselves actually move. Rises in long-term interest rates generally precede rises in short-term rates. Long-term rates can go up while short-term rates are still falling. This happened in the UK between June and November 2003, as Chart 3.4 shows. Between 16th June and 4th November five-year and ten-year spot rates went up by, respectively, 145 and 106 basis points. Short-term rates fell during this period. The Bank of England lowered its repo rate from 3.75 to 3.5 on the 10th July.



**3.20** Borrowers who are led to believe that they can time the market, and base their mortgage decisions on that, are playing a game which will work only if they are better at calling the market than others. The idea that individual borrowers beat professional traders at predicting future directions of rate movements is implausible.

## PERCEIVED INFLEXIBILITY OF LONGER-TERM FIXED-RATES

### Flexible payment terms

**3.21** Chart 3.1 suggests that many borrowers consider flexibility in the profile of mortgage payments an important factor in mortgage choice. The UK mortgage market has been very innovative in providing flexible mortgages. Such mortgages offer combinations of options to over and underpay regularly, overpay lump sums, draw down lump sums and take payment holidays. ‘Offset’ mortgages are a related product which allow consumers’ savings to be offset against their mortgage – with interest calculated on a daily or monthly basis on the net position. Flexible mortgages are a largely desirable and welcome feature in the market.

**3.22** There has been considerable growth in flexible mortgages in recent years. Flexible mortgages started to become popular in the mid 1990s; by 2000 54 lenders were offering flexible products and now nearly all lenders offer flexible mortgages. Survey evidence suggests that 24 per cent of mortgages bought since 1995 are flexible (MORI/CML, Annual Market Research 2002).

**3.23** Flexible payment terms have traditionally been offered with variable-rate mortgages but a longer-term fix need not preclude flexibility. It need not be the case that a borrower has to choose between flexibility and nominal payment certainty. Several lenders offer flexible fixed-rate products (the option to overpay up to 10 per cent of the outstanding balance per year and draw-down overpayments is common in products fixed for 10 to 25 years); others allow borrowers to combine a fixed-rate element with a flexible variable-rate element in a single product. Nor do fixed-rate mortgages require that the profile of mortgage repayments be flat. Stepped fixed-rate mortgages allow the level of repayments to start at a lower level and then move up in a predictable way to a higher level some years ahead.



3.24 There is some evidence that borrowers aspire to make more use of flexible payment terms ex ante than turns out to be the case ex post. Table 3.3 is based on data from a survey of flexible mortgage holders, commissioned by the Council for Mortgage Lenders (CML) and carried out in 2001.<sup>6</sup> It shows the proportions of borrowers attracted to a flexible mortgage by particular features and the proportions that have subsequently made use of those features.

**Table 3.3: Flexible mortgage features**

Flexibility facility	Among the 3 most important features (per cent)	Ever used (per cent)
Overpayment	63	32
Inject lump sum	32	23
Withdraw lump sum	25	25
Underpay	10	2
Payment holiday	38	4

*Source: CML (2002).*

3.25 For example, 63 per cent of the sample cited the option to overpay among the three most important features that attracted them to a flexible mortgage; 32 per cent had subsequently made use of this. 48 per cent of the sample had not made use of any flexible features and had simply followed the normal repayment profile. Though this survey evidence is far from conclusive – 76 per cent of respondents had held the mortgage for two years or less – the attractiveness of large degrees of flexibility may be more aspirational than functional for some borrowers.

## Portability

3.26 UK mortgages are typically portable. Lenders allow borrowers to carry the mortgage at the existing terms to the new property, provided it meets their standard collateral requirements and that the borrower's credit status has not deteriorated. For a large majority of fixed-rate mortgages, borrowers do *not* necessarily incur redemption penalties on moving house. Borrowers may need a top-up loan if the new property is more expensive. Lenders generally offer competitive terms for such loans, indeed some allow the borrower to extend the mortgage to the new value at the existing fixed-rate. Active customer retention strategies mean that administration fees are typically low.

3.27 Portability is at lenders' discretion and may not be well understood by most borrowers. Some borrowers may mistakenly believe that they will have to pay redemption penalties on moving house if they have taken out a fixed-rate mortgage or they may feel uncomfortable with the discretionary nature of portability. A wider phenomenon may also be at work. For house-buyers, mortgage purchase is a means to purchase a particular property. Such consumers may think it inappropriate to take out a fixed-rate loan with a term longer than they expect to stay in the property, especially if there are redemption charges. But first-time buyers, who will typically move house more quickly than older homeowners, are unlikely to reduce their level of housing debt significantly when they do move. They are more likely to increase debt than to reduce it. The advantages of fixing the rate on debt is greater for such households than for existing older homeowners who might be paying off a substantial proportion of what may already be a small mortgage in the relatively near term. It would be unfortunate if a failure to appreciate the advantages of portability made first-time buyers believe that fixed-rate mortgages were unlikely to be suitable for them because of the likelihood of a house move in a few years time.

<sup>6</sup>The CML's survey consisted of interviews with 486 flexible mortgage holders. While the sample is not fully representative, it is likely to provide a good guide to the characteristics of such borrowers at that time. The fieldwork was carried out in late 2001.

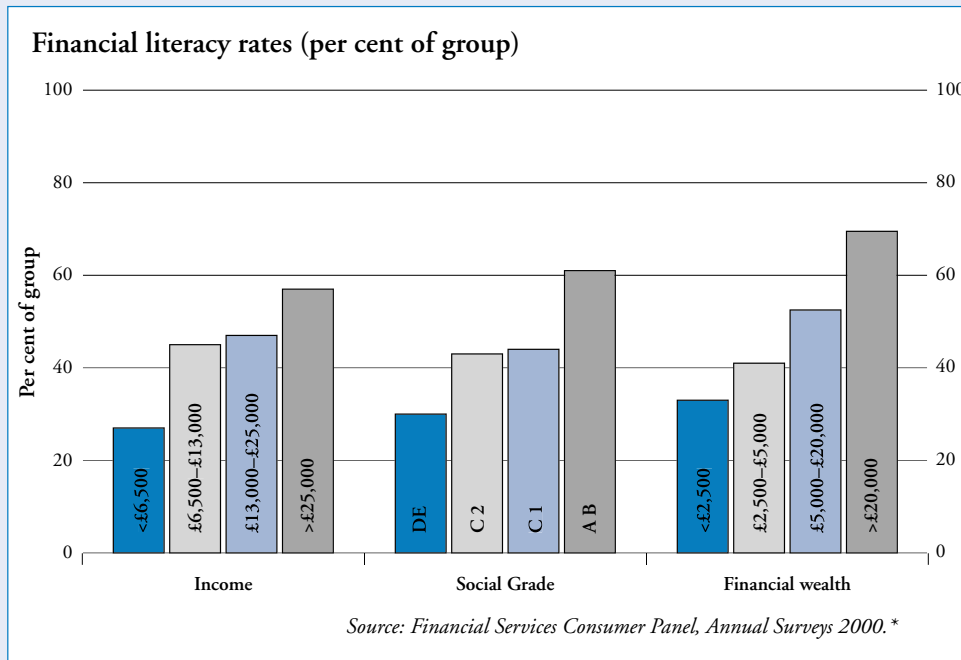
**Box 3.1: Financial literacy and planning**

Over half of UK households have held a mortgage and there are currently around 11 million mortgages outstanding. The growth in homeownership over the last 20 years has broadened the socio-economic spectrum of mortgage holders. In 1998 over half of households in the lowest income decile were homeowners (CML, 2001; Forest et al, 1990).

Basic numeracy skills are lacking in a significant proportion of the population. A survey of seven developed countries in 1996 found adults in the UK to be least competent in basic arithmetic (Basic Skills Agency, 1996). Research carried out by the Office for National Statistics found that half the adult population in the UK had an understanding of numerical concepts that did not go beyond simple addition and subtraction, meaning that they are unable to understand percentages and other concepts vital to financial literacy (ONS, 1997).

There is no generally accepted definition of financial literacy. One offered by Schagen and Lines (1996), is ‘the ability to make informed judgements and to take effective decisions regarding the use and management of money’. Survey evidence shows that higher levels of financial literacy are correlated with higher socio-economic class and greater levels of affluence.

Research into financial planning in the UK suggests that consumers do not tend to plan over the medium to long-term. A general reluctance to defer consumption and Britain’s history of significant welfare provision have been offered as explanations for the lack of financial provisioning (Sandler 2002; Skinner & Ford 2000).



\*The FSCP’s survey defined people as financially literate if they definitely agreed with the statement, ‘I enjoy finding out about new investment and savings schemes’, or definitely disagreed with the statement, ‘I find it difficult to understand financial leaflets and materials’, or said that they read the personal finance pages of a newspaper at least once a week.

The Review welcomes the fact that the Financial Services Authority (FSA) is putting consumer education among its key priorities. The FSA’s decision to lead the development of a national strategy for financial capability and the introduction of financial education to some secondary schools are particularly encouraging steps.

## THE ROLE OF INTERMEDIARIES AND ADVICE

**3.28** Intermediaries, mortgage brokers and independent financial advisors (IFAs) play an important role in the UK mortgage market. Estimates of the proportion of all new lending that now comes through the intermediary route are consistently between 50 and 60 per cent. For some lenders, all business is brokered. Estimates of the number of mortgage intermediaries are as high as 16,000. There are a few large brokers and many very small ones. There is no doubt that intermediaries have brought greater competition between lenders. They have been a driving force behind the rise in levels of re-mortgaging in the UK.

**3.29** A striking feature of the UK market is the number of products on offer. Estimates of the number of products in the prime market are consistently over 4,000. Some take this as a sign of a healthy market. A typical first-time buyer has over 1,600 variable-rate products to choose between (Moneyfacts database). The number of products offered varies greatly across lenders, with some currently offering as many as 27 different variable-rate products in the prime market (Moneyfacts, August 2003). Some lenders restructure products regularly – one lender offered 175 different variable-rate products over an 18 month period.<sup>7</sup>

**3.30** Clearly there is demand for a variety of products to meet different consumers' needs and genuine product innovation is to be welcomed. Many of the products on offer, however, have almost identical underlying features. The proliferation in the number of "different" products is likely a result of lenders' attempts to differentiate themselves from the competition (OFT, 1994; FSA, 2000a).

**3.31** There is evidence that professional advice is very influential in consumers' decision making and that, in many cases, consumers may delegate the choice of product to the advisor. This is a reflection of what seems to many a bewildering array of products.

**3.32** Research into consumer mortgage choices, commissioned by the FSA, found that almost all respondents went to at least one meeting with a lender or intermediary. More than half of the sample had not made use of any other sources of information before this meeting and those that had were unable to narrow down their options on the basis of it. Across the sample respondents tended not to make firm decisions themselves but relied on advice from intermediaries or lenders. The FSA's research finds that nearly all respondents did not know what type of interest rate (fixed, variable, discounted etc.) they wanted before taking advice from lenders or intermediaries. (FSA, 2001).

**3.33** Research commissioned by the Financial Services Consumer Panel showed that professional advice was often taken at face value and that respondents showed a lack of ability/willingness to engage in decision-making. The research attributes this to the complexity of choice; a feeling on the part of respondents that they had to meet lenders' criteria and not vice versa; and, for house buyers, the mortgage was simply seen as a means to an end and respondents tended to concentrate their efforts on the house purchase itself. (FSCP, 1999)

**3.34** The influence of professional advice on borrowers' mortgage choice needs to be considered in the light of intermediaries' incentives. Intermediaries typically either receive a one-off commission from the lender on selling a product or they charge the customer an upfront fee. Some lenders offer higher one-off commissions for the sale of products which tie-in the borrower for a longer period and for speciality products such as self-certified mortgages. There is very limited, if any, use of commission that is paid per period that the borrower remains with the lender.<sup>8</sup> There

<sup>7</sup>Financial Ombudsman Service case investigation, unpublished.

<sup>8</sup>Commissions published in various Moneyfacts 2003.

is a financial incentive for intermediaries to sell a product with the prospect of resale in the near future. In explaining the lack of longer-term fixed-rate lending in the UK, the Council of Mortgage Lenders' submission to the Review states:

'Mortgage intermediaries also play a key role here, given their vested interest in maintaining the future potential for regular review of the consumers' personal circumstances. ... The effect, overall, has been to increase substantially the level of mortgage churn in recent years.'

### THE REGULATION OF MORTGAGE SALES

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#### Regulatory environment

**3.35** In the light of the preceding discussion, the regulation of mortgage sales is an important issue. There is currently a voluntary set of standards, the Mortgage Code, that relate to the sales process. The CML introduced the Code in July 1997 for lenders and in April 1998 for intermediaries. 98 per cent of lenders have adopted the Code, as has much of the intermediary market. The Government introduced Charges, Access and Terms (CAT) standards for mortgages in 2000. The motivation behind CAT standards was to introduce minimum standards for mortgages to act as a straightforward and fair benchmark for consumers.

#### The FSA'S new regime

**3.36** In 2000 the Government announced that the FSA would have the authority to regulate mortgage lending and administration. It extended this to include advice and arranging in December 2001. Following consultation, the FSA published its rules detailing the new regime on 15th October 2003. The regime comes into effect on 31st October 2004.

**3.37** The FSA's rules will govern financial promotions, advising and disclosure. The approach focuses on improving transparency in the mortgage market. The requirements for advice and disclosure are principally designed to bring clarity to pricing structures to allow consumers to compare similar products across different lenders. The new regime will bring greater clarity to a complex market.

**3.38** The sales process will be divided into two categories – consumers will choose to go down the advised or non-advised route. Regulated firms will be required to comply with disclosure rules for all sales. Mortgage products are also divided into two categories – standard and high risk. Equity release (or lifetime mortgages), which allow elderly homeowners to borrow against their property with repayment made on sale of the property after death, are classified as high risk. All other mortgages are deemed standard risk. (The sale of endowment policies is governed by the investment advice regime).

#### Regulation of advice

**3.39** Advice is very influential in the decisions people make about mortgages. The FSA's rules will require that a firm cannot recommend a particular mortgage unless it is 'suitable' for the customer. The suitability assessment requires a firm to give due regard to a range of factors that could be important to a customer – including whether the customer has a preference for payment stability. It requires firms to assess whether a mortgage is affordable and to explain to the customer that this assessment is based on 'current interest rates, which might rise in the future'.<sup>9</sup> Accordingly, the issue of interest rate risk will arise during the interview.

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<sup>9</sup>FSA Handbook, MCOB, 4.7.

