

Denmark: Probably the best housing finance system in the world?

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- The Danish housing market appears to have experienced the sort of soft landing looked for in the UK. Personal debt levels have increased but the financial position of households generally does not seem unduly stretched.
- Denmark's strong legal framework for mortgages and close supervision of mortgage banks aims to minimise risk for investors in mortgage bonds. But this has not been at the expense of product innovation.
- The Danish system makes it easy for borrowers to refinance their mortgages. Borrowers with callable fixed rate mortgages have the option to prepay their loan at face value.
- Sharp falls in interest rates over the past few years have triggered substantial remortgaging activity. Adjustable rate mortgages – permitted since 1996 - account for a third of balances outstanding, but their popularity has begun to fall back in line with the expectation that interest rates are close to their cyclical lows.
- Danish borrowers appear to act with a degree of financial sophistication and understanding of mortgage products that is largely absent from the UK.

Introduction

The Chancellor of the Exchequer's decision earlier this year to ask Professor Miles to look at the fixed rate mortgage market in the UK has stimulated interest in the different housing finance systems across the globe (see article UK housing finance ain't fixed so don't break it in the Autumn 2003 issue of Housing Finance).

The US provides an obvious point of reference for the Miles Review. But the particular history of that country has given rise to a system that is now dominated by government sponsored enterprises like Fannie Mae and characterised by a high degree of specialisation and extensive secondary mortgage market activities. When the Miles Review team publishes its interim report this Autumn, it is likely to recognise that it would be neither feasible nor desirable to seek to re-engineer the UK mortgage sector along US lines.

Closer to home, the Danish housing finance system seems to provide something of a role model for the rest of Europe in how to deliver fixed rate mortgages efficiently and in a consumer-friendly manner. As such, it is a much more likely source of inspiration for the Miles Review team. This article describes how the Danish system works and asks if there are any lessons for the UK mortgage sector. We start with a brief overview of the current state of the Danish housing and mortgage markets.

Background

Reflecting international developments, Denmark (like the UK) has seen a slowdown in economic growth over the past year or so, but avoided outright recession.

Denmark has already seen a moderate increase in unemployment although labour market conditions overall remain relatively tight. After a few sluggish years, consumer spending accelerated during 2002 and has been providing important support to overall economic growth. Sound growth in real disposable incomes and the low level of interest rates should sustain growth in consumption for the foreseeable future. Overall growth of around 1½ per cent is expected in 2003.

From the mid-1990s Denmark experienced a property boom. The annual rate of house price growth averaged eight to ten per cent until late 2001, but there has been a considerable slowdown more recently. Price increases in 2003 are only likely to be about two to three per cent, broadly similar to the rate of inflation. With no apparent risk of a pronounced downturn, the housing market appears to have experienced precisely the sort of soft landing looked for in the UK.

Household debt has grown relative to disposable income in recent years. Since 2001, the growth in mortgage debt has outpaced that for other bank loans as home-owners have taken advantage of rising house prices to use some of the equity in their homes to refinance other more expensive loans. Some equity withdrawal has also fed through into higher consumer spending. Despite higher debt levels overall, family income statistics show that for even the most heavily-indebted households interest payments have edged down as a result of lower interest rates. The last few years has seen an increase in the number of late payments and this may signal future difficulties on the part of some households to meet payments. But for the time being, the number of mortgage arrears and enforced property sales remain at very low levels historically.

Danish housing finance system

The Danish mortgage system was established at the end of the 18th century to satisfy the vast

demand for housing finance, which arose after the great fire in Copenhagen in 1795. The basic idea was - and still is – to safeguard investors' interests through investments based on a pool of mortgages rather than on a single mortgage.

Danish mortgage bonds (realkreditobligationer) are supported by an extremely strong legal framework (The Danish Mortgage Credit Act) and close supervision of mortgage banks by the Danish Financial Supervisory Authority to ensure low risk for investors. The Danish mortgage bond market is the second largest in Europe (after the German pfandbrief market), with a total size of €178 billion at the end of 2002.

