The Banks' Interest Rates

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INTRODUCTION AND SUMMARY

Since 2008, Danmarks Nationalbank has lowered its interest rates on several occasions, but the banks' interest rates have not fallen correspondingly. During 2012, some of the banks' customers have seen the interest rates on their own loans being raised, while reading in the newspapers that Danmarks Nationalbank's interest rates were still falling and the rate of interest on certificates of deposit was negative.

The banks' retail and corporate interest rates roughly fluctuate with Danmarks Nationalbank's interest rates. How closely they are linked varies during a business cycle. In periods of recession, the banks widen their interest-rate margins, i.e. the spread between lending and deposit rates, in response to higher credit risk and to prevent a decline in earnings, while the interest-rate margins are reduced when the economy is booming. This procyclical pattern has also been seen in the current economic downturn, with banks gradually increasing their interest-rate margins since 2008.

Despite higher interest-rate margins, both households and firms are benefitting from the extraordinarily low monetary-policy interest rates at the moment, in that bank lending rates are generally lower than before the financial crisis, and the rates of interest on mortgage loans are historically low.

The bank' earnings must be said to be low at present. This is attributable to large loan impairment charges and falling lending volumes, among other factors, which have contributed to a substantial reduction in bank earnings. This decline has only to some extent been offset by higher interest-rate margins and cost reductions.

In the current recession, the banks' earnings are also squeezed by the low monetary-policy interest rates. The unusually low level of interest rates has made it difficult – if not impossible – for the banks to lower their deposit rates further. As a result, it is no longer possible to "pass on" the reductions in monetary-policy interest rates to depositors. At the same time, the rates of interest on some of the banks' loans are linked to reference interest rates that mirror Danmarks Nationalbank's interest rates closely. The extraordinarily low monetary-policy interest rates mean that the banks' earnings on such loans are reduced.

Finally, the forthcoming Capital Requirements Directive, CRD IV, imposes tougher requirements on the quality and size of the banks' capital and introduces new, harmonised liquidity rules across the EU. The new requirements will entail indirect demands on bank earnings, which must be sufficiently high to build up the required capital buffers. Several international analyses of the consequences of this new regulation indicate that the banks' lending rates will rise in response to the more stringent requirements.

DEVELOPMENT IN INTEREST RATES

As part of the fixed-exchange-rate policy, Danmarks Nationalbank has reduced its monetary-policy interest rates in step with those of the euro area since 2008.[1] Moreover, due to sustained upward pressure on the krone, Danmarks Nationalbank has, on several occasions, unilaterally reduced its monetary-policy interest rates so that they are now lower in Denmark than in the euro area. With the most recent reduction, the rate of interest on certificates of deposit became negative.

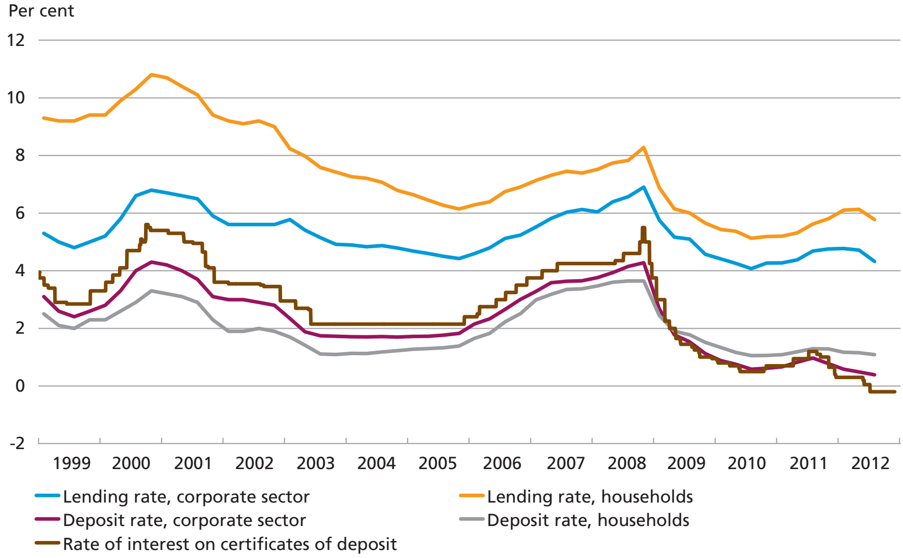
The banks' retail and corporate interest rates usually fluctuate with Danmarks Nationalbank's interest rates, cf. Chart 1. There are two main reasons why this is so. Firstly, most bank deposits and loans bear interest at a variable rate. Secondly, Danmarks Nationalbank's monetary-policy instruments and the short-term money market are potential marginal sources of funding for the individual banks. For the financial sector overall, Danmarks Nationalbank's interest rates are equivalent to the marginal price of liquidity.

