Danmarks Nationalbank

Financial stability

2013

DANMARKS NATIONAL BANK 2013

FINANCIAL STABILITY 2013

The small picture on the cover shows a characteristic section of Danmarks Nationalbank's building, Havnegade 5 in Copenhagen. The building, which was constructed in 1965-78, was designed by the architect Arne Jacobsen (1902-71).

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Explanation of symbols:
- - Magnitude nil
- 0 Less than one half of unit employed
- • Category not applicable
- na. Numbers not available

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Foreword

Under the 1936 Danmarks Nationalbank Act, Danmarks Nationalbank must maintain a safe and secure currency system and facilitate and regulate the traffic in money and the extension of credit. One of Danmarks Nationalbank's main objectives is thus to contribute to the stability of the financial system.

Danmarks Nationalbank defines financial stability as a condition whereby the overall financial system is robust enough for any problems within the sector not to spread and prevent the financial system from functioning as an efficient provider of capital and financial services.

In its *financial stability* publication, Danmarks Nationalbank assesses financial stability in Denmark and presents its views and recommendations on measures that may contribute to enhancing financial stability. Furthermore, the publication is intended to stimulate debate about topics of relevance to financial stability and provide input for public authorities, individual financial institutions and financial sector organisations in relation to risk-assessment issues.

1. Recommendations and Assessment

Since 2008, the banks have focused on strengthening their capital base. Most banks currently hold sufficient equity to comply with the forth-coming EU requirements for Common Equity Tier 1 capital. But in addition, banks will need an adequate level of excess capital consisting of Common Equity Tier 1 capital, and many banks will need to replace existing issuances of Additional Tier 1 capital and Tier 2 capital with new issuances meeting the new criteria for subordinated capital.

The banks' liquidity has also improved in recent years. The liquidity situation of the systemic banks is good, and they use short-term issuance only to a limited extent.

Almost all government-guaranteed bonds issued in 2009-10 have been redeemed. The phasing-out has been satisfactory. Most non-systemic banks that faced challenges in connection with the expiry of government-guaranteed bonds have succeeded in adjusting their balance sheets and reducing the customer funding gap.

On the basis of Danmarks Nationalbank's analyses, the assessment is that the recommendations below will support financial stability in Denmark. The recommendations will help to restore a high level of confidence in the Danish financial sector – both nationally and internationally – thus enabling the banks to reap the full benefits of sound capitalisation and liquidity.

RECOMMENDATIONS

The recommendations of the Committee on Systemically Important Financial Institutions in Denmark should be implemented as soon as possible. It is important to ensure adequate defences around systemically important financial institutions to prevent them from becoming distressed. This reduces the risk of financial crises and their serious economic consequences.

Many banks should continue to strengthen their earnings and capitalisation. The banks' earnings are under pressure from high loan impairment charges, declining lending volumes and a low level of interest rates. New international rules will impose stricter requirements on the banks' capital as regards size and quality.

The mortgage banks should opt for a prudent business model. Investor confidence in the creditworthiness and liquidity of mortgage bonds is at the core of the mortgage-credit system. A suitable distance to the statutory limits is necessary in order to maintain this confidence. This means that the mortgage banks should not grant adjustable-rate loans, loans with deferred amortisation and loans financed by SDOs (covered bonds) or SDROs (covered mortgage bonds) right up to the statutory limits.

The level of disclosure should be high in connection with encumbrance of bank assets, including contingent encumbrance. A low degree of transparency may reinforce risks associated with asset encumbrance, because this makes it more difficult for unsecured creditors to assess their positions in the event of default.

Housing taxes should be changed so that they automatically reflect property and land values. The current freeze on property value tax and the adjustment rate for property taxes (land tax) contribute to amplifying house price fluctuations. When prices fall, taxes increase relative to property value – and vice versa.

Denmark should work towards completion of and participation in a forthcoming banking union that can serve as an insurance scheme in relation to systemic banks. The consolidated assets of Danish banks amount to almost four times Denmark's GDP. In addition, the consolidated assets of the largest bank as a ratio of GDP are among the highest in the EU.

Non-systemic banks should prepare for the phasing-in of new liquidity regulation. The systemic banks' efforts to prepare for the new requirements are welcomed. It is important that also non-systemic banks identify the necessary adjustments.

ASSESSMENT

Overall, Danmarks Nationalbank finds that the banks are resilient to severe macroeconomic shocks. But they are still facing substantial challenges. Most banks have a low return on equity and high loan impairment charges. Moreover, earnings are under pressure from falling lending volumes.

In Danmarks Nationalbank's stress test of the banks' capitalisation, comprising the 14 largest banks in Denmark, cf. Box 1-1, the systemic banks meet the capital adequacy requirements in all scenarios. Several

BANKS IN DANMARKS NATIONALBANK'S ANALYSES Box 1-1

Danmarks Nationalbank's assessment of financial stability in Denmark is based on the 14 largest banks and the mortgage banks. Together they cover 92 per cent of loans and guarantees from Danish banks and all lending by mortgage banks.

The Committee on Systemically Important Financial Institutions in Denmark has recommended that the five largest banks be identified as systemically important. In this report, the 14 banks are classified as five systemically important banks and nine non-systemic banks, cf. Appendix 1.

of the non-systemic banks will need to strengthen their capitalisation. For two banks, this need arises already in the baseline scenario.

In the assessment of Danmarks Nationalbank, any problems arising among non-systemic banks can be solved through business initiatives or within the current framework for mergers and resolution without appreciably affecting financial stability in Denmark. Besides the sound capitalisation of the systemic banks, this assessment is also based on the finding that the banks' liquidity is sufficiently stable to protect their funding from any threats caused by renewed market turmoil. In a stress scenario, in which the 10 largest term deposits and all long-term senior debt maturing in 2013-15 cannot be refinanced, the banks will still have sound excess liquidity cover. The risk of contagion from any problems in non-systemic banks is therefore assessed to be low.

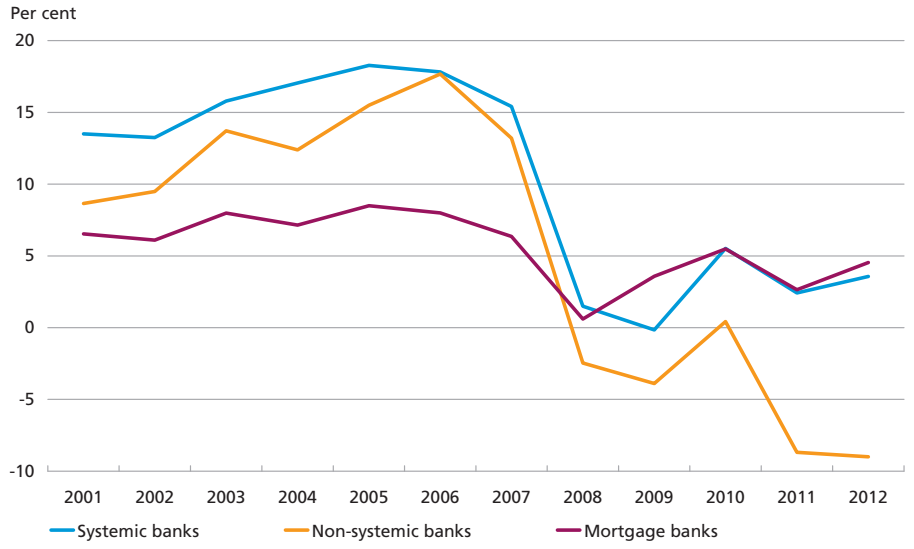
Since the beginning of the crisis, the mortgage banks have gradually raised their administration margins, so, at the current level of earnings, they are able to sustain considerably higher loan impairment charges than what they are posting at present.

Low return on equity

The return on equity has been low in recent years, and this development continued in 2012, cf. Chart 1-1. On average, the systemic banks recorded a return on equity of 3.6 per cent after tax in 2012. Non-systemic banks still showed considerable dispersion as regards earnings. In 2012 a few banks obtained a return on equity in the range of 12-14 per cent after tax. However, the average return on equity for non-systemic banks was negative in 2012, as in 2011.

The mortgage banks have been better than the banks at maintaining a return on equity only slightly lower than the pre-crisis level. Lending by mortgage banks has increased throughout the crisis, and rising administration margins have to some extent offset higher loan impairment charges. Moreover, falling interest rates have induced remortgaging activity.

RETURN ON EQUITY Chart 1-1



Note: Return on equity is calculated as profit before tax as a percentage of average equity.
Source: Danish Financial Supervisory Authority and own calculations.

High loan impairment charges

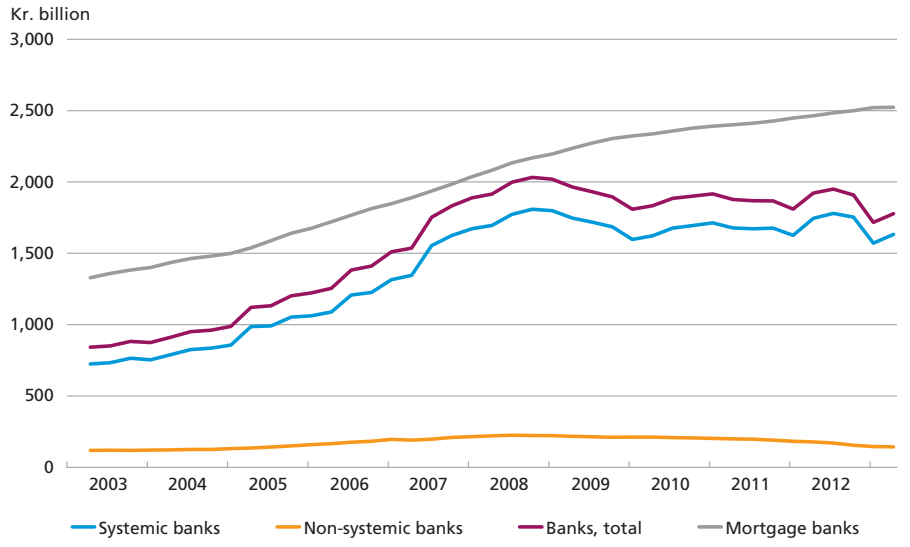
The banks' loan impairment charges continued to be high in 2012 and even increased relative to 2011. In the baseline scenario of Danmarks Nationalbank's stress test the annual average loan impairment charges decline gradually from 1.2 per cent in 2012 to 0.7 per cent in 2015. The loan impairment charges remain at the current level in a scenario with continued low growth, while rising considerably in the event of new global shocks to the economy.

Since 2008, the banks have posted high loan impairment charges especially on lending to building and construction, property companies and agriculture.

In 2012 the banks' loan impairment charges on firms in the trade and transport industries increased. Rising probabilities of default among vulnerable firms in these industries also pose a risk of loan impairment charges in the future. These industries account for 8 and 11 per cent, respectively, of the total loans and guarantees of the systemic and non-systemic banks.

The banks' loan impairment charge ratios on loans to households have remained low throughout the crisis. But since households account for a large share of the banks' total lending, they may still have a major impact on the size of the banks' total loan impairment charges. Danmarks Nationalbank's assessment of the households is that their finances as such do not pose a threat to financial stability. It is also the assessment that expiry

LENDING BY DANISH BANKS AND MORTGAGE BANKS Chart 1-2



Note: Lending to all sectors, excluding MFIs. Quarterly observations.
Source: Danmarks Nationalbank.

of the deferred-amortisation period for mortgage loans is manageable, and that there is no need for new legislation.

Declining lending

In 2012, lending by banks fell by kr. 92 billion, while lending by mortgage banks rose by kr. 73 billion, cf. Chart 1-2.