The legal framework has many elements (LTV limits, valuation rules etc), but the so-called "balance principle" - which virtually eliminates the mortgage lender's funding risk - is the central pillar of the Danish system for mortgage finance. Amended legislation came into force in April 2001. The new legislation gives more room for product innovation, but within a context that limits a wide range of risks.

Key provisions include:

- At least 98% of mortgage bonds must be secured on lending against mortgages or real property
- Maximum interest rate risk relating to mortgage bank's lending and funding of one per cent of the capital base as a result of a one per cent change in interest rates.
- The currency risk of mortgage banks cannot exceed 0.1% of the capital base.
- Mortgage banks must not incur prepayment or index-linked risks in connection with lending and funding.
- Future liquidity deficits may not exceed, with regards to the capital base: 25% years 0-3, 50% years 4-10 and 100% years 11+
- Only derivatives with a maximum four-year maturity can be used to limit counterparty risks.

The interest rate risk provision in effect means that Danish mortgage banks must fund all their lending activities by issuing mortgage bonds and that all such bonds are so-called "pass-throughs" (that is, the principal and interest cash flows from mortgage borrowers very closely match those paid to bond-holders). This, combined with the fact that investors cannot call the mortgage bonds prematurely, protects the mortgage banks from the refinancing risk that other banks, funded partly by short-term retail deposits, face.

Although the traditional long term fixed rate mortgage remains dominant, the Danish mortgage market has seen tremendous product innovation in recent years. A recent European Mortgage Federation report (EMF 2003), commissioned from Mercer Oliver Wyman, concluded that the Danish system offers a particularly wide range of mortgage products. This includes variable rates, capped rates, a full spectrum of fixed rates, euro-denominated loans and equity release mortgages.

The most important product development to date occurred in 1996, since when Danish borrowers have been able to take out adjustable rate mortgages (ARMs) in the form of "interest reset" loans. Table 1 compares the typical features of such products with the traditional long term fixed rate products.

Table 1: Fixed rate and adjustable rate mortgages compared

| | Fixed rate mortgages | Adjustable rate "interest reset" mortgages |
|------------------------|--|---|
| Original maturities | 10, 20 and 30 years | 20 or 30 years |
| Interest type | Fixed rate | Fixed rate Interest rates reset each reset period |
| Interest frequency | Quarterly | Quarterly (borrower) Annually (bond) |
| Interest payment dates | 1 Jan, 1 Apr, 1 Jul and 1 Oct | 1 Jan, 1 Apr, 1 Jul and 1 Oct (borrower) 1 Jan (bond) |
| Prepayment | These can be repaid at face value | Buy mortgage bonds used to fund the loan at prevailing market rate |
| Funded by | Callable mortgage bonds (lender has right to pay off loan to bond holder ahead of maturity date) | Non callable bullet bonds with maturities ranging from 1-11 years (lender pays off loan to bond holder with a single repayment of principal on maturity date) |

Source: Compiled by author from various sources.

Interest reset loans offer considerable flexibility to borrowers, with 19 profiles currently available. A borrower can determine the share of the loan to be refinanced, whether the maturity or the payment is to be variable and the length of the period the interest rate is locked-in for (usually between one and five years). Loans funded by one-year bonds are the most popular, but since 2001 there has been stronger demand for loans funded by bonds with longer maturities, especially three- and five- years. In addition to the "interest reset" mortgages, one of Denmark's mortgage banks, Totalkredit, offers an ARM where the interest rate is fixed twice a year based on the six month CIBOR.

Irrespective of the type of mortgage, the Danish system deliberately makes it easy for borrowers to refinance their mortgages. With callable fixed rate mortgages, the borrower may redeem his mortgage by repaying the loan at par, that is, face value. A short period of prior notice must be

given (normally at least two months before the expiry of one of the quarterly repayment periods on 31 March, 30 June, 30 September or 31 December). This prepayment option is valuable to the borrower and is priced into the market price of the mortgage (and associated mortgage bond that funds it). According to the EMF report referred to earlier, this prepayment option has an equivalent interest rate value of 0.46%.