However, the link between monetary-policy interest rates and bank interest rates varies over the business cycle. In recent years, bank lending rates have not fallen by as much as the development in monetary-policy interest rates would indicate. Bank deposit rates have to a greater extent mirrored the monetary-policy rates. Consequently, the banks' interest-rate margins – that is, the spread between lending and deposit rates – rose from 2008 until the beginning of 2012. Recently, however, interest-rate margins have narrowed a little. The widening of interest-rate margins is in line with the slowdown in the economy, cf. Chart 2, as the banks overall face higher credit risk on lending in a recession, and earnings fall, cf. below.

[1] Cf. Danmarks Nationalbank (2009).

INTEREST RATE ON CERTIFICATES OF DEPOSIT AND THE BANKS' AVERAGE DEPOSIT AND LENDING RATES

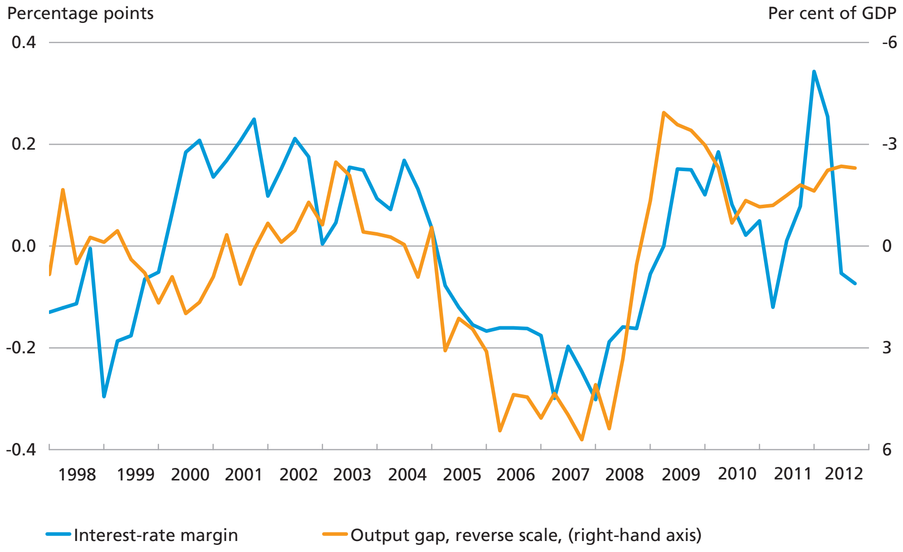
Chart 1



Note: Rate of interest on certificates of deposit on a daily basis, other interest rates on a quarterly basis.
Source: Danmarks Nationalbank.

THE CYCLICAL COMPONENT OF THE INTEREST-RATE MARGIN AND THE OUTPUT GAP

Chart 2



Note: The cyclical component of the interest-rate margin is defined as the deviation from an HP-filtered trend (lambda = 1,600). The interest-rate margin has been falling over time especially for households, one reason being that the banks have changed their price policies. Such structural changes are eliminated by analysing an HP-filtered trend.
Source: Danmarks Nationalbank.

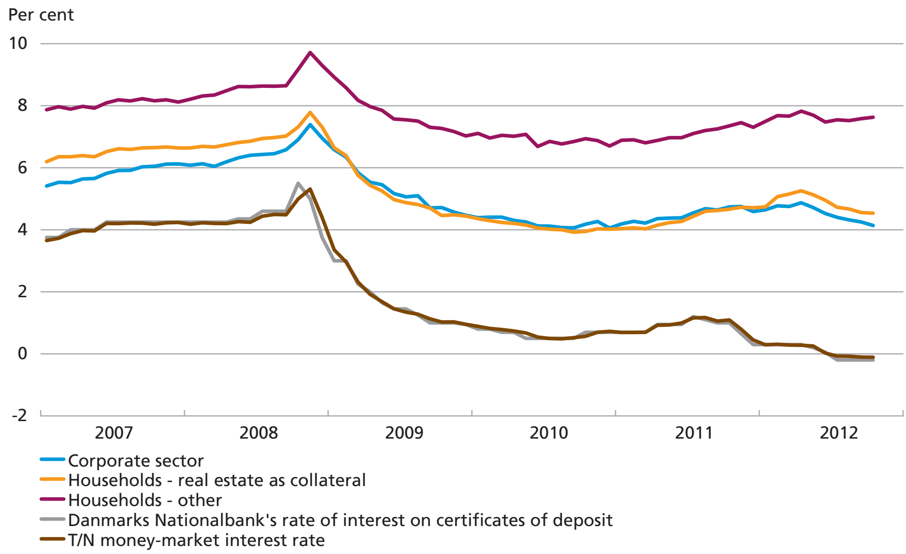
To provide a more detailed picture of the development in bank interest rates, the interest-rate margin can be split into a lending margin and a deposit margin. The lending margin is calculated as the spread between the lending rate and the short-term money-market rate, while the deposit margin is the spread between the short-term money-market rate and the deposit rate. The aggregated interest-rate margin is the sum of the lending and deposit margins.