3.40 If a number of mortgage products are identified as being appropriate for the customer then the firm should,

‘recommend the one that is the least expensive for that customer taking into account those pricing elements identified by the customer as being most important to him.’<sup>10</sup>

3.41 The FSA’s interpretation of the suitability assessment is set out in their final consultation paper on mortgage regulation (FSA 2003a, vol I). The key section states:

‘For identifying the most suitable mortgage the draft rules allow the advisor to demonstrate compliance by recommending the better value mortgage based on the pricing elements (fixed-rate, no repayment fees etc.) that are most important to the consumer. Equally, however, a firm would be free to adopt an alternative criterion other than price (e.g. speed or quality of service) providing it can demonstrate that the recommended mortgage is more suitable.’<sup>11</sup>

3.42 This final stage of the suitability assessment allows regulated firms to demonstrate compliance by recommending the cheapest mortgage based on the pricing criterion identified as being most important by the consumer. There is no specific requirement for those giving advice on mortgages to ensure that customers understand the risk characteristics of mortgages, though there is a requirement that a suitable mortgage should be affordable at current interest rates.

3.43 In contrast, the FSA regulations governing the sale of investment products makes assessment of the risk characteristics of those products central. A firm may not recommend a particular transaction,

‘unless it has taken reasonable steps to ensure that the private customer understands the nature of the risks involved.’<sup>12</sup>

### Regulation of disclosure

3.44 The FSA has a difficult balance to strike in its disclosure requirements. There is a need to enhance transparency, provide written personalised product information, and explain key elements of the mortgage product. The difficulty is that consumers tend to have a limited appetite for such information. The FSA has extensively researched the presentation of disclosure forms to ensure that information is presented in a digestible and concise manner. The pre-sale disclosure form is the key disclosure document that firms must send to customers once a particular product(s) has been selected. It sets out the principal terms of that mortgage(s).

3.45 The form highlights the annual percentage rate (APR) as a summary measure of the overall cost of a mortgage. Related pieces of information on cost, the total amount you must pay back over the life of a mortgage and the amount repaid per pound borrowed, are shown. For variable-rate mortgages all these calculations are made using the current interest rate.<sup>13</sup> Borrowers are encouraged to use the APR as the relevant number for comparison of the cost of mortgages. A warning that APR should only be used to compare repayment or interest-only mortgages is given. The number of payments and the amount to be paid each month is also presented.<sup>14</sup>

<sup>10</sup> FSA Handbook, MCOB, 4.7.13 E (1).

<sup>11</sup> 4.7.13 E (1) has not changed since the publication of the draft rules in CP186 vol II so this interpretation presumably remains valid.

<sup>12</sup> FSA Handbook, COB, 5.4.3.

<sup>13</sup> If the mortgage is a discounted product where the level of mortgage payments is calculated off a standard variable-rate (SVR) after the initial discount, the APR and other calculations are based on the *current* SVR.

<sup>14</sup> FSA Handbook, MCOB 5, Annex 1R – see boxes 5 & 6 of the pre-sale disclosure form.

3.46 Accordingly, it would be natural for borrowers to focus on APR and the related calculations in comparing fixed and variable-rate mortgages. The APR figure is described as a measure of “the overall cost for comparison” (of different mortgages). The APR figures are helpful in showing the impact of fees and other costs on the overall cost of debt. They are not helpful in assessing the relative merits of mortgages with very different risk characteristics. It is understandable that the FSA places emphasis on such calculations though they will encourage people to think of the cost of variable-rate mortgages based on unchanged short-term interest rates as a reasonable measure of the overall likely cost of a mortgage.

3.47 Interest rate risk is subsequently and separately addressed on the pre-sale disclosure form.<sup>13</sup> There is an illustration which shows what would happen to monthly payments if interest rates went up by 1 per cent and a warning that rates could increase by much more than this. This is helpful. But there is no indication of how likely it is that rates could move by 1 per cent or by 2 per cent or more. Borrowers need to have some idea of the probability distribution of movements in short-term nominal rates of interest over horizons of one, two, five, and ten years to make an informed judgement on the risk and return characteristics of variable-rate and fixed-rate products.<sup>14</sup> There is also a reference to a generic FSA information sheet, which will be made available on the FSA’s website, for further information on risk. The FSA has published a draft of their information sheet on mortgage risks. Among other things, it gives a clear explanation of the impact of a range of changes in interest rates on mortgage payments and draws attention to historic volatility in rates. The leaflet will be very helpful in explaining the risks of different types of mortgages to those consumers who read it.

### CONCLUSION

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3.48 Many different types of evidence suggest that a large proportion of borrowers attach overwhelming importance to the level of initial repayments on mortgages. Many borrowers seem to have a poor understanding of the nature of interest rate risk. Mortgage intermediaries are not incentivised to explain these risks. FSA regulation will help in making some characteristics of mortgages clearer to borrowers. The risk characteristics of variable-rate mortgages are addressed in the FSA’s information sheet on mortgage risks. This will be very helpful for borrowers who see it.

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<sup>13</sup> FSA Handbook, MCOB 5, Annex 1R – box 7 of the pre-sale disclosure form.

<sup>14</sup> Under the investment advice regime the FSA’s rules govern projections used in the sale of investment products. The FSA recently undertook extensive research on the probability distribution of returns on equities to help guide what alternative rate of return assumptions sellers of investment products should use (FSA 2003).

# 4

## Pricing structure in the UK mortgage market

4.1 The evidence presented in Section 3 suggests that many borrowers attach disproportionate weight to the level of initial monthly repayments in choosing mortgages. Risk issues appear to play a secondary role for most households and may not be well understood. Lenders face intense competition for new business and are under pressure to create products that match the perceived needs of borrowers – even when those perceptions may not fully reflect people’s real interests. The structure of pricing and the range of products reflects this competition – which in itself is desirable – but it may also reflect the tendency of many borrowers to focus excessively on the level of initial payments and insufficiently on the range of possible repayment costs some years ahead. In this section the current structure of pricing of mortgages is described. This is a key factor in households’ choice between fixed and variable-rate debt. How the pattern of pricing and the nature of products offered is shaped by the competitive pressures on lenders is analysed.

### THE CURRENT STRUCTURE OF PRICING IN THE UK

4.2 Table 4.1 summarises the pricing of a range of products in the UK mortgage market in October 2003. The underlying data are from the Financial Services Authority (FSA) comparative tables where products offered by most UK lenders are listed. The first row shows the average rate charged on discounted variable-rate mortgages. These are mortgages with no overhanging redemption charges – i.e. borrowers can remortgage without charge at the end of the discount period. The discounts are available for 2 years, after which borrowers would, with few exceptions, move onto the Standard Variable Rate (SVR) of the lender. These are mortgage products that have become increasingly popular in recent years. The second row shows pricing of variable-rate mortgages where there is no initial discount; here borrowers would not move onto the SVR after some initial period. Just over half of these mortgages were tracker mortgages where the rate charged is at a fixed margin over a reference rate, usually the base rate.

Table 4.1: Pricing of mortgages – October 2003

	Mortgage rates	LIBOR/ swap rates	Difference	Arrange-ment fees	Number of products	Number below LIBOR/ swap rate	Cheapest deal per product
	(%)	(%)	(%)	(£)			(%)
Discounted Variable	3.70	3.63	0.07	210	40	19	3.03
Variable-rate for term	4.51	3.63	0.88	90	48	0	4.00
Standard Variable-rate	5.42	3.63	1.79	–	74	0	4.70
2 year fixed	4.49	4.51	–0.02	305	40	19	3.74
5 year fixed	4.95	4.80	0.15 <sup>1</sup>	310	45	17	4.45
10 year fixed	5.26	4.94	0.32 <sup>2</sup>	290	12	0	4.89
25 year fixed	5.48	5.02	0.46 <sup>3</sup>	295	1	0	5.48

<sup>1</sup> Spread over 4 year swap – chosen because amortisation makes the 5 year swap somewhat too long for a benchmark maturity.

<sup>2</sup> Spread over 7 year swap – chosen because amortisation makes the 10 year swap substantially too long for a benchmark maturity.

<sup>3</sup> Spread over 10 year swap – in the US thirty year fix rate amortising mortgages are generally priced off 10 year swap rates.

Source: FSA comparative tables – 8/10/2003, Bank of England.

4.3 The third row shows the Standard Variable Rate of a sample of over 70 lenders. The final rows show data on fixed-rate deals of various lengths: 2, 5, 10 and 25 years. The number of longer-term deals (10 and 25 years) is very small.

4.4 The table presents a snapshot picture of pricing in the UK market; the figures reflect rates reported on the FSA comparative tables on 8th October 2003. In October new borrowers faced a great many discounted variable-rate deals which offered them mortgages with sub-LIBOR interest rates. Around one half of the discounted deals had interest rates under the one-month LIBOR rate of 3.6 per cent. Several deals were at initial rates close to 3 per cent – 50 basis points under the base rate. The average of the rates charged on these discounted deals was close to LIBOR. Two-year fixed-rate deals were also priced in line with two-year swap rates. If we take money market rates of interest as an indication of the marginal cost of funds, these discounted and two-year fixed-rate deals seem to offer lenders virtually no profit margin. Lenders could earn roughly the same rate of interest as they were receiving on discounted and two-year fixes by lending in the money markets – without the costs associated with marketing and administering mortgages. Many lenders did charge fees on these products, and many also charged fees on fixed-rate products. Fees vary a good deal across lenders and across products. Typical fees for those that charged them were between £200 and £300. It is not likely that the excess of those fees over the real resource cost of marketing and arranging a new mortgage would add more than a few basis points to the net of costs return to the lender on loans.

4.5 It is plausible that many lenders whose rates are reported in the FSA tables were making a loss on their discounted and two-year fixes. Both products reported in the table had no overhanging redemption penalties; both products generally switched onto the lender's SVR after two-years. At this time the spread of the average SVR over one-month LIBOR was 179 basis points.

4.6 It is hard to escape the conclusion that many lenders were offering new borrowers money at rates that could only make commercial sense if they were subsidised by existing customers already paying the SVR or if there was an expectation that a substantial proportion of those taking the low initial rates would subsequently switch onto the SVR, *despite there being no overhanging redemption penalties*.<sup>2</sup>

4.7 Variable-rate mortgage products where there was no switch onto a Standard Variable Rate (so called “variable rates for term”) were, on average, priced at around 88 basis points over one-month LIBOR. No lender offered a rate below LIBOR on such deals.

4.8 Long-term fixed-rate deals, where the prospect of a borrower switching onto a Standard Variable Rate is remote, were priced at a margin over comparable swap rates of between 32 basis points (for 10 year fixes) and 50 basis points (for 25 year fixes). These spreads are low. They need to cover the costs of administering loans over a sustained period and a profit margin. Since the longer-term fixes typically had early redemption penalties the value of the option to pre-pay the mortgages – which we also expect to see reflected in the margin over swap rates – may have been fairly small. But it was not zero and still had to be covered by a spread of only around 50 basis points.

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<sup>2</sup> Mortgage rates may also be cross-subsidised by other financial products sold by lenders. However, to the extent that this is a factor, all mortgage rates would be affected not just those that revert to the lender's SVR.



4.9 The implications of the figures in table 4.1 is that even though some lenders were setting wafer thin margins on longer-term fixed-rate deals, the margins on discounted deals and on two-year fixes (which are effectively a form of discounted lending with the prospect of borrowers moving on to SVR in two years) were very much lower. Those two-year discounted deals were likely to be very attractive to borrowers focusing on the scale of their initial repayments on mortgages. The evidence in Section 3 suggests that this is a large group. The two-year discounted deals are only feasible because a substantial gap exists between such rates and the SVR – a gap of over 170 basis points for many lenders. The substantial number of borrowers paying SVR on mortgages – a group which may currently constitute close to one third of all borrowers – allow pricing of this sort to be feasible. This apparent cross-subsidisation, which in itself is undesirable, has as a side effect that longer-term fixed-rate mortgages – where sustainable margins over the marginal cost of funds are unlikely to be under 50 basis points – appear relatively expensive.

4.10 Table 4.2 suggests that the pattern of pricing revealed by table 4.1 does not simply reflect the pricing of smaller lenders who may be offering some products at unsustainable prices but who do not expect to be lending large amounts at discounted rates. Table 4.2 is based on deals offered by the 10 largest lenders in early October 2003. It shows a pattern of pricing on two-year discounted and two-year fixed-rate deals very similar to that in table 4.1. Five out of the top ten lenders offered two-year discounted variable-rate deals at rates below one month LIBOR. Seven out of 10 lenders offered two-year fixed rate deals with rates below the two-year swap rate. Ten-year fixes were offered at an average margin over swap rates of 55 basis points. Ten-year fixed-rates were, on average, slightly *beneath* the Standard Variable Rate but were, on average, over 180 basis points *above* the discounted variable-rate.

**Table 4.2: Pricing of mortgages of top 10 lenders – October 2003**

	Mortgage rates	LIBOR/ swap rates	Difference	Arrangement fees	Number of products	Number below LIBOR/ swap rate	Cheapest deal per product
	(%)	(%)	(%)	(£)			(%)
Discounted Variable	3.65	3.63	0.02	230	10	5	3.30
Variable-rates for term	4.52	3.63	0.89	80	8	0	4.19
Standard Variable-rate	5.53	3.63	1.90	–	10	0	5.49
2 year fixed	4.35	4.51	–0.16	290	10	7	3.74
5 year fixed	4.85	4.80	0.05 <sup>1</sup>	330	10	5	4.49
10 year fixed	5.49	4.94	0.55 <sup>2</sup>	210	2	0	5.49
25 year fixed	–	–	–	–	0	0	–

<sup>1</sup> Spread over 4 year swap – chosen because amortisation makes the 5 year swap somewhat too long for a benchmark maturity.

<sup>2</sup> Spread over 7 year swap – chosen because amortisation makes the 10 year swap substantially too long for a benchmark maturity.

Source: FSA comparative tables – 8/10/2003, Bank of England.

4.11 The figures in Tables 4.1 and 4.2 show the pattern of pricing at a particular point – early October 2003. The Bank of England increased its repo rate to 3.75% in early November. The full implications of this on pricing of mortgages had yet to work themselves through by the end of November. Table 4.3 shows the pattern of pricing at 24th November. The broad pattern of relative pricing is very similar to the pattern shown in table 4.1. Discounted variable-rate mortgages were, on average, priced at LIBOR. 20 of the 39 products were priced sub-LIBOR. Spreads on 10 and 25 year fixed-rate mortgages over relevant swap rates were close to 50 basis points.

Table 4.3: Pricing of mortgages – November 2003

	Mortgage rates	LIBOR/ swap rates	Difference	Arrange-ment fees	Number of products	Number below LIBOR/ swap rate	Cheapest deal per product
	(%)	(%)	(%)	(£)			(%)
Discounted Variable	3.84	3.83	0.01	276	39	20	3.13
Variable-rates for term	4.53	3.83	0.70	112	41	0	4.00
Standard Variable-rate	5.52	3.83	1.69	–	68	0	4.70
2 year fixed	4.99	4.75	0.24	319	38	8	4.19
5 year fixed <sup>1</sup>	5.43	5.04	0.39	303	35	1	4.84
10 year fixed <sup>2</sup>	5.58	5.16	0.42	321	11	0	5.20
25 year fixed <sup>3,4</sup>	5.73	5.20	0.53	397	2	0	5.48

<sup>1</sup> Spread over 4 year swap – chosen because amortisation makes the 5 year swap somewhat too long for a benchmark maturity.