A declining lending volume affects the banks in several ways. It puts downward pressure on the banks' interest income, while also contributing to reducing risk-weighted assets. In recent years it has also helped to boost the banks' liquidity. In the period 2005-08 the banks accumulated a considerable customer funding gap. This was one of the reasons why the banks became increasingly reliant on less stable funding sources.

The customer funding gap has been reduced since the beginning of the financial crisis, and deposits and lending are now balancing overall. Generally, lending has primarily fallen, while deposits have been relatively constant. However, the development in deposits masks an increase in deposits from households and a decrease in deposits from other depositors.

The considerable increase in deposits from households, combined with declining use of less stable funding sources, enhances the stability of the banks' liquidity. The banks are thus more robust to periods of market turbulence than they were before the crisis.

SYSTEMICALLY IMPORTANT FINANCIAL INSTITUTIONS IN DENMARK Box 1-2

In March 2013, the Committee on Systemically Important Financial Institutions in Denmark, established by the Minister for Business and Growth, issued a number of recommendations regarding identification and requirements of Danish SIFIs, as well as proposals for crisis management tools.

The Committee recommends that a credit group be identified as a SIFI if either the ratio of total assets to GDP or the ratio of lending or deposits in Denmark to the sector's total lending or deposits in Denmark is above a fixed threshold. Given the recommended values, Danske Bank, Nykredit, Nordea Bank Danmark, Jyske Bank, BRF-kredit and Sydbank will be identified as SIFIs. In addition, it is recommended that DLR Kredit be considered for identification as a SIFI on the basis of a qualitative assessment. The Committee recommends that the Danish Financial Supervisory Authority identifies SIFIs on the basis of a recommendation from the Systemic Risk Council.

In order to minimise the probability that SIFIs become distressed, the Committee recommends imposing stricter requirements on Danish SIFIs. These include higher capital and liquidity requirements, requirements for good corporate governance, enhanced supervision and recovery and crisis management plans. In addition, it is recommended that SIFIs should be required to hold more stable funding as from 2014, and that LCR should be fully phased in by 2015.

The Committee recommends imposing an additional capital requirement on Danish SIFIs of 1-3.5 per cent of risk-weighted assets on the basis of a quantitative measure of the systemic importance of a SIFI. The requirement should be met in the form of Common Equity Tier 1 capital. Moreover, it is recommended that all SIFIs establish a "crisis management buffer" of 5 per cent of risk-weighted assets, comprising debt instruments to be converted into Common Equity Tier 1 capital or written down if the SIFI is subject to crisis management.

In the Committee's assessment, Bank Rescue Package 3 and the existing resolution scheme for mortgage banks are generally insufficient to handle distressed SIFIs. The Committee therefore finds that at present it should be considered likely that the central government may find it necessary to intervene if it is assessed, in a specific situation, that the derived effects of resolution would be more detrimental to the economy, including government finances, compared with a situation where the central government assumes a risk in connection with crisis management.

The Committee recommends establishment of a crisis management authority, which is to be responsible for crisis management of SIFIs. Another recommendation is to make further crisis management tools available to the authorities. This includes the authority to transfer all or parts of an institution's assets, rights and liabilities to a bridge bank, the possibility of selling the whole institution or parts thereof to a third party and the possibility of converting or writing down the SIFI's unsecured creditors. Finally, the establishment of a stability fund financed by SIFIs is recommended. The Committee recommends that the crisis management plan be activated if the crisis management buffer is converted, or if the total capital falls below 10.125 per cent of the risk-weighted assets.

The proposed crisis management tools are in line with those on the drawing board in the EU. Danmarks Nationalbank finds it appropriate to await the completion of the European framework before deciding on implementation of crisis management tools in Danish legislation. This ensures that the crisis management rules are the same for Danish SIFIs and other European banks.

GROWING CAPITAL NEEDS

In the coming years, new regulation will impose stricter requirements on the banks' capital as regards size and quality. So will the recommendations from the Committee on Systemically Important Financial Institutions in Denmark, cf. Box 1-2. Moreover, today the financial markets distinguish clearly between banks with different capitalisation. The return requirements are lower for both equity and debt for the more well-capitalised banks.

International studies by e.g. the Basel Committee on Banking Supervision, BCBS, find that higher capital requirements will result in a small increase in the banks' lending rates and a limited negative effect on growth. The effect is more than offset by a lower risk of financial crises.

In theory, the banks may find that holding more equity causes their total funding costs to rise, due to implicit government guarantees, deposit guarantee schemes and taxation. This rise is attributable to redistribution between the banks and the central government/deposit guarantee scheme, and it can be remedied – if politically desirable – via the taxation system and the contribution structure of the deposit guarantee scheme.

Higher funding costs are therefore a weak argument for not holding more equity. On the other hand, a high level of equity enables the banks to suffer substantial losses without becoming distressed. This reduces the risk of financial crises and their serious economic consequences.

Funding structure and return requirements

In principle, the risk and return on a bank's assets do not depend on its funding structure. Consequently, the total funding costs for the bank's assets are independent of the equity-to-debt ratio, cf. Chart 1-3.[1]

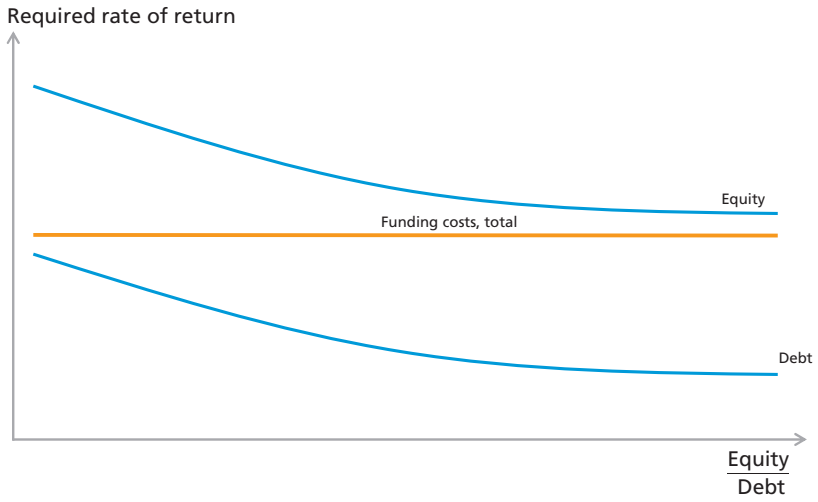
All the same, a number of factors may play a role so that the funding structure still influences the total funding costs of banks. These factors have opposite effects.

If a bank defaults, winding it up entails a number of costs, which are to be borne by those who have funded the bank. Since the risk of default increases with the degree of leverage, this will lead to higher funding costs for the bank.

However, the social costs if a large bank defaults may be of such magnitude that the central government decides to step in. In that case, funds are transferred from the government to the bank to avoid default. Since the risk of default increases for a high degree of leverage, there is a higher

[1] For more details, see Franco Modigliani and Merton H. Miller, The Cost of Capital, Corporation Finance and the Theory of Investment, *The American Economic Review*, vol. 48, No. 3, June 1958, pp. 261-297.

MODIGLIANI-MILLER THEOREM: CAPITAL COSTS ARE INDEPENDENT OF CAPITAL STRUCTURE Chart 1-3



probability of transfer of funds from the government to the bank. In other words, the value of the bank's implicit government guarantee grows as the debt ratio increases. This means that a high degree of leverage can reduce funding costs for the bank to the detriment of the central government.

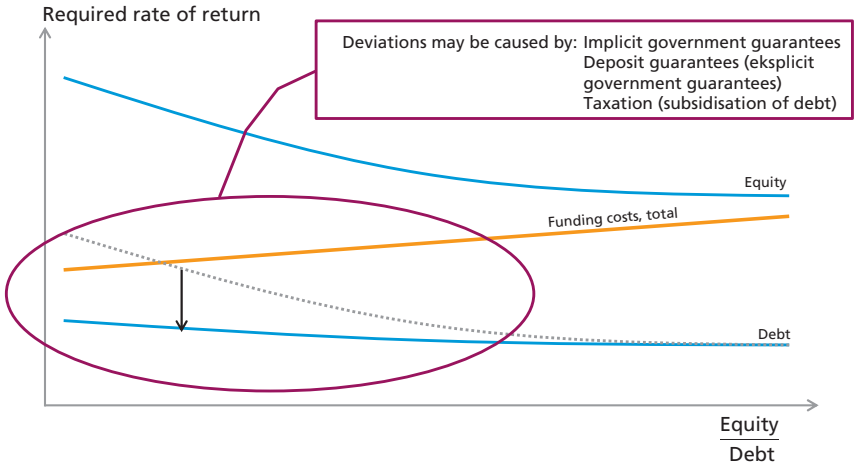
Tax legislation points the same way. Banks may deduct interest expenses on their tax returns, but not dividend to shareholders. So a high leverage ratio can reduce the total tax payments to the central government, although this effect is very limited in practice.

Finally, a large share of a bank's deposits is covered by the deposit guarantee scheme. Consequently, the rate of interest on this share of deposits does not depend on the bank's capitalisation. This means that the gain from holding more equity partially goes to the deposit guarantee scheme and not to the bank.

Notwithstanding factors with the opposite effect, injection of more equity into a bank may thus, in principle, increase the bank's funding costs, since it 1) reduces the value of the implicit government guarantee, 2) increases the bank's tax payments to the government and 3) reduces the value of the deposit guarantee, cf. Chart 1-4. Ultimately, the equity-to-debt ratio is therefore a question of redistribution between the bank and the central government/deposit guarantee scheme.

The extent to which banks are to contribute funds to (or receive funds from) the central government is a political issue. The small changes in tax payments that could be the result of holding more equity may be evened out through marginal changes in the taxation of banks if politically desir-

POSSIBLE DEVIATIONS FROM THE MODIGLIANI-MILLER THEOREM Chart 1-4



able. Moreover, the banks' contributions to the deposit guarantee scheme (i.e. their payment for an explicit government guarantee on a share of their deposits) can be risk-based, implying that the contribution is reduced for more well-capitalised banks.

On the other hand, there is no justification for establishing a finely meshed safety net of government guarantees to the banks' creditors to prevent the need for higher capital requirements. This would give the banks an incentive for riskier activities that could pose a risk to financial stability.

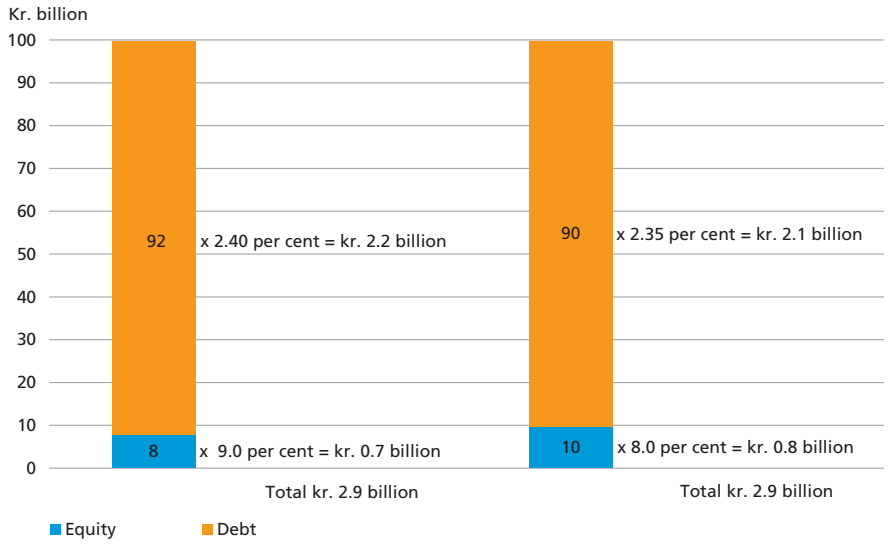
Return requirements – an example

Injection of more equity into a bank entails a decline in risk on both equity and debt and a lower return requirement for both.

