



**FINANSINSPEKTIONEN**

# Bank interest rates and lending

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**NOVEMBER 2012 (Q3 2012)**





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## Summary

Swedish credit institutions have largely already adapted to the forthcoming requirements regarding capital adequacy and access to liquidity. At the same time, lending to Swedish households and non-financial corporations is still growing, albeit at a lower rate. The stricter requirements involve a certain cost, but also help improve stability in the financial system at the same time. In terms of the economy, it is believed that, on the whole, the benefits brought about by the tougher future requirements will outweigh the costs they incur. The banks' mortgage margins continued to increase in the third quarter.

In accordance with the assignment, this report includes an analysis of the banks' adaptation to forthcoming capital and liquidity requirements. It is difficult to isolate the effects of the regulations on lending volumes and interest rates for households and non-financial corporations. This is because the banks may adapt in different ways and make business decisions on grounds other than the regulations alone. Swedish banks have already largely adapted to the forthcoming Swedish and international requirements. Nevertheless, the banks are still lending to households and non-financial corporations. However, the growth rate for lending is declining.

In the report, Finansinspektionen (FI) has made a standard calculation of how lending rates to households and non-financial corporations have increased as a result of the adaptation of the major Swedish banks since 2010. FI's calculations suggest that the forthcoming requirements involve slightly higher costs for the banks. This in turn affects interest rates for households and non-financial corporations. The calculation indicates a moderate increase in lending rates for households and non-financial corporations, even assuming that they bear the entire cost.

Because the Swedish banks are viewed as being well-capitalised and stable, they have access to cheaper funding. More capital should also mean a reduction in the return requirements of shareholders. This partly counteracts the increased costs for households and non-financial corporations ensuing from the forthcoming regulations. Swedish and international studies suggest that the overall net effect on the national economy will be positive and that the stricter requirements on Swedish banks are justified. FI believes that, on the whole, the forthcoming requirements will bring about a more stable financial system which will in turn generate positive effects for the economy.

The gross margin for a newly issued three-month mortgage continued to rise and averaged at 1.30 percentage points in the third quarter. Like before, the increase was due to the funding cost decreasing more than the lending rate did. The net margin, which is the margin after other costs have also been deducted, was 0.59 percentage points in the third quarter. This represents an increase of 0.08 percentage points from the previous quarter. At the same time, it can be noted that in the fourth quarter, the banks have announced interest rate cuts which are not included in the calculation in this report.

## Background

Finansinspektionen (FI) has been assigned by the Government to review how banks and other credit institutions are adapting to increased capital requirements. The review shall include the effects of this adaptation on lending and setting interest rates on loans to households and corporations. The report is published on a quarterly basis.

Since the financial crisis, conditions on the financial market have changed. During the crisis, the Government was obliged to take various measures to reduce risks and avoid major disruptions in the Swedish financial system. For instance, the deposit guarantee was extended, a guarantee programme for the banks' borrowing was created and the Riksbank, together with the Swedish National Debt Office, undertook measures to support liquidity. Since 2008, FI has had the assignment of evaluating the effects of the Government's stability measures and has published regular reports about the effects on interest rates and lending to corporations and households.<sup>1</sup>

The supporting measures for the Swedish banking system have now been wound up, and hence so too FI's review assignment regarding their effects. In order to strengthen financial stability and avoid future financial crises, new international regulations for the banking sector are being prepared (Basel 3). The regulations include higher capital adequacy requirements. Large parts of the regulations will be implemented through a new regulation and a new directive (CRR/CRD 4) currently being negotiated within the EU. Besides these requirements, the Swedish Ministry of Finance, the Riksbank and FI have announced that Sweden will introduce further capital requirements on systemically important banks<sup>2</sup>, and FI has designed quantitative liquidity coverage ratio (LCR) requirements.<sup>3</sup> Although the rules have largely not yet come into force, it is clear that credit institutions in Sweden have already adapted to the forthcoming requirements to a great extent. This is occurring partly because of the new regulations, and partly because their financiers and other market players (such as credit rating agencies) require that credit institutions preserve more capital and better liquidity reserves. The regulations are described in the chapter Stricter requirements for Swedish banks.

Besides adding to the resilience of credit institutions, the new regulations and changed conditions on the financial market also involve a greater cost for them. These costs have to be borne by somebody – either by shareholders or customers. If the costs are borne by shareholders, this occurs in the form of lower return. The new regulations entail that credit institutions must have higher capital buffers and more stable funding, leading to less risky credit institutions. Consequently, this ought to mean that shareholders could accept a lower return on their invested capital.

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1 Click on the following link for FI's reports: <http://www.fi.se/Utredningar/Statistik/Utvardering-av-statliga-stabilitetsatgarder/Tidigare-utvarderingsrapporter/>.

2 See <http://www.fi.se/Folder-EN/Startpage/Press/Press-releases/Listan/New-capital-requirements-for-Swedish-banks/>.

3 See FFFS 2012:6 Regulations regarding requirements for liquidity coverage ratios and reporting of liquid assets and cash flows;

The credit institutions also have the possibility of increasing the prices of their services and lending, thus transferring the costs onto their customers. FI has been assigned by the Government to review how credit institutions' adaptation is affecting the terms for corporations and households.

#### **Assignment in the Letter of Appropriation**

The assignment is to monitor the adaptation of credit institutions to higher capital adequacy requirements, and their effect on Swedish corporations and households. The assignment involves the following:

Reviewing the effects of the credit institutions' adaptation on the issuing of loans to corporations and households, including margins on mortgages.

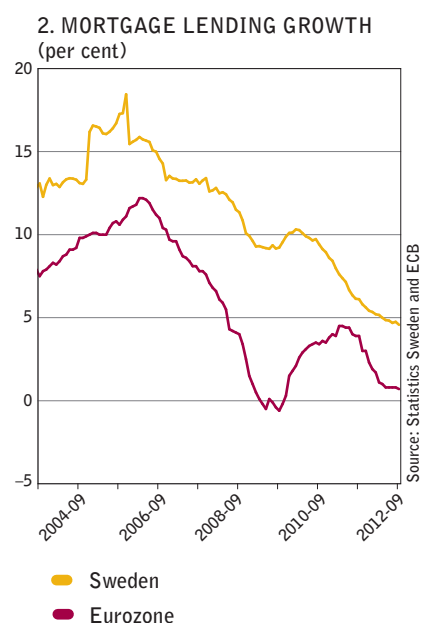
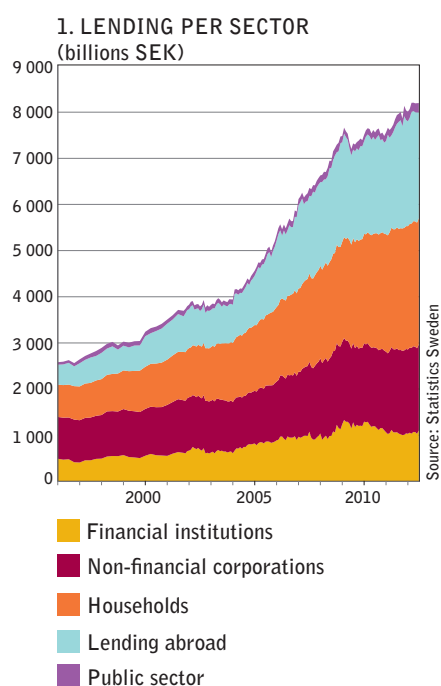
Following the credit institutions' interest rates and also placing the interest rate in relation to the institutions' borrowing costs at different maturities.

Including in one of the reports an analysis of how and to what extent the credit institutions adapted to the increased capital adequacy requirements prior to 2012 and the effects this has had on corporations and households.

The assignment shall be reported on a quarterly basis for 2012. In this third report, FI describes the trend for lending to households and non-financial corporations during the quarter. In addition, the report addresses in particular the forthcoming regulations and their potential effects on households, corporations and the national economy in two new chapters. FI presents, just as in previous reports, its calculation of the gross margin and net margin for mortgages.

## Lending, deposits and interest rates

Lending to non-financial corporations is still on the rise, but the annual growth rate continued to decline in the third quarter and is currently at 2.8 per cent. However, it is much higher than lending growth in the eurozone, which is negative. Lending to Swedish households continued to rise in the third quarter, but at a lower rate. On an annual basis, mortgage lending grew 4.6 per cent at the end of the third quarter of 2012. The lending rate to households for new mortgages fell in the third quarter for all maturities. The banks' funding rate, that is the covered bond rate, also declined in the quarter.



### LENDING TO HOUSEHOLDS AND CORPORATIONS

Lending to Swedish non-financial corporations and households corresponds to around 130 per cent of Swedish GDP. The total lending of Swedish credit institutions consists of around one third in lending to households, and around one quarter in lending to non-financial corporations (chart 1). In relation to total lending, lending to households and abroad has increased in the last 15 years, while other sectors have declined or been constant.

Out of total lending to households, the largest part consists of mortgages<sup>4</sup> and amounted to SEK 2,194 billion at the end of the third quarter<sup>5</sup>. Mortgage lending is still on the rise, but at a lower rate than before. The mortgage lending growth rate was 4.6 per cent in the third quarter. This is the lowest growth rate since 2002, which is as far back as comparable statistics are available. In the eurozone too, mortgage lending is on the rise, but lending growth was close to zero at the end of the third quarter (chart 2).

At the end of the third quarter of 2012, outstanding loans of Swedish credit institutions to Swedish non-financial corporations amounted to SEK 1,866 billion<sup>6</sup>. The annual growth rate in lending to Swedish non-financial corporations decreased from 3.9 per cent in the preceding quarter to 2.8 per cent in the third quarter, but remains positive. This can be compared to lending to non-financial corporations in the eurozone, which has been declining since June this year (chart 3). In its latest lending survey directed at banks, the ECB writes that the reduced lending to non-financial corporations is chiefly due to lower demand for loans. Demand is also expected to decline in the fourth quarter<sup>7</sup>.

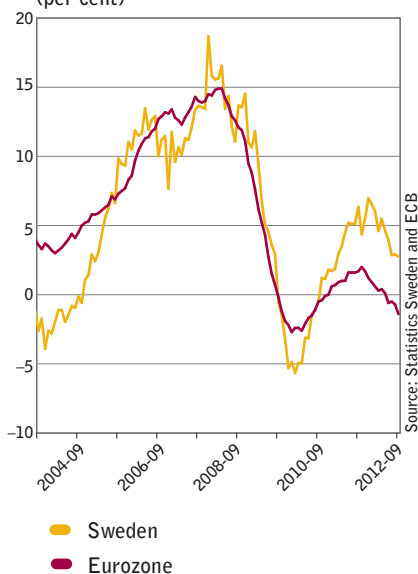
4 Households also have indirect mortgages in the form of loans to tenant-owner associations. These are included in the statistics for loans to non-financial corporations.