In normal conditions, both the lending and deposit margins are positive. This is because borrowers pay a higher interest rate than the rate the bank can earn by placing an extra krone in the short-term money market, and depositors receive a lower rate on their accounts than the interest rate at which the bank can borrow in the money market.

The banks' lending rates

While the short-term money-market rate has followed Danmarks Nationalbank's rate of interest on certificates of deposit closely, the link between the banks' lending rates and the rate of interest on certificates of deposit has become less clear in recent years, cf. Chart 3. Hence, from the autumn of 2008 to the end of 2010 bank lending rates did not fall by quite as much as the rate of interest on certificates of deposit.

AVERAGE INTEREST RATES ON OUTSTANDING BANK LOANS, RATE OF INTEREST ON CERTIFICATES OF DEPOSIT AND MONEY-MARKET INTEREST RATE — Chart 3



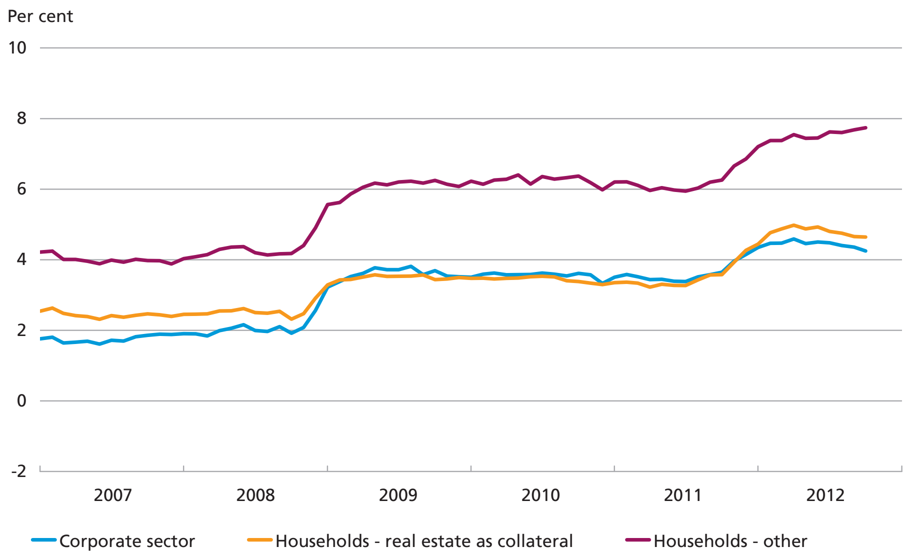
Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc.
Source: Danmarks Nationalbank.

This reduced covariation between bank lending rates and monetary-policy interest rates is clearly reflected in the banks' lending margins, cf. Chart 4. From the end of 2008 to the beginning of 2009, average lending margins thus widened by approximately 2 percentage points. This was not because the banks actively raised their interest rates, but because lending rates were not lowered in step with the monetary-policy interest rates. The lending margins widened by a further 1.5 percentage points or so at the end of 2011, reflecting a combination of falling monetary-policy interest rates and a slight increase in lending rates.

In 2012, a number of banks have announced further interest-rate rises on parts of both their retail and corporate loan portfolios. According to Danmarks Nationalbank's interest-rate statistics, the most recent announcements have only had a weak impact on the average lending rate for households on loans excluding loans for house purchase. As regards housing loans to households and corporate loans, no immediate effect of the announced increases can be seen. The reason could be that many of these loans are directly linked to a reference rate such as Cibor or Danmarks Nationalbank's rate of interest on certificates of deposit. For such loans, a fall in the reference rate will immediately lead to an equivalent fall in the lending rate.

Although the announced interest rate increases are only to a limited extent reflected in Danmarks Nationalbank's interest-rate statistics,

THE BANKS' AVERAGE LENDING MARGINS Chart 4



Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc. The lending margin has been calculated as the spread between the lending rate and the T/N money-market rate.
Source: Danmarks Nationalbank.

there will be customers who will be paying a higher rate of interest on their loans while reading in the newspapers that monetary-policy interest rates have fallen to a historically low level. The increases have mainly affected uncollateralised loans or loans collateralised against other assets than real property. It should be noted that the statistics could be affected by substitution between products. The interest-rate statistics are based on actual interest paid and hence they reflect both changes in interest rates on the various loan types and changes in the distribution of loan types.