This can be illustrated in stylised form. A bank has a balance sheet total of kr. 100 billion, cf. Chart 1-5 (left). Initially, the bank's equity (Common Equity Tier 1 capital) amounts to kr. 8 billion and its debt to kr. 92 billion, (Chart 1-5, left). The return requirements for these two items are 9 and 2.4 per cent, respectively. The funding costs thus total kr. 2.9 billion. Assuming that the average risk weight (risk) on the assets is 65 per cent, the bank's Common Equity Tier 1 ratio is 12. (kr. 8 billion of Common Equity Tier 1 / kr. 100 billion of assets * risk weight of 65 per cent = 12 per cent).

Now assume that the bank increases its equity to kr. 10 billion and reduces its debt to kr. 90 billion (Chart 1-5, right). Given an unchanged risk on the assets, the risk weight remains 65 per cent, entailing an increase in the Common Equity Tier 1 ratio to 15. The risk is now lower on both equity and debt, resulting in a lower return requirement for both.

EQUITY AND FUNDING COSTS Chart 1-5



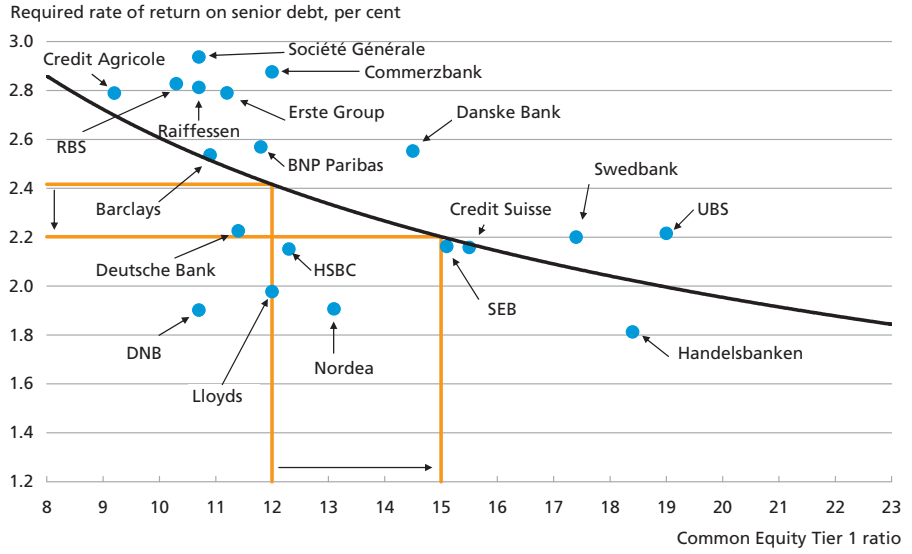
In the example, the return requirements for equity and debt are calibrated so that the total funding costs remain unchanged at kr. 2.9 billion. Consequently, the return requirement for equity must fall by 1 percentage point, while the return requirement for debt must fall by 0.05 percentage point as a result of the extra equity. As mentioned, this may not be the case in practice as government guarantees, taxation and deposit guarantees also play a role. If, on the other hand, the creditors factor in fear of the bank defaulting, better capitalisation may lead to a drop in the total return requirements.

Empirical relation between equity and return requirements

As a result of the financial crisis, investors today have sharpened their focus on risk. Before the crisis, funding costs varied only slightly among the banks. Today, the differences are far greater. Now, the banks can expect lower return requirements for their equity and debt if they are well capitalised.

Charts 1-6 and 1-7 illustrate the relationship between the Common Equity Tier 1 ratio and a return requirement – calculated on the basis of market data – for senior debt and equity, respectively, for a group of large European banks. The implicit government guarantee for the banks varies across countries. Moreover, the banks' earnings capacity varies considerably. Despite these differences, the return requirements tend to be lower for the more well-capitalised banks as regards both debt and equity.

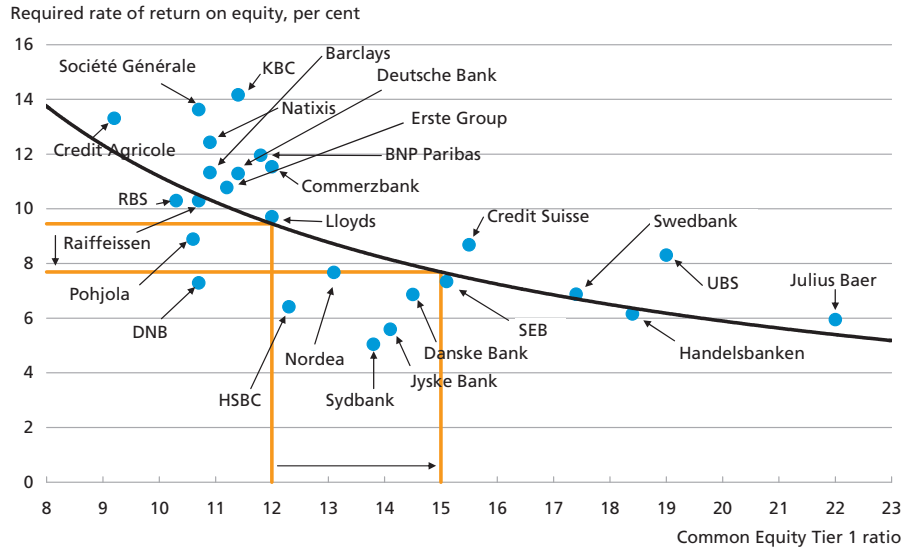
INVESTORS' REQUIRED RATE OF RETURN ON SENIOR DEBT — Chart 1-6



Note: The required rate of return on senior debt has been calculated on the basis of CDS spreads. The Chart shows the relationship in 2012 for a group of large European banks.
Source: Bloomberg and own calculations.

If the Common Equity Tier 1 ratio rises from 12 to 15, the trend lines in the two Charts illustrate that the return requirement for senior debt and equity fall by 0.2 and 1.7 percentage points, respectively, i.e. by more

INVESTORS' REQUIRED RATE OF RETURN ON EQUITY — Chart 1-7



Note: The required rate of return on equity has been calculated using CAPM. The Chart shows the relationship in 2012 for a group of large European banks.
Source: Bloomberg and own calculations.

than is necessary for the total funding costs to remain constant in the example in Chart 1-5. Naturally, these calculations are associated with great uncertainty. Nevertheless, Charts 1-6 and 1-7 show that the return requirements for senior debt and equity, respectively, fall when capitalisation increases.

The overall conclusion is that if more capital tends to increase funding costs, the increase can be attributed to implicit government guarantees, contributions to the deposit guarantee scheme that are independent of risk, and differences in taxation on interest and dividend. In other words, factors that are either basically unhealthy for the economy (implicit government guarantees) or can be remedied via the taxation system and the contribution structure of the deposit guarantee scheme.

HOUSING MARKET

Despite the banks' generally low loan impairment charges on households, there will still be loan impairment charges and losses in some segments of the housing market in the coming years due to differences in market condition and development. While the housing market is improving primarily in Greater Copenhagen, it remains weak in the peripheral areas. Western and southern Zealand in particular are hard hit. Since 2008, households have tended to move from the peripheral areas to mainly Copenhagen, but also to eastern Jutland to some extent.

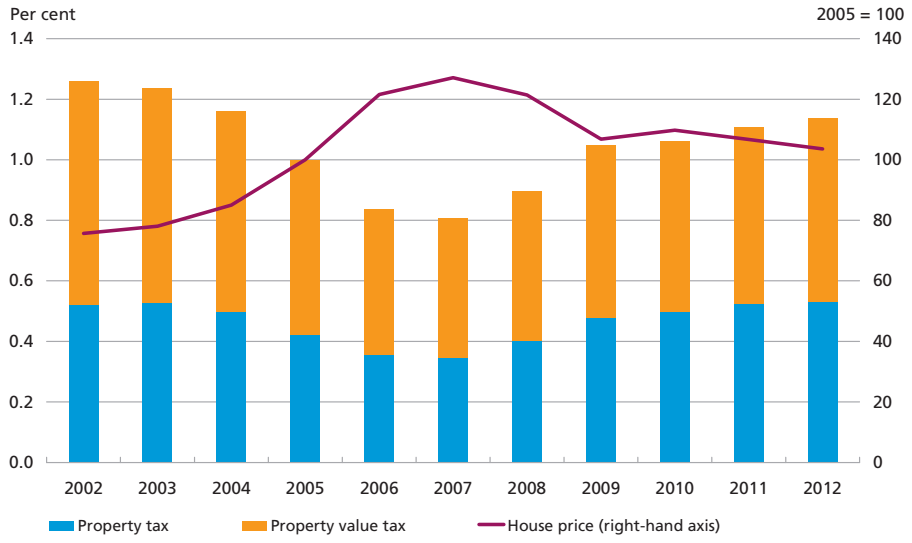
Housing taxation, consisting of property value tax and property tax, contributes to amplifying house price fluctuations.

Property value tax is a housing tax payable by all homeowners. The tax freeze nominally froze the property value tax at the 2002 level. However, if the property value falls below the 2002 level, the tax is reduced correspondingly. As a result of the freeze, the property value tax as a ratio of the property value fell in the years of rising house prices, i.e. until 2007, and rose in the following years with declining house prices, cf. Chart 1-8.

Property tax – also called land tax – is a tax on the land value payable by the landowner. It basically reflects the development in land values. However, there is a cap on year-on-year increases in property tax in the form of an adjustment rate. Consequently, if a rise in land values exceeds the adjustment rate, property tax as a ratio of land value is reduced. That was the case in the mid-2000s, and property taxes trailed behind land values in many parts of the country. In these areas, property tax therefore continued to rise at the maximum rate permitted, despite the falling or only slightly increasing land values.

The current housing taxation rules, particularly the freeze on property value tax at the 2002 level, thus contribute to amplifying house price fluc-

EFFECTIVE HOUSING TAXES Chart 1-8



Source: Statistics Denmark, Danmarks Nationalbank and own calculations.

tuations. The structure of housing taxes should therefore be changed so that they follow house prices, which will automatically help to stabilise house prices and ultimately the business cycle. Both more stable house prices and less pronounced cyclical fluctuations will have a positive impact on financial stability.

BANKING UNION

In response to the sovereign debt crisis in the EU, Herman Van Rompuy in June 2012 presented a proposal for a banking union comprising a single supervisory mechanism, SSM, a single resolution mechanism and an addition to the national deposit guarantee schemes (common deposit protection). The preparations for the SSM, initially for the euro area member states, are already well underway, cf. Box 1-3, while the remaining elements of the banking union await the outcome of the ongoing negotiations on a common rulebook for resolution (the Crisis Management Directive).

The vision behind the banking union is to prevent crises like the one seen in recent years and to mitigate the impact if a crisis should, nevertheless, arise. It is to help shield developments in the financial sector from developments in public finances in individual member states – and vice versa – and enhance financial stability. In the longer term, a banking union is to help support financial integration in the EU, and hence the single financial market.

SINGLE SUPERVISION OF CREDIT INSTITUTIONS IN THE EU Box 1-3

On 19 March 2013, the Council and the European Parliament concluded an agreement conferring specific tasks concerning prudential supervision of credit institutions on the European Central Bank, ECB (the single supervisory mechanism, SSM). The agreement is to contribute to strengthening financial stability in the EU and will enable the European Stability Mechanism, ESM, to inject capital directly into distressed credit institutions in the euro area.