5 All deposit and lending volumes and deposit and lending rates in this section were obtained from Statistics Sweden, Financial Market Statistics, 25/10/2012. They relate to lending from Monetary Financial Institutions (MFI) which include banks, housing credit institutions, financing companies and other MFIs (municipal and corporate funding institutions, monetary investment funds, monetary investment firms and brokerages and other monetary financial institutions).

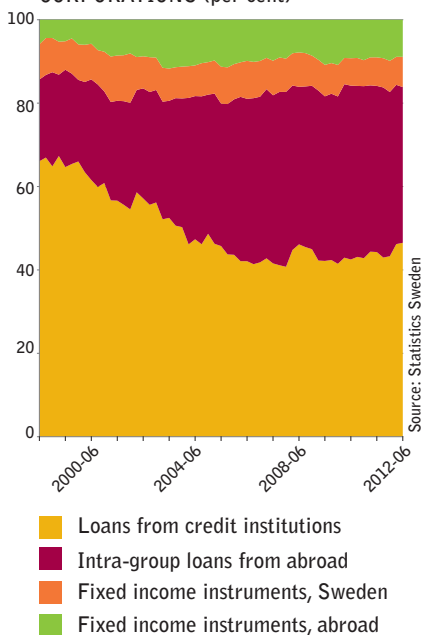
6 A large part of this lending is associated in some way with the real estate sector.

7 See ECB Bank Lending Survey, October 2012, European Central Bank.

### 3. LENDING GROWTH NON-FINANCIAL CORPORATIONS (per cent)



### 4. FUNDING, NON-FINANCIAL CORPORATIONS (per cent)



## CORPORATIONS' OTHER FUNDING

Non-financial corporations can obtain funding for their operations in different ways. They can use equity and internal means on the one hand, and different types of loan financing on the other. Loan financing refers here to borrowing from Swedish and foreign credit institutions, intra-group loans and borrowing through issuing corporate bonds and commercial papers. Just under half of the loan financing of Swedish non-financial corporations consists of loans from credit institutions (chart 4)<sup>8</sup>. Corporations also obtain funding through commercial loans<sup>9</sup>.

### Fixed income instruments

Fixed income instruments account for around 16 per cent of the total financing of non-financial corporations (see chart 4). The majority of the securities financing of non-financial corporations comprises bonds, i.e. securities with a maturity exceeding a year. Almost 40 per cent of the outstanding stock of corporate bonds is issued in Swedish kronor today.

Bond issues are associated with extensive administrative costs. It is therefore primarily large and medium-sized corporations which have the possibility of using the securities market as a financing source. A bond market issue usually amounts to around SEK 200–500 million. Investors attach great importance to credit ratings, which are determined by a credit rating agency. It costs a corporation around SEK 2 million annually to obtain credit ratings from a credit rating agency<sup>10</sup>.

In Sweden there are just over 70 corporations, municipalities and financial institutions which issue corporate bonds to finance parts of their operations. Most of these are large, global corporations and some have ties with the public sector<sup>11</sup>. The five largest issuers account for over half of the issues.

A growing number of corporations state that they seek market financing as an alternative to bank loans and other financing<sup>12</sup>. This is visible in the fact that the number of issuers has increased, and a greater spread in creditworthiness has come about. However, market financing continues to constitute as large a share of non-financial corporations' total financing.

### Intra-group loans

Foreign intra-group loans constitute an increasingly large share of Swedish corporations' financing. From having amounted to around one fifth of financing at the end of the 1990s, intra-group loans now account for a share around twice as large of the total financing of Swedish non-financial corporations. At the same time, direct borrowing from Swedish and foreign credit institutions has decreased as a share of total financing (chart 4).

The fact that corporations that form part of groups choose to obtain financing through intra-group borrowing chiefly illustrates a change in the financing models of corporations. A study by the Riksbank shows

8 Out of total lending to Swedish non-financial corporations, around 8 per cent consists of so-called syndicated loans, a loan offered by a group of lenders who work together in order to share the risk.

9 Commercial loans consist of accounts receivable and accounts payable.

10 See Gunnarsdottir and Lindh (2011), Markets for Swedish non-financial corporations' loan-based financing, "Economic Review 2011:2", the Riksbank.

11 Many of the corporations are or have been state-owned in whole or in part, e.g. Vattenfall and TeliaSonera.

12 The Riksbank's company interviews, January 2012 and May 2012.

that intra-group borrowing can constitute a tax-planning means for corporations. The increased intra-group borrowing can also be due to a higher share of foreign direct investments in Sweden, or the fact that groups with many subsidiaries use a central account in Sweden to manage cash liquidity in the group<sup>13</sup>. This means that all transfers of liquidity from the group's foreign subsidiaries to the Swedish parent company leads to an increase of the group's total liability to abroad.

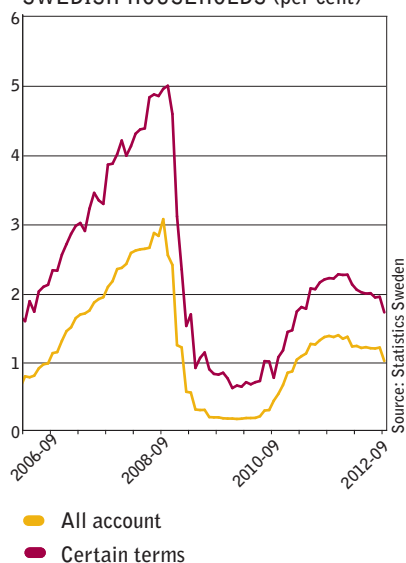
## DEPOSITS FROM HOUSEHOLDS AND CORPORATIONS

In relation to households in other European countries, Swedish households have a low level of savings in the form of bank deposits, because many of them save in funds and other savings solutions instead. At the end of the third quarter of 2012, deposits from households at Swedish credit institutions amounted to SEK 1,282 billion. This corresponds to 47 per cent of lending to Swedish households. The bank must cover the so-called deposit deficit by obtaining funding on the capital market. Deposits are currently growing faster than lending. The annual growth rate for deposits from households decreased slightly from the second quarter, amounting to 10 per cent at the end of the third quarter.

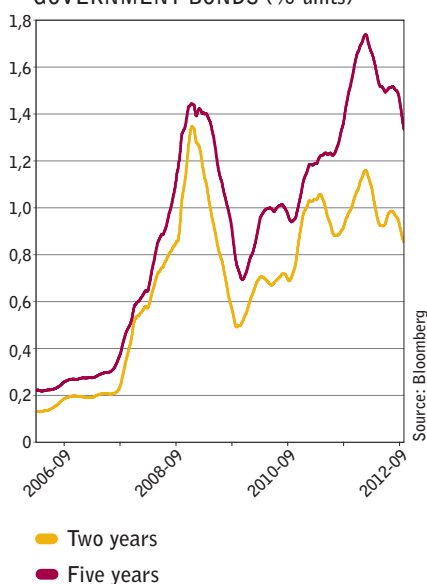
The deposits of Swedish non-financial corporations at Swedish credit institutions amounted to SEK 652 billion at the end of the third quarter this year, corresponding to around 35 per cent of lending to non-financial corporations<sup>14</sup>. The annual growth rate for deposits from non-financial corporations increased by just over one percentage point from the previous quarter and amounted to 4.4 per cent at the end of the third quarter.

Deposit rates for households continued to decline in the third quarter. The average deposit rate for new deposit agreements for households was 1 per cent at the end of the third quarter<sup>15</sup>. For deposit accounts with special terms, such as restrictions on withdrawals, the interest rate was slightly higher, amounting to 1.71 per cent on average (see chart 5).

5. DEPOSIT RATES FOR SWEDISH HOUSEHOLDS (per cent)



6. SPREAD COVERED AND GOVERNMENT BONDS (%-units)



## MARKET AND LENDING RATES

In the third quarter, the Riksbank cut the repo rate by 0.25 percentage points to 1.25 per cent. The difference between the repo rate and the interbank rate (the rate at which banks borrow from each other) with a three-month maturity has decreased sharply in 2012. From having been just shy of 0.8 percentage points at the beginning of the year, the difference at the end of the third quarter was around 0.34 percentage points.

The covered bond rate continued to decline in the third quarter. The dif-

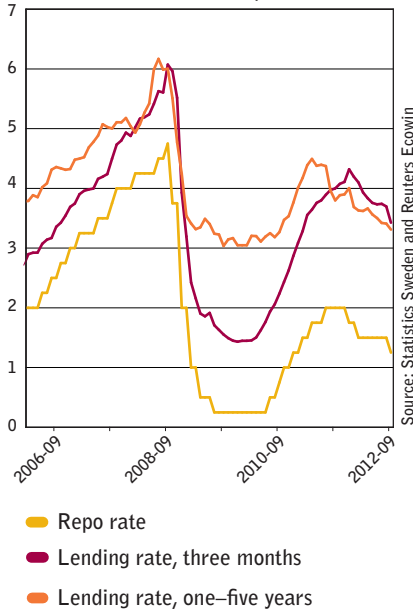
<sup>13</sup> See Blomberg, Hokkanen and Kåhre (2012), Tax planning may have contributed to high indebtedness among Swedish companies, "Economic Commentaries no. 3", 2012, the Riksbank.

<sup>14</sup> The report Bank interest rates and lending from 24 May 2012 stated that Swedish non-financial corporations' deposits at Swedish credit institutions amounted to SEK 2,251 billion at the end of the second quarter of this year. This figure corresponds to deposits from non-monetary financial institutions and not non-financial corporations. The correct figure is SEK 635 billion.

<sup>15</sup> The term 'total deposit accounts' includes transaction accounts and deposits associated with certain terms. These terms can include a limitation on the number of withdrawals or a certain fixed term. New agreements means, on the one hand, new deposits and, on the other, deposits with terms and conditions that were amended during the period. All included accounts are covered by the deposit guarantee.



7. MORTGAGE RATES (per cent)



ference between the covered bond rate and the Swedish government bond rate has decreased in 2012 (see chart 6). The fact that the spread between so-called risk-free rates, such as the government bond rate, and rates containing credit and liquidity risks<sup>16</sup> is decreasing might be an indication of less distress in the financial system.

The three-month mortgage rate dropped to 3.43 per cent at the end of the third quarter compared with 3.73 per cent at the end of the second quarter (chart 7)<sup>17</sup>. The rate on mortgages with a one- to five-year fixed interest term was 3.31 per cent at the end of the quarter, and has been below the three-month rate for a year.

The average three-month rate on new loans to non-financial corporations was 3.17 per cent at the end of the third quarter. It follows a similar trend as the three-month rate for households (chart 8).