In most other countries, real property is typically financed by banks, while mortgage banks have a large share of this market in Denmark. Furthermore, the share of the property that is mortgaged may vary considerably from one country to another. Such differences in financial structures make it difficult to compare interest rates across countries. In an international comparison, Danish banks' interest rates on housing loans may look relatively high, but this is because the banks' collateral often ranks after that of the mortgage banks. Consequently, interest rates are substantially lower on mortgage loans than on bank loans. Overall, interest rates on Danish housing loans are on the low side compared with those in other countries, cf. Box 1.

The banks' deposit rates

As is the case for lending rates, the link between the banks' deposit rates and Danmarks Nationalbank's rate of interest on certificates of deposit has become less clear in recent years, cf. Chart 6. Traditionally bank deposit rates have been lower than Danmarks Nationalbank's rate of interest on certificates of deposit and the short-term money-market rates. Since early 2009 the reverse has applied. The banks' deposit margins have become negative, cf. Chart 7. As a result, the banks can no longer make a profit from attracting further deposits and placing the resultant liquidity in the money market.

The background to the negative deposit margins is that interest rates in 2009 became so low that it became extremely difficult for the banks to lower their deposit rates further, even though monetary-policy interest rates continued to fall. For most ordinary overnight deposits, the rate of interest was already zero or close to zero. Hence it was no longer possible for the banks fully to "pass on" the reductions of the monetary-policy interest rates to their depositors. In a few cases, interest rates on corporate deposits have, however, been negative, primarily for special short-term time deposits, cf. Jørgensen and Risbjerg (2012). At the same time, the deposit margins have been affected by recent years' intensified competition for deposits, particularly on time deposits which can only be

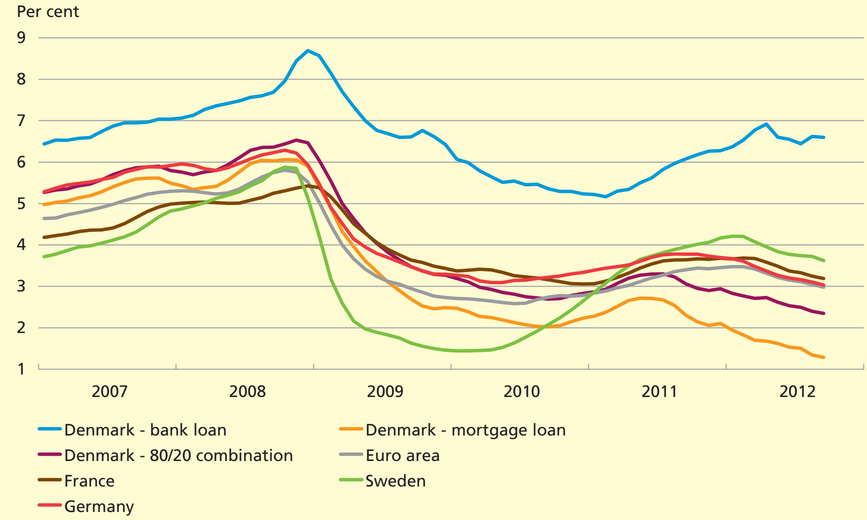
INTERNATIONAL COMPARISON OF LENDING RATES — Box 1

Due to differences in financial structures, international comparisons of bank interest rates are difficult.[1] Especially differences in the underlying collateral for loans, maturity structures and rate fixation periods play a role. Aggregate interest rates may reflect differences in both interest rates and in the weighting of individual subcomponents. So international comparisons should preferably focus on specific combinations of the dimensions that are significant to the comparison.

The vast majority of Danish bank loans having real estate as collateral have short rate fixation periods. Since the mortgage banks' collateral usually ranks first, while the banks' collateral often ranks second, the banks' interest rates are higher than those of the mortgage banks and relatively high compared with levels in other European countries, cf. Chart 5.

The overall short-term interest rate for real estate financed 80 per cent by a loan from a mortgage bank and the remaining 20 per cent by a bank loan, does not differ substantially from the level in other countries. However, the loan-to-value ratio in other countries is normally well below 100 per cent, so in that perspective Danish interest rates are relatively low compared with those observed in other countries.