The agreement confers the responsibility for the most important supervisory tasks in relation to credit institutions from the national supervisors to the ECB. The national supervisory authorities are to supervise credit institutions that have not requested or received financial assistance from the EFSF or the ESM, and which are regarded as less significant according to specific criteria. As a minimum, the ECB is to supervise the three most significant credit institutions in each participating member state, and may at any time choose to take over the supervision of a specific institution to ensure consistent supervision of high quality.

SSM participation is mandatory for the euro area member states, but non-euro area member states may also join the SSM. This is done by concluding an agreement with the ECB on close cooperation on financial supervision. The ECB must conclude a Memorandum of Understanding, MoU, with the non-euro area member states that do not wish to join the SSM. The MoU will describe how the ECB and the national supervisors will cooperate on prudential supervision of credit institutions operating in both participating and non-participating member states.

The ECB must observe a number of principles in the organisation of the supervisory tasks. The supervisory tasks should be carried out independently of monetary policy. For this purpose, the ECB must establish a Supervisory Board, which is to undertake the overall planning of supervisory tasks and make decisions in specific cases. One representative from each national supervisor participating in the SSM will attend the meetings of the Supervisory Board. A representative of a national supervisor may invite a representative of the national central bank to participate in the meetings of the Supervisory Board. As a main rule, the Supervisory Board's decisions will be based on a simple majority of votes, each participating member state having one vote. The decisions of the Supervisory Board must be approved by the ECB's Governing Council and are regarded as endorsed unless the Governing Council objects. If the Governing Council expressly disagrees with a decision of the Supervisory Board, the disagreement should be resolved by a mediation panel established by the ECB. Non-euro area member states may choose not to observe a decision reversed by the Governing Council. In that case, the ECB may suspend or terminate the cooperation with the non-euro area member state in question.

The ECB is expected to commence its supervisory activities on 1 July 2014, but may choose to take over the supervision of a specific institution before that date if so requested by the ESM. Similarly, before the ECB is to assume its supervisory tasks, it may choose to monitor the prudential supervision of specific institutions in order to ensure an expedient assignment.

From a Danish perspective, it would be valuable if the banking union were to be more than a single supervisory mechanism and contain an insurance element as well. This is motivated by the size and high degree of concentration of the Danish banking sector: The largest banks have

considerable cross-border activities, and the consolidated assets of the Danish banks are almost four times Denmark's GDP. This places Denmark slightly above the EU average. In addition, the ratio of the largest Danish bank's consolidated assets to Denmark's GDP is among the highest in the EU.

Joining only the SSM, i.e. without the other elements of the banking union, does not have the same value to Denmark as a full banking union would have. However, it may have certain advantages, e.g. a mark of quality if the market perceives the SSM as better than national supervision, and influence on supervision of banks abroad.

Overall, Danmarks Nationalbank recommends that Denmark should work towards completion of and participation in a forthcoming banking union that can serve as an insurance scheme in relation to systemic banks.

LAST YEAR'S RECOMMENDATIONS

Most of Danmarks Nationalbank's recommendations from *Financial stability 2012* still apply and are contained in this report's recommendations. Two recommendations from *Financial stability 2012* no longer apply, since they have been addressed satisfactorily.

Macroprudential policy

In *Financial stability 2012*, Danmarks Nationalbank recommended that an institutional framework be established for developing, assessing and implementing macroprudential instruments.

In late 2012, the Folketing (Danish parliament) passed a bill to establish a Systemic Risk Council tasked with identifying and monitoring systemic financial risks and issuing observations, warnings and recommendations in order to prevent or reduce the accumulation of such risks. Warnings and recommendations may be issued to the Danish Financial Supervisory Authority and – if they relate to legislation – to the government. If a recommendation is not observed, the recipient must justify this decision. Danmarks Nationalbank chairs the Systemic Risk Council and will provide analyses for the Council's work on a regular basis.

Non-systemic banks' liquidity on expiry of government-guaranteed debt

For a few non-systemic banks (groups 2 and 3 of the Danish Financial Supervisory Authority), government-guaranteed issuances accounted for a considerable share of their balance sheet total last year. Danmarks Nationalbank therefore recommended that these banks continued their adjustment to a business model that was viable in the longer term. Al-

most all government-guaranteed issuances have now matured or been redeemed. The phasing-out has been satisfactory. Most non-systemic banks that faced challenges in connection with the expiry of government-guaranteed issuances have succeeded in adjusting their balance sheets and reducing their customer funding gaps. In a few cases, Danmarks Nationalbank's measures to support liquidity provided the required flexibility. Moreover, Bank Rescue Packages 4 and 5 have solved the liquidity problems of particularly challenged banks.

Report Section

2. The Banks' Earnings and Capital

Bank earnings were under pressure on several fronts in 2012. Demand for new loans remained low, while loan impairment charges stayed high. Systemic banks all emerged from the year with a profit, while the picture for non-systemic banks was more diverse.

Most banks improved their capital bases during 2012. Much of the improvement was attributable to lower lending volumes, but some banks also carried out share issues.

Most banks currently hold sufficient equity to comply with the forthcoming EU requirements for Common Equity Tier 1 capital. But in addition, banks will need an adequate level of excess capital consisting of Common Equity Tier 1 capital, and many banks will need to replace existing issuances of Additional Tier 1 capital and Tier 2 capital with new issuances meeting the new criteria for subordinated capital. This also applies to systemic banks with regard to the recommendations of the Committee on Systemically Important Financial Institutions in Denmark.

BANKS IN DENMARK

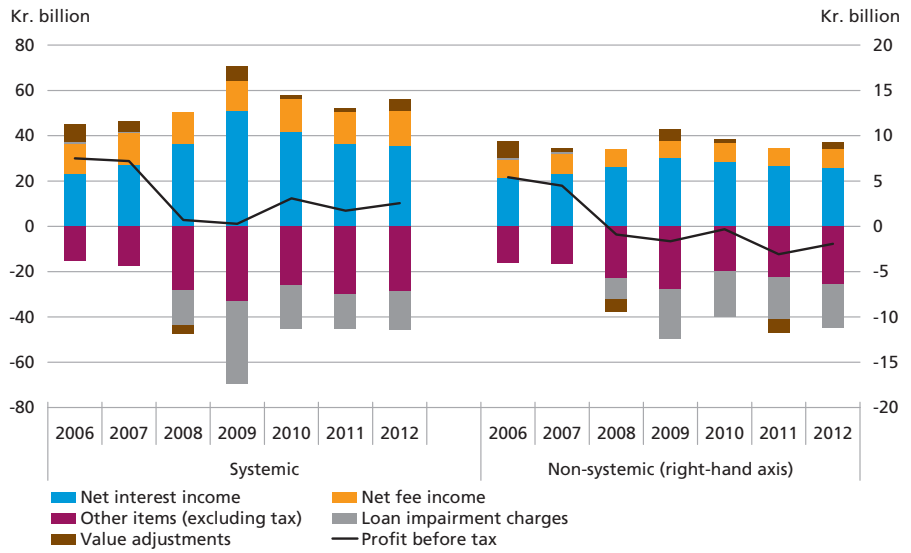
Earnings remained under pressure

Bank earnings remained low in 2012, but all systemic banks emerged from the year with a profit. The weighted average return on equity for systemic banks was 3.6 per cent after tax, i.e. 1.2 percentage points higher than in 2011.

Non-systemic banks continued to show substantial diversity in earnings. Close to half of these banks were still recording substantial losses, while the rest recorded profits. A few non-systemic banks achieved a return on equity in 2012 in the range of 12-14 per cent after tax. The weighted average return on equity for non-systemic banks was negative by 10.1 per cent after tax relative to a negative 8.7 per cent in 2011.

In the course of 2012, many banks increased their prices on loans, generally enabling them to keep net interest income unchanged, cf. Chart 2-1, despite lower lending volumes. Excluding repos, lending by systemic banks declined by 6 per cent relative to end-2011, while lending by non-systemic banks fell by 20 per cent. Part of the decrease is attributable to the ongoing balance-sheet reduction of FIH Erhvervsbank, implying e.g.

EARNINGS BROKEN DOWN BY KEY ITEMS, BANKS — Chart 2-1



Note: "Other items (excl. tax)" comprises dividends from shares, other operating income, income from associates and subsidiaries, income from assets held temporarily, staff and administration costs, amortization and depreciation of intangible and tangible assets and other operating expenses.
Source: Danish Financial Supervisory Authority and own calculations.

that a large proportion of the bank's property loans have been transferred to the Financial Stability Company.[1]

In normal circumstances, bank interest rates fluctuate with monetary-policy interest rates, but the extremely low level of interest rates has made it difficult – not to say impossible – for banks to reduce deposit rates further. But as a result of higher prices on loans, rising lending margins more than offset the widening of negative deposit margins, cf. Chart 2-2.

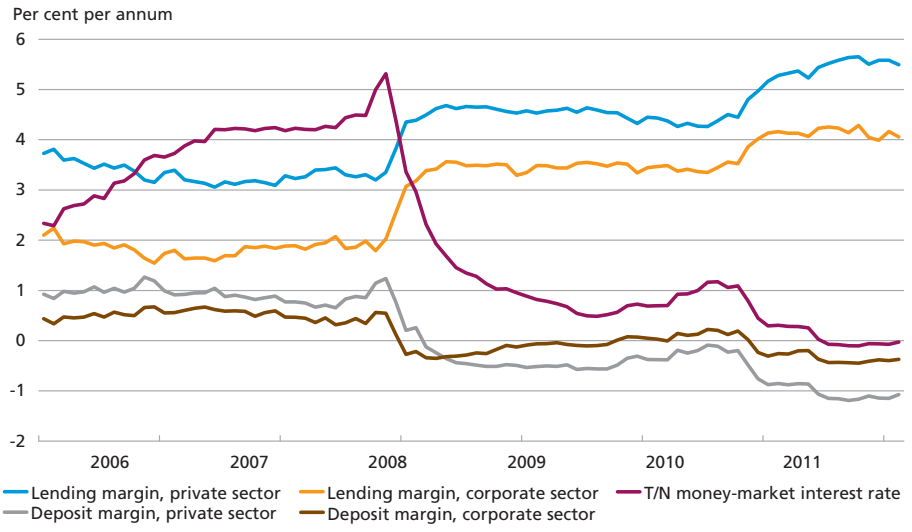
Earnings from bank trading activities showed moderate progress in the form of positive value adjustments and slightly increasing fee income from securities trading.

In 2012, the number of branches of Danish banks was reduced by 13 per cent, while the number of employees decreased by 7 per cent. Due to costs related to restructuring, including severance payments, etc., the measures implemented have yet to be reflected in falling costs.

Systemic banks also recorded growth in subsidiary earnings. Accounting effects in Danica Pension had a positive impact on Danske Bank. Higher administration margins in Realkredit Danmark and Nordea Kredit also had a positive effect on the profits of Danske Bank and Nordea Bank Danmark, respectively.

[1] Cf. Danmarks Nationalbank, *Financial stability*, 2012, page 31, Box 4.

AVERAGE DEPOSIT AND LENDING MARGINS Chart 2-2



Note: The most recent observation is February 2013. Lending margins are calculated as the difference between the average lending rate and the T/N money-market interest rate (monthly average). Deposit margins are calculated as the difference between T/N money-market interest rate (monthly average) and the average deposit interest rate. The calculations comprise deposits and lending in Danish kroner.