<sup>2</sup> Spread over 7 year swap – chosen because amortisation makes the 10 year swap substantially too long for a benchmark maturity.

<sup>3</sup> Spread over 10 year swap – in the US thirty year fix rate amortising mortgages are generally priced off 10 year swap rates.

<sup>4</sup> Includes deal relaunched on 28/11/2003.

Source: FSA comparative tables – 24/11/2003, Bank of England.

4.12 There is a good deal of evidence that this pattern of pricing and of cross-subsidisation is neither a recent nor transient feature of the market. Estimates of the pattern of pricing of mortgages in the UK in the period from 1995 to 1999 made by the FSA suggest a similar pattern to that revealed by Tables 4.1, 4.2 and 4.3 (FSA, 1999a, Annex). Table 4.4 is reproduced from the 1999 FSA paper. The figures are estimates of the interest rates on various types of mortgage net of the funding cost. Funding costs are estimated using the rates that would be available for external funding (the Bank of England base rate and, for fixed-rate products, the relevant swap rates). Variable rate deals with incentives were offered over this period at a price of around 100 basis points below the price charged to those on SVR. Ten-year fixed-rate deals were offered at a rate of around 50 basis points more above the estimated cost of funds than variable deals with incentives. Two-year fixed-rate deals were offered on similar terms to variable-rate deals with incentives.

Table 4.4: Margins on different mortgage products

All figures are basis points – bp (1bp=1/100 of 1%)	Mortgage margin				
	Existing business (SVR)*	Variable rate with incentives <sup>3**</sup>	New business		
			Fixed rate mortgages* (no extended penalty periods)		
			2 years	5 years	10 years
1995 <sup>1</sup>	155	n/a	52	65	92
1996	122	20	27	49	70
1997	121	47	15	63	94
1998	143	46	28	43	84
1999 <sup>2</sup>	162	38	60	66	75
Average	141	38	36	57	83

<sup>1</sup> February to December 1995.

<sup>2</sup> January to May 1999.

<sup>3</sup> This is based on the average of the annual equivalent cash-back offered on SVR mortgages and the discount offered on the SVR mortgages. The annual equivalent is calculated by taking account of the penalty period (on average, between 4 and 5 years). The figures are therefore comparable with those for fixed rate mortgages in the table. (The mortgage margin is calculated using an SVR time series from Solomon Smith Barney.)

Source: \* FSA estimates based on published data from the Bank of England.

\*\* Solomon Smith Barney, 'A Trainspotter's Guide to Savings & Mortgage Markets', July 1999. (These figures should be treated with caution: annual average rates for this type of mortgage were not readily available and the figures used here were derived from a chart containing monthly data).

4.13 In the light of the evidence the FSA report observed:

‘The differences between margins for new business and existing business in (the) Table suggest that competition between lenders is focused on new business, and that deals offering low payments in the first few years are seen as an effective way of competing for this business.....Lenders clearly generate more profit from keeping business at the SVR than they do from the first few years of new mortgage business.’ (FSA 1999a, Annex)

4.14 How is the pattern of pricing revealed by tables 4.1, 4.2 and 4.3 possible? Why do many lenders seem to adopt a pricing model which offers subsidised deals to new borrowers at the expense of existing borrowers who are either unwilling or unable or switch from high cost mortgages or else are unaware of the nature of pricing? The answers to the two questions are linked. The degree of cross-subsidisation is possible because many existing borrowers are unaware of the extent to which they are cross-subsidising new lending. Some barriers are not erected by lenders – they reflect the fact that borrowers may be inert. Some barriers are erected by lenders – deals are offered to new customers which are not available to existing borrowers. Switching costs – the cost of finding out about alternative deals and arranging for a mortgage to be moved to another lender where that is the only way to take advantage of them – are not trivial. These costs mean that many lenders are *able* to cross-subsidise. But that does not explain why many *do* cross-subsidise.

4.15 No lenders are unaware of the tension between a desire to reward loyal customers who have held mortgages for several years and a perceived need to match the discounted deals that other lenders offer. It is possible that the market is trapped in a bad equilibrium – one where no lender welcomes the ability to charge existing customers significantly more than new borrowers but few are able to resist the pressure to exploit this so as to have a range of products that generate new business. Mutual lenders, whose *raison d’être* is to act in the interest of their existing customers – the owners of the entity – are likely to find this tension particularly uncomfortable. Yet a decision by any institution in isolation to depart from what has become a common pricing model may be commercially highly costly. A lender that stopped offering discounted deals with no overhanging redemption penalties might find that the flow of new borrowers dried up. Deviation from the pricing model that generates substantial cross-subsidisation could be commercially damaging.

4.16 The existence of cross-subsidisation is not a symptom of a lack of competition for new customers in the UK mortgage market. Quite the contrary. A lender that chose to discontinue offering discounted products would risk losing market share to many other lenders. *Because* the market for new lending is so competitive – with financial intermediaries and mortgage brokers ensuring that new borrowers know what the lowest rates are – the cost to any one lender of deviating from the dominant pricing model is significant.

### SUSTAINABILITY OF THE CURRENT PATTERN OF MORTGAGE PRICING

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4.17 Tables 4.1, 4.2 and 4.3 show that the scale of the difference between the margin over funds for different types of loan is very large. But if very few people now pay SVR, or if the numbers paying SVR are likely to dwindle to insignificance within a few years, then the degree of cross-subsidisation may not be of great concern. To assess how much cross-subsidisation there is and how long it may last it is useful to trace the development of discounted mortgages. Lenders began to compete for new borrowers by offering “upfront deals” in the early 1990s. The initial deals tended to be self-financing, in that a borrower would start-off paying a low discounted rate of interest for a given period followed by a set period of paying a higher SVR. Such a deal was said to have extended redemption charges – redemption charges were applied for a period after the initial discount had finished. Moneyfacts for September 1996 shows that most deals with upfront discounts that were then offered had overhanging penalties of about the same length as the initial discount period. This type of mortgage need not generate significant cross-subsidisation between borrowers; it represents a tilting in the profile of payments of a borrower with lower initial payments matched by higher payments later in the life *of the same deal*. At this time (September 1996) the average SVR was around 100 basis points over LIBOR, a margin some 80 basis points lower than was the case in October 2003. Since then overhanging redemption penalties have become less common, with many lenders instead using funds generated from existing borrowers to cross-subsidise discounts for new borrowers.

4.18 The increasing importance of financial intermediaries and advisers in an environment where lenders have felt the need to offer discounted deals without overhanging redemption charges has fuelled re-mortgaging. The scale of re-mortgaging in the UK rose from 9.2 per cent of the stock of mortgages in 2001 to 16.7 per cent of the stock of mortgages in the twelve months to the end of August 2003. This rise in re-mortgaging has two quite different implications for the scale and sustainability of cross-subsidisation. The more re-mortgaging there is the smaller may become the “back book” of people paying SVR on mortgages and the more is the viability of cross-subsidisation undermined. But at least for a while as the back book is slowly eroded and more borrowers move onto discounted deals the greater is the absolute amount of cross-subsidisation. It is likely that one reason why the spread between the SVR and LIBOR in 1996 was so much lower than it is today is that the degree to which those paying SVR needed to cross-subsidise cheaper deals elsewhere was lower.

4.19 Data from CACI suggests that although the “back book” of borrowers paying undiscounted variable-rates has fallen in recent years, the proportion of borrowers on such deals remains significant<sup>3</sup>. Tables 4.5 and 4.6 show the share of different mortgage products by number and value of debt. A significant proportion of loans continue to remain on undiscounted variable-rate deals – figures for August 2003 show that 45 per cent of mortgages (by number) and 33 per cent (by value) were at undiscounted variable-rates.

**Table 4.5: Proportion of mortgage stock by category of mortgage product – number**

	March 1998 per cent	March 1999 per cent	March 2000 per cent	March 2001 per cent	March 2002 per cent	April 2003 per cent	August 2003 per cent
Variable <sup>1</sup>	70	64	59	58	51	49	45
Discounted	15	12	14	15	18	19	20
Capped	0	4	6	6	6	3	2
Fixed	15	19	20	20	21	21	24
Other <sup>2</sup>	0	0	0	2	4	7	9

*1 Includes premium rate mortgages which pay higher rates than Standard Variable Rates.*

*2 Mainly trackers (for short periods and for the full term of the mortgage).*

*Source: CACI Mortgage Market Database.*

**Table 4.6: Proportion of mortgage stock by category of mortgage product – value**

	March 1998 per cent	March 1999 per cent	March 2000 per cent	March 2001 per cent	March 2002 per cent	April 2003 per cent	August 2003 per cent
Variable <sup>1</sup>	59	52	46	45	39	36	33
Discounted	20	16	19	19	23	24	24
Capped	0	5	7	7	7	3	2
Fixed	21	27	28	27	27	27	30
Other <sup>2</sup>	0	0	1	2	5	9	11

*1 Includes premium rate mortgages which pay higher rates than Standard Variable Rates.*

*2 Mainly trackers (for short periods and for the full term of the mortgage).*

*Source: CACI Mortgage Market Database.*

4.20 The stock of mortgages paying discounted rates may remain lower than the stock of mortgages paying SVR, though because some short-term fixes are essentially discounted rate mortgages this is a hard judgement to make. If one somewhat arbitrarily included half of the stock of fixed-rate mortgages (which are overwhelmingly fixed for less than 5 years) in the category of discounted mortgages one would find the value of the stock of mortgages paying SVR and those discounted might be roughly comparable.

4.21 The October 2003 average margin of 180 basis points of SVR over LIBOR and, essentially, zero over LIBOR on discounted mortgages and two-year fixes means that if the latter group are all offset by the former group the degree of cross-subsidisation is about 90 basis points. Borrowers paying SVR may, on average, be paying about 90 basis points over a “fair” rate so that those on discounts can pay about 90 basis points under that rate. This figure is consistent with the idea that variable-rate products which do not switch into SVR – and which tables 4.1 and 4.2 show have an average 88 basis points margin over LIBOR – are fairly priced.

<sup>3</sup> CML figures for 2001 were broadly consistent with those from CACI.

4.22 The high proportion of customers who have not moved to discounted deals suggests “switching costs” are significant. Despite an explosion of re-mortgaging the stock of mortgages paying SVR remains large. We may be reaching a stage where a high proportion of re-mortgaging is now driven by borrowers already on discounted deals switching to other deals as the discount period ends. This can explain why the rapid pace of re-mortgaging may not be significantly eroding the stock of borrowers who are cross-subsidising others. This situation may be sustainable. It will be if the scale of switching costs for many borrowers is substantial. A recent Office of Fair Trading report (OFT, 2003) defines switching costs as “ a cost incurred by changing supplier that is not incurred by remaining with the current provider”. Consumers can also incur switching costs on changing product with the same provider. Switching costs include:

- contract costs – such as redemption penalties, or the inability of existing customers to switch to deals available to new customers;
- transaction costs – such as legal and valuation fees, form filling; and
- search costs – time taken to find the right product in the market.

4.23 While redemption charges do apply to many fixed-rate loans they would only apply to a small proportion of existing mortgages where borrowers are paying the lender’s SVR. In many cases borrowers are willing to pay transactions costs for new loans at more favourable rates – in some cases lenders are prepared to waive these costs. This suggests that the more significant switching cost may well be search costs. High search costs may be associated with low levels of financial literacy, the proliferation of products and their increased complexity over recent years. The complexity and proliferation of products on offer may serve to create switching costs for the less financially aware.

4.24 Switching costs do not necessarily raise competition issues,<sup>4</sup> although they do raise important distributional issues. Customers who are financially literate or well advised are more likely to gain by (repeatedly) switching to cross-subsidised products at the expense of borrowers who may well be less financial astute and remain with a lender and pay a high SVR<sup>5</sup>.

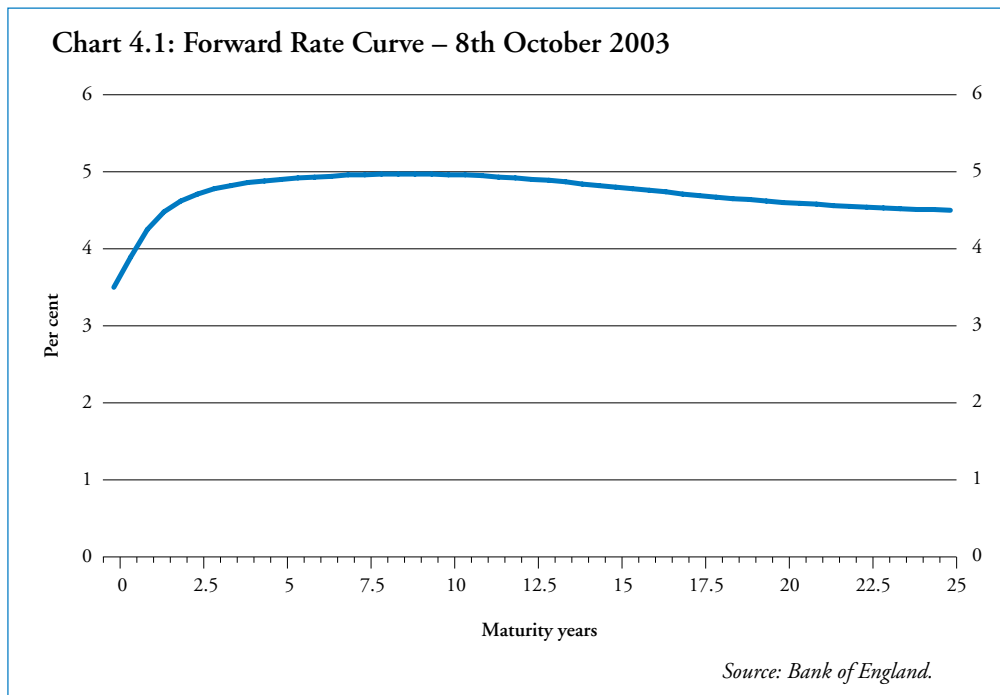
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<sup>4</sup>For a thorough analysis of the potential effects of switching costs see Farrell and Klemperer (2002).

<sup>5</sup>Higher interest rates for existing borrowers are inconsistent with developments towards pricing credit risks. Existing customers are likely to have lower credit risks for lenders as debts fall relative to households’ income over time (as income grow and debt is repaid) and the equity in the property rises.