INTEREST RATES ON NEW HOUSING LOANS WITH SHORT RATE FIXATION PERIODS IN SELECTED COUNTRIES — Chart 5

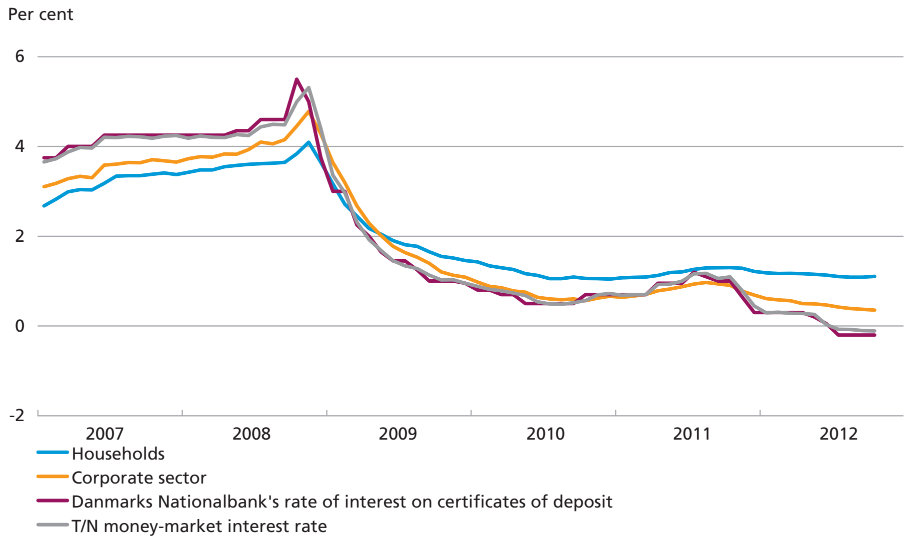


Note: The chart shows interest rates on new loans for housing purposes and with a rate fixation period of up to one year. The rates of interest are shown as 3-month moving averages.
Source: ECB and Danmarks Nationalbank.

[1] In a recent survey, the ECB analysed the development in bank interest rates in selected euro area member states, cf. ECB (2012). Among other things, the survey concluded that different financial structures are a major explanation of cross-border differences in interest rates.

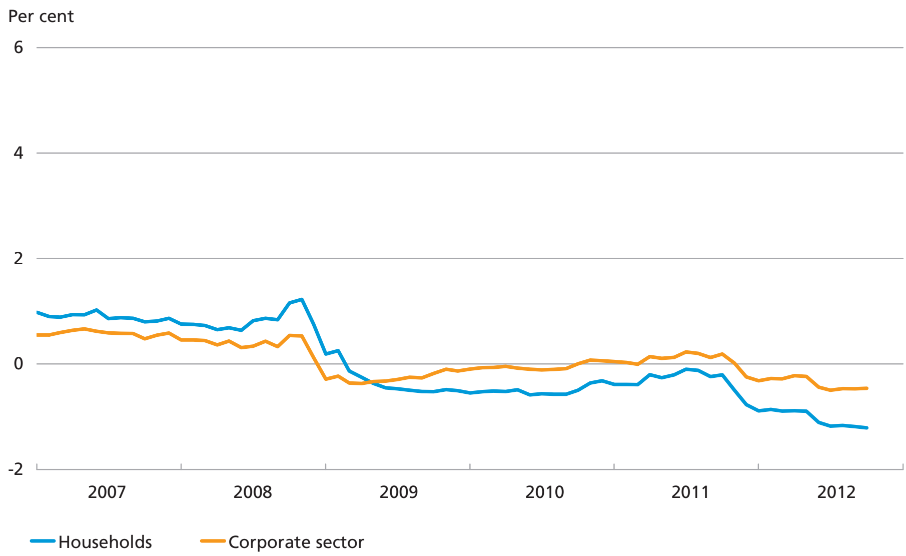
withdrawn at the end of an agreed period of e.g. 1 or 3 years. Today, the rate of interest on time deposits from households with a rate fixation period of more than 2 years is approximately 1.5 per cent. Time deposits account for around 38 per cent of total deposits.

AVERAGE INTEREST RATES ON OUTSTANDING BANK DEPOSITS | Chart 6



Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc.
Source: Danmarks Nationalbank.

THE BANKS' AVERAGE DEPOSIT MARGINS | Chart 7



Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc. The deposit margin has been calculated as the spread between the T/N money-market rate and the deposit rate.
Source: Danmarks Nationalbank.

In Danmarks Nationalbank's interest-rate statistics, the rate of interest on overnight deposits is also affected by deposits linked to bank mortgage loans[1], which push up the average considerably. A survey based on data from April to August 2012 shows that, if bank mortgage loans and similar are excluded, the rate of interest on overnight deposits from households was around 0.3 per cent.