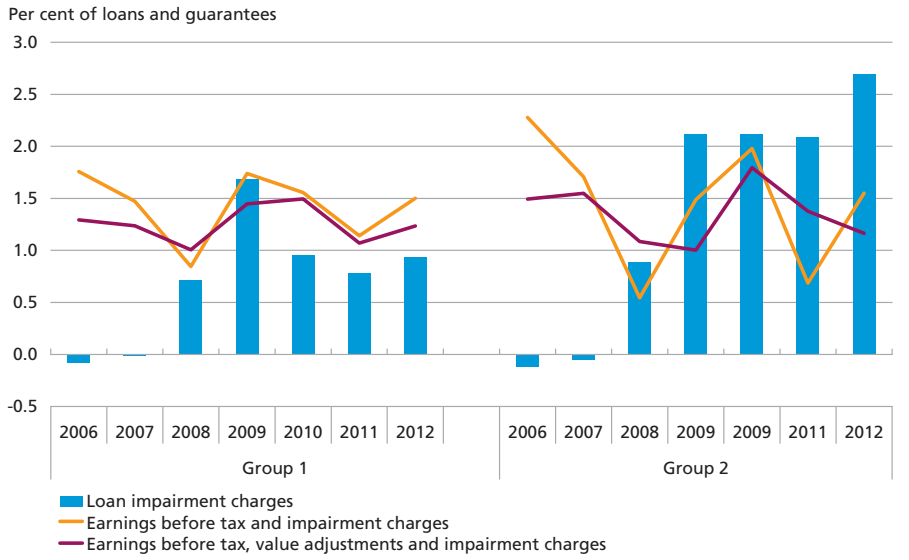
Source: Danmarks Nationalbank.

Loan impairment charges

Loan impairment charges remained high in 2012. For systemic banks, the impairment charge ratio for loans and guarantees to households increased from 0.5 to 0.7 per cent on average in 2012, while it was unchanged at 1.1 per cent with regard to corporate customers. For non-systemic banks, the impairment charge ratio for loans and guarantees to households rose from 1.0 to 1.1 per cent in 2012, while the impairment charge ratio for loans and guarantees to corporate customers grew from 2.7 to 3.7 per cent. Overall, the loan impairment charges of non-systemic banks were still too high to be covered by earnings, cf. Chart 2-3, but there was considerable variation from one bank to the next. Loans to agriculture and property companies, etc. still accounted for most of the loan impairment charges of non-systemic banks.

In 2012, the Danish Financial Supervisory Authority issued detailed guidelines for loan impairment charges, taking effect for the first time in banks' interim reports for the 1st half of 2012. For several banks, the new guidelines led to a more conservative approach to the valuation of loans. Some of the loan impairment charges in 2012 should be assumed to be attributable to the implementation of the new guidelines.

EARNINGS AND IMPAIRMENT CHARGES ON LOANS AND GUARANTEES Chart 2-3



Note: Loans and guarantees are calculated as an average of loans and guarantees at the beginning and the end of the year.
Source: Danish Financial Supervisory Authority and own calculations.

In March 2013, the International Accounting Standards Board, IASB, issued a proposal for new international rules on loan impairment charges. Under this proposal, all loans must be written down by an expected loss to be estimated based on probability-weighted outcomes. As a new feature, loans for which no evidence of impairment has yet been identified must also be written down. The effects of the proposal and its expected date of enactment are not yet known.

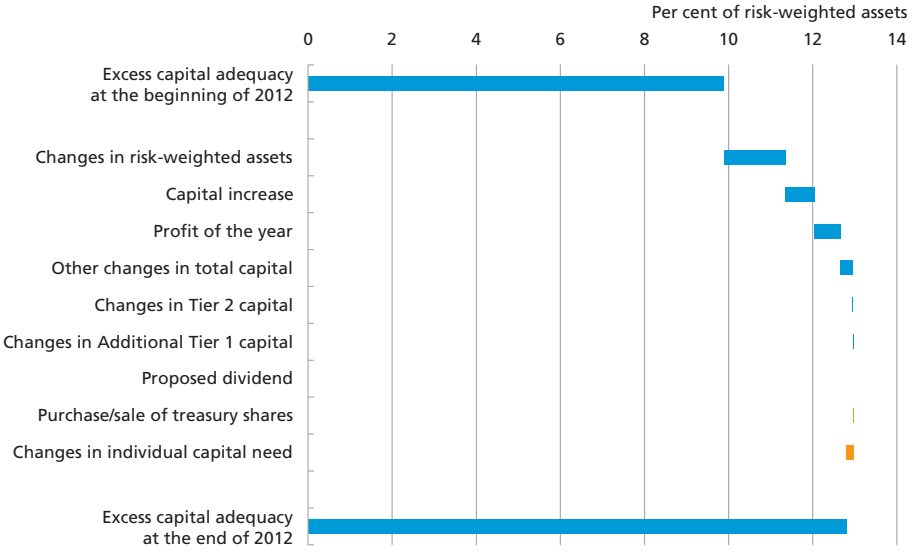
Improved capital bases

In 2012, all but two non-systemic banks improved their capital bases in the form of higher Common Equity Tier 1 ratios and increased excess capital adequacy relative to their individual capital needs.

Much of the capital base improvement is attributable to declines in risk-weighted assets, cf. Charts 2-4 and 2-5, respectively. The decreases in risk-weighted assets are driven, among other factors, by lower lending volumes. Some banks have also made other balance-sheet adjustments, including portfolio management and divestment of securities holdings.

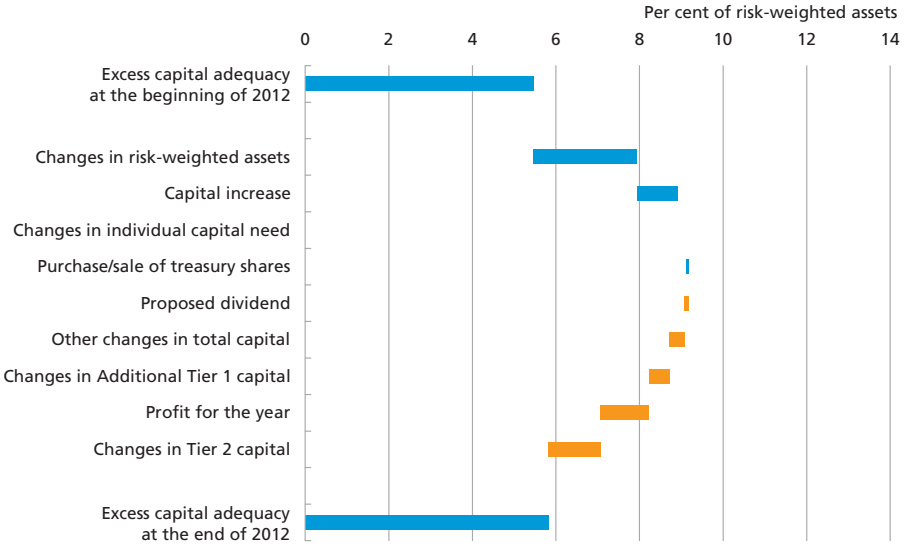
Several banks improved their capital bases through capital increases. Danske Bank, Jyske Bank, Spar Nord Bank and Vestjysk Bank launched share issues with pre-emptive rights for existing shareholders or targeting a group of investors, while Alm. Brand Bank received fresh capital from its parent company. The Vestjysk Bank share issue was part of the capital plan submitted by the bank in connection with its merger with

CHANGES IN EXCESS CAPITAL ADEQUACY, SYSTEMIC BANKS — Chart 2-4



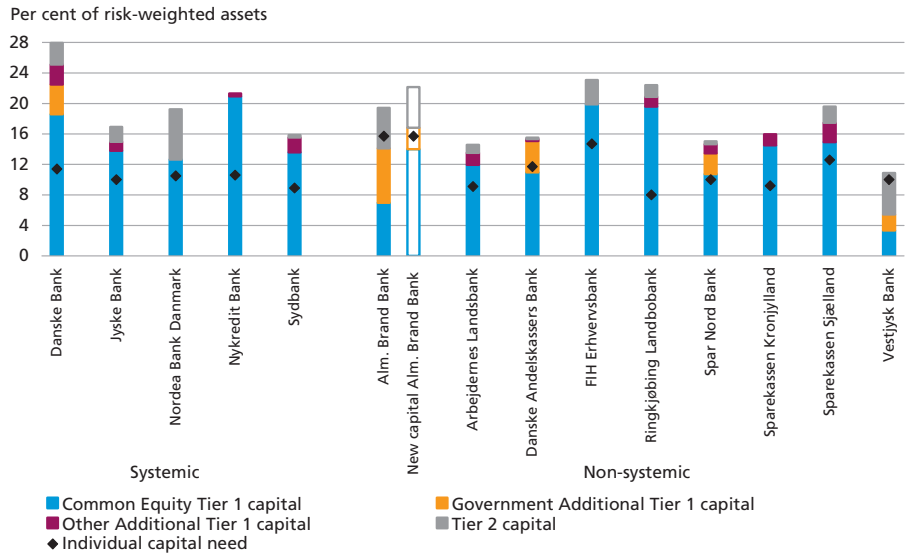
Note: Excess capital adequacy is capital in excess of the individual capital need. "Other changes in total capital" includes value adjustments through other comprehensive income and changes to regulatory deductions.
Source: Danish Financial Supervisory Authority, annual reports and own calculations.

CHANGES IN EXCESS CAPITAL ADEQUACY, NON-SYSTEMIC BANKS — Chart 2-5



Note: Excess capital adequacy is capital in excess of the individual capital need. "Other changes in total capital" includes value adjustment through other comprehensive income and changes to regulatory deductions. "Other changes in total capital" also includes the net effect of divestment of net assets and the receipt of a group capital injection in connection with the demerger of FIH Erhvervsbank. "Capital increase" includes conversion of Additional Tier 1 capital in Vestjysk Bank.
Source: Danish Financial Supervisory Authority, annual reports and own calculations.

COMPOSITION OF TOTAL CAPITAL, END 2012 Chart 2-6



Note: "New capital Alm. Brand Bank" includes a capital injection from the bank's parent company on 26 February 2013 and partial redemption of government Additional Tier 1 capital on 19 March 2013.
Source: Danish Financial Supervisory Authority, company announcements and own calculations.

Aarhus Lokalbank. In addition, part of Vestjysk Bank's government Additional Tier 1 capital was converted into share capital. At end-2012, most banks had considerable excess capital adequacy relative to their individual capital needs, cf. Chart 2-6.

As a result of low earnings, banks are still reluctant to pay dividends. Only the two non-systemic banks with the highest returns on equity have distributed part of the profits earned in 2012 as dividends to shareholders.[1]

The rules on the individual capital need were amended at the end of 2012, cf. Box 2-1. In future, the individual capital need will be a "soft" requirement. At the same time, the difference between the individual capital need and the minimum requirement of 8 per cent of risk-weighted assets must be met by Common Equity Tier 1 capital or subordinated capital that may automatically be converted into equity.

Need for adjustment to new capital requirements

The new capital adequacy rules, CRD IV/CRR, impose stricter requirements on bank capital as regards size and quality, cf. Appendix 2. The European Banking Authority, EBA, has published studies of the impact of the new rules on the capital bases of a group of European credit institutions. Three

[1] Moreover, two savings banks paid interest on their guarantee capital. These amounts are included in "proposed dividend" in Chart 2-5.

NEW RULES ON THE INDIVIDUAL CAPITAL NEED Box 2-1

In December 2012, the Folketing (Danish parliament) adopted an amendment to the Financial Business Act, designed to enable the Danish Financial Supervisory Authority to take a more patient approach to banks under pressure. The purpose of the new approach is to balance the consideration for protection of depositors and other creditors with the consideration for possible recovery.

Since 2007, Danish banks and mortgage banks have been required to comply both with the minimum requirement of 8 per cent of risk-weighted assets (the Pillar 1 requirement) and the individual capital need (the Pillar 2 requirement). Non-compliance with these requirements has resulted in revocation of the licence to operate as a credit institution unless capital was restored within a short period of time. The financial crisis has seen more bank closures due to non-compliance with the individual capital need, although the bank's total capital ratio was still assessed to be higher than the 8 per cent minimum requirement.