**IMPLICATIONS FOR LONGER-TERM FIXED-RATE MORTGAGES**

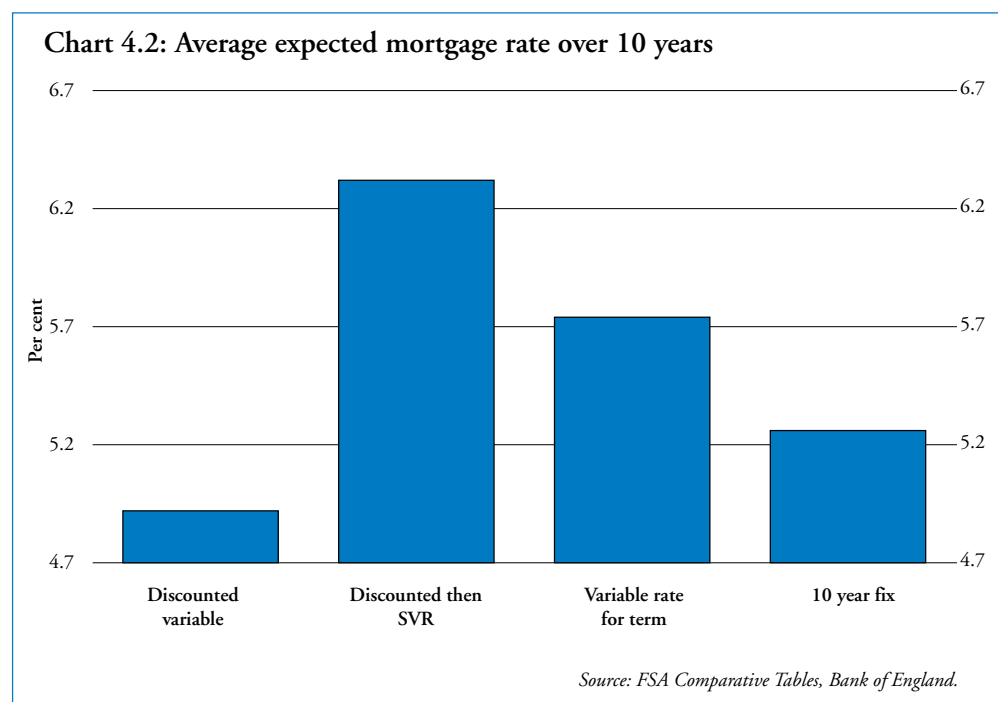
4.25 Comparisons to this point have concentrated on the initial price to pay. However, the relative price of taking out a fixed-rate mortgage will depend on expected interest rates over the relevant time horizon. Chart 4.1 shows the forward rates derived by the Bank of England from their estimated gilt yield curve for 8<sup>th</sup> October 2003. These forward rates are an indication of expected movements in short-term rates, though the existence of risk premia and term premia means that they are not equal to expected future short rates. Such forward rates are nonetheless useful in calculating the approximate average expected mortgage rate over different time horizons. Those forward rates can be used, along with assumptions about the margin of mortgage rates over money market rates on different products, to assess the overall expected relative cost of various deals given the pattern of pricing revealed by Tables 4.1 and 4.2.



4.26 Chart 4.2 uses the forward rates from chart 4.1 to estimate the average expected interest rate over a ten-year horizon for a borrower who:

- i. keeps re-mortgaging to a discounted fixed-rate mortgage;
- ii. a borrower who takes out a discounted variable-rate mortgage for two-years after which they move onto an SVR;
- iii. takes out a variable-rate to term mortgage (i.e. they do not move onto an SVR after an initial discount); and
- iv. one where the borrowers takes out a 10 year fixed-rate mortgage.

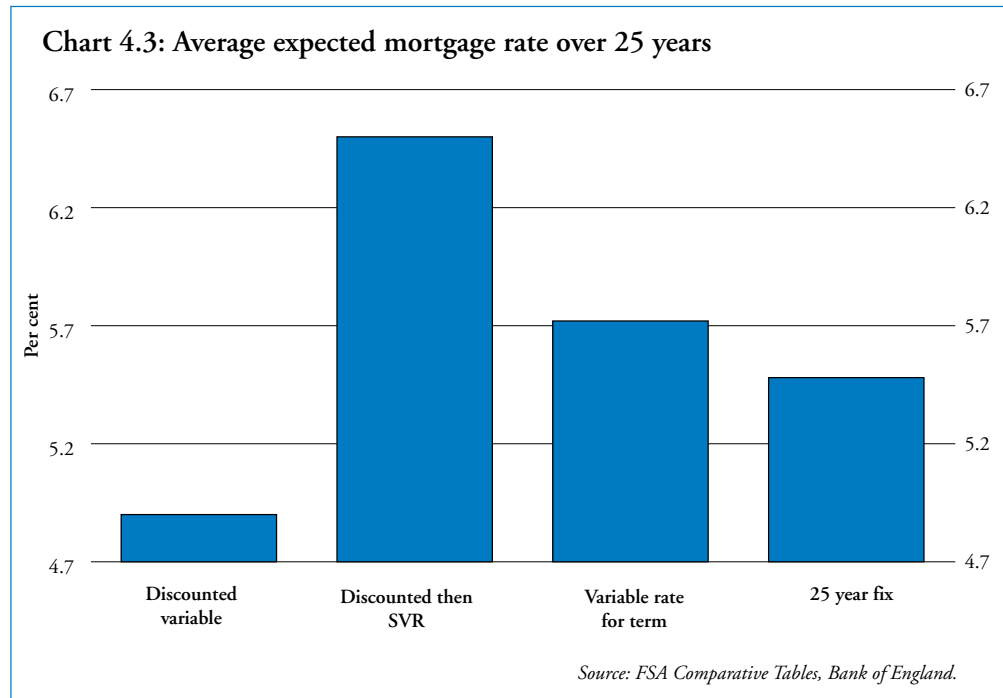
In each case we use the margins from table 4.1 to construct the averages based on the forward rates shown in chart 4.1.



4.27 The borrower who continually takes out a discounted loan is expected to pay the lowest average mortgage rate over a 10 year horizon. This is around 34 basis points lower on average than the 10 year fixed-rate. (They would, of course, face considerable uncertainty over the rate – we are focussing here simply on the expected cost). Given market expectations for future interest rates, borrowers who take out a mortgage with no discount for the term of the mortgage and those that take out a discounted rate and then move onto an SVR are expected to pay substantially higher average rates than a 10 year fixed-rate (by around 50 and 100 basis points respectively).



4.28 Comparing the same variable-rate products against a 25 year fixed-rate mortgage over the lifetime of the loan produces similar results, (see chart 4.3). The borrower who continually moves to different discounted deals might expect to pay 58 basis points below the fixed-rate over the full period of the loan (they would face the same uncertainty over the rate as they faced in the comparison with 10 year fixed-rates). Once again the other variable-rate borrowers (who do not keep shifting deals) would pay a higher average variable-rate over a 25 year time horizon, of around 25 (for a variable-rate for term) and 100 basis points (for a discounted then SVR mortgage) respectively.



## CONCLUSION

4.29 The implication of the data in tables 4.1, 4.2 and 4.3 is that the current structure of pricing in the UK generates substantial cross-subsidisation. Those most harmed by this are existing borrowers with mortgages paying SVR. But a by-product of this situation is that fixed-rate mortgages, which one would expect to be priced off longer-term capital market rates (typically swap rates) appear expensive to new borrowers when judged against deals with initial discounts whose pricing reflects cross-subsidisation. This structure of pricing exacerbates the problem that many borrowers focus unduly on the initial cost of different sorts of mortgage.



# 5

## Funding and pricing of fixed-rate mortgages

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5.1 This report has analysed the risk characteristics of different types of mortgage. Borrowers' choices depend on their understanding of those characteristics – which depends on the information and advice they are given – and upon the pricing of products. In section 4 the way in which mortgages are priced in the UK was analysed. The overwhelming proportion of these mortgages are at variable rates or at rates fixed for a short period. How longer-term fixed-rate mortgages would be funded and priced in an environment where a significantly higher proportion of lending was at rates fixed for ten years or more is a central issue for the Review. In this section that issue is addressed. As before, the focus is on potential obstacles to the development of a much bigger market for longer-term fixed-rate mortgages.

5.2 This section deals with the related questions of funding and pricing of fixed-rate mortgages. It starts by reviewing how mortgages are currently funded in the UK and assesses their profitability and pricing relative to other European countries. It then analyses how different funding routes can be used to handle two related risks associated with fixed-rate mortgages: interest rate risk and pre-payment risk.

### THE CURRENT SITUATION: VARIABLE-RATE MORTGAGES LARGELY FUNDED BY VARIABLE-RATE DEPOSITS

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5.3 UK mortgages are overwhelmingly held on the balance sheets of lenders. Less than 10 per cent of mortgages in the UK have been securitised; a proportion which is nonetheless high by European standards.<sup>1</sup> Because a very high proportion of mortgage lending is at variable rates, it is natural that funding is predominantly at variable rate. Variable-rate funding of variable-rate lending helps remove much (but certainly not all)<sup>2</sup> interest rate risk for lenders. A high proportion of that funding is in the form of variable rate retail deposits. Bank of England figures for August 2003 show that deposits account for 87 per cent of commercial banks' sterling liabilities in the UK. Of these deposits 41 per cent are sight deposits (less than three months), 30 per cent are time deposits (three months or longer) and the rest is mainly Certificates of Deposit (CDs) and short-term paper. Practically all of sight deposits are variable-rate, as are a high proportion of time and other deposits. Around one third of banks' assets are mortgages.<sup>3</sup> At least half of building societies' funding has to come in the form of members' retail share accounts, and no more than 25 per cent of business assets (total assets minus liquidity, fixed assets and long-term insurance funds) can be in the form of assets not fully secured on residential property. Bank of England data for August 2003 show that retail share accounts make up 70 per cent of total building society liabilities. Mortgages on residential property account for 63 per cent of their assets (80 per cent of total loans and investments, which exclude liquid assets).

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<sup>1</sup> Only 32 per cent of UK Residential Mortgage Backed Securities (RMBS) over the past two years was issued in sterling. 48 per cent was issued in US dollars and 20 per cent in euros.

<sup>2</sup> Basis risk between retail funding rates and lending rates remains. Given the discretion that lenders have over margins, this is not substantial.

<sup>3</sup> This is total M4 sterling domestic lending to households secured on dwellings, minus lending by building societies, divided by banks' total sterling assets.

5.4 UK lenders are in a strong position. They are well capitalised and their funding profile has strengthened in recent years by becoming more diverse (see Moody's, 2003). This is also the assessment of regular analysis reported in the Bank of England's Financial Stability Review (June 2003, Section 3.2, "The UK banking sector"). Tests carried out by the UK authorities in consultation with the IMF in 2002 suggested that the UK banking system was relatively well placed to face a range of plausible adverse events (Hoggarth and Whitley, 2003).

5.5 Mortgage lending in the UK is a relatively profitable business, with substantially higher margins than in many other countries. A recent study by the consultants Mercer Oliver Wyman for the European Mortgage Federation shows the UK as having the highest risk-adjusted return on economic capital for mortgage lending, and the highest estimated average returns from mortgage lending, in Europe. Chart 5.1, reproduced from the study, shows that average returns from mortgage lending are highest in the UK. Returns here are measured as post tax profit as a proportion of outstanding mortgage balances. No adjustment is made for risk. Table 5.1 shows estimates of risk-adjusted returns. Here profits are measured relative to economic capital, defined as the amount of capital that a company requires in order to support the economic risk it faces. It includes credit and operating risk capital. The last column in Table 5.1 shows estimates of the return of mortgage business on economic capital. On this measure, the UK still emerges as the country with the highest returns.

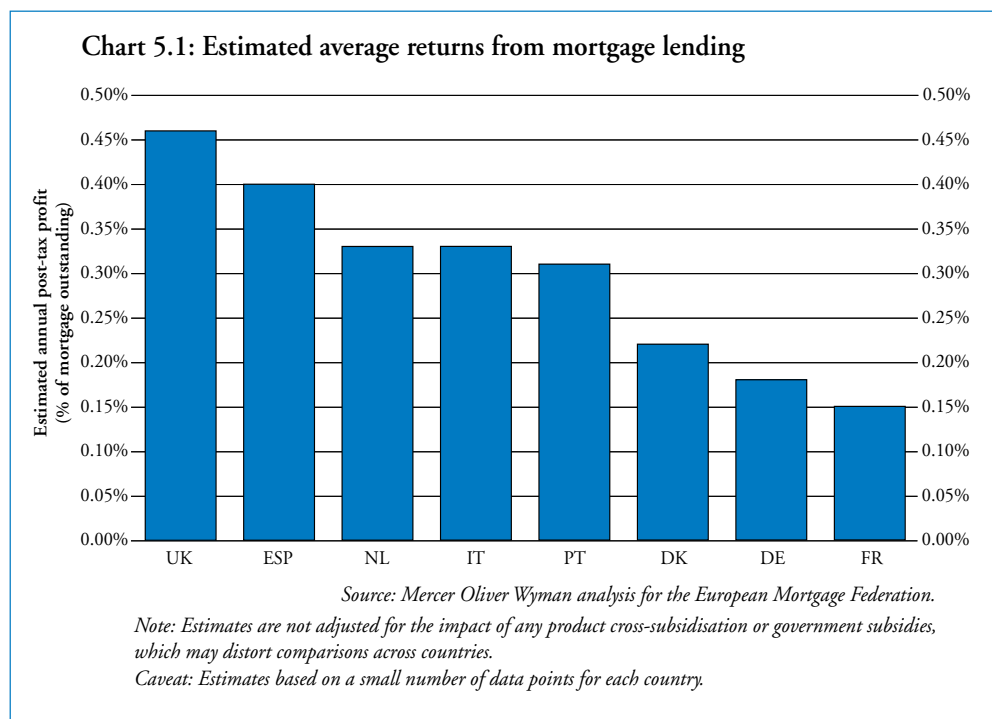


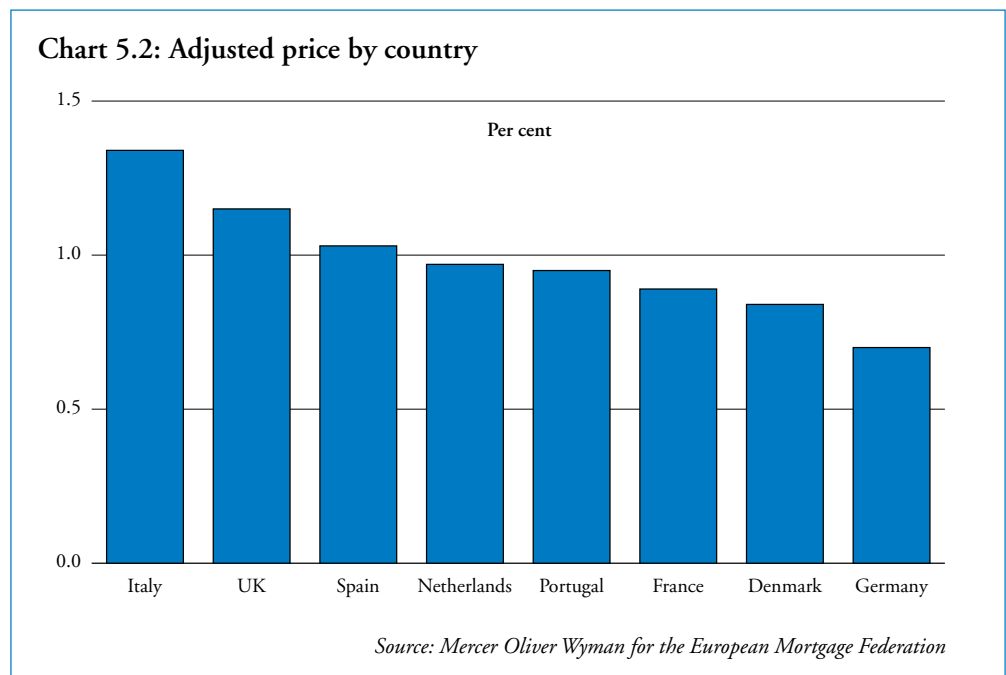
Table 5.1: Risk adjusted return on economic capital

Country	Estimated post-tax profit (% of outstanding)	Estimated economic capital (% of outstanding)	Estimated risk-adjusted return on capital (%)
Denmark	0.22	1.2	18
France	0.16	2.0	8
Germany	0.18	1.7	11
Italy	0.33	2.9	12
Netherlands	0.33	1.5	22
Portugal	0.31	2.4	13
Spain	0.40	1.8	22
U.K.	0.46	2.0	23

Note: Economic capital includes credit and operating risk capital. Estimates are not adjusted for the impact of any product cross-subsidisation or government subsidies which may distort comparisons across countries.