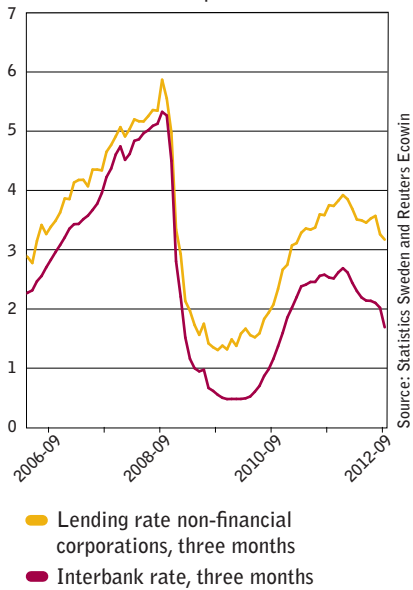
NET INTEREST INCOME

The banks' net interest income is the difference between its interest income and interest expenses. In other words, the difference between what the bank earns on its interest-bearing assets (e.g. mortgage lending) and what it pays for its interest-bearing liabilities (deposits and borrowing).

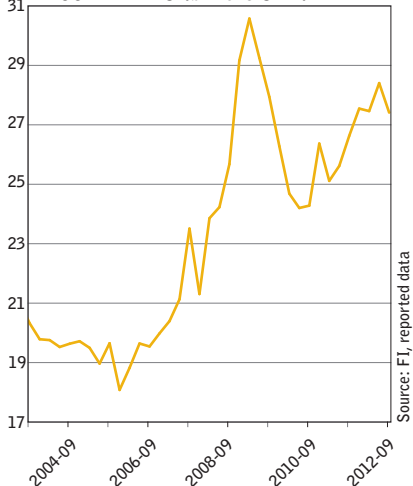
A positive deposit margin entails the banks paying less interest to their customers than what they earn on investing in the market. Similarly, the lending margin is positive if the bank can lend money at a higher rate than the rate at which it borrows. The higher the margins, the greater the net interest income. When interest rates are low, the importance of the deposit margin decreases because the rate will not fall below zero on deposit accounts.

Total net interest income of the major Swedish banks amounted to SEK 27 billion in the third quarter this year. Since the end of the third quarter of 2003, the major banks' aggregate net interest income has increased by 35 per cent (chart 9). The increase is due to both higher margins and greater volumes of interest-bearing liabilities and assets.

8. INTEREST RATE, NON-FINANCIAL CORPORATIONS (per cent)



9. TOTAL NET INCOME OF FOUR MAJOR BANKS (billions SEK)



16 Examples of rates with credit and liquidity risk are loans to corporations and households, but also rates on covered bonds with mortgages as the underlying asset.

17 The average actual rate, and not the rate announced by banks on their web sites, for example.

## Stricter requirements for Swedish banks

New requirements for the banks' capital adequacy and access to liquidity are approaching in the EU and globally. Sweden aims to introduce the requirements at a faster pace than the EU with stricter requirements on systemically important banks. Swedish banks have already largely adapted to the new requirements. Also, FI presents its view on risk weights for mortgages at the same time as this report.

In order to strengthen financial stability and avoid future financial crises, new regulations for the banking sector are being introduced in the EU. The regulations include higher capital adequacy requirements. The Swedish Ministry of Finance, the Riksbank and FI are of the opinion that, in order to safeguard the stability of the Swedish financial system, Sweden needs to go further than the Basel Committee's<sup>18</sup> agreement from 2010<sup>19</sup> and the EU Commission's proposal for a new regulation regarding capital adequacy and liquidity<sup>20</sup>. FI has also decided on a new liquidity coverage ratio regulation to enter into force on 1 January 2013<sup>21</sup>. In this respect, Sweden is ahead the EU in terms of drawing up and introducing quantitative requirements for Swedish banks. Concurrently with this report, FI presents its view of the minimum amount of capital the banks should preserve for their mortgage lending. This chapter explains the background and content of the planned regulations.

### CAPITAL ADEQUACY REGULATIONS

Compared with non-financial corporations, the balance sheets of banks consist of a relatively small share of equity, which has also decreased over time. The purpose of equity is for the banks to be able to absorb losses. One of the lessons from the financial crisis is that stricter requirements on banks' capital are needed. The Basel Committee has therefore issued a new framework, the Basel 3, which includes higher capital adequacy requirements.

#### What do the new capital adequacy rules involve?

The new capital adequacy rules are planned for introduction for Swedish banks as of 2013. In the EU, the introduction of the Basel Committee's proposal is occurring through a new capital adequacy regulation and a new directive (CRR and CRD4)<sup>22</sup>.

In the proposal for CRR/CRD which has been presented by the EU Commission, it is required that banks, in somewhat simplified terms,

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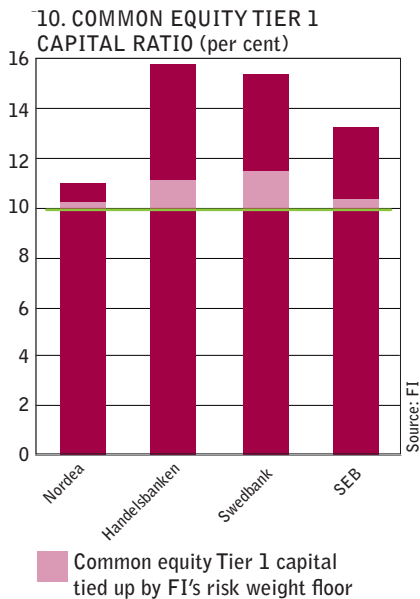
18 The Basel Committee on Banking Supervision operates under the Bank for International Settlements (BIS), and develops, for instance, standards for regulation and supervision of banks. The Basel Committee's proposal consists of recommendations that must be implemented at a national level to be binding regulation.

19 To read more about the Basel Committee agreement: <http://www.bis.org/publ/bcbs189.htm>.

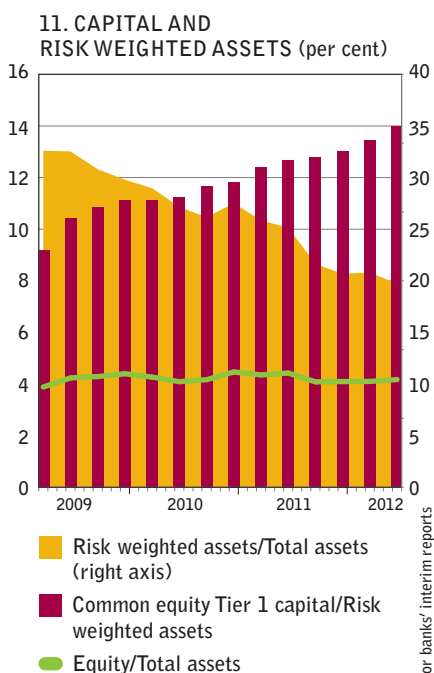
20 See <http://www.fi.se/Press/Pressmeddelanden/Listan/Nya-kapitalkrav-pa-svenska-banker/>.

21 See FFFS 2012:6 Regulations regarding requirements for liquidity coverage ratios and reporting of liquid assets and cash flows.

22 Capital Requirements Regulation (CRR) and Capital Requirements Directive 4 (CRD).



Note. Common equity Tier 1 ratios for the four largest banks in Sweden including estimated effects of Basel 3 and IAS19 (reductions from current common equity Tier 1 ratios).



shall have at least 7 per cent in common equity Tier 1 capital<sup>23</sup> from 2019. However, in November 2011, FI, the Ministry of Finance and the Riksbank agreed to advocate that this requirement shall apply in Sweden beforehand in 2013. The Swedish authorities also advocate that the four major Swedish bank groups Handelsbanken, Nordea, SEB and Swedbank shall meet a higher level of requirements. The proposed level is that their common equity Tier 1 capital should amount to at least 10 per cent of their risk-weighted assets from 2013 and 12 per cent from 2015. All the major Swedish bank groups already meet the forthcoming 10 per cent requirement today (chart 10).

There are several strong reasons for placing stringent requirements on the major Swedish banks. The major Swedish banks obtain a great extent of their funding by borrowing on international capital markets, which makes them sensitive to disruptions on these markets. The banks are also very large compared to the Swedish economy. If one or several of the major Swedish banks needed a bailout, this would involve tremendous costs for society and tax payers. The markets have also learned from history and often presuppose that the government would step in to bail out major banks. The perception of an implicit guarantee from the Government means that the major banks can obtain funding more cheaply than would otherwise have been the case, and take greater risks.

The major Swedish banks have gradually strengthened their capital adequacy. Three out of four major banks raised new capital through issues during the acute phase of the financial crisis in 2009. Risk-weighted assets have subsequently decreased, due both to the fact that risk weights on existing assets have decreased, and because the banks have shifted their operations to less risky assets (chart 11).

#### FI's view on risk weights for Swedish mortgages

The capital adequacy regulations provide scope for banks to calculate the risk weight themselves for credit exposures using internal models (the internal ratings-based approach – IRB), which is based on historical credit loss data. All major players on the Swedish mortgage market use such internal models for calculating the risks in their credits.

The long history of low or non-existent credit losses on mortgages, particularly in Sweden and the Nordic region, led to risk weights for mortgage lending being very low – among the lowest in Europe – when IRB was introduced. Many of the biggest players have average risk weights down at around 5 per cent for mortgages today. In Basel 1, the regulations applicable until 2007, risk weights of 50 per cent were used. In the current standardised approach, which is an alternative to IRB, 35 per cent is used.

FI has, following a review of the Swedish housing and mortgage market, the limitations of the IRB approach and an overall assessment of the risk level in Swedish mortgages, assessed that the capital need for Swedish mortgages equals at a minimum an average risk weight of 15 per cent<sup>24</sup>. The legal prerequisites mean that the insufficient capitalisation, calculated using risk weights according to the IRB approach, is best addressed as part of FI's overall capital assessment, the so-called Pillar 2. FI is of

23 The definition of common equity Tier 1 capital is what non-financial corporations call equity, i.e. share capital, restricted reserves, profit for the year, profit brought forward, etc.

24 See FI's memorandum Risk weight floor for Swedish mortgages, published 26 November 2012.

the opinion that, to a great extent, the banks have already taken account of the capital levels brought about by the measure in their capital planning.