In future, the individual capital need will be a "soft" requirement, while the 8 per cent requirement will remain a "hard" requirement. Non-compliance with the 8 per cent requirement will result in revocation of the bank's licence, unless capital is restored within a short period of time. Non-compliance with the "soft" requirement will enable the Danish Financial Supervisory Authority to impose restrictions on managerial decisions and implement a number of supervisory processes. The purpose is to give the bank more time to redress its financial position or find a private solution. If the Danish Financial Supervisory Authority finds that the bank's capital recovery lacks sufficient momentum or that the recovery plans are unrealistic, the Danish Financial Supervisory Authority may respond by issuing an order or, ultimately, by revoking the bank's licence, although it complies with the minimum capital requirement.

The special Danish requirement for banks to publish their individual capital needs will remain in force. As a new requirement, the portion of the individual capital need that exceeds 8 per cent of risk-weighted assets must in principle be met by Common Equity Tier 1 capital. Subject to a specific and individual assessment, the Danish Financial Supervisory Authority may authorise banks to meet the requirement by other types of capital, which are automatically converted to equity or written down in case of non-compliance with the individual capital need or in case of non-compliance with an adequate level of Common Equity Tier 1 capital.

In continuation of the amendment, the Financial Supervisory Authority has issued new guidelines for the calculation of the individual capital need.[1] The guidelines provide the so-called 8+ approach under which an add-on to the minimum requirement of 8 per cent of risk-weighted assets is established. Under this approach, an amount equivalent to 8 per cent of the loan's risk weight in the capital need is to be allocated for loans exhibiting no major signs of weakness, while, for loans to customers in financial distress, an amount equivalent to the conservatively estimated loss if the loan is terminated due to default is to be allocated.

[1] Cf. The Danish Financial Supervisory Authority's guidelines on adequate total capital and capital needs for credit institutions, Annex 1 of the Danish Financial Supervisory Authority's Executive Order on Capital Adequacy.

Danish credit institutions participated in the most recent analysis, published in March 2013. They were all better prepared to meet the new capital requirements than the average European credit institution.

Most Danish banks currently hold sufficient equity to comply with the forthcoming EU requirements for Common Equity Tier 1 capital. But in addition, banks will need an adequate level of excess capital consisting of Common Equity Tier 1 capital, and many banks will need to replace existing issuances of Additional Tier 1 capital and Tier 2 capital with new issuances meeting the new criteria for subordinated capital. This also applies to systemic banks with regard to the recommendations of the Committee on Systemically Important Financial Institutions in Denmark.

During the final CRD IV/CRR negotiations, the risk weights on loans to small and medium-sized enterprises were eased. The reduction of risk weights does not provide for a more resilient financial system, on the contrary. The purpose of the reduction is to increase lending by European credit institutions to small and medium-sized enterprises in the EU by allowing a general 24 per cent reduction in the risk weights on these enterprises. This is surprising since, from a risk perspective, a general reduction in the risk weights on loans to small and medium-sized enterprises does not appear to be justified. Therefore, banks should not include the reduction in their capital planning. The reduction may also erode confidence in risk-weighted assets as a measure of bank asset risk.

NORDIC BANKING GROUPS

Danske Bank and Nordea have considerable activities in the Nordic countries, offering a wide range of products. Consequently, a comparison with other Nordic groups may help to provide an assessment of the trend in earnings and capitalisation relative to comparable competitors.

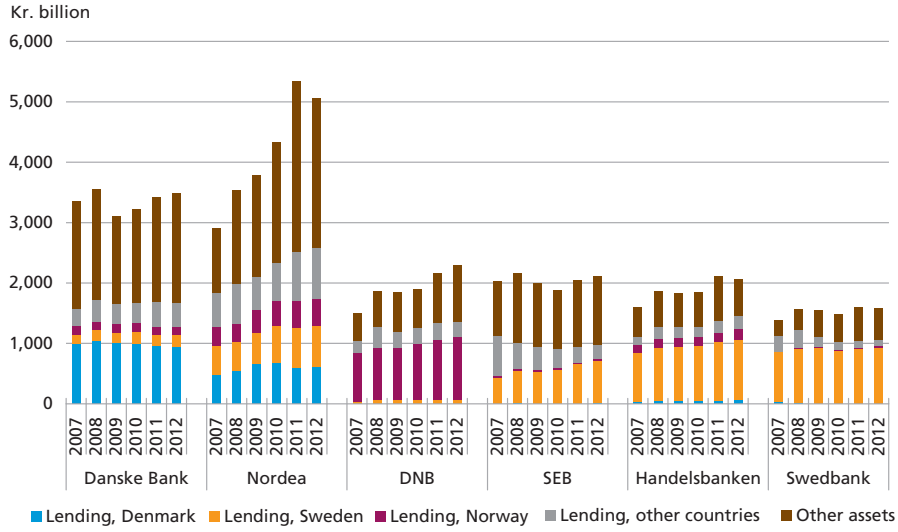
Balance-sheet development and earnings

Except for Nordea, the Nordic groups have seen relatively stable balance-sheet developments in recent years, cf. Chart 2-7. In Nordea, fluctuations in total assets are driven primarily by derivatives activities.

In 2012, Nordic banking groups increased lending by between 3 and 10 per cent. At 3 per cent, Danske Bank and Nordea posted the lowest lending growth, while Handelsbanken increased lending by 6 per cent. In terms of lending, Handelsbanken was the sixth largest bank in Denmark at end-2012. Generally, deposits were also rising in Nordic groups. In absolute terms, deposits in Danske Bank, Nordea and DNB grew more than lending.

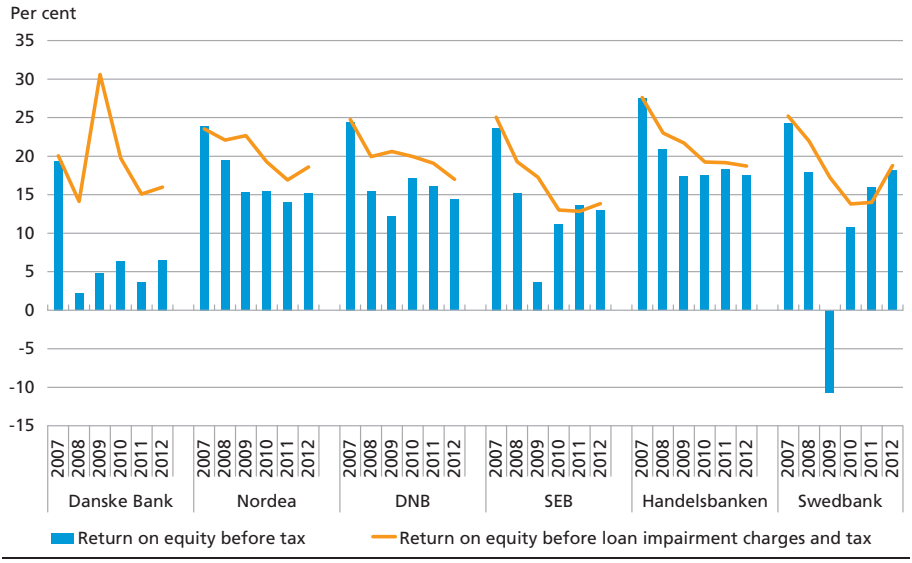
For several years, Danske Bank's return on equity has been lower than that of the other Nordic groups, attributable primarily to higher loan impairment charges, cf. Chart 2-8. The difference in the trend and level

TOTAL ASSETS Chart 2-7



Note: Total assets have been converted into Danish kroner at the exchange rate at the end of 2012 applying throughout the review period. For Danske Bank the geographical distribution applies to lending from banking activities. DNB does not state lending to Denmark. The country distribution of SEB's lending in 2007 is based on the country distribution for 2008. For Swedbank the geographically distributed lending as from 2009 is based on total credit exposures.
Source: Annual reports and own calculations.

RETURN ON EQUITY BEFORE TAX Chart 2-8



Note: Return on equity before tax calculated on the basis of the average equity at the beginning and end of the year.
Source: Annual reports and own calculations.

of loan impairment charges among the groups may be explained in part by the geographical distribution of loans. Danske Bank has recorded higher loan impairment charges in its domestic market than the other Nordic groups. The reason is that the economic downturn in Denmark has been more severe than in Sweden and Norway. Previously, several of the Nordic groups suffered from high loan impairment charges in the Baltic States, but they were at a considerably lower level in 2012. Danske Bank has also had high loan impairment charges in Northern Ireland and Ireland where the bank is currently seeking to divest a large portion of its lending portfolio.

Capitalisation

In 2012, the Nordic groups increased their Tier 1 ratios through higher Tier 1 capital and declines in risk-weighted assets.[1] Although the size of balance sheets was largely unchanged, risk-weighted assets decreased by between 3 and 14 per cent due, *inter alia*, to changed risk calculation models. International focus on the calculation of risk-weighted assets has increased, cf. Box 2-2.

The recommendations of the SIFI Committee on the size of the systemic risk buffer for Danske Bank are in line with the requirements in Sweden where Nordea, SEB, Handelsbanken and Swedbank have all been identified as SIFIs. Norway has yet to determine the criteria for identification of SIFIs.[2]

[1] Except for SEB whose Common Equity Tier 1 capital was reduced following the implementation of changed accounting rules.

[2] In March 2013, the Norwegian Ministry of Finance proposed new capital requirements for credit institutions based on CRD IV/CRR with proposed implementation on 1 July 2013. The bill states that the Ministry may determine criteria for appointing banks as SIFIs. These banks will be subject to more stringent requirements.

INTERNATIONAL STUDIES OF DIFFERENCES IN RISK-WEIGHTED ASSETS Box 2-2

During the last few years, the considerable international variation in the risk weights applied by banks in the calculation of their capital bases has been in focus. Both the Basel Committee on Banking Supervision, BCBS, and the European Banking Authority, EBA, have conducted detailed studies of this issue and submitted preliminary findings in early 2013. More in-depth analyses are expected to be performed in the 2nd half of 2013.

The Basel Committee report focuses on the risk weights for market risk in trading activities of 16 equal-sized cross-border banks.[1] In addition, a test of 15 banks has been conducted in which their respective risk-measurement models were applied to a hypothetical trading portfolio. Two main sources of the substantial differences in the results of the exercise were identified:

- The first source was regulatory and supervisory decisions. Banks operate in different jurisdictions with different rules for the assessment of asset risk. Although increased international harmonisation of the rules will gradually reduce the level of variation, the report highlights that supervisory authorities may extensively adjust certain elements of the rules on bank risk models. Variations in the treatment of banks by supervisory authorities may be justified – e.g. the quality of their risk-management systems may play a role – but lack of transparency in such decisions renders comparisons of banks' risk-weighted assets difficult. Consequently, the report recommended increased public disclosure of regulatory and supervisory decisions.
- The second major source of variations in risk-weighted trading portfolios was differences in bank risk models, e.g. in terms of how losses in prior periods affect the risk assessment going forward. The report concluded that variations in risk weighting due to these factors could be reduced e.g. by restricting the types of modelling options available to banks.

The first EBA report on this topic made a comparison of the calculation of credit risk on assets of 89 European banks.[2] The calculations showed substantial variations in the banks' calculations of risk-weighted assets and expected losses. The most substantial variations in the risk weights applied were related to enterprises and households. The report concluded that about half of the total variation in banks' risk-weighted assets (as a ratio of total assets) could be explained by differences in rules, business models and markets, while the other half was attributable to variations in the methodologies used for risk measurement of certain assets in banks' internal models.

So far, the primary focus of Nordic supervisory authorities has been on banks' risk weights on housing and corporate loans.