Source: Mercer Oliver Wyman for the European Mortgage Federation.

5.6 High profitability reflects low funding and operating costs compared to other countries. Low funding costs help generate high profitability because risk-adjusted margins appear to be relatively high in the UK. Chart 5.2 shows the estimates made by Mercer Oliver Wyman of the risk-adjusted price of mortgages across the major European countries. The “price” here is the margin between the cost of funds and the cost of mortgages. This margin has been adjusted for risk.<sup>4</sup> The estimated adjusted price of mortgages in the UK is the second highest (after Italy) among the European countries included. The Mercer Oliver Wyman study for the European Mortgage Federation shows that the lowest cost mortgages in Europe appear to be those available in Germany and Denmark.



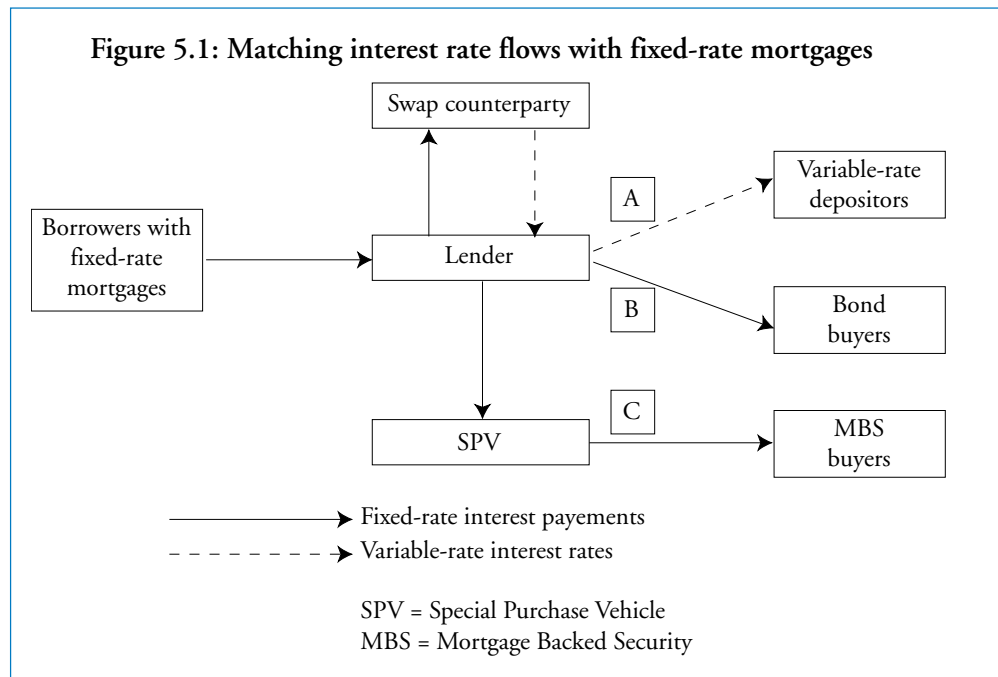
<sup>4</sup>Prices are calculated using a weighted average of interest rates for different mortgages over the expected life of the product. This figure is then adjusted to take into account the fees paid in each country, the point at the yield curve off which mortgages are priced, the differences in credit risk and the value of the pre-payment option, if it exists.

**POSSIBLE WAYS TO FUND FIXED-RATE MORTGAGES**

5.7 Funding fixed-rate mortgages with variable-rate deposits would leave lenders exposed to **interest rate risk**. If short-term interest rates went up, mortgage lenders would find the cost of funds rising relative to the return on fixed rate assets. This is what happened during the Savings and Loans crisis of the early eighties in the US.

**Handling interest rate mismatch**

5.8 In principle there are many ways that lenders who advance fixed-rate mortgages can avoid interest rate mismatch. They could aim to increase their fixed-rate retail savings. But, assuming that lenders continue to have most retail deposits pay variable-rate interest, the funding strategies that remove interest rate mismatch fall into three main categories. These are depicted in a stylised way in Figure 5.1. The solid arrows represent flows of fixed-rate interest and the dotted arrows flows of variable interest payments. The diagram is highly simplified, and it only includes flows of interest rate payments<sup>5</sup>.



5.9 The three routes illustrated in the diagram are, from top to bottom:

A. Lenders could keep fixed-rate mortgages on their balance sheets, finance them from variable-rate funds and use the **swaps** market to match the fixed/variable profile. The swap agreement would be to pay fixed and receive floating. As figure 5.1 shows, this cancels out the fixed that the lender receives from the mortgages and they end up in a position of paying variable rates to depositors and receiving variable rates from their swap counterparty. To the extent that the margin between the rate received on the swap (generally LIBOR) and the cost of funds on the balance sheet was variable and uncertain, risk would not be entirely removed. Lenders would also take on the credit risk of the swaps counterparty – although it could be reduced through collateralisation.

<sup>5</sup> Strategies for funding fixed-rate mortgages are discussed in great detail in Fabozzi (2001), Hu (2001), and Batcharov et al (2003).

B. Lenders can keep the mortgages on the balance sheet and fund them from matching fixed-rate funds. Those fixed-rate funds can be:

- collateralised by mortgages, such as **covered bonds**; and
- other ordinary fixed-rate debt issued by lenders (which would include bonds sold directly to retail customers and bonds issued via the capital markets).

C. Finally, lenders can effectively sell their mortgages on to the capital markets as **mortgage-backed securities (MBS)**. The lender sells the loans to a Special Purpose Vehicle (SPV). The SPV is a separate legal entity, structured so as to achieve bankruptcy remoteness from the original lender. The SPV issues securities backed by the mortgages. If all cash flows (principal and interest) are “passed through” to investors on a pro rata basis, they are called “pass-through” securities. MBS that are not “pass-through” are structured into tranches with different levels of payment priority. In Figure 5.1 the interest payments flow from borrowers to lenders and then to the SPV- it is assumed here that the lenders retain their servicing role.

This Review does not presuppose that one funding route is superior to the others. The Review does aim to identify potential obstacles to using each of the routes outlined in Figure 5.1.

### Handling pre-payment risk

5.10 Interest rate risk is only part of the risk that lenders take when offering fixed-rate mortgages. They may also take on pre-payment risk. Mortgages can be, and often are, paid off before the scheduled date. Pre-payment does not generate interest rate risk with variable-rate mortgages because the funds paid ahead of schedule can nearly always be re-lent at a rate close to the one they were earning. But pre-payment can pose substantial risk in the case of fixed-rate mortgages. Lenders cannot expect to reinvest the prepaid funds at the contractual rate. Borrowers’ ability to pre-pay at a time when prevailing interest rates are lower than the contractual rate of the mortgage represents a valuable call option on the underlying debt.

5.11 The option to pre-pay a fixed-rate mortgage is valuable to the borrower but it is not free. If lenders are to accept the risk that pre-payments generate to them they need to be compensated. Compensation can come in different forms. It can be:

- i in the form of payments at the point of pre-payment *or*
- ii as a higher interest rate over the life of the mortgage *or*
- iii as a charge up front *or*
- iv as some combination of all these.

5.12 The first route implies that only those who actually pre-pay the mortgage pay a fee. This fee may or may not be related to the value of the option to repay the mortgage at the point it is exercised. In the second and third routes, the cost of the option to pre-pay is shared among all borrowers, regardless of whether they actually pre-pay or not.

5.13 Table 5.2 outlines different strategies for managing pre-payment risk, and how they can be combined with the three funding routes shown in Figure 5.1. Lenders can pass pre-payment risk on to borrowers, to investors, or they can keep it and hedge it. They can also combine those strategies in different ways. Table 5.2 does not consider the situation where lenders take on pre-payment risk without explicitly addressing it in some way; that is unlikely to be an acceptable strategy for a financial institution holding substantial fixed-rate mortgages or for the regulatory authority.

Table 5.2: Managing Pre-payment Risk on Fixed-rate mortgages

Strategy to manage pre-payment risk	Funding route		
	A	B	C
	<b>Variable rate funding and swaps</b>	<b>Conventional fixed-rate debt or covered bonds</b>	<b>Securitisation</b>
Pass it on to borrowers	Swaps + mark-to-market charges on redemption	Fixed-rate debt + mark-to-market charges on redemption	Securities + mark-to-market charges on redemption
	Swaps + fixed redemption charges	Fixed-rate debt + fixed redemption charges	Securities + fixed redemption charges
Pass it on to investors		Issue callable debt	Sell pass-through securities
Keep it and hedge it	Swaps + derivatives to hedge pre-payment risk (e.g. swaptions)	Fixed-rate debt + derivatives to hedge pre-payment risks (e.g. swaptions)	

5.14 The first two rows in Table 5.2 show how pre-payment can be managed by passing it on to borrowers. Borrowers then pay *at the point of breaking the contract*, and the most common ways to establish the amount due are:

A. The market costs of breaking the contract, also known as “**mark-to-market**” charges. This is calculated as the difference between the present value of the mortgage discounted at market interest rates at the time of pre-payment and the present value of the mortgage discounted at the contractual fixed rate. It is not possible to know at the beginning of the mortgage what the scale of these charges might be. This is how pre-payment risk is commonly dealt with in Germany. If such arrangements are symmetric then they could result in a refund: a mortgage pre-paid at a time when interest rates are higher than when the mortgage was taken out could come with a refund. The value of the refund would exactly offset the higher repayments that would need to be made if a new mortgage was taken out for the same value and with the same residual maturity. In the more usual case where a fixed-rate mortgage is pre-paid when interest rates have fallen the mark-to-market redemption charge is equal to the saving that would be made by taking out a new mortgage at a lower fixed rate.

B. **Pre-determined fees that are not related to interest rates at the time of pre-payment.** In this case the charge for pre-paying the mortgage is known at the outset, though whether it will be above or below the value to the borrower from pre-paying is not known. It is usual for such fees to fall as time elapses, though the amount actually received by the lender may be very different from the market cost of breaking the contract. Pre-determined fees can be calculated as:

- a fixed amount; or
- a number of months of interest rate payments; or
- a percentage of the outstanding loan.

5.15 In the case of mark-to-market penalties, lenders are protected from potential losses triggered by pre-payment. Lenders are also substantially protected when fixed-rate mortgages have predetermined fees that are large enough so that only in extreme circumstances would they incur some loss. Residual pre-payment risk can then be dealt with in the ways described below.



5.16 Pre-payment charges for the fixed-rate mortgages that now exist in the UK usually take the form of either a number of months' interest or a percentage of the outstanding capital. A typical schedule of repayment fees for a five-year fixed-rate deal is to pay 5 per cent of the outstanding capital if it is prepaid during the first year, 4 per cent if during the second and so on until the penalty goes down to 1 per cent during the fifth year. Obviously such charges do not cover all the possible loss to the lender from pre-payment. The short duration of most current fixed-rate deals in the UK makes the price of the mortgage much less sensitive to changes in current interest rates than would be the case for longer-term fixed-rate mortgages. This short duration of the fixed-rate period, coupled with the greater predictability of interest rates movements over shorter horizons (which makes hedging at short-term horizons cheaper), leaves lenders relatively well covered with fixed pre-payment charges even though they are not related to movements in market rates. But this would not be the case if long-term fixed-rate mortgages became more common.

5.17 An alternative way for borrowers to pay for the option to pre-pay is as *a higher interest rate paid over the unknown life of the mortgage*. When borrowers do not pay at the point of pre-paying a fixed-rate mortgage, lenders are left with two alternatives: they can pass the pre-payment risk on to investors or they can keep it and hedge it. Table 5.2 illustrates these two options. Either strategy will affect the cost of mortgages: providers of funds need to be compensated for the extra risk that they are taking, and hedging instruments are costly. This cost has to be ultimately paid by borrowers. But, unlike the case of pre-payment charges, it can be shared among all borrowers and be paid as a higher interest rate over the term of the mortgage. In return, borrowers may be entitled to pre-pay their mortgage at par (ie at the remaining balance outstanding based on the original fixed interest rate) without redemption charges. Who needs to receive the compensation for providing borrowers with an option to pre-pay depends on where the pre-payment risk resides.

5.18 Pre-payment risk can be *passed on to bond/MBS investors*. How it is passed on depends on the funding route chosen among those shown in Figure 5.1:

A. Lenders that fund their fixed-rate mortgages by issuing fixed-rate debt can make that debt *callable*. The debt can be called by the lender when mortgages are prepaid. Investors in callable bonds sell lenders a call option that can be structured so that it closely matches the call option that lenders sell to borrowers. This is the way pre-payment risk is handled in Denmark. The price of a callable bond is given by subtracting the price of the embedded call option (bought by the issuer) from the price of an equivalent non-callable bond. Non-callable bonds have the desirable property from the investor's point of view of positive convexity: the price of the bond goes down proportionally less when interest rates rise than it goes up when rates fall (Fabozzi, 2000). Callable bonds, on the contrary, have the undesirable property of negative convexity, which arises because the bond becomes more likely to be called at a discount to the price of comparable non-callable debt if yields fall. Investors need to be compensated for the option they give issuers, and the negative convexity that it generates, with higher yields than for non-callable debt. Their bonds are more likely to be called when they can only reinvest their capital at lower rates. This extra yield on callable bonds translates into a higher cost of funding for lenders and higher rates to borrowers when fixed-rate mortgages carry no redemption charges.

B. Lenders can make their MBSs have *pass-through characteristics*. This is the common route to hedge pre-payment risk in the US. In pass-through securities, the cash flow of the security depends on the cash flow of the underlying mortgages. The pre-payment risk is thus assumed by investors. The pre-payment option embedded in MBSs is priced in the same way as callable bonds. Investors in pools of securities with a higher probability of being pre-paid because of the characteristics of either the borrowers or the mortgages will need to be compensated for this extra risk.