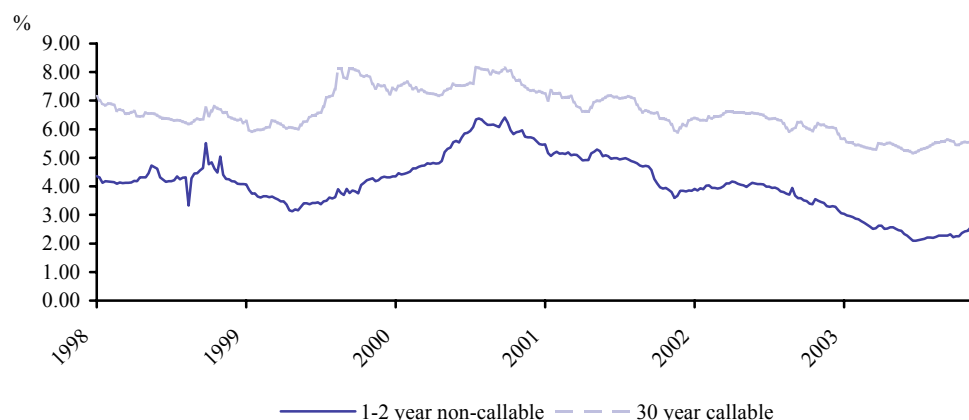
For non-callable mortgages, a borrower can only redeem his/her mortgage by buying and handing over to the mortgage bank bonds of the same type that the lender sold to fund the loan in question. This means the borrower has to purchase mortgage bonds on the Copenhagen Stock Exchange at the prevailing market rate for that bond (this option would also be available to borrowers with callable fixed rate mortgages). These borrowers involvement and understanding of this system contributes to their overall financial awareness of the housing finance system.

Recent experience

The ability of Danish borrowers to prepay their mortgage at any time means that remortgaging plays a big role when interest rates are changing.

As can be seen from Chart 1, Danish interest rates have fallen significantly over the past three years. Interest rates on 30-year mortgage loans have dropped by about three percentage points. Short-term rates have fallen even more, with rates on one and two-year interest reset loans more than 4% lower over the period. These sharp falls in interest rates have triggered substantial remortgaging activity.

Chart 1: Interest rate developments for long and short mortgage bonds

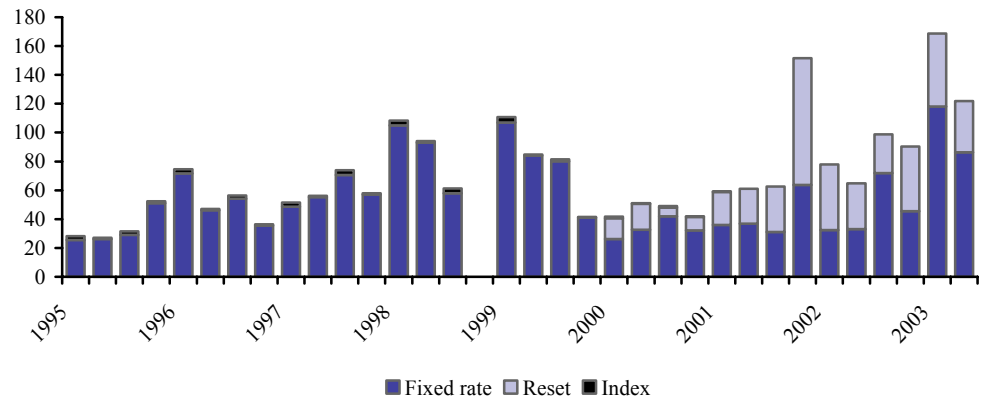


Source: Association of Danish Mortgage Banks

More conservative borrowers, who prefer the security and stability of fixed monthly payments, have simply converted their six per cent and seven per cent bond loans into five per cent loans to lower their mortgage repayments.