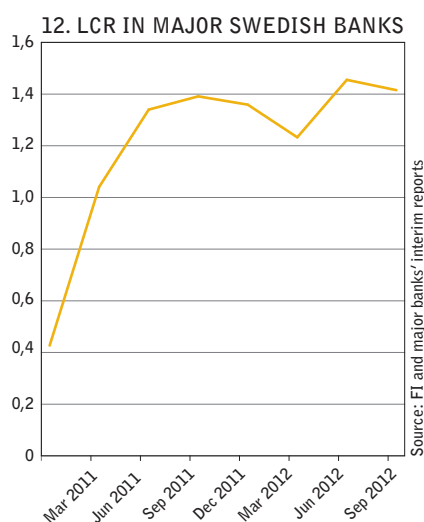
## LIQUIDITY REGULATION

In addition to capital adequacy regulations, the Basel Committee's agreement in Basel 3 also contains quantitative requirements aimed at reducing the liquidity risks of banks. In simplified terms, a bank encountering liquidity problems means that it does not have sufficient available liquid funds for the time being to pay its debts falling due. The reason for liquidity problems could be that a bank has issued a long-term loan, such as a mortgage, with funding at a shorter maturity. The bank's short-term funding must therefore be repaid before it has received its money back for the mortgage. In normal circumstances it is easy for the bank to renew its short-term funding on the financial markets. However, during periods of financial stress like in the latest financial crisis, there is a risk of the bank encountering liquidity problems.

### What do the liquidity requirements involve?

The previous Swedish provisions for financial companies' liquidity did not contain any quantitative liquidity requirements. FI has now decided on an introduction of quantitative liquidity coverage ratio requirements as of 1 January 2013<sup>25</sup>.

The regulations are based on the guidelines of the Basel Committee regarding calculating liquidity coverage ratio, LCR, established at the end of 2010 and planned for introduction in the EU from 2015. LCR says, in brief, that banks should have sufficient liquid assets<sup>26</sup> to cover their expected outflows of payment in a stressed situation during the next 30 days. If a bank were to have liquidity problems, it could use its liquid assets and in this way match the outflows that take place during the period.



FI's regulations will apply to credit institutions and investment firms with a balance sheet total exceeding SEK 100 billion at 30 September of the previous year. This currently means that the regulation will apply to eight credit institutions and their financial groups. The requirement applies at aggregate currency level, but also in the individual currencies EUR and USD. This is to ensure good liquidity management also in the foreign currencies in which Swedish credit institutions and investment firms chiefly obtain funding, and where possibilities of liquidity support from the Riksbank are more limited. The major banks already fulfil the liquidity coverage ratio requirements today. FI's test reporting requirement was introduced at the end of 2010, and since then the major banks' liquidity coverage ratios have increased sharply (chart 12). FI has, since the summer of 2011, required reporting on liquidity risks from all credit institutions and investment firms operating in Sweden with a balance sheet total of over SEK 5 billion.

As a complement to LCR, the Basel Committee has also proposed a more long-term structural measurement called NSFR (Net Stable Funding Ratio). This aims at banks funding long-term assets with long-term liabilities to a greater extent. Banks shall thus better match the maturi-

25 See FFFS 2012:6 Regulations regarding requirements for liquidity coverage ratios and reporting of liquid assets and cash flows.

26 Liquid assets in this context primarily include government securities and, to a certain extent, covered bonds.

ties in their funding, further improving stability in the banking system. However, the international discussions regarding NSFR have not come as far as for LCR and, according to the Basel Accord, NSFR will not be introduced until 2018. FI and the Riksbank have emphasised the importance of better matching assets with liabilities. The latest financial crisis has also made banks and other market players aware of it. This has probably contributed to the major Swedish banks already having extended the maturities of their liabilities since the acute crisis, to which FI takes a positive view.

## Effects of new regulations

A large part of the adaptation to the forthcoming capital adequacy and liquidity requirements has already taken place. At the same time, lending to Swedish households and corporations is still growing, albeit at a lower rate. FI's calculations indicate that the rate households and non-financial corporations pay is affected by the new requirements. According to existing studies, the net effect of the new regulations on the national economy are nevertheless expected to be positive, because they lead to a reduced risk of financial crises.

It is difficult to evaluate the effects of the regulations on lending volumes and interest rates for households and non-financial corporations. This is because banks make business decisions based on grounds other than regulations and react to events on financial markets. In the event of the regulations giving rise to increased costs for the banks, this could affect households in the form of lower lending volumes and higher lending rates. In order to discuss the effects of the requirements on the economy, one must also distinguish economic costs from personal financial costs and take account of the effect on the risk of financial crises.

### WHAT DOES MORE CAPITAL AND IMPROVED LIQUIDITY COST?

The forthcoming capital adequacy regulations oblige banks to preserve a greater proportion of equity. Economic theory says that the capital structure of a corporation ought not to affect its total financing costs or value<sup>27</sup>. This is because the corporation is safer when the share of equity increases, and this should reduce both the return requirements of owners and the corporation's loan financing cost. The shift towards a more expensive form of financing hence does not affect the total financing cost, because all forms of financing become cheaper when the corporation in question becomes safer.

In reality, however, this is not entirely the case. For example, loans are beneficial in terms of the tax effect, because interest payments can be made with untaxed funds while dividends are taxed. This makes loans cheaper in relation to equity. However, this applies to all corporations, and does not explain why banks have such a lower share of equity compared to non-financial corporations<sup>28</sup>.

A more important explanation for the banks' high indebtedness is that they have a number of explicit and implicit government guarantees which favour loan financing, and which other corporations lack. This entails a lower cost for loan financing for the banks. For example, the deposit guarantee scheme involves deposits up to EUR 100,000 being state-guaranteed. This makes private individuals less sensitive to the bank's risks and means they do not adapt their return requirements. Other lenders to banks can also expect that governments protect banks in crisis, which reduces the risk of failure to repay the loan. The reason is that banks are often considered to be so important to the financial sys-

27 The Miller Modigliani theorem, "The Cost of Capital, Corporation Finance and the Theory of Investment", *American Economic Review* 48 (3): 261–297.

28 According to Statistics Sweden (2012), non-financial corporations had an equity ratio, that is equity plus untaxed reserves (with a deduction for tax), as a share of the overall balance sheet total of around 40 per cent in 2010.

tem that the government seldom allows major banks go bankrupt. Shareholders cannot expect the same support, but often lose a large part of their investment if the bank runs into difficulty.

A higher proportion of equity increases security for the bank's other financiers, because it constitutes a buffer consisting of loss-absorbing capital. Loan financing therefore gets cheaper when the share of capital increases. As already mentioned, there is at the same time reason to assume that higher capital requirements involve a certain cost increase for the banks, even though an adaptation of return requirements on equity can be expected<sup>29</sup>. It is, however, important to bear in mind that increased costs for banks do not necessarily involve reduced economic benefit.

In the same way, the fact that a bank preserves a buffer of liquid assets can help make it more secure. But, this safety measure too can bring about certain costs. There are two main alternatives that a bank can use to fulfil the liquidity requirement. First, it can replace illiquid assets such as mortgages with liquid assets in the form of government securities, hence increasing its share of liquid assets. This entails costs because the assets to be taken into account when calculating the liquidity coverage ratio have a lower return than other, more illiquid assets.

Second, the bank can attempt to reduce the need for liquid assets by reducing its liquidity outflows within a 30-day period, such as by extending the maturity of its funding. This involves increased interest payments to the bank's originators. A bank's decision about the size of the liquidity buffer it is to preserve is also affected by the explicit and implicit guarantees from governments and central banks. So, these increased costs for the bank and its customers cannot necessarily be translated into reduced economic benefit for society as a whole.

## EFFECTS FOR HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

FI's assignment from the government includes reviewing the effects on lending volumes and interest rates from the new requirements, and reporting the effects of the adaptation on households and non-financial corporations before 2012. The banks can choose to meet the forthcoming new requirements in different ways. For instance, they can increase their amount of equity, reduce their balance sheet total or shift their operation towards areas with lower risk weights. There can also be incentives for increased use of internal models which give lower capital requirements. The banks can also increase their lending rates, adjust the required return on equity downwards or attempt to reduce their costs.

What today's costs for meeting the capital and liquidity requirements should be compared with is a difficult question. One could envisage looking at what an increase in the capital requirement of one percentage point would imply in terms of costs, or select a suitable comparative point in time. The comparison could be made with a point in time before the crisis or later. FI has chosen the end of 2010 as a comparative point in time. The motivation for this is that it could then be assumed that Swedish banks had adapted their capital to the requirements which, following the financial crisis, came from market players and the banks' own

<sup>29</sup> The IMF assumes a 50 per cent adaptation to the Miller Modigliani theorem, i.e. that the return requirements of shareholders and loan financiers are assumed to be 50 per cent-adapted to a new larger share of equity. See "Estimating the Costs of Financial Regulation", September 2012, IMF.

models, but had not yet reacted to the requirements placed by the forthcoming regulations<sup>30</sup>.

Based on the starting point in 2010, FI has taken account of which costs the adaptation to forthcoming capital and liquidity requirements could have involved thus far for the major Swedish banks. By making certain simplified assumptions, this cost can be translated into an increase to lending rates to households and non-financial corporations. Other international and Swedish studies are described in the section Effects on the national economy.

## Effects on households

### *Effects on lending volume*

Although the major Swedish banks largely already fulfil the forthcoming capital and liquidity requirements, lending to households is still on the rise. However, it is increasing at a lower rate than before (chart 2). At the same time, it can be compared with lending growth in the eurozone, which is almost zero. The fact that the forthcoming regulations do not seem to have brought about a credit contraction probably means that the increased costs have not led to lending to households becoming unprofitable. In this context, it is also difficult to distinguish what are effects on the bank's supply of loans and what is governed by demand. For example, demand is affected by interest rates, changes in income and other regulations such as the mortgage cap decided by FI.

### *Effects on lending rates*

By comparing the cost of the major Swedish banks' equity at the end of 2010 and the third quarter of 2012, FI estimates the potential increase on lending rates to households at between 4 and 8 basis points (table 1 and fact box). This increase corresponds to the rise in costs for households brought about by the forthcoming requirements if they were to bear the entire cost.

TABLE 1. Increase in basis points on lending rates to households ensuing from the forthcoming requirements (Comparison Q4 2010 and Q3 2012)

Return requirement on equity	8%	9%	10%	11%	12%	13%	14%	15%	16%
Change in cost of equity attributable to mortgages	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.4	7.9

Even if it is probable that the loan financing of banks will become cheaper when the share of equity increases, it is not possible to calculate the isolated effect with precision. With the hypothetical assumption that the cost of the bank's loan financing would not be affected, a standardised effect of a higher share of equity can be calculated. The calculated effect is probably higher than the actual effect, and the calculation can be considered conservative.