5.19 Lenders can take on pre-payment risk and hedge it with **swaptions**. Swaptions are, effectively, options to break a swap contract by entering a swap that cancels the original one. They give the buyer the right (but not the obligation) to break the swap when mortgages are prepaid. Lenders can combine the use of swaptions to hedge pre-payment risk with any of the funding routes examined above. They can, for instance, issue non-callable debt and use swaptions to protect themselves from pre-payment risk.

5.20 It is possible to combine the different ways to manage pre-payment risk outlined above. Lenders can charge some penalties at the point of pre-payment combined with the use of swaptions or other derivatives. Lenders can offer limited options to pre-pay, offering the ability to pre-pay at no charge during specific windows. The cost of hedging by taking positions in derivatives could be financed by charging a higher interest rates over the life of the loan or through an up-front fee.

5.21 These combinations of strategies allow lenders to offer borrowers products with varying degrees of flexibility, such as mortgages without pre-payment charges after an initial period, or the option to pre-pay up to a given percentage of the outstanding capital per year, or during pre-determined windows.

### POTENTIAL OBSTACLES TO FUNDING LONGER-TERM FIXED-RATE MORTGAGES

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5.22 Figure 5.1 and table 5.2 illustrated ways in which fixed-rate mortgages could be funded and their risks hedged. Many of those methods are already used. But the scale of longer-term fixed rate lending in the UK is currently very small and some strategies which work adequately at low levels of lending may work less well at greater levels. Whether obstacles exist that make some of the routes illustrated in 5.1 infeasible or too costly is a central question for the Review. It is the issue that is addressed in the rest of this section. It begins by exploring potential obstacles that could arise along the different routes that lenders use to avoid interest rate mismatch (the focus of Figure 5.1). It then goes on to examine potential difficulties with strategies to manage pre-payment risk (the focus of Table 5.2). The effects of regulatory capital adequacy rules and of legislation specific to building societies have a bearing on these issues. They are considered at the end of the section.

#### Issues in using swaps and bonds to avoid interest rate mismatch

5.23 Here we examine two possible hurdles that lenders may encounter when funding fixed-rate mortgages in a way that avoids interest rate mismatch. They are the possible lack of liquidity at the long end of the swaps market and the absence of specific covered bond legislation in the UK.

##### Liquidity in the swaps market

5.24 Data from the Bank of England show that in August 2003 there was £730 billion in outstanding mortgages in the UK. According to the latest triennial survey of derivatives volumes by the Bank of International Settlements (BIS) from June 2001 (BIS, 2001), the notional amount of sterling swaps outstanding at that date was almost five times as big at \$4.8 trillion (£3.5 trillion). Globally 41 per cent of outstanding swaps had a remaining maturity of one year or less, 37 per cent were from one to five years and the remaining 22 per cent were over five years.

5.25 If the profile of maturity in the sterling swap market matches that for the world, the notional amount of sterling swaps outstanding over five years would have been about £785 billion in mid 2001. This is roughly equal to the existing stock of mortgages in the UK.

5.26 For non-pre-payable repayment mortgages, the average life of the cash flows – and therefore the relevant maturity for hedging swap transactions – needs to be adjusted for the amortization of capital. This results in a shorter average life (or duration) than the contractual term of a fixed-rate mortgage. In the absence of pre-payment risk the payment profile is known and could be matched with an amortising swap. But the cash flows are uncertain when the mortgage is pre-payable. In that case, it is necessary to make assumptions about future pre-payment behaviour in order to forecast the expected average life and the relevant swaps maturity for hedging. In the US, for example, 30-year mortgages tend to be priced off ten-year Treasury bonds (or ten-year swap rates which are closely linked to Treasury bond yields) based on amortisation and pre-payment rates. What is likely to be relevant in the UK is the liquidity in the swaps market between five and ten years.

5.27 In the absence of up to date and reliable volumes data, the bid/ask spread at different maturities can shed some light on how liquidity in the sterling swap market changes by maturity. Table 5.3 displays the swap bid/ask spread at different maturities published in the Financial Times on 8 October 2003. It is apparent that spreads increase substantially after ten years, but they are at similar levels to euro and dollar markets up to that maturity. This widening of the spread is consistent with the conventional view that liquidity in UK swaps declines substantially after ten years.<sup>6</sup> Table 5.3 shows that the bid/ask spread does not widen after ten years in the euro or dollar swaps markets, which are more liquid at longer maturities.

**Table 5.3: Swaps bid-ask spread**

	£	€	\$
1 year	3	3	3
5 years	5	3	3
10 years	4	3	4
15 years	9	3	3
20 years	13	3	3
25 years	12	3	3
30 years	14	3	3

*Source: Financial Times, 08/10/03.*

5.28 BIS data from June 2001 show that the euro and dollar swap markets are far bigger than the sterling swap market. Both had similar volumes (\$18 trillion in dollar and \$20 trillion in euro). Each market is more than four times bigger than the sterling market. The sterling market makes up 8 per cent of global swap markets. UK lenders can tap into the more liquid euro and dollar swaps markets to hedge their interest-rate risk at short maturities, using a currency swap for short-term deals. But currency swaps beyond two years' maturity are illiquid and expensive. BIS data show that in 2001 only 3 per cent of outright forwards and one per cent of currency swaps turnover in the UK were for maturities over one year. Globally, the outstanding volume of foreign exchange forwards and swaps at remaining maturities over five years is less than one per cent of the total.

<sup>6</sup>The spread is also affected by the decline in liquidity in long gilts at long maturities.

5.29 The liquidity in any particular market is not fixed. Liquidity is endogenous. An increase in demand for longer-maturity interest rate swaps would, at a price, bring about an increase in supply. In the context of the pricing and funding of longer-term fixed-rate mortgages the key question is who would be the natural receivers of long-dated fixed payments. Pension funds and life insurers have long-dated liabilities and seek matching long-dated assets. Entering into a long-term swap where they receive fixed is a possible way for them to match their assets and liabilities. Receiving fixed could also be appealing to corporate borrowers. Many non-financial companies may find the strategy of issuing long and medium-dated fixed-rate debt and converting this to variable-rate funding through a swap transaction an attractive way of generating long-term lending at variable rates. However, the credit risk on the swaps counterparty rises with the term of the swap. This is one reason why longer-term swaps are less prevalent.

### Lack of specific covered bond legislation

5.30 A natural way in which fixed-rate mortgages can be financed in a way that avoids interest rate risk for lenders is through their issuing fixed-rate debt. In many European countries covered bonds<sup>7</sup>, where fixed-income securities are collateralised by a specific pool of mortgages, are an important source of finance for fixed-rate mortgages. They are the largest category of wholesale funding in Europe, funding 16 per cent of all mortgage loans outstanding at the end of 2001. Although mortgage bonds have been issued in a number of countries across Europe, the great majority has been issued in Germany (41 per cent), Denmark (32 per cent) and Sweden (11 per cent).

5.31 There are two main issues associated with covered bonds that are relevant to the development of long term fixed-rate mortgages in the UK:

- are there obstacles to the development of a liquid and efficient covered bond market in the UK?
- can covered bonds be combined with pre-payment flexibility?

5.32 A covered bond<sup>8</sup> is a bond collateralised by a set of assets (in this case a set of underlying mortgages) which remain on the lender's balance sheet. In most countries there are rules governing the assets that can count as collateral for a covered bond and special procedures that are enshrined in law. The rules ensure that only that part of a mortgage up to a maximum specified loan-to-value ratio can be included as collateral for the covered bond. Thereafter, lenders have to use additional funds to provide higher loan-to-value ratios. Such limits vary across countries. The rules have the advantage that the pools of mortgages are relatively homogenous and investors perceive the bonds as close substitutes for government bonds. The market in Germany and Denmark is highly liquid.

5.33 Appendix 5.1 at the end of this section shows how covered bond rules vary across countries including in terms of:

- limits on issuers of covered bonds;
- assigned supervisor;
- limits on loan-to-value ratios; and
- matching of covered bonds to assets.

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<sup>7</sup> Also commonly referred to as "Pfandbriefe".

<sup>8</sup> Covered bonds can also include Public Sector loans, but these are excluded from our analysis.

5.34 The matching of covered bonds to the underlying mortgage assets is generally done at the aggregate level. This allows the underlying pool of mortgage assets to be dynamic so that the lender can add new qualifying mortgages to the pool to replace loans that repay or no longer qualify.

5.35 Covered bonds are issued for different maturities, with some less than one year and others up to ten years. The most common maturity is between five and seven years. The actual structure of the bonds can vary from simple fixed income bullet bonds, where a fixed income is paid each year, to more complex step-up bonds, callable bonds and other layered structures.

5.36 Most European countries (Germany, France, Spain, Austria, Denmark, Ireland, Finland Luxembourg, and Belgium) have legislation that defines what can be classed as a covered bond. Laws set out how security is enhanced for investors in the case of bankruptcy. In the case of default of the issuer, the assets backing covered bonds are ring-fenced. This enhances the credit of covered bonds.

5.37 There is no specific covered bond legislation in the UK. Nevertheless, HBOS issued the first covered bond in the UK on 27 July 2003, selling 3 billion euros. They have recently offered another tranche as part of a 14 billion euro programme. The structure of this issue relies on the legal underpinnings of UK common law and the enforceability of contracts. While the HBOS issue has been successful, uncertainty remains as to whether a specific legal framework would be advantageous. The uncertainties surrounding some aspects of UK covered bonds could lead to a cost premium if investors believe they are higher risk. The cost to issuers of convincing potential investors that a particular issue was a covered bond *could* be higher in the absence of specific covered bond legislation. Whether this could become a significant factor affecting the cost of longer-term fixed-rate mortgages in the UK is unclear. The way in which the HBOS issue has been received by investors suggests that it will not.

5.38 Where there is a well-established covered bond market pricing is tight. In Germany between 1997 and 2002 Jumbo covered bonds (Jumbo Pfandbriefe, minimum volume 500 million euro) were priced between 20 and 70 basis points over comparable German government bonds (bunds). Jumbo Pfandbriefe yields have followed swap rates closely.

5.39 The HBOS euro issues have traded close to Jumbo Pfandbriefe – yields have been around 10-14 basis points over euro swap rates. However the HBOS issue included a number of safety features, including contractual levels of over-collateralisation that reduced the risk to investors.

5.40 Currently covered bonds in the UK do not qualify for favourable treatment under the 1988 Directive on Undertakings of Collective Investments in Transferable Securities (UCITS), as amended in 2002. Article 22(4) now allows European investment funds to invest up to 25 per cent of their funds in covered bonds that meet the UCITS criteria. Without UCITS recognition, the maximum is 5 per cent. Article 22(4) requires that such bonds need to be recognised in 'law' before a Member State can grant UCITS recognition – it may be that this requirement could be met with an amendment to the FSA's rules, without the passage of primary legislation.

5.41 Covered bonds issued in a number of countries, including Germany, carry a capital risk weighting of 10 per cent. In the UK, covered bonds issued by UK lenders currently carry a risk weighting of 20 per cent or more depending on the structure. The 10 per cent preferential risk weight is not available as the transitional provision set out in Directive 2000/12/EC that allowed this was not taken up by the UK and has now expired. The capital adequacy treatment of these bonds will be reviewed as part of the European Commission's proposed directive on capital adequacy (CAD 3).

5.42 Covered bonds qualify as collateral for monetary policy operations pursued by the European Central Bank and have been classified in the Tier 1 category of securities enabling them to be used by counterparties to the ECB in its liquidity providing operations.

5.43 In Denmark pre-payable long-term fixed-rate mortgages are funded by callable mortgage bonds – a form of covered bonds. Here there is a match between the cash flows on a mortgage and the cash flows to the bond-holder. In other European countries with covered bonds, lenders can change the underlying mortgages used as security, subject to the new assets meeting certain eligibility criteria. In theory this would appear to offer a suitable route for pre-payment. However, if borrowers pre-pay when interest rates fall, the number of loans required to service the interest on the covered bond would increase, substantially increasing the cost of the covered bond to the lender. The inclusion of interest rate derivatives or the inclusion of callable options would therefore appear to be the main routes by which callable bonds could fund pre-payable fixed-rate mortgages.

### Potential obstacles to managing pre-payment risk

5.44 Strategies for managing pre-payment of fixed-rate mortgages were outlined above and summarised in table 5.2. Here potential difficulties with various strategies are analysed. Obstacles to the development of fixed-rate mortgages could stem from difficulties in managing pre-payment risk. Potential obstacles considered below are:

- the enforceability of mark-to-market redemption charges;
- problems stemming from a possible lack of liquidity in the market for fixed income derivatives;
- issues in the accounting treatment of gains and losses on derivatives and the implications of IAS39; and
- limited data on pre-payment.

### Mark-to-market pre-payment charges

5.45 The imposition of pre-payment charges to borrowers who pre-pay is one way in which lenders can help control pre-payment risk. But only mark-to-market penalties fully protect lenders from pre-payment risk. There exist uncertainties about how enforceable mark-to-market charges are in the UK.

5.46 In 1999, a case was brought by the OFT against NatWest under the Unfair Terms in Consumer Contracts Regulations. At that time the OFT was the body in the UK which had the power to deem a term in a contract as unfair. The lender had been calculating their early repayment charges on a mark-to-market basis and borrowers who wished to pre-pay after interest rates had fallen sharply were faced with charges which amounted to tens of thousands of pounds. As a result of the OFT intervention, NatWest imposed caps on the maximum amount of charges payable, clearer explanations were included in the accompanying materials, and hardship cases were reviewed on an individual basis. NatWest agreed not to include the term in new contracts and not to enforce it in existing ones. The central issue in this case was apparently not on the legitimacy of mark-to-market charges per se. Rather it was whether borrowers were able to understand in advance what the scale of charges for early repayment of a loan might be.

5.47 In the wake of its judgement in the NatWest case the OFT conducted its own research into excessive redemption charges in 1999. The press release for that research reads:

“The OFT published research today which suggests that the cash value of early redemption charges on fixed-rate mortgages can be given to borrowers at the start of their mortgages, and that such charges can be tested to determine whether they are excessive”. (OFT, 1999).

5.48 This statement would seem to imply that any mark-to-market charges – where a cash value could not be placed on the early redemption charge – are intrinsically unfair.

5.49 Subsequently, the Consumers’ Association published guidance on how fairness can be achieved in mortgage terms, which was endorsed by the OFT. It states that:

“There should be a justifiable link between the early repayment charge and a lender’s loss that will be obvious to the consumer. Pre-set charges may be preferable because they provide certainty to the consumer.” (Consumers’ Association, 2000)

5.50 There is a clear tension between the aim of the first sentence in this paragraph and the assessment made in the second. A mark-to-market charge on early pre-payment of a fixed-rate mortgage is one that most closely links the early repayment charge and the cost to the lender of pre-payment. Pre-set charges unrelated to unknown future levels of interest rates could not preserve such a tight link. It is hard to see how a link between the charge and cost to the lender of pre-paying the loan can be achieved if the scale of the charge needs to be certain (in advance) to borrowers.