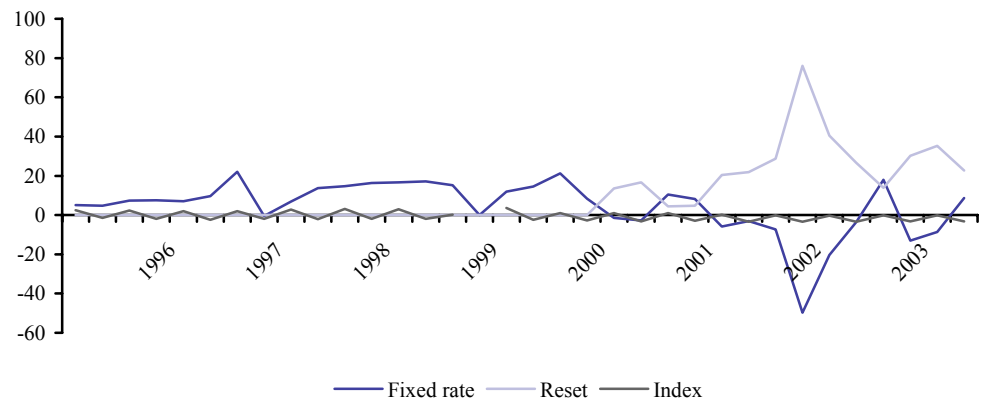
But the prospect of paying sharply lower mortgage payments has encouraged many borrowers to remortgage into interest reset loans, financed through the issuance of short-term non-callable bullet bonds. In many cases, borrowers have opted for or switched into three to five year interest reset loans to lock into low rates for a longer period.

Chart 2: Gross mortgage lending by loan type, DKK billion



Source: The Association of Danish Mortgage Banks

Chart 3: Net mortgage lending by loan type, DKK billion



Source: The Association of Danish Mortgage Banks

As Charts 2 and 3 show, interest reset loans have seriously challenged the dominant position of

callable fixed rate mortgages over the past few years as interest rates have progressively fallen. In 2001, for the first time, more than half of the issued mortgage bonds were non-callable bullet loans. More recently, as the expectation that interest rates are close to their cyclical lows has gained ground, borrowers have started to refinance back into callable fixed interest mortgages and the popularity of interest reset loans has fallen back.

Interest reset loans currently account for about a third of total outstanding mortgage loan volumes. Although the market share of callable fixed rate mortgages has fallen back sharply over the past few years (see Table 2), for the time being they continue to dominate the Danish mortgage market. Denmark remains the largest market for callable mortgage bonds after the US.

Table 2: Danish mortgage bonds in circulation

| | 2000 | 2001 | 2002 | 2000 | 2001 | 2002 |
|--|-----------|-------|-------|---------|------|------|
| | € billion | | | % share | | |
| Fixed rate loans (mainly callable loans) | 121.7 | 113.3 | 111.8 | 81.5 | 70.7 | 64.7 |
| Index bonds | 11.3 | 10.4 | 9.0 | 7.6 | 6.5 | 5.2 |
| Bullet bonds (interest reset loans) | | | | | | |
| :Danish krone | 14.1 | 28.7 | 40.8 | 8.8 | 17.9 | 23.6 |
| : euro | 2.2 | 7.8 | 11.1 | 1.4 | 4.9 | 6.4 |

Source: Danish Mortgage Bonds, Association of Danish Mortgage Banks, Nykredit Markets
Notes: Includes loans secured on residential and commercial properties.

Reflections for UK

As in the UK, recent Danish experience illustrates how quickly households will respond to price signals in a competitive market. Although there are concerns that the cash flow savings from a switch to variable-rate financing has fuelled consumer spending and that some Danish homeowners may be vulnerable to a future increase in interest rates, for the most part Danish borrowers appear to have been relatively cautious compared with their UK counterparts. No doubt somewhat harsher labour market conditions and a less frenetic housing market than the UK's have had a restraining effect on behaviour. But Danish households also appear to have a better understanding of their mortgage products than is the case in the UK. It is a moot point whether this has also led to more measured decisions.

The Danish system of housing finance provides a fascinating case study against which the Miles Review team can assess UK experience and make proposals. Not least because the Danes have shown such enthusiasm for variable rate mortgages over the past few years. It will be

particularly interesting to see whether Miles draws on the Danish model if, as CML expects, he brings forward proposals to raise UK borrowers' awareness of risk.

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