In previous reports, FI has already calculated the banks' cost of preserving a liquidity buffer for their mortgage lending. The cost was, according to FI's calculations, close to zero in the fourth quarter of 2010, when the liquidity buffer was very small. The banks have subsequently built up their liquidity buffer and the cost has increased. The cost com-

30 This comparative point in time is used in "Estimating the Costs of Financial Regulation", September 2012, IMF. The Basel Committee's proposal for Basel 3 was presented in December 2010. In March 2011, FI communicated a capital adequacy expectation for the major banks of common equity Tier 1 capital of 10 per cent, and in November 2011 the Swedish Ministry of Finance, the Riksbank and Finansinspektionen communicated their view on the new requirements.



prises the increased size of the buffer and the cost involved in funding the buffer. The banks need to fund it by e.g. issuing certificates or bonds. The bank can then invest the liquid funds and hence receive income. The income minus the expense of funding the buffer is the final cost of preserving a liquidity buffer. From 2010 until the third quarter of 2012, the total cost according to FI's calculations has increased by around 14 basis points. So, the requirement to preserve a liquidity buffer should give an increase on mortgage lending rates of 14 basis points, assuming that households bear the entire cost.

Since 2010 the banks have not appreciably extended the maturity of their borrowing for mortgage lending. The maturity was shorter in the crisis year of 2008, but both before and after 2008, the statistics show that the maturity of newly issued covered bonds was around four years. FI takes account of the extended maturity in the calculation of the funding cost for mortgages (see the chapter The banks' mortgage margins).

A simple addition of the effects of higher capital adequacy and liquidity buffer requirements during 2010–2012 results in an increase of 18–22 basis points on the mortgage lending rate to households, assuming that the households bear the entire cost. This is a conservative calculation because it only takes account of the costs arising upon increased requirements and not of the potential offsetting effects. The advantages afforded by a stable banking system with robust resilience, in the form of good borrowing opportunities on advantageous terms, are not included. It is therefore probable that the effect for households is lower. How the costs are distributed between customers and shareholders depends on how the market works. FI's calculation of mortgage margins, described in the next chapter, shows that margins have increased in the past year.

### Increase in lending rates

In the calculation, FI has used the actual figures of the four major Swedish banks regarding equity and risk-weighted assets at group level<sup>31</sup>. The relationship between total equity and risk-weighted assets for the major banks increased by around 3 percentage points from the end of 2010 to the third quarter of 2012 inclusive.

For households, the risk weight of 15 per cent is used at both points in time. For non-financial corporations, the major banks' average risk weight for corporate lending in 2010 is also used in the calculation for 2012<sup>32</sup>. Equity attributable to mortgages and corporate lending, respectively, is calculated by assuming that the relationship between equity and risk-weighted assets is the same as at aggregate level.

By using different return requirements on equity, a cost of equity attributable to mortgages and non-financial corporations, respectively, at the two different comparative points in time can be calculated. The return requirement on equity assumption varies between 8 and 16 per cent in the calculation.

$$\text{EQ mortgages} = \frac{\text{EQ total}}{\text{RWA total}} \times \text{RW mortgages} \times \text{Lending mortgages}$$

EQ=equity, RW=risk weight, RWA=risk-weighted assets

31 The line item entry equity in the balance sheet and risk-weighted assets according to full Basel 2 are used.

32 At the end of 2010, it stood at 55 per cent. For non-financial corporations, the analysis is limited by the credit portfolio not containing the exact same credits on the two occasions.

## Effects on non-financial corporations

The evaluation of the effects of the regulations on non-financial corporations also encounters great difficulties. They do not form a homogeneous group, and the impact can vary between, for instance, small and large corporations. Besides a calculation of effects on lending rates, FI describes the volume trend and certain qualitative studies of the corporations' loan terms and the development of the corporate bond market.

### *Effects on lending volume*

Lending to non-financial corporations is still on the rise, although the growth rate in lending is subdued. This can be compared with lending in the eurozone, which is decreasing (chart 3). Here, it is particularly difficult to distinguish the effects of the prevailing market climate on demand among non-financial corporations from the effects of the regulations on supply.

In 2012, the smallest corporations (those with up to 50 employees) have found it harder to obtain bank loans<sup>33</sup>. A reason is probably a turn for the worse in the economic climate, but this could also be due to the forthcoming regulations making banks more restrictive in granting credit. According to the Riksbank's company interviews in September 2012, corporations stated weak demand and poor profitability as the greatest causes for concern currently<sup>34</sup>. The granting of credit should thus largely be governed by the state of the economy and not just an effect of new regulations.

The largest corporations, with over 2,000 employees, have also experienced certain difficulties in financing their operations. Unlike the small corporations, the larger ones state higher borrowing costs for bank loans as the primary reason for the deterioration<sup>35</sup>. According to queried banks, the majority believes however that the lending margin for corporations was unchanged in the third quarter<sup>36</sup>.

Large non-financial corporations have, unlike households, access to other sources of financing. Total issue volumes for corporate bonds have increased during the year<sup>37</sup>. However, it is not possible to discern a shift whereby corporations choose to obtain financing through the bond market instead of bank loans. Statistics show that financing through corporate bonds as a share of total financing for non-financial corporations has been constant in the last three years. In the Riksbank's company interviews in January and May this year, several large corporations stated that the more expensive borrowing from banks has led them to start looking for other sources of financing, such as corporate bonds<sup>38</sup>.

Issue volumes of corporate bonds for corporations with low credit ratings, or which lack credit ratings, have increased in the last three

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33 According to the National Institute of Economic Research's Economic Tendency Survey, credit and financing terms in industry, October 2012.

34 The Riksbank's Company Interviews, September 2012.

35 According to the National Institute of Economic Research's Economic Tendency Survey, credit and financing terms in industry, September 2012.

36 Loan indicator September 2012, ALMI Företagspartner. The increased lending margins can be compared with December 2011, when 59 per cent were of the opinion that the lending margin to corporations had risen.

37 According to Bloomberg statistics.

38 The Riksbank's company interviews, January 2012 and May 2012

years. To date in 2012, issue volumes have increased 13.7 per cent compared with 2011<sup>39</sup>.

#### *Effects on lending rates*

FI's calculations show that lending rates for loans to non-financial corporations are between 14 and 29 basis points higher in a comparison made between the end of 2010 and the third quarter of 2012 (table 2). The increase in the lending rate is calculated assuming that non-financial corporations pay for the entire cost increase from the forthcoming requirements.

TABLE 2. Increase in basis points on lending rates to non-financial corporations ensuing from the forthcoming requirements  
(Comparison Q4 2010 and Q3 2012)

Return requirement on equity	8%	9%	10%	11%	12%	13%	14%	15%	16%
Change in cost of equity attributable to non-financial corporations	14.6	16.5	18.3	20.1	21.9	23.8	25.6	27.4	29.3

## EFFECTS ON THE ECONOMY

The effect of the regulations on households and corporations affects the economy as a whole. The majority of the studies conducted on the effect of higher capital adequacy ratios and greater liquidity reserves find that the proposed stricter requirements have an expected net positive effect on the economy. The reduced risk of serious banking and financial crises, in combination with the major negative effects brought about by such crises, often outweigh the ongoing costs brought about by the regulations. The regulations can therefore be viewed as insurance, whereby a low, ongoing cost is paid for protection against major and unforeseen crises.

### What the regulations cost the economy

As described in previous sections, the regulations may give rise to increased costs for the banks. This may in turn lead to higher lending rates and reduced credit granting, leading in turn to reduced investments. Because investments are an important part of GDP, the increased interest rate margins risk leading to a poorer macroeconomic trend, resulting in lower GDP and higher unemployment.

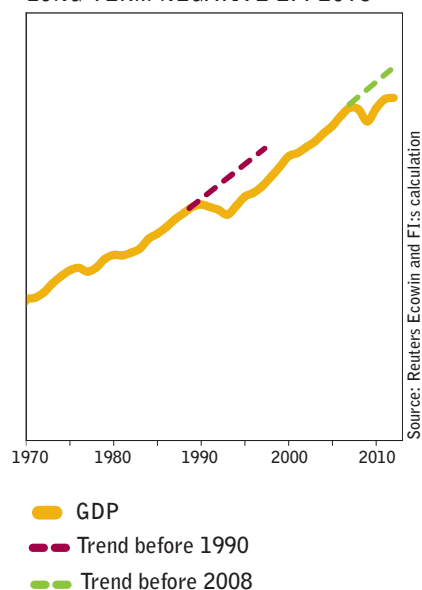
However, the economic costs of the regulations are hard to quantify. This is because the banks may, as mentioned, choose to meet the requirements in different ways, while at the same time it is difficult to determine how much of the banks' changed behaviour is due to the regulations. The assumptions made affect the assessment of the effect and cost of the regulations. There are thus several different assessments in literature.

In a Swedish study, the Riksbank has assessed that loan margins will increase by 13 points if the share of common equity Tier 1 capital as a share of risk-weighted assets in Swedish banks increases by one percentage point. Over time, this gives rise to GDP which is 0.06–0.16 per cent lower<sup>40</sup>. Other studies arrive at effects in the same order of size. The loan increase is affected by assumptions about risk weights, shareholders' return requirements and similar factors. In this report, the effect on two

<sup>39</sup> According to Bloomberg statistics.

<sup>40</sup> See Appropriate capital ratio in major Swedish banks – an economic analysis, December 2011, the Riksbank.

### 13. FINANCIAL CRISIS HAVE LONG-TERM NEGATIVE EFFECTS



specific areas has been studied – mortgages and loans for corporations, so estimations of a general interest rate increase are hard to make<sup>41</sup>.

#### The effect of financial crises

The regulations can lead to certain costs for individual players, but are being introduced to benefit the economy at large. The regulations chiefly aim to make the financial system more stable and reduce the risk of future banking and financial crises. Because such crises tend to have major and negative effects on the economy, reducing the probability of them happening is profitable.

There are a number of channels through which banking and financial crises affect the real economy. For instance, they can give rise to negative wealth effects, credit contraction, reduced scope for investments and consumption, and sovereign debt crises.

The negative effects of banking and financial crises also tend to be prolonged, and in certain cases permanent. For example, it is assumed that the crisis in Sweden of the 1990s and the 2008 financial crisis have had a long-term negative effect on the Swedish economy<sup>42</sup> (chart 13).

As shown, there are good reasons to assume that the effect of a banking crisis is practically permanent, and that previous Swedish crises have led to lower GDP in the long term<sup>43</sup>. Besides the forthcoming capital adequacy requirements, work is in progress to improve the government's possibilities of dealing with banking crises. For instance, the possibility of bail-in is being discussed (writing down banks' debt). The effects of these future rules are hard to evaluate today, however.

#### How the regulations benefit the economy

Given that the regulations have the intended effect and reduce the risk of future banking and financial crises, there is reason to believe that they can lead to higher GDP in the future. However, quantifying the effect of a more stable banking sector requires uncertain assumptions. In 2010 the Basel Committee was of the opinion that a one-percentage-point lower risk of a banking crisis increases expected GDP by 0.6–1.6 per cent over time<sup>44</sup>.