5.51 The guidance continues:

“Some lenders adopt a ‘mark-to-market’ approach to setting charges which attempts to identify the actual loss to the lender at the time of redemption according to prevailing market rates. Such an approach has potential for unfairness particularly if not fully explained to the consumer in plain language and so should be used with care. It should only be offered to consumers who are capable, in full knowledge, of taking on the risks and unpredictability associated with its operation. Lenders should also use a worked example based on the amount of the loan and set a reasonable cap/maximum amount which is based on calculable market expectations and expressed in cash terms. Bearing in mind the complexity of this method of calculation, consumers should be warned to take advice on all the implications and the effect of such an approach in terms of re-mortgaging.

Explanations about charges should be expressed in plain language that takes account of ordinary consumers’ limited understanding of how interest rates and money markets work. The explanations should feature prominently with the other literature relating to the loan and must not be hidden in the ‘small print’.

Consumers should not be expected to work out the charge for themselves. It is preferable to express charges as cash sums”

5.52 FSA regulation of the sales process, to be introduced end October 2004, will require maximum redemption charges to be quoted in cash amounts in the pre-sale disclosure form.<sup>9</sup> In theory, the maximum possible mark-to-market redemption charge will have to be calculated assuming that interest rates go down to zero. Such a theoretical possibility, even if remote, could result in a huge maximum redemption charge that is likely to make the mortgage difficult to sell. Capping the maximum charge in the contract would be a possible solution, but only a partial one. If the cap is not set very high, it would still leave the lenders exposed to substantial risk. This would defeat the purpose of mark-to-market charges. If the cap is high enough to cover practically all the risk, the figure is likely to seem alarming to borrowers who, unaware of the likely distribution of future interest rates, would probably overestimate the probability of having to pay it.

<sup>9</sup> FSA Handbook, MCOB, 5.6.84R(1)(g)

5.53 It is not surprising in the light of the OFT judgements, the Consumers Association guidance and the FSA's forthcoming requirement to show maximum cash penalties *ex ante* that most lenders in the UK do not consider mark-to-market charges feasible.

5.54 This is unfortunate. Mark-to-market charges are designed so that the gain to a borrower from repaying a fixed-rate mortgage early and replacing it with a lower rate loan is matched by the charge for repayment. Households that want to fix the level of payments for a period that might extend beyond the life of a mortgage (for example because they might move house, repay one mortgage but borrow again to finance another house purchase) would *want* mark-to-market charges. The alternative is likely to be a fixed-rate mortgage at a higher rate to compensate lenders for not being able to remove interest rate risk with mark-to-market charges. Mark-to-market charges are also the ones providing banks with the most complete protection from interest-rate risk, making them desirable from a financial stability perspective.

5.55 Many borrowers might prefer options to pre-pay at a cost unrelated to the subsequent level of rates, or at no cost. Ideally a range of options would be available. But it could usefully include mortgages with mark-to-market charges.

5.56 Mark-to-market charges could be symmetric. Then, if borrowers pre-paid their mortgage at a time when interest rates were higher than when loans were taken out they would be compensated with a lump sum equal to the market gain to the lender of breaking the contract. Symmetry in redemption charges would make the issue of whether a fixed-rate mortgage could be ported to a new property when a borrower moves irrelevant. Mortgage portability is more valuable to borrowers with fixed-rate mortgages than to those with variable-rate ones, because it does not force them to take on a new loan if they move house at a time when the interest rate environment is less favourable. But if mortgages had symmetric mark-to-market charges borrowers would be compensated for taking on a new mortgage in less favourable conditions – when interest rates had risen – with exactly the (discounted) amount by which they would be worse off.

5.57 A crucial question is the value that consumers place on flexibility and the ability to pre-pay at no cost. How much would they be willing to pay as a higher interest rate in order to remove pre-payment penalties? The recent rise in flexible mortgages seems to indicate that UK consumers value flexibility in general. But they perhaps over-estimate the likelihood that they will pre-pay. Preliminary results on a version of the Campbell and Cocco (2003) mode of optimal mortgage choice calibrated to the UK economy shows that the value of fixed-rate mortgages to forward-looking borrowers is rather insensitive to changes in the pre-payment charge. The *ex-ante* value of the pre-payment option may not be as high as borrowers believe. The notion that pre-payment charges need to be avoided because “they lock you in” – a proposition that is frequently heard in the UK – is at best somewhat simplistic. Where mortgages are portable or where mark-to-market charges are symmetric, households that want to be certain over the path of nominal repayments and value the ability to lock in at a known cost of borrowing should not seek to avoid mortgages with redemption charges.

### Keeping pre-payment risk and hedging it with swaptions

5.58 Lenders can use derivatives – most obviously swaptions – to hedge pre-payment risks. How feasible that is depends upon the cost of options and the degree of liquidity in the market for long-term swaptions. How movements in the value of options affect reported earnings is also relevant. This section considers these issues.



### Liquidity of swaptions

5.59 Swaptions are less liquid than swaps. BIS data from 2001 show that the notional amounts of swaptions outstanding were slightly more than one sixth of those of swaps, both globally and in the UK market. The proportion of swaptions with maturities over five years is around 25 per cent, similar to that of swaps. The dollar and euro swaptions market are, respectively, seven and four times bigger than the sterling market. There is little publicly available data on bid/ask spreads for swaptions of different maturities, but spreads are likely to be much larger than for swap contracts.

5.60 Swaption prices change with changes in the implied volatility of interest rates, so it is not possible to give a single price for hedging pre-payment risks with swaptions. Estimates that have been presented to the Review vary. Some have estimated that the cost of offering an unlimited pre-payment option for 25-year fixed-rate mortgage might be around 100 basis points on the rate charged on the mortgage. This could go down to 50-60 basis points if mark-to-market payments were imposed during the first three years of a mortgage, or 40-50 basis points if mark-to-market charges were imposed for five years.

5.61 This compares with estimates of the cost of pre-payment option between 45 and 100 basis points for a 30-year fixed-rate mortgage in the US. Most estimates are in the narrower range of 50-75 basis points. In Denmark the cost of a pre-payment option on a 30-year mortgage has been estimated at around 70-85 basis points.

5.62 The cost of hedging with swaptions looks to be somewhat higher in the UK. But liquidity in the market for longer-dated options is endogenous. It is very likely that a deeper market in long maturity swaptions would develop if demand grew.

### International Accounting Standard 39

5.63 A number of lenders consulted by the Review have expressed concern over proposed changes to accounting requirements, to be effected on the adoption of International Accounting Standard 39 (IAS 39). This could affect the attractiveness of using derivatives to manage pre-payment risk. IAS 39 mandates that all financial instruments held for trading, including derivatives, are reported on balance sheet at 'fair value'. In an active market, market price is the best evidence of fair value.<sup>10</sup> Currently most entities report financial instruments at historic cost. The European Commission has proposed that all listed companies in the EU should be subject to IAS in their group accounts by January 2005. The International Accounting Standards Board (IASB) has embarked on a project to revise IAS 39, in order to make it easier to implement. The majority of revisions are expected to be published in early 2004, for this EU deadline. The IASB will continue a long-term project to review the approach to accounting for financial instruments.

5.64 Mortgage lenders and other financial institutions have expressed a variety of concerns with the Standard. Much of the debate over IAS 39 concerns whether, and to what extent, accounting entries should follow contractual or behaviour profiles. The Review's interest is in the proposals for the accounting treatment of fixed-rate pre-payable debt funded by swaps and hedged using swaptions, in particular whether a lender can report fair values for both the derivatives used in hedging positions and the underlying mortgages.

<sup>10</sup> 'Fair value' is defined in IAS32 'Financial Instruments: Disclosure and Presentation' as 'the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction'. In an active market, the market price is the best evidence of the fair value of a financial instrument. But this may not be the case when, for example, there is infrequent activity in a market or an instrument is not traded in an organised financial market. In such circumstances, it may be necessary to use a different basis to estimate fair value e.g. by using a valuation technique.

5.65 There are two separate elements underlying pre-payment activity. One is ‘core’ pre-payment which is driven by mortality, divorce rates etc. and can be expected to be fairly constant in a large mortgage book. The other is interest rate sensitive pre-payment, which depends on the future path of interest rates. Many UK lenders fund their fixed-rate mortgages by adjusting historical pre-payment rates with a central view of future interest rates. Estimated pre-payment behaviour is then incorporated into the terms of the swap. Hedging is limited to this central view of the future. If interest rates evolve in an unexpected way, the profile of cash flows on the swap will no longer match that of the mortgages. The implementation of IAS 39 will, quite correctly, require that as this mismatch arises it is reported in a lender’s profit and loss statement.

5.66 There are a number of UK mortgage lenders that adopt a different hedging methodology. These lenders enter into a swap to hedge the direct interest rate risk, using a central estimate of pre-payment speeds to determine the appropriate swap position. Deviations in prepayment speeds from the central estimate that are driven by unanticipated movements in interest rates are hedged by buying swaptions. This provides a hedge against the risk of unexpected pre-payment, as the swaptions give the buyer the right to enter into a swap offsetting the terms of the original swap. There is concern here that under IAS 39 in some circumstances lenders would not be able to report changes in the fair value of the pre-payment options embedded in mortgage loans against offsetting changes in the fair value of the swaptions.

5.67 IAS 39 makes a distinction between two situations; that in which the economic characteristics of the pre-payment option is deemed ‘closely related’ to the mortgage contract and that in which it is not. Under the latter, pre-payment options are to be separated from the mortgage loan and accounted for at fair value. To the extent that the hedge is effective, that is changes in the value of the pre-payment option are equal and opposite to changes in the value of the swaptions, there will be a zero net effect on reported profit and loss. The Review’s understanding is that where the pre-payment option is considered ‘closely related’, it can also be reported at fair value. IAS 39 permits a company to designate a *portion* of a financial asset as the item that is hedged, provided that the effectiveness of the hedge can be measured. Hence, a mortgage lender could designate the pre-payment option (being a portion of the mortgage loan) as the hedged item. The carrying amount of the mortgage loans can then be adjusted for the change in the fair value of the pre-payment option with this change reported in profit and loss. Again, to the extent that the hedge is effective, there will be zero net effect in reported profit and loss. Therefore to the extent that lenders can accurately value the option to pre-pay a mortgage, IAS 39 need not – at least in principle – bring unwarranted volatility to financial statements. However, it appears that the simplifications proposed in the IASBs exposure draft of July 2003, to allow a portfolio approach to hedge accounting, will not be available for hedging with swaptions. Therefore lenders would have to identify individual hedging relationships between each swaption and the specific mortgage loan that the swaption was hedging. Where large volumes of transactions are involved this could give rise to considerable practical difficulties.

### Lack of data necessary to estimate pre-payment

5.68 In the absence of mark-to-market charges managing pre-payment risk requires estimating pre-payment behaviour. Investors in both pass-through securities and callable bonds need to assess pre-payment rates in order to price the embedded option that they are granting the issuer. When lenders keep the pre-payment risk and hedge it, they need to assess the value and maturity of the positions they need to take in swaps and swaptions.

5.69 Lack of pre-payment information makes hedging pre-payment risk more difficult; it is likely to make pass-through mortgage backed securities less attractive and more expensive as a funding option. More than half of residential mortgages in the US are securitised, the majority of them are long-term, fixed-rate mortgages. US investors in MBS have a great deal of pre-payment data. Investors in Danish callable mortgage bonds also have a large amount of pre-payment data.

5.70 Current fixed-rate mortgages in the UK are usually fixed for a short period only and they tend to carry significant redemption charges. As a result, there is little information on pre-payment behaviour for longer-term fixes where there are low, or no, redemption charges.

5.71 This absence of information on pre-payment behaviour in the UK creates uncertainty for potential investors in securities with an embedded call option; as a result they would want to be compensated. Pre-payment models from countries like the US or Denmark could be used as a starting point for assessing behaviour in the UK, but differences in the housing market, in portability of mortgages and in divorce rates would make them somewhat unreliable. The uncertainty premium that would be required by investors would be passed on to borrowers in higher lending rates, making fixed-rate mortgages with the option to pre-pay without charge initially more expensive.

5.72 There is no easy way to solve this start-up problem; assessment of pre-payment behaviour and hedging of risk will become easier as data accumulates. As it does, prices for certain types of fixed-rate mortgage are likely to fall.

5.73 There may be some scope for gains from lenders pooling the pre-payment information that they have gathered individually from their existing fixed-rate mortgages. Significant pre-payment data on fixed-rate products does exist in the UK. Nearly all of those data are held by lenders. Pooling the existing data could improve the quality of the initial pre-payment models constructed. Different lenders have different amounts of data, and some of them have invested substantial resources in developing their pre-payment models in order to use that extra information when competing with the lenders who have chosen not to do so.

5.74 The problem of lack of pre-payment data is compounded by the fact that there is limited standardisation in the data collected by lenders about borrowers and properties. This is information that helps model pre-payment. Standardised information across securities reduces the time and effort investors need to devote to assess risk, increasing their liquidity. Standardised information can also help smaller players pool their assets to issue securities jointly. This can lead to lower funding costs as the fixed expenses of issuance can be shared. All these efficiency gains can result in mortgages being more attractively priced to borrowers.

5.75 Standardised information may entail some standardisation of underwriting procedures. Lenders could collect similar data for all mortgages and borrowers and still retain their discretion about loan approvals. Many lenders may choose to upgrade their systems in order to benefit from the internal ratings based approach in the second Basle Accord.

5.76 Standardisation of information needs not reduce the range of mortgage products on offer. In the US, standardised information has to be collected for mortgages that conform with the Government-Sponsored Enterprises<sup>11</sup> (GSE) criteria. However, the same standardised forms are used for products not meeting the criteria such as loans over the maximum amount allowed. There is a wide range of products on offer in the US, from mortgages with fixed rates for 30 years to adjustable-rate mortgages with annual and lifetime caps, with all sorts of combinations of the two in hybrid products. In addition, the US point system allows borrowers to choose their own combination of up-front fees and interest rates. Standardisation of the information about mortgages and borrowers does not preclude diversity in the range of mortgages on offer.

5.77 Standardisation of information on individual loans and pooling of information on pre-payment histories could generate gains. The scale of such gains is hard to judge. It need not come at the expense of diversity of products. But whether it will emerge even if the potential size of those gains is large is not obvious. Co-ordination may be needed; trade bodies and rating agencies may have an important role here.

### REGULATORY ISSUES

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5.78 The remainder of this section examines regulatory issues that affect the funding of long-term fixed-rate mortgages. It considers the changes to prudential regulations governing capital adequacy requirements to be brought about principally by the implementation of the new Basle Accord and the legislative limits imposed upon building societies' funding.