FACTORS AFFECTING THE BANKS' INTEREST-RATE MARGINS

The banks' interest rates are also affected by other factors than the development in monetary-policy interest rates, including credit risk and bank earnings. In the current situation, new liquidity and capital requirements for banks also play a role. Several surveys show that the new rules may lead to higher lending rates.

Higher credit risk

As a natural part of their activities, banks take on a credit risk when providing loans to households and firms. Credit risk is the risk of the bank incurring a loss as a consequence of a borrower's default on its payment obligations. This risk depends on the business cycle, the borrower's creditworthiness and the value of any collateral pledged, e.g. real property.

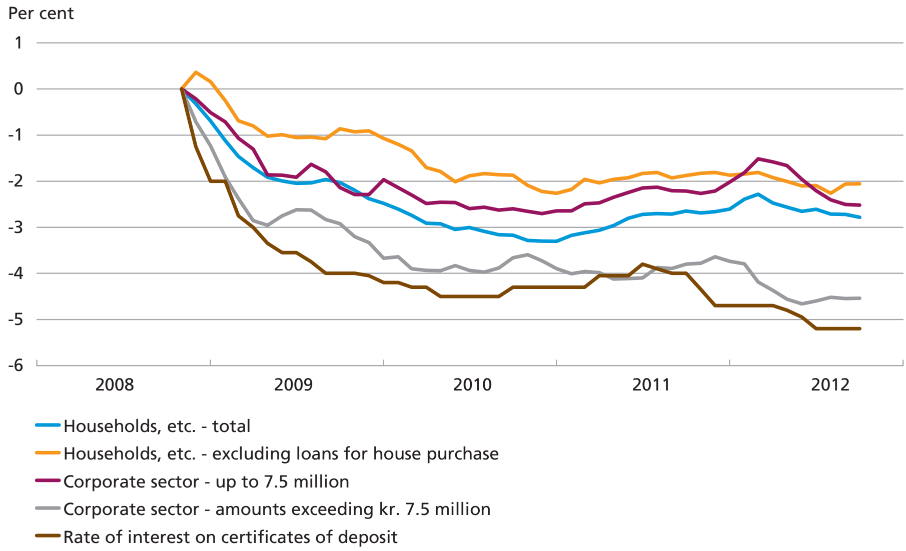
The interest rate on a loan normally reflects the credit risk on the individual borrower or a group of borrowers with the same characteristics as the borrower in question. So part of the lending margin can be seen as a premium for the credit risk taken on by the bank when granting the loan.

Prior to the financial crisis, most banks adopted an optimistic approach to the assessment of credit risk. Unemployment was record low, corporate key ratios good and the collateral pledged increased in value. This optimism meant that credit risk premia were generally low, while the banks' lending growth was high.

Following the outbreak of the financial crisis, the banks have revised their assessments of credit risk on borrowers. One of the main reasons is that the combination of a weak economy and falling collateral values has increased the risk of losses. At the same time, the banks have seen an increasing number of non-performing loans, which have increased their risk awareness. As a result, the banks have tightened their credit

1 These loans are often designed as loans against real property as collateral linked to a deposit account which accrues interest at the same rate as the loan. A recent survey showed that deposits in such accounts make up 13-18 per cent of total overnight deposits.

ACCUMULATED CHANGES IN INTEREST RATES SINCE NOVEMBER 2008 Chart 8



Note: The banks' interest rates are shown as 3-month moving averages of interest rates on new loans. The rate of interest on certificates of deposit as per month-end. Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc.
Source: Danmarks Nationalbank.

policies for both corporate customers and households, cf. Danmarks Nationalbank's quarterly lending surveys.[1]

The banks differentiate their interest rates across customers and product types, and the lending margin may have been increased more for some customer groups than for others. Interest rates on loans with relatively sound collateral show a closer correlation with money-market interest rates than loans with collateral of a poorer quality, cf. Chart 8. The banks' differentiation of prices for corporate loans is reflected in e.g. a lower average interest rate on large corporate loans than on small corporate loans, cf. Box 2.

Squeezed earnings

The banks' earnings have been squeezed since the financial crisis erupted in the autumn of 2008. In the period 1995-2007, the average annual return on the banks' equity was more than 15 per cent before tax. In recent years, it has been less than 2 per cent before tax. There are several reasons for this:

[1] Danmarks Nationalbank's lending survey is based on assessments by credit managers of the largest banks and mortgage banks concerning changes in the supply of and demand for loans, as well as the terms and conditions for loans, in the most recent quarter and expected changes in the coming quarter. The survey was introduced in the 4th quarter of 2008.