In the 2011 study referred to previously, the Riksbank also made an estimation of the effect of the regulations on the probability of the event of a banking crisis in Sweden. In the study, it is concluded that a higher capital adequacy ratio reduces the risk of such crises. However, the effect of higher capital adequacy ratios is greatest when the original level is low. Raising the capital adequacy ratio of banks that are already well-capitalised has less of an effect than recapitalising banks with low capital adequacy ratios.

41 See e.g. "Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements", December 2010, Financial Stability Board and Basel Committee on Banking Supervision and "Estimating the Costs of Financial Regulation", September 2012, IMF.

42 See the Swedish Economy, the National Institute of Economic Research, March 2010.

43 See Appropriate capital ratio in major Swedish banks – an economic analysis, December 2011, the Riksbank. See also "Eurosclerosis or Financial Collapse: Why Did Swedish Income Fall Behind?", February 2005, IMF.

44 See "An assessment of the long-term economic impact of stronger capital and liquidity requirements", August 2010, Basel Committee on Banking Supervision.

The Riksbank concluded that the fact that higher capital adequacy ratios reduce the probability of future financial crisis, in combination with such crises being associated with major costs to the economy, means that higher capital adequacy ratios can be expected to have a net positive effect on the economy. For the Swedish banks, the assessment was made that a level of capital among them which is suitable in terms of the economy is somewhere in the range of 10–17 per cent of risk-weighted assets<sup>45</sup>.

### THE SUM OF EFFECTS

On the whole, FI can conclude that Swedish banks have largely already adapted to the forthcoming requirements. At the same time, lending to both households and non-financial corporations is still growing. Lending is also affected by other factors such as supply and demand, and for households also by other regulations such as FI's mortgage cap.

In order to assess the effects of the forthcoming regulations, many assumptions are required, and the calculations are made more difficult by the fact that the banks make decisions on a series of grounds other than the forthcoming regulations alone. All else being equal, the forthcoming regulations involve a cost. For mortgage lending to households, this is estimated at an increase of 18–22 basis points to the lending rate if the entire cost increase is borne by the households. For non-financial corporations, the increase to the lending rate, solely on the basis of the forthcoming capital adequacy regulations, is 14–29 basis points if they bear the entire cost.

Because a bank with more capital and more stable funding involves fewer risks for the bank's shareholders, it would be reasonable for the latter to require a lower return on their invested capital. More stable banks ought also to be able to obtain better terms from their creditors. Swedish banks are currently strong, well-capitalised and have robust resilience, affording them access to funding on good terms.

Studies about the economic effects of the forthcoming regulations suggest that the net effect will be positive. The calculations made of an optimal capital level in Sweden for the economy indicates that greater requirements for major Swedish banks are justified.

Even assuming that households and non-financial corporations bear the entire cost for the adaptation to the forthcoming regulations, the effect on lending rates is small. The ultimate distribution of the cost depends on competition and efficiency in the market. FI is however of the opinion that it can on the whole nevertheless be assumed that the forthcoming regulations bring about increased benefits for the economy because the costs are limited while the benefits ensuing from greater stability among banks and a reduced risk of financial crisis are great.

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45 Capital refers to common equity Tier 1 capital.

## The banks' mortgage margins

A way of illustrating the cost trend is FI's calculation of mortgage margins. The gross margin for a newly issued three-month mortgage continued to rise and averaged at 1.30 percentage points in the third quarter. The increase is mainly due to the funding cost decreasing more than the lending rate did. The margin after other costs have also been deducted – the net margin – was 0.59 percentage points. This represents an increase of 0.08 percentage points from the previous quarter.

Calculating the exact cost of mortgages is complicated and requires information about the individual bank. By creating a simple model, FI can illustrate the banks' costs that are associated with mortgages, and how they have developed over time. The calculations in this report relate to the third quarter of 2012 and do not comprise subsequent changes in lending rates or funding costs. FI can ascertain that, since then, the banks have announced cuts in their lending rates and the actual impact of this will not be measured until in the next report pertaining to the fourth quarter.

The model to calculate the funding cost, which was prepared in collaboration with the Riksbank, is based on certain assumptions and is a simplification of reality. There are many reasons for the simplification. Partly, it is in order to make the model easy to understand, and partly because statistics are not always available or possible to publish due to confidentiality reasons<sup>46</sup>. By calculating all the banks' costs that are associated with mortgages, and comparing these with actual lending rates, the mortgage margin can be calculated.

The model is simple and general and cannot be used for calculating the mortgage margin of an individual bank. Transparency would be greater if the banks that conduct mortgage operations inserted their costs into FI's model themselves. The calculations of the banks' mortgage costs are largely identical to those presented in the first and second report. A change is that, in this report, an applicable tax rate of 26.3 per cent is used. In previous reports, a standard tax rate was calculated as one third of the gross margin minus other costs. With the tax rate applicable now, the net margin was 0.44 percentage points in the first quarter of 2012 and 0.51 percentage points in the second quarter of 2012. This gives a difference of 4 basis points for the first quarter and 5 basis points for the second quarter compared with the previous calculation method, but does not affect the trend over time.

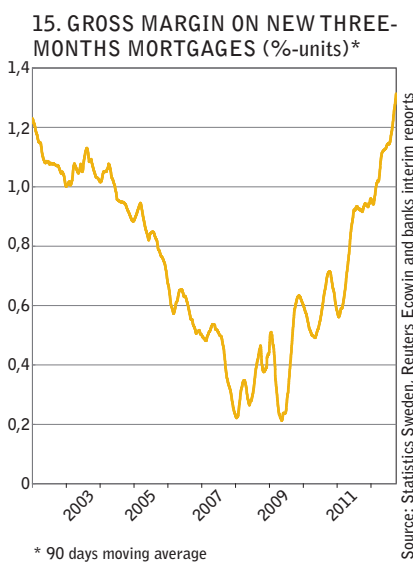
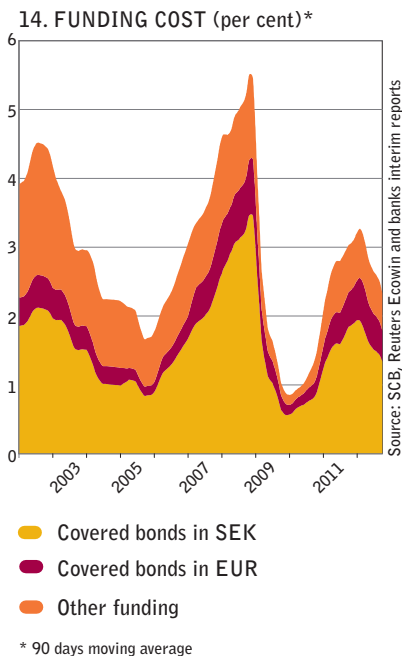
### THE BANKS' FUNDING COST

Information from the major banks and their housing credit institutions is used to calculate the costs associated with funding a mortgage<sup>47</sup>. The funding cost calculated by FI is an average of the last 90 days and cor-

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<sup>46</sup> See appendix 1 for a detailed description of the model.

<sup>47</sup> The model is based on statistics from Swedbank, Nordea and Handelsbanken and their housing credit institutions (Swedbank Hypotek, Nordea Hypotek and Stadshypotek. Because SEB's housing credit institution has been included in the parent company, SEB Bolån is only included in the calculations until the end of 2006).



responds to the cost of a new mortgage with a three-month fixed interest term<sup>48</sup>.

By studying the liabilities side of the balance sheets of major banks' housing credit institutions, FI has estimated the size of various funding sources' share of total funding. The share of the funding sources varies between the banks, and in the model an average for the banks' shares has been used<sup>49</sup>. The shares vary over time. The funding sources in the model are covered bonds and other funding. Other funding consists of unsecured market borrowing and deposits from the banks' customers<sup>50</sup>. The average maturity of the banks' issued covered bonds is allowed to vary over time in the model<sup>51</sup>.

The funding cost of banks is calculated by allocating a cost to each funding source and then weighting these based on the distribution and estimated maturity of the funding (chart 14)<sup>52</sup>. The average funding cost has decreased from 2.63 per cent<sup>53</sup> in the second quarter of 2012 to 2.33 per cent, which was the average in the third quarter<sup>54</sup>. Just like in the second quarter, the downturn is chiefly due to the fact that the covered bond rate declined in the quarter.

## GROSS MARGIN ON MORTGAGES

By comparing the average interest rate actually paid by customers during the third quarter with the average funding cost in the third quarter, a gross margin for a new mortgage can be calculated. This margin refers to a new loan with a three-month fixed interest term. FI chooses to call this margin a gross margin because it does not take into account the other costs, besides the funding cost, associated with mortgage lending. The gross margin thus does not equal the banks' profit.

The gross margin continued to increase in the third quarter, averaging at 1.30 percentage points (chart 15). In this quarter too, this was mainly due to the funding cost decreasing more than the lending rate did. In terms of the analysis of the funding cost over time, it can be ascertained that, even in the most acute phase of the financial crisis, the model assumes that the banks obtain funding at prevailing market rates. At the same time, the Riksbank offered loans at a much more advantageous interest rate. Chart 16 shows the lending rate broken down into gross margin and funding cost.

48 Out of new mortgages, around 55 per cent are entered with a three-month fixed interest term. Out of the total mortgage stock, 47 per cent is entered with a three-month fixed interest term. The fixed interest term is not the same as the loan maturity, which is usually much longer.

49 FI makes the assumption that mortgages are 100% debt-financed. The model thus does not take into account the cost of equity.

50 For a description of the various funding sources, see "Bank interest rates and lending, Q1 2012".

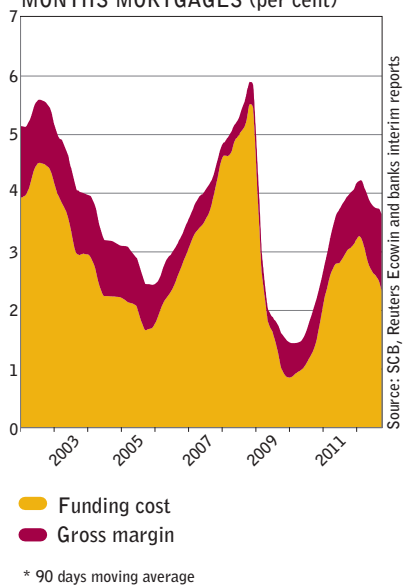
51 Maturity information has been obtained from the Association of Swedish Covered Bond issuers (ASCB).

52 A more in-depth description of FI's calculations is provided in Appendix 1.

53 In the second Bank interest rates and lending report, FI wrote that the funding cost was 2.59 per cent, but with updated maturity assumptions the cost was 2.63 per cent.

54 FI has calculated the funding cost by using the quoted daily market values on the secondary market. This is a simplification, however, because the banks do not obtain funding on the market each day.