#### Capital adequacy requirement for mortgage lending

5.79 To the extent that firms believe that capital is expensive, regulatory requirements to hold capital will influence firms' behaviour. Current capital adequacy requirements for deposit-taking institutions stem largely from the first Basle Accord, agreed in 1988, and its transposition into EU legislation. The existing framework is built around categorisations of banks' capital between 'core' (tier 1) and 'supplementary' (tier 2) capital and risk weights which vary broadly to reflect the relative risk of lending to different classes of counterparties. The Accord sets a minimum capital adequacy ratio of capital to risk weighted credit exposures at 8 per cent (of which core capital must account for at least half).<sup>12</sup> The current risk weight for originators of all residential mortgage lending held on balance sheet, is 50 per cent.

#### The new Basle Accord

5.80 The Basle Committee has been working towards a new Accord since 1999 with the aim of developing a more comprehensive and accurate approach to risk. The third Basle consultation exercise closed on 31 July 2003. The Committee intends to ratify a final version of the new Accord by mid 2004 and this is due to take effect in all G10 countries from 31 December 2006. The European Commission is expected to publish proposals for a new capital adequacy directive in spring 2004. This directive will be the means by which the new Basle Accord will be transposed into EU legislation.

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<sup>11</sup> The largest of which are Fannie Mae and Freddie Mac.

<sup>12</sup> An amendment to the Accord in 1996 introduced additional requirements in respect to market risk (the risk of losses on positions arising from changes in market prices) which are unchanged in the proposed new Accord.

5.81 The Review's particular interest is in considering how well the proposed new arrangements reflect the different risk characteristics of longer-term fixed and variable-rate mortgages. The different risks of various types of mortgage to the borrower, discussed in section 2, are reflected in different credit risks to the lender.

5.82 The minimum requirement of capital to risk weighted exposures remains at 8 per cent in the proposed new Accord. Three options are proposed for firms within the credit risk element of the capital requirements – the Standardised Approach (SA), the Foundation Internal Ratings Based Approach (FIRB), and the Advanced Internal Ratings Based Approach (AIRB). This menu of options is designed to provide capital incentives for better risk management. A stringent set of systems and data requirements have to be met in order for lenders to qualify for the IRB approaches. For retail lending, including residential mortgage lending, there is only one IRB approach available which is an advanced approach. Therefore lenders will only be able to choose between the SA and AIRB approach for retail lending. It is uncertain how many lenders will qualify for the AIRB approach and much depends on systems work undertaken by lenders between now and implementation.

#### The FSA's proposals for implementation in the UK

5.83 Under the Standardised Approach in the proposed new Accord a minimum credit risk weighting for residential mortgage lending held on balance sheet is set at 35 per cent. National supervisors are required to ensure that this risk weight is only applied in accordance with prudential criteria. On this basis, the FSA is currently consulting on a proposal to restrict the use of the 35 per cent risk weight based solely on loan-to-value ratio (LTV) criterion (FSA, 2003b). The FSA is proposing to apply the 35 per cent weight to the proportion of the loan up to 75 per cent LTV and a marginal risk weight of 75 per cent thereafter. They are also considering allowing firms that do not have the systems in place to use this LTV framework, to weight all residential mortgage exposures at 45 per cent.

5.84 Under the Internal Ratings Based approach for residential mortgage lending risk weights are a function of three variables: probability of default (PD), loss given default (LGD), and exposure at default (EAD).<sup>13</sup> Lenders' estimates of each of these are entered into a supervisory formula to calculate the risk weight for the exposure.<sup>14</sup> Risk weights under AIRB will vary considerably across mortgage lenders. Estimates contend that risk weights could go as low as close to 11 per cent (Ischenko and Samuels, 2001). Illustrative estimates given by the Basle Committee show weights for residential mortgage lenders at 21 per cent (Basle Committee, 2003b).

5.85 In estimating the PD of an exposure firms will have to rank borrowers (or pools of borrowers) by their relative likelihood of default, assign a rating grade and then estimate a PD to be applied to that grade. In their consultation paper on the implementation of the new Accord and EU capital adequacy standards, the FSA state that the objective of PD estimation is to 'produce a (forward-looking) estimate of the long-run average of one-year default rates for exposures in each grade.' Historic experience of default is to provide the basis for estimations and, where estimates differ from this, explicit justification will be required. The FSA does accept that in most cases estimates will differ from historic experience.

<sup>13</sup> The minimum LGD is 10%; minimum PD is 0.03%. Note that there is no explicit maturity adjustment for retail risk weight functions.

<sup>14</sup> For the supervisory risk weight function for residential mortgage lending see paragraph 298, Basle Committee (2003a)

5.86 Most, perhaps all, UK mortgage lenders will have little historic data that reflects the different credit risk of longer-term fixed and variable-rate mortgages. The FSA is currently considering whether inputs from other sources – such as data from other markets – could be used to supplement existing data. Where firms can provide sufficient evidence to demonstrate that there is a different risk profile for particular products, different capital treatments will be accepted.

5.87 The implementation of the new capital adequacy regime will also affect the regulatory capital incentives of funding through different routes. Currently mortgage lenders can gain regulatory capital relief from securitisation of prime (high credit quality) residential mortgages.<sup>15</sup> This regulatory capital incentive will largely disappear for lenders that qualify for the IRB approach, as on-balance sheet risk weights more accurately reflect credit risk.<sup>16</sup> The new regime will also alter the risk weightings for investors in MBS and covered bonds to reflect better the risk of those investments. Overall, the current regulatory capital incentives to securitise prime residential mortgage lending will be reduced relative to funding on balance sheet.

### Legislative limits on building societies

5.88 Building societies comprise an important part of the UK mortgage industry, holding approximately 18 per cent of outstanding residential mortgages by value. The essence of mutual organisations is that they are owned by their members.

5.89 The Building Societies Act 1986 places a number of constraints on the activities of building societies. Section 5 (1) of the Act states:

‘A society may be established under this Act if (and only if) it complies with the following requirements, namely

(a) its purpose or principal purpose is that of making loans which are secured on residential property and are funded substantially by its members;’

The Act also sets lending (section 6) and funding (section 7) limits, commonly known as the “nature limits”, which are quantitative criteria which help to determine a society’s compliance with the principal purpose. Section 6 states that no more than 25 per cent of business assets (total assets minus liquidity, fixed assets and long-term insurance funds) can comprise assets other than loans fully secured on residential property. Section 7 specifies that at least 50 per cent of the funds raised by a building society must be in the form of shares in the society held by individuals.<sup>17</sup>

5.90 The Building Societies Association’s submission to the Review argues that these requirements, particularly that in section 7, would place building societies at a disadvantage to other mortgage lenders if there were a substantial increase in longer-term fixed-rate lending, as funding directly from the capital markets is restricted.

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<sup>15</sup> See FSA Handbook, Interim Prudential Sourcebook for Banks, chapter SE for details of the capital adequacy treatment of securitisations.

<sup>16</sup> The introduction of international accounting standard 27 & 39, for some entities from 2005, may mean that some securitised assets that are currently excluded from, or reported net on, the balance sheet will in future be reported gross on the company and/or consolidated balance sheets. The FSA awaits the final draft of IAS 39 before deciding how this will affect its capital adequacy requirements.

<sup>17</sup> Section X, volume I, of the Interim Prudential Sourcebook for Building Societies sets out the FSA’s guidance on interpretation of these sections of the Act.

5.91 It is not necessarily the case that funding longer-term fixed-rate lending from retail deposits and using the swaps and swaptions markets to hedge interest rate and pre-payment risk would be any less efficient than other funding routes. But in the event that securitisation or the issuance of ‘covered bonds’ became the dominant funding vehicle, a society may no longer be considered compliant with the ‘principal purpose’ of a building society, section 5 (1) (a). Section 7 of the Act, however, does not currently restrict securitisation which involves the transfer of ownership rights to a special purpose vehicle (SPV) at arm’s length and the partial de-recognition of the assets in the society’s accounts. Under these circumstances securitised funding does not have to be counted in the calculation of funds raised by the society under section 7 of the Act. As building societies become subject to international accounting standards, gross assets and liabilities may have to be reported in societies’ accounts and, under the current arrangements, the funding limit would be calculated on this basis – i.e. including the non-recourse funding raised through securitisation. Section 6 may act as a marginal constraint on the amount of securitisation, depending on the amount of non-residential mortgage assets held by the society and the extent to which such assets cannot be securitised.

## CONCLUSIONS

5.92 UK lenders have a number of means at their disposal to fund fixed-rate mortgages and to deal with pre-payment risks. But the level of longer-term fixed-rate lending is currently small and therefore the scale of pre-payment risk is limited. Some funding mechanisms that might be effective at very low levels of lending might prove much less attractive if the stock of lending was much larger; other methods to finance long-term fixed-rate mortgages are only likely to become attractive when the level of lending is much larger. In this section we have considered some of the potential obstacles to the use of various mechanisms to fund fixed-rate mortgages. Some of these may prove transitory – absence of pre-payment data for longer-term fixed-rate mortgages would diminish over time as a market developed and liquidity in some markets, for example those for interest rate options and swaptions, is itself dependent upon demand. Other factors are less likely to be transitory. These include the impact of accounting rules, the effects of capital adequacy requirements, the enforceability of types of redemption charges and nature limits on building societies. All these are affected by policy decisions.

## Appendix 5.1

### Covered bond legislation across Europe. Source: European Mortgage Federation

#### General Principles

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
1. Privilege in case of bankruptcy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Currently no but yes in the proposed legislation
2. Special supervision	Independent trustee and banking regulator	Banking regulator	Special supervisor and banking regulator	Regulatory authority at the Federal Ministry of Finance	Banking regulator	Independent trustee and banking regulator	Special supervisor and banking regulator	Banking supervisor	Banking supervisor (and special supervision in the proposed legislation)
3. Matching principle <sup>1</sup>	The cover assets must procure a yield above interest rate paid on the bonds. Currency matching is required between the cover assets and the Pfandbriefe. Maturities of the cover assets may not be shorter than those of the Pfandbriefe. No rules on interest rate risks.	<i>The balance principle restricts:</i> Interest rate risks to 1% of capital. Currency risk to 0.1% of capital. Cash flow deficits of 25% of capital.	Currency matching is required between cover assets and the bonds. No guidelines on either interest rate or maturing mismatching.	The cover assets must procure a yield above the interest rate paid on the issued bonds. Matching currency between bonds/cover assets. Maturities of the cover assets have to be longer than maturities of the bonds. Interest of covered bonds has to be covered by interest of cover assets.	Cash flows on floating rate cédules need to be matched.	The cover assets must procure a yield at least superior to the interest paid on the bonds which they back. Integral cover with regard to principal and interest is required by law. No specification on interest rate risks.	The cover assets must procure a yield at least superior to the interest paid on the bonds which they back. Interest rate risks limited to 10% of Tier 1 capital. Maturity mismatches are addressed through duration limits. Currency matching is required between cover assets and bonds.	No rules	Currently none, but in the proposed legislation, currency matching is required between cover assets and covered bonds. Additional requirement of matching calculated at net present value including derivatives used to hedge interest rate risks. Additional requirement that cover assets must procure a yield above interest rate paid on the bonds.

<sup>1</sup> Sums deriving from the issue of these bonds must be invested in conformity with the law in assets which, during the whole period of validity of the bonds, are capable of covering claims attaching to the bonds.



	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
4. Notification with EU Commission	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Currently no but yes in the proposed legislation

**Cover Principle/Asset quality**

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
5. Eligible assets.	Public sector, residential and commercial mortgage loans.	Residential and commercial mortgage loans.	Public sector loans and residential and commercial mortgage loans MBS.	Public sector loans, residential and commercial mortgage loans.	Public sector, residential and commercial mortgage loans.	Public sector, residential and commercial mortgage loans.	Public sector, residential and commercial mortgage loans.	Public sector, residential and commercial mortgage loans.	Public sector, residential and commercial mortgage loans (max 10% of pool-value in the proposed legislation) and shares in condominiums.

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
6. Treatment of eligible assets	Assets remain on the balance sheet	Assets remain on the balance sheet	Assets with special company but consolidated with mother company	Assets remain on the balance sheet	Assets remain on the balance sheet	Assets remain on the balance sheet	Assets remain on the balance sheet	Assets remain on the balance sheet	Assets remain on the balance sheet

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
7. Maximum loan-to-value ratios	60% on all assets	60% commercial 80% residential loans	60% on most mortgage loans	60%	70% for commercial 80% for residential loans	60% on all mortgage loans	60% on commercial 75% on residential loans	60% on all mortgage loans	Currently none. 60% commercial, 75% residential in the proposed legislation

## 5 Funding and pricing of fixed-rate mortgages

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
8. Restrictions on ancillary activities	Yes	Yes	Yes	Yes	Not relevant	Yes	Yes	Yes	No

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
9. Limit to maximum bond issues	Yes	No	No	No	90% of eligible assets	60 times shareholder equity	50 times shareholder equity	No limit	No

### Bankruptcy/privilege

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
10. Issuers is bankruptcy remote	No	No	No	No	No	Yes	No	No	No

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
11. Substitute assets <sup>2</sup>	Low-risk securities – up to 10% of the cover pool.	Bonds may be secured by securities meeting certain liquidity and credit criteria.	Tier 1 instruments. Up to 20% of the cover pool.	Up to 10%.	Not applicable.	Cash and deposits covered bonds. Up to 20% of cover pool.	Tier 1 instruments. Up to 20% of the cover pools.	Tier 1 instruments. Up to 20% of the cover pools.	Currently NA. Tier 1 instruments. Up to 20% of the cover pool in the proposed legislation.

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
12. Bankruptcy segregation from parent	No	Yes	Yes	No	Not relevant	No	Yes	Yes	Yes

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
13. Mandatory over-collateralisation	The law requires the amount of assets to be at all times above the nominal value of the bonds.	8% of risk-weighted assets.	The law requires the amount of assets to be at all times above the nominal value of the bonds.	Assets have to be above the nominal value of the bonds.	10% of cover assets	The law requires the amount of assets to be at all times above the nominal value of the bonds.	The law requires the amount of assets to be at all times above the nominal value of the bonds.	The law requires the amount of assets to be at all times above the nominal value of the bonds.	In the proposed legislation, the law requires the amount of assets to be at all times above the nominal value of the bonds.

	Germany	Denmark	France	Austria	Spain	Luxemburg	Ireland	Finland	Sweden
14. In case of bankruptcy first claim is on	All assets registered in the pool.	All cover mortgage plus the 8% of over-collateralisation.	All assets listed in the cover pool.	All registered assets.	Recourse against all relevant assets, not just the eligible portion.	All assets registered in the cover pool.	All assets registered in the cover pool.	All assets registered in the cover pool.	In the proposed legislation, all assets registered in the pool (including derivatives) and all cash-flow from assets.
15. Treatment of derivatives <sup>2</sup>	No	No	Yes	No	No	Yes	Yes	Yes	Currently NA. Yes in the proposed legislation.

<sup>2</sup> Do derivative contracts linked to assets of the cover pool benefit from the privilege  
Source: European Mortgage Federation