- The banks' loan impairment charges are substantially higher than before the crisis. Many of the loan impairment charges still relate to loans granted in the pre-crisis years. Under the current rules, loan impairment charges must be made when there is objective evidence of impairment, and it is not permitted to distribute these charges evenly on "good" and "bad" years. If current earnings do not match the loan impairment charges, the solvency base will be eroded, which could jeopardise the bank. To avoid this scenario, banks may have to raise their prices.
- The banks' funding costs have risen relative to the development in monetary-policy interest rates. This is illustrated by the declining deposit margins, cf. Chart 7, but also by the fact that interest-rate spreads on debt issued by banks are wider than before the crisis. At the same time, the interest rates on some of the banks' lending are linked to interest rates that mirror Danmarks Nationalbank's interest rates closely. Hence, the extraordinarily low monetary-policy interest rates mean that the banks' earnings on such loans are reduced.
- Lending by banks has declined. So the banks' net interest income is reduced not only because of higher funding costs, but also because of a lower lending volume.

All these factors have contributed to squeezing bank earnings and thus help to explain the widening lending margins.

In spite of the increasing interest-rate margins, bank earnings must still be said to be low, cf. Chart 10. Consequently, unless the level of loan impairment charges declines, other measures may be required to increase the return on the banks' equity. Several banks have once again

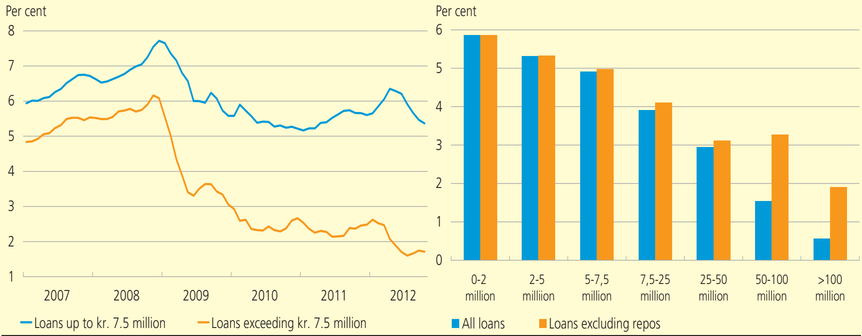
INCREASED PRICE DIFFERENTIATION VIS-À-VIS CORPORATE CUSTOMERS Box 2

The banks' differentiation among customer groups can be illustrated by the breakdown of the interest-rate statistics for new corporate loans above and below kr. 7.5 million.[1] The rate of interest on large loans, which account for the lion's share of the aggregate volume, has declined markedly since late 2008, cf. Chart 9 (left). For the smaller loans, the overall decrease since 2008 has been far less pronounced. The difference in the interest rate level for loans above and below kr. 7.5 million is attributable to factors such as differences in the firms' sizes, collateral pledged and administration costs. Small firms have a higher probability of default than large firms, and hence the credit risk is also greater, other things being equal.

The interest rate spread between large and small corporate loans has widened since 2008. In the autumn of 2012, Danmarks Nationalbank collected further data from banks in order to investigate the reasons for this spread.[2] The survey shows a negative correlation between the rate of interest and the size of the loan, cf. Chart 9 (right).

CONTINUED Box 2

INTEREST RATES ON NEW CORPORATE LOANS, BROKEN DOWN BY LOAN SIZE Chart 9



Note: The rates of interest in the left-hand chart are shown as 3-month moving averages. The right-hand chart is based on data for the period April-August 2012.
Source: Danmarks Nationalbank, interest-rate statistics and a specially collected data set.

Furthermore, the survey shows that a major difference between loans above and below kr. 7.5 million is the underlying collateral. Repos, i.e. loans collateralised by securities, constitute a substantial share of loans exceeding kr. 7.5 million. Due to the collateral pledged for repo loans, the rate of interest is markedly lower for these loans than for other corporate loans. So the rate of interest on other corporate loan types is considerably higher than the average rate for loans exceeding kr. 7.5 million. A conservative estimate based on data from April to August 2012 shows that the rate of interest on loans exceeding kr. 7.5 million exclusive of repos is some 1.0-1.5 percentage points higher than the rate of interest shown in the left-hand chart. Repos now constitute a larger share of the banks' outstanding loans than before the financial crisis. However, it cannot be said with certainty whether this increase is attributable to individual sectors, such as insurance and pension companies, which are not included in the figures for the corporate sector.

Finally, the survey shows a clear link between the size of the loan and the size of the firm. Loans to small and medium-sized enterprises account for most of the volume of loans below kr. 7.5 million.