16. LENDING RATE FOR NEW THREE-MONTHS MORTGAGES (per cent)\*



## NET MARGIN ON MORTGAGES

In addition to the direct funding costs, there are also other costs associated with banking operations and hence mortgages. These costs must be distributed between the bank's different operational areas, and must therefore be taken into account when the bank determines its mortgage rate. When both the funding cost and other costs are compared with the average rate paid by consumers, a net margin is obtained.

### Other costs for mortgages

The other costs vary from bank to bank and, in FI's model, consist of administrative costs, the cost of maintaining a liquidity reserve, the cost of anticipated credit losses and tax. FI has estimated an average for the four major Swedish banks. FI's calculations of the other costs amount to 0.71 percentage points in total. The costs are identical to in the previous report, apart from tax now being calculated using the actual tax rate.

Administrative costs include costs for personnel, premises and computer systems. These costs are often common to the entire bank group and must therefore be distributed across the different operational areas. According to FI's estimation, administrative costs for mortgages amounted to 0.30 percentage points in the third quarter of 2012.

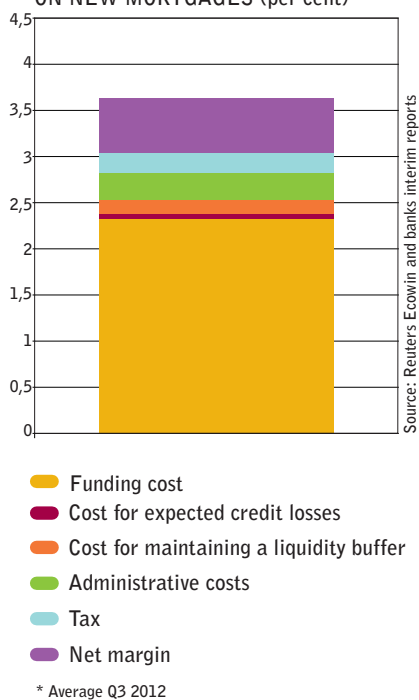
To ensure that the banks can continuously fund their mortgage stock, even in periods of financial stress, they preserve a reserve of liquid assets. These assets can be used in the event of the bank's normal funding sources becoming subject to disruption. Preserving a liquidity reserve is associated with certain costs which, according to FI's calculations, amounted to 0.15 percentage points on average in the third quarter of 2012.

The banks must also allow for the event of certain mortgage holders not being fully able to pay their mortgage interest and instalments. When a bank grants a mortgage, it must take account of expected future credit losses. Based on the banks' current calculation models, FI assumes that the average costs for expected credit losses amount to 0.05 percentage points over time.

Finally, a cost is deducted for tax. According to FI's calculations, this amounted to 0.21 percentage points in the third quarter of 2012<sup>55</sup>. When all costs including tax are deducted from the lending rate, a net margin remains. The net margin for a newly issued mortgage was, according to FI's model, 0.59 percentage points on average in the third quarter. This entails an increase of 0.08 percentage points from the second quarter this year<sup>56</sup>. The increase is due to the fact that the funding cost declined more than the lending rate did. Chart 17 shows the banks' average funding cost, other costs and net margin.

Because the current tax rate is used as of this quarter, there are small revisions in the historical net margin. However, the trend is the same. The analysis of the most intensive period of the financial crisis is affected by the assumption of the banks obtaining funding at prevailing market rates. During the period, however, the Riksbank offered loans at a much more advantageous rate than prevailing market rates.

17. COSTS AND NET MARGIN ON NEW MORTGAGES (per cent)\*

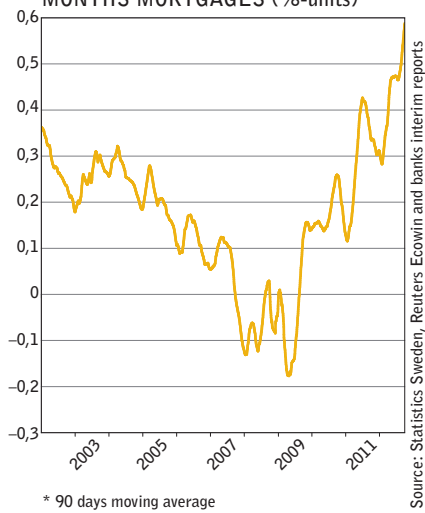


<sup>55</sup> In previous reports, a standard tax rate was calculated as one third of gross margin minus other costs. In this report, an applicable tax rate of 26.3 per cent is used.

<sup>56</sup> The net margin for the second quarter of 2012 was 0.51 percentage points if a tax rate of 26.3 per cent is used. The net margin was 0.46 when tax was calculated as one third.



18. NET MARGIN ON NEW THREE-MONTHS MORTGAGES (%-units)\*

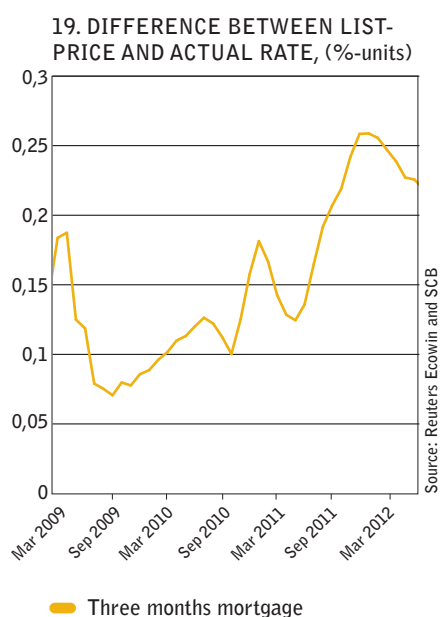


In simplified terms, the net margin can, according to FI's model, be seen as the banks' profit on the mortgages issued during the quarter. The net margin must cover the cost of capital including the expected return of shareholders. Shareholders' expected return is governed by the risk level associated with the investment. As already mentioned, more stringent requirements on both liquidity management and capital adequacy lead to safer and more stable banks. Over time, this should mean that the expected return of shareholders decreases.

A net margin of 0.59 percentage points entails a profit for the bank on the mortgages issued during the quarter of SEK 8,850 annually for an average loan in Stockholm which, according to FI's mortgage survey, was at around SEK 1.5 million. This can be compared with SEK 7,650 for the second quarter.

## Customers' total banking services

Better transparency on mortgage margins can be useful in mortgage negotiations between customer and bank. Well-informed customers who negotiate their terms and are willing to change banks are required for functioning competition. It is important that customers understand all parts of their banking services and products. Also, the bank decides on an individual basis which customers shall be granted loans, and on which terms.



The bank determines the interest rate and the fees a customer is to pay for his or her loan, but there is often a possibility to negotiate. When negotiating, the consumer is often at a disadvantage in relation to the bank in terms of information. One of the purposes of this report is to increase understanding of the banks' costs. However, it is ultimately up to the customer to study the personal offer and compare it between several different banks.

The lending rate published by the bank on, for instance, its website is known as the list rate. The list rate often differs from the rate agreed by the customer and bank. Since 2002, the banks' variable list rates have on average been around 0.2 percentage points higher than the actual average interest rate paid by customers on their variable loans<sup>57</sup> (chart 19). This means that a bank can grant a certain discount on the interest rate presented on its website<sup>58</sup>.

However, negotiation skills alone do not determine a consumer's mortgage rate. The financial circumstances of consumers vary, which means that different borrowers constitute differently sized risks for the bank. Factors that affect negotiation scope include the borrower's income and size of other assets, as well as the proportion of the home the customer wants to mortgage. It is ultimately up to the bank whether the customer is granted a loan, and which interest rate applies.

Negotiations also include discussing different fixed interest terms for the loan. In the model presented by FI in this report, the banks' margins based on the three-month rate only are discussed. Each customer must consider the advantages and disadvantages in the choice of fixed interest term. The choice depends on the customer's situation and the size of the premium the customers can consider paying to fix their mortgage rates and hence know with certainty what the loan will cost over a long period of time. Changing a fixed interest term or terminating the loan during the fixed interest term is often associated with a fee, called interest differential compensation.

It is also important that customers consider the scope they have for paying off a mortgage. The average repayment period for new mortgages was 70 years in 2011 according to FI's mortgage survey, and has increased by four years since 2009. The proportion of amortisation-free loans has increased, by just over 6 percentage points since 2009<sup>59</sup>. FI per-

<sup>57</sup> In most cases, a variable rate is not entirely "variable" but has a fixed term of three months.

<sup>58</sup> The model, as described in a previous section, uses the average interest rate actually paid by the customer, i.e. after the discount.

<sup>59</sup> See the report The Swedish mortgage market from 13 March 2012.

forms a more in-depth analysis of mortgage repayment in the mortgage survey which takes place in the autumn.

### **An overall view is taken of the customer**

Because a mortgage is often the biggest banking transaction in a person's life, many consumers choose their banks based on the best mortgage rate. Banks therefore sometimes use mortgages as an enticer. In connection with mortgage negotiations, banks can offer various types of holistic customer solutions, meaning that they grant a cheaper mortgage rate in exchange for consumers placing all of their banking services with the bank. It is not unusual for a bank to offer a lower mortgage rate if the household commits to other services. It is important to bear in mind that these other services involve costs, in certain cases for many years to come. The fact that the banks present a holistic customer solution makes it simple for customers, but at the same time distinguishing the costs of different services is difficult.

Focus on savings too is positive, but it is important that people who save in funds are aware that this carries fees. Fees for fund and pension saving are automatically deducted from the funds' return or from the deposited amount, and can thus be hard to estimate for customers. Paying attention to the fees associated with fund saving can have a major bearing on return. A customer who saves SEK 1,000 per month for ten years in an average fund portfolio pays around SEK 12,400 in fees<sup>60</sup>.

Taking account of the deposit rate offered by the bank for different accounts is also an important parameter for a customer's personal finances. Deposit rates have a major bearing in the long run because of the interest-on-interest effect<sup>61</sup>, and customer passiveness might therefore cost them money in the form of missed interest income. A customer who keeps his or her entire salary in a transaction account that pays no interest, instead of saving SEK 1,000 each month in a deposit account that pays interest, misses out on around SEK 6,250 over a ten-year period<sup>62</sup>.

It is also important to be aware that other services such as cards, securities depositories and payment services are in most cases associated with a fee. It is therefore important to also renegotiate, or at least take account of, the terms and price of services besides mortgages.

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<sup>60</sup> In the calculation it is assumed that the fund portfolio has the same distribution as Swedish households' total fund net asset value, consisting of 76 per cent equity funds, 18 per cent mixed funds, 5 per cent bond and money market funds and 7 per cent other funds (source Statistics Sweden). FI has used average management fees obtained from AMF's report "Fees on the fund market 2011" (Swedish only) and expected return is obtained from [www.amf.se](http://www.amf.se). For Swedish funds, the difference between the management fee and TER (Total Expense Ratio) used in the so-called "Norman amount" is often negligible.