[1] Basel Committee on Banking Supervision, BCBS, Regulatory Consistency Assessment Program, RCAP, – Analysis of Risk-Weighted Assets for Market Risk, January 2013.

[2] European Banking Authority, EBA, Interim Results of the EBA Review of the Consistency of Risk-Weighted Assets – Top-Down Assessment of the Banking Book, January 2013.

3. The Banks' Liquidity

The liquidity situation of the systemic banks is good. The opportunities for raising loans in the market are utilised, and the banks use short-term issuance only to a limited extent.

Almost all government-guaranteed bonds issued in 2009-10 have been redeemed. The phasing-out has been satisfactory. Most non-systemic banks facing challenges in connection with the expiry of the government-guaranteed bonds have succeeded in adjusting their balance sheets and reducing their customer funding gaps. In a few cases, Danmarks Nationalbank's liquidity measures provided the required flexibility. Moreover, Bank Rescue Packages 4 and 5 have solved the liquidity problems of particularly challenged banks.

Danmarks Nationalbank welcomes the systemic banks' efforts to prepare for the coming liquidity regulation. Although the LCR will not be implemented until 2015 and its final calibration remains uncertain, it is important that also the non-systemic banks identify any adjustments necessary to meet the new requirement.

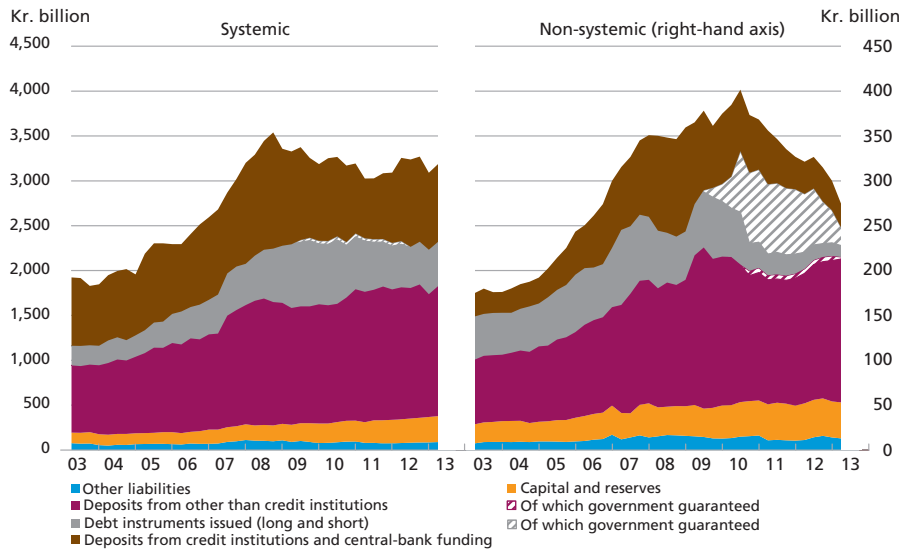
BACKGROUND

The banks' lending and other assets are primarily financed by deposits, long-term debt issuance and loans from other credit institutions. It is important that the composition of funding sources is tailored to the size and business model of the individual bank. For instance, it is easier for large banks than for small banks to maintain access to raise loans in the market. The banks' balance sheets have been reduced, and the use of market funding has diminished, particularly for non-systemic banks, cf. Chart 3-1. Overall, a diversified composition of funding sources contributes to reducing and spreading the banks' refinancing risks.

DEPOSIT FUNDING

In the period 2005-08, the banks accumulated considerable customer funding gaps, cf. Chart 3-2, and in consequence became increasingly dependent on market funding. The gaps have subsequently been narrowed, and deposits and lending now balance overall. In particular, lending has been reduced, while deposits have been fairly constant. The development in deposits varies considerably from bank to bank. Overall,

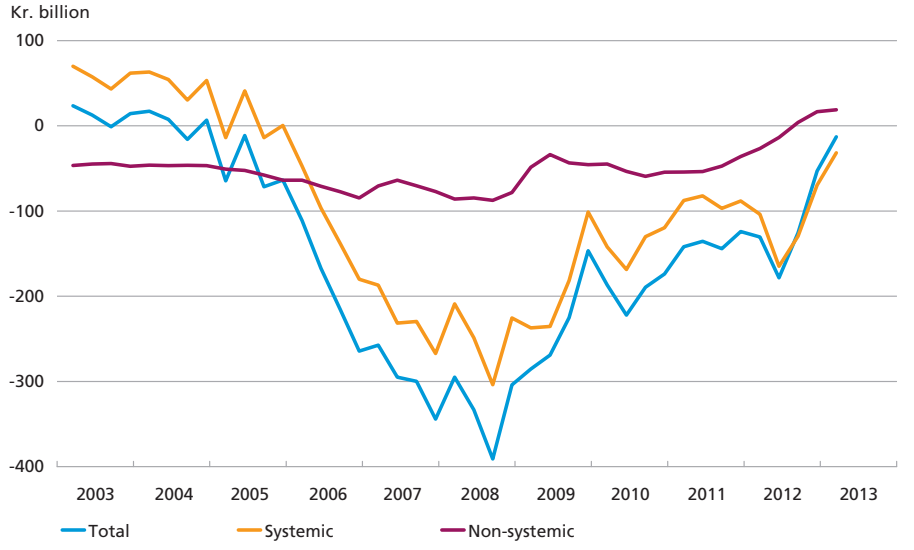
COMPOSITION OF THE LIABILITIES SIDE — Chart 3-1



Note: The banks' liabilities side has been calculated excluding derivatives. A few government-guaranteed bonds were issued by Special Purpose Vehicles, SPVs, on the basis of loans with individual government guarantees to Danish banks or mortgage banks. The banks' loans from SPVs are included on the liabilities side as deposits from other than credit institutions. The most recent observation is from the 1st quarter of 2013.

Source: Danmarks Nationalbank and own calculations.

CUSTOMER FUNDING SURPLUS — Chart 3-2



Note: Lending and deposits are excluding repos in the domestic banks, but including – due to data limitations – repos in foreign branches of Danish banks. Overall, the banks' repo lending exceeds their repo deposits, so the customer funding surplus is larger when repos are excluded than when they are included. The most recent observations are from the 1st quarter of 2013.

Source: Danmarks Nationalbank and own calculations.

the non-systemic banks' deposits have grown, while those of the systemic banks have declined slightly. This development masks, among other factors, a rise in deposits from households and a drop in deposits from other depositors such as firms and the insurance and pension sector.

In June 2012, the Danish Financial Supervisory Authority ordered Danske Bank to reduce its customer funding gap by kr. 75 billion by end-2013.[1] As early as the 1st quarter of 2013, the bank had reduced the gap by more than the ordered amount and thus made a considerable contribution to the overall reduction of the customer funding gap since 2011. The majority of the other systemic banks contributed to the reduction too. Since end-2011, nearly all the non-systemic banks have increased their customer funding surpluses, reduced their customer funding gaps or turned gaps into surpluses, entailing that only two out of nine non-systemic banks now have customer funding gaps of more 3 per cent of their total assets, compared to five out of nine at the end of 2011.

The households account for a considerable share of the deposits, particularly in the non-systemic banks. Household deposits are a stable source of funding, while deposits from e.g. large corporate customers and professional investors are less stable. The stability of household deposits reflects that these deposits are from many small customers, whose deposits up to approximately kr. 750,000 are covered by the deposit guarantee scheme. The sizable rise in household deposits combined with a decline in deposits from less stable sources contributes to more stable deposits.

In order to improve the balance between deposits and lending, several banks made efforts to attract deposits in the 2nd half of 2011, which resulted in a wider spread between the rates on term deposits offered by the banks. This spread has subsequently narrowed, but remains wider than at the beginning of 2011.

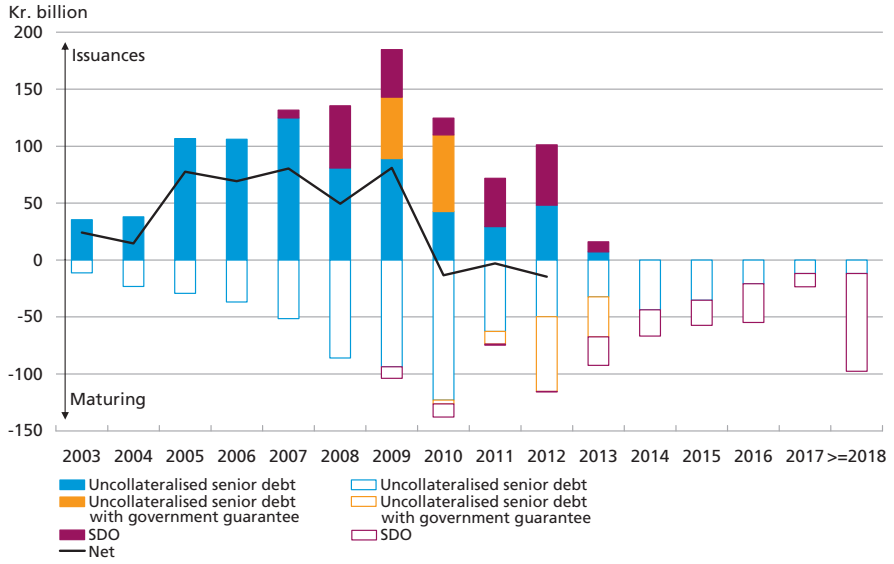
MARKET FUNDING

The banks' market funding mainly consists of deposits from other credit institutions and long-term debt issuance. The banks' short-term debt issuance only accounts for a minor share of market funding. Mainly the systemic banks have access to issue long-term debt instruments in the form of senior debt and covered bonds, SDOs.[2]

1 The order was announced in February 2013.
2 Danske Bank is the only Danish bank issuing SDOs.

ISSUANCE AND MATURING OF DEBT INSTRUMENTS WITH AN ORIGINAL MATURITY OF MORE THAN 1 YEAR

Chart 3-3

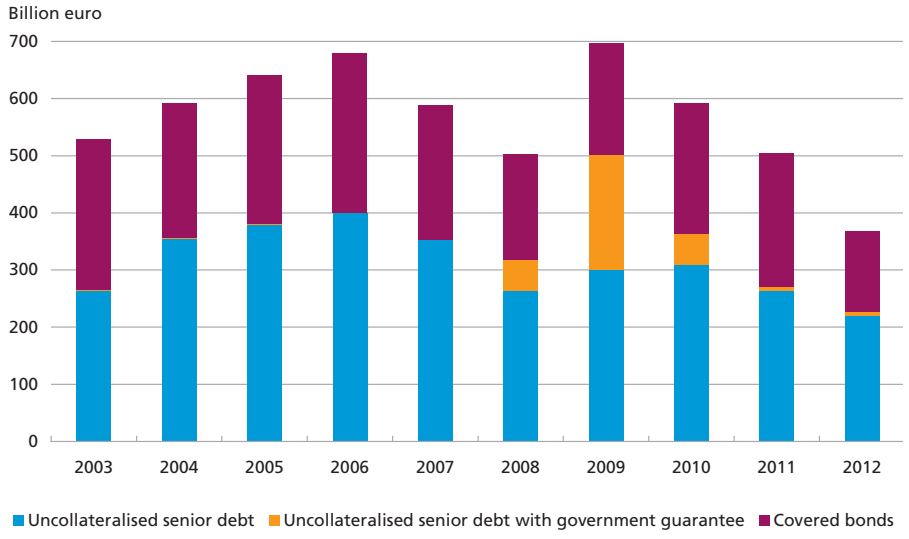


Note: Nominal value of Danish banks' issuance and maturing of debt instruments. Issuance in 2013 up to and including March, but maturity for the full year 2013.

Source: Danmarks Nationalbank and own calculation.

ISSUANCE OF DEBT INSTRUMENTS WITH AN ORIGINAL MATURITY OF MORE THAN 1 YEAR FOR CREDIT INSTITUTIONS IN EUROPE

Chart 3-4



Note: The Chart covers issuance of uncollateralised senior debt and covered bonds for banks in the 27 EU member states. Uncollateralised senior debt with government guarantee covers issuance guaranteed by states, provinces, regions or local authorities.

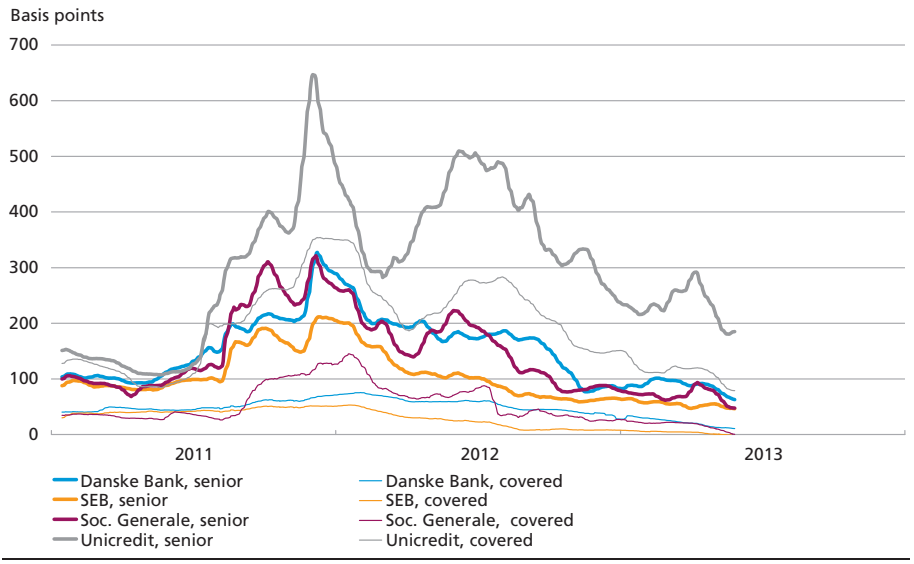
Source: Dealogic and own calculations.

The 2nd half of 2012 was characterised by increasingly positive financial market trends, contributing to the Danish systemic banks issuing senior debt and SDOs to a greater extent than in 2011, cf. Chart 3-3. While the Danish banks issued more long-term bonds in 2012 than in 2011, issuance activity in Europe continued to diminish, cf. Chart 3-4.

It has become more attractive for the banks to issue long-term bonds. Issuances by Danske Bank and several other European banks have been made at credit spreads consistent with the level prevailing prior to the financial market turbulence in the autumn of 2011 and the spring of 2012, cf. Chart 3-5.

After almost five years, first the general government guarantees and later the individual government guarantees have been successfully phased out. The non-systemic banks took the opportunity to issue bonds with individual government guarantees to a great extent. Nearly all government-guaranteed issuance has now been prematurely redeemed or has matured, cf. Box 3-1.

CREDIT SPREADS FOR EUROPEAN BANK BONDS — Chart 3-5



Note: Credit spreads are shown as estimated asset-swap spreads for uncollateralised senior debt and covered bonds denominated in euro with a remaining term to maturity of five years. On conclusion of an asset swap, the holder of a bond makes payments corresponding to the bond's coupon payments and instalments and in return receives a variable interest rate based on Euribor and a spread. Asset-swap spreads enable comparison of bonds with different coupons. The estimates in the Chart have been smoothed using 10-day moving averages. The most recent observations are from 27 May 2013.

Source: Bloomberg and own calculations.

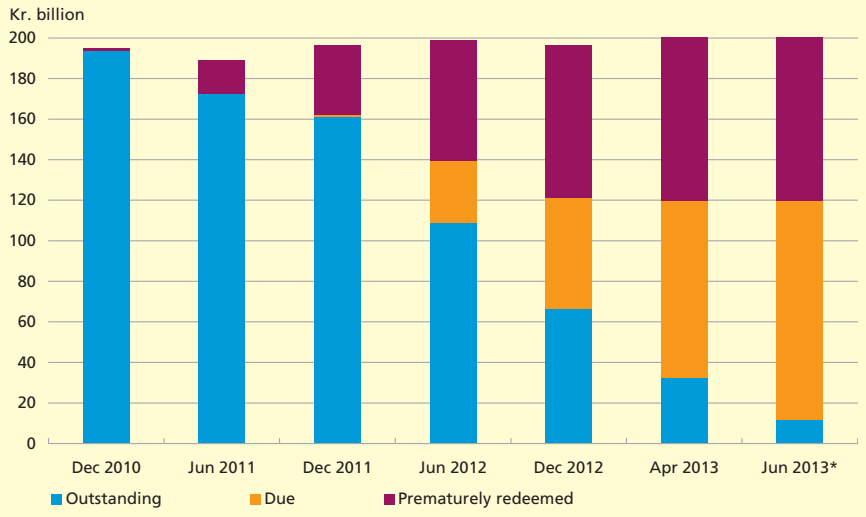
EXPIRY OF INDIVIDUAL GOVERNMENT GUARANTEES Box 3-1

As from 2009, banks and mortgage banks were given the opportunity to issue senior debt with a government guarantee (Bank Rescue Package 2). The aim of the guarantee scheme was to secure the banks' access to obtain liquidity when the general government guarantee (Bank Rescue Package 1) expired. The maturity of the issuance was up to three years. The guarantee scheme comprised loans issued up to 31 December 2010. In 2009 and 2010, 50 banks issued kr. 194 billion under the scheme, cf. the Chart. Of the original issuance, kr. 32 billion had still not been redeemed at end-April 2013, kr. 5 billion of which was issued by banks subsequently taken over by the Financial Stability Company. Assuming normal run-off in the 2nd quarter of 2013, only kr. 12 billion of the original issuance will still be outstanding at the end of June.

The non-systemic banks used the scheme to a great extent, and several of these banks had to adjust their business models to leave the guarantee scheme again. This adjustment was to some extent effected by reducing customer funding gaps.

Bank Rescue Package 4 enables the banks to extend the individual government guarantees. An extension is only possible in connection with a merger between two banks if at least one of the banks is distressed or is expected to become distressed and the continuing bank is viable. In connection with mergers, the Financial Stability Company has concluded agreements with Den Jyske Sparekasse and Vestjysk Bank on the possibility of extending the government guarantees by up to kr. 1 billion and kr. 7 billion, respectively, until 2016. Den Jyske Sparekasse has made use of the commitment and issued kr. 1 billion under the new scheme. In addition, Danmarks Nationalbank's temporary liquidity measures have provided an opportunity for supplementing the banks' access to funding and, hence, ensuring flexible adjustment to a situation without government guarantees.

GOVERNMENT GUARANTEED BONDS



Note: The amounts have been calculated on the basis of the exchange rate prevailing at the time of calculation. Changes in the height of the total bars reflect exchange-rate fluctuations. *Data for June 2013 is based on contractual maturity of outstanding bonds maturing in May and June 2013.

Source: Financial Stability Company.

Short-term debt issuance

Short-term debt issuance offers a less costly supplement to longer-term funding and can be used to meet short-term liquidity needs. However, the dependence on short-term debt for funding of longer-term lending involves a refinancing risk.

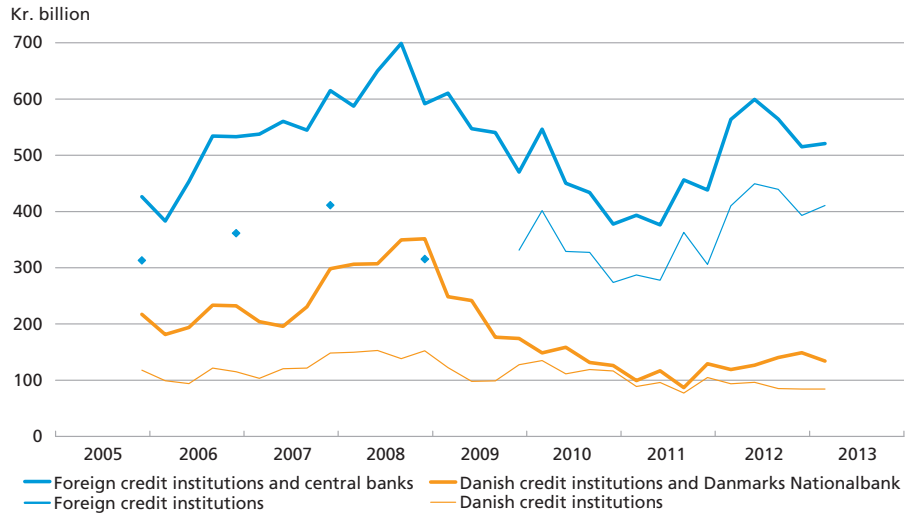
Short-term debt issuance now accounts for only 11 per cent of the banks' overall debt issuance, or less than 2 per cent of their total assets. This is a marked change from the situation prevailing prior to 2007, when short-term issuance accounted for almost half of total debt issuance – a development that mitigates the vulnerability of the banks in connection with market turbulence.

Deposits from credit institutions and central-bank funding

In a well-functioning money market, banks with short-term excess liquidity lend to banks in need of liquidity. Deposits from credit institutions can be an unstable source of funding due in part to the credit institutions' focus on counterparty risks and that the deposits can be withdrawn at short notice.

Foreign credit institutions' deposits with Danish banks rose from end-2010 to mid-2012 following a period of decline, cf. Chart 3-6. The rise occurred amid substantial uncertainty in the euro area. The trend of growing deposits from foreign credit institutions reversed in mid-2012.

DEPOSITS FROM CREDIT INSTITUTIONS AND CENTRAL-BANK FUNDING — Chart 3-6



Note: Data has been adjusted for intra-group transactions, such as deposits from foreign subsidiaries, foreign parent companies and mortgage banks that are part of the group. The adjustment for foreign central banks is subject to some uncertainty. The most recent observations are from 1st quarter 2013.

Source: Danmarks Nationalbank, Danish Financial Supervisory Authority and own calculations.

This should be viewed in conjunction with statements and measures taken by the European Central Bank, ECB, in the summer and autumn of 2012, which contributed to stabilising the European markets.[1]

Like the ECB, Danmarks Nationalbank has launched 3-year loans and expanded the collateral base. Danmarks Nationalbank offered the 3-year facility in March and September 2012, and the banks' drawing on the facility totalled kr. 53.2 billion. The loans can be redeemed on a weekly basis six months after being raised, and some banks took this opportunity in the spring of 2013. The use of Danmarks Nationalbank's other measures to support liquidity is still limited.[2]

CURRENT LIQUIDITY REQUIREMENTS

In order to ensure adequate liquidity, Danish banks are subject to a minimum requirement for their excess liquidity cover, cf. Section 152 of the Danish Financial Business Act. Pursuant to the requirement, a bank must hold adequate liquid assets to cover at least 10 per cent of its total debt and guarantee exposures or 15 per cent of its short-term debt exposures.

In addition, the Supervisory Diamond supplements the binding liquidity requirement with a benchmark for excess liquidity cover of 50 per cent and a benchmark for stable funding known as the funding ratio. The funding ratio reflects the relationship between lending on the one hand and working capital less bonds maturing within 1 year on the other. The objective of the funding ratio is that the banks obtain a more long-term funding structure. Non-observance of the benchmarks of the Supervisory Diamond may result in a supervisory response.

Stress test of the banks' liquidity situation

At the end of March 2013, the Danish banks' excess liquidity cover was markedly above the Supervisory Diamond limit value, cf. Chart 3-7. In addition, at the end of 2012, the banks observed the limit value of the funding ratio.