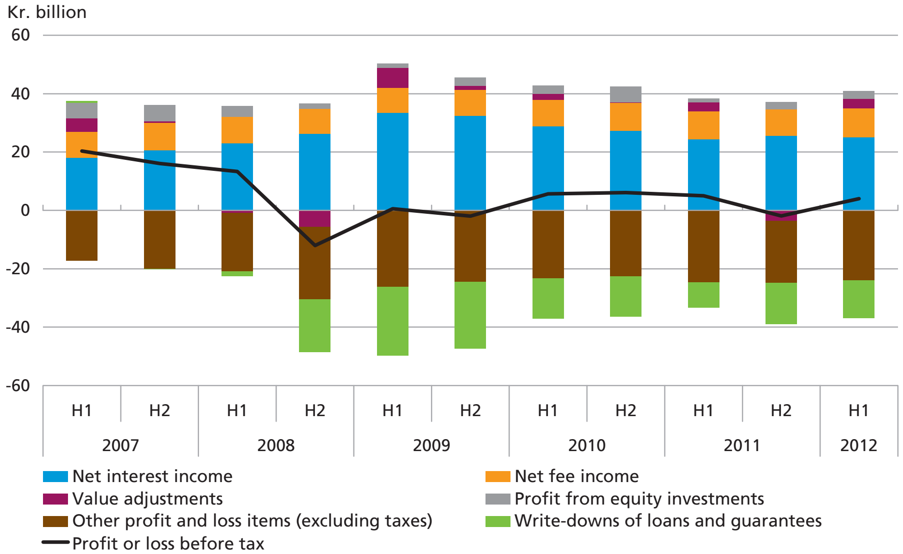
[1] New corporate loans are defined as "any new agreement concluded with non-financial corporations during the reference period". New agreements should be taken to mean: "All financial contracts or agreements on terms and conditions where the rate of interest for a deposit or loan is fixed for the first time (new accounts), as well as existing loans where the terms and conditions have been amended following renegotiation."

[2] Five banks participated in the survey and provided a cross-sectional data set on interest rates on new corporate loans broken down by a large number of loan size categories than in the ordinary interest-rate statistics, for the period April-August 2012. The survey comprises new loans for some kr. 35 billion, corresponding to around half of the aggregate new loans in Danish kroner during that period.

begun to focus on adjusting costs. The number of employees in Danish banks has declined by more than 10 per cent since 2008, and there are plans to reduce staffing further in the coming years.

In *Financial stability* 2012, Danmarks Nationalbank recommended that banks with low excess capital adequacy should seek to strengthen their

THE BANKS' EARNINGS BROKEN DOWN BY MAIN ITEMS — Chart 10



Note: "Profit from equity investments" comprises the profit from equity investments in affiliated and associated companies. "Other profit and loss items" comprises share dividend, other operating income, other operating expenses, staff and administration costs, depreciation and profit/loss from assets temporarily in possession.
Source: Danish Financial Supervisory Authority and own calculations.

earnings.[1] Solid, positive earnings are essential if the banks are to be able to absorb unforeseen loan impairment charges and losses. Earnings can strengthen the capital base directly via retained profits, while also making it easier to raise new capital in the market. For some banks, this is a prerequisite if they are to meet the future capital requirements.

New regulation imposes higher capital requirements

Against the background of the financial crisis, a number of new regulatory initiatives have been launched, both nationally and internationally. All these initiatives are aimed at ensuring a more robust financial system. The international rules will be implemented in Denmark via pan-European sets of rules.

A cornerstone in the future regulation is the forthcoming Capital Requirements Directive, CRD IV, which, among others, imposes higher requirements on the quality and size of the banks' capital and introduces new, harmonised liquidity rules across the EU. These new requirements indirectly imply that bank earnings must be sufficiently high to support the build-up of the necessary capital buffers. At the same time, the requirements of more stable sources of funding may increase the banks' funding costs.

[1] Cf. Danmarks Nationalbank (2012).

On the other hand, a more robust financial system could ultimately reduce the banks' funding costs as investors will require lower risk premia when investing in and lending money to the banks. If the banks become more safe, investors will, all else equal, accept lower returns, irrespective of whether they are investing in debt or equity.

Several international studies have analysed the consequences of this new regulation and the results indicate that the banks' lending rates will rise in response to the tougher requirements.[1] In September 2012, the International Monetary Fund, IMF, published a study in which the long-term effects of the new capital and liquidity requirements were estimated to entail a general increase in interest-rate margins by 17 basis points in Europe.[2] Other international studies show that the impact could be considerably stronger.[3] The analyses take different approaches to assessing the consequences, so caution should be exerted when comparing them.

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1 Cf. Christensen (2011).
2 Cf. Santos et al. (2011).
3 Cf. BIS (2010).