<sup>61</sup> Because the interest paid out remains in the deposit account, it also earns interest. This means that the amount on which interest is calculated increases next time.

<sup>62</sup> The average interest rate on an unrestricted deposit account was 1.0 per cent at the end of the third quarter, and the transaction account rate was zero.

## Appendix 1. Calculation of funding cost and other costs

### DISTRIBUTION OF THE BANKS' FUNDING

The share of different funding sources of total funding has been estimated by studying the debt side of the balance sheets of the major Swedish banks' housing credit institutions. Shares of funding are calculated by an aggregate of the funding sources of Swedbank Hypotek, Nordea Hypotek and Stadshypotek over the period 2002–2011. SEB Bolån is included in the calculations for the years 2002–2006. SEB Bolån is subsequently included in the parent company and the mortgage institution can therefore not be distinguished from the bank.

The model includes the following funding types:

- covered bonds SEK (maturity two and five years)
- covered bonds EUR (maturity two and five years)
- other funding – deposits and unsecured borrowing

TABLE 3. Distribution of funding at the end of the third quarter of 2012 (per cent)

Covered in SEK	54.7
Covered in EUR	17.3
Other funding	28.0

Covered bond volumes were obtained from statistics of issued securities from Statistics Sweden. Other funding consists of certificates issued in SEK and EUR as well as loans from the parent company consisting largely of deposits. Certificate volumes in SEK and EUR have also been obtained from Statistics Sweden. Loans from the parent company are estimated to equal the net debt to credit institutions, which is calculated as the difference between the company's debts to credit institutions and lending to credit institutions. The volumes for each type of funding are then converted to shares of the total funding volume. These shares vary over time.

### Maturity

The average maturity for covered bonds was obtained from statistics from Statistics Sweden and the Association of Swedish Covered Bond Issuers. The maturity in the model varies over time. In order to reach the observed maturity, the calculations use the combination of two-year and five-year covered bonds that reach the actual maturity.

### COSTS OF THE BANKS' FUNDING

Data from the fixed income market is used to price the banks' different types of funding. Interpolation is used to estimate a cost for covered bonds with an exact maturity of two and five years in SEK and EUR, respectively. Also, interest rate conversion is compensated by interest rate swaps for covered bonds in SEK, and by interest rate and currency conversion for covered bonds in EUR. Interest rate and currency conversion usually involves a cost that depends on the maturity and currency being converted. Other funding, chiefly comprising deposits, is priced using the three-month interbank rate. Deposits can be addressed in different ways. FI has chosen to view deposits as a funding source. Conducting

deposit operations is, however, associated with certain costs, which argues against pricing deposits using the deposit rate. Other funding also consists of unsecured borrowing to a certain extent, which is more expensive than deposits. In order to reflect these factors, FI has chosen to price other funding using the three-month interbank rate.

#### **Funding cost**

By aggregating the distribution of the types of funding, maturity distribution and costs of the different types of funding, FI arrives at a funding cost. Because all long-term funding is converted to three-month rates through swaps, the cost refers to funding a new loan with a three-month fixed interest term.

### **OTHER COSTS**

#### **Administrative costs**

Administrative costs chiefly comprise costs for personnel, premises and computer systems. In FI's model, the administrative costs of a mortgage are estimated based on data from the annual reports of the bank groups and mortgage institutions. According to FI's calculations, this increase amounts to 0.30 percentage points on average<sup>63</sup>. In the historical calculations, the increase varies annually.

#### **Costs for preserving a liquidity reserve**

Swedish banks must, in order to fulfil the more stringent liquidity requirements, extend the maturity of their funding and preserve a liquidity reserve of a certain size. The banks have already adapted to the forthcoming requirements. FI estimates the cost of preserving a liquidity reserve at 0.15 percentage points. It arises out of the bank's need to invest part of its borrowing in assets with relatively low return.

#### **Costs of expected losses**

There is always a probability of a mortgage customer's inability to pay interest and loan instalments. The bank has access to historical data regarding this probability, and supplements it with statistics about how much of the loaned amount can perceivably be recovered in the event of default on payments. In this manner, the bank obtains the average expected loss associated with the mortgage. Expected credit losses can vary between consumers because their credit risks differ. FI's calculations use a cost of expected credit losses of 0.05 percentage points over time for an average mortgage holder.

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63 Because the estimate is derived from the companies' annual reports, the most recent available data is from 2011.

## Glossary

**Basel Committee/The Basel Accord** The Committee that negotiates the regulations for banks and credit institutions which shall apply internationally. Examples of accords include capital requirements for credit institutions, liquidity reserve requirements and requirements on credit institutions to publish information. The first regulatory framework was created in 1988 and was called Basel 1. Basel 3 is currently being discussed and designed and its introduction will commence in 2013.

**Basis point** A basis point is one hundredth of a per cent, i.e. 0.01 per cent. 100 basis points thus equals 1 per cent.

**Bond** An interest-bearing ongoing debt commitment, or a debt instrument, issued by governments, municipalities, credit institutions, mortgage institutions or large corporations. Bonds generally have a long maturity, at least a year. The nominal amount of a bond is repaid upon maturity, and periodical payments occur in between.

**Capital adequacy** A measurement of the amount of capital in relation to risk-weighted assets that banks have to manage future losses.

**Capital buffer** Capital to cover expected or unexpected losses.

**Capital requirements** Regulations about the minimum amount of capital an institution must maintain to conduct operations.

**Certificate** A financial instrument for trading on the money market. A certificate is a debt instrument issued by e.g. a bank or a corporation with the purpose of borrowing money. The maturity is one year maximum.

**Commercial paper** Security issued by a corporation with a view to borrowing money. The maturity is one year maximum.

**Corporate bond** Security issued by a corporation with a view to borrowing money. The maturity is one year minimum.

**Covered bonds** A bond where the holder has a special right of priority in the issuing institution's cover pool in the event of bankruptcy. The purpose of covered bonds is that the credit risk is normally lower compared with non-covered bonds, which means a reduction in borrowing costs. Only credit institutions may issue covered bonds pursuant to an authorisation granted by FI.

**Credit institution** Banks or credit market companies. Only credit institutions have Finansinspektionen's permission for lending and deposits.

**Credit risk** The risk of a borrower failing to meet his or her obligations.

**CRR/CRD 4** The EU's Capital Requirements Regulation and Capital Requirements Directive.

**Equity** Item in the corporation's balance sheet that shows the difference between assets and liabilities, containing e.g. capital contributed by owners, profit brought forward and reserves.

**Financial markets** An umbrella term for markets on which financial instruments are traded. The four most important markets are the foreign exchange market, the fixed income market, the equity market and the derivative market.

**Fixed interest term** The period during which the interest rate on a loan is fixed. For treasury bills and most government bonds, the fixed interest term is equal to the remaining maturity of the loan.

**Government bond** Ongoing interest-bearing debt commitment issued by

the government. The bond has a long maturity, at least a year. The nominal amount of the bond is repaid upon maturity, and during the duration the bond holder receives periodic dividends (yields).

**Gross margin** The difference between the customer's actual three-month lending rate and the cost of the bank for funding a new three-month mortgage.

**Housing credit institution** Credit market institution specialised in long-term funding of real estate and tenant-owner properties. Also called mortgage institutions.

**Interbank market** The market on which banks trade interest rates and currencies with each other.

**Interbank rate** A daily reference rate based on the interest rates of unsecured loans offered by banks to other banks. In Sweden, the rate that banks offer to each other for lending in kronor is called STIBOR (Stockholm Interbank Offered Rate). It is used as a reference for setting interest rates or pricing derivative contracts.

**Interest rate risk** A measurement of the sensitivity of financial assets and liabilities, which measures how the value changes when market rates rise and fall.

**Interest rate swap** Instrument for exchanging rate flows (variable for fixed rates and vice versa) to adapt interest payments.

**Issue** Involves a corporation issuing a bond, or another type of security, with the purpose of borrowing money on the market.

**Liquidity** Access to liquid assets, in relation to debts falling due. Often used to specify a company's short-term capacity to pay.

**Liquidity Coverage Ratio – LCR** Liquidity measurement defined by the Basel Committee which measures a bank's ability to manage a stressed net liquidity outflow for thirty days. An LCR of 100 per cent means, in somewhat simplified terms, that a bank's liquidity reserve is sufficient for the bank to cope with an unexpected liquidity outflow for 30 days.

**Liquidity reserve/liquidity buffer** Liquid assets intended to counteract liquidity problems.

**Liquidity risk** The risk of experiencing difficulties in meeting payment commitments. See Appendix 2 for a more detailed description.

**List price** The lending rate marketed by credit institutions.

**Maturity** The amount of time remaining until the payment of a liability or until a bond falls due. The longer the maturity, the larger the interest rate risk.

**MFI** Monetary financial institution, according to Statistics Sweden's definition.

**Net margin** The difference between the actual lending rate to customers and all costs associated with conducting mortgage operations, i.e. the gross margins minus costs besides the funding cost.

**Net Stable Funding Ratio – NSFR** Liquidity measurement defined by the Basel Committee. The measurement places a bank's stable funding in relation to its illiquid assets in a stressed scenario which lasts for a year.

**Pillar 1** One of three core sections of the Basel accords. Pillar 1 comprises the quantitative capital requirements for credit risks, market risks and operational risks.

**Pillar 2** One of three core sections of the Basel accords. Pillar 2 comprises

the bank's overall risk assessment, and thus risks other than those covered by Pillar 1, and the bank's own calculation of "economic capital".

**Repo rate** The Riksbank's key interest rate. The interest rate at which the banks can borrow or invest with the Riksbank for seven days.

**Risk weight** A weight used in calculating risk-weighted assets. In simplified terms, to calculate a bank's risk-weighted assets, the loaned amount is multiplied by a risk weight. The risk weight is determined based on the extent of probability of the borrower being unable to meet his or her loan commitments, and thus varies between borrowers. A high risk weight involves a greater risk than a low risk weight.

**Spread** Usually denotes the difference between two interest rates. On the bond market, the spread is usually measured in basis points (see basis point).

**Stibor (also interbank rate)** A daily reference rate based on the interest rates of unsecured loans offered by banks to other banks. In Sweden, the rate that banks offer to each other for lending in kronor is called STIBOR (Stockholm Interbank Offered Rate). It is used as a reference for setting interest rates or pricing derivative contracts.

**Supervisory review and evaluation process (SREP)** An internal, annual capital assessment that FI conducts on each individual credit institution. The scope of the SREP varies depending on the complexity and size of each institution.

**Swap** An agreement between two parties to exchange a certain currency/interest rate for another currency/interest rate for a period of time determined in advance and in accordance with certain terms.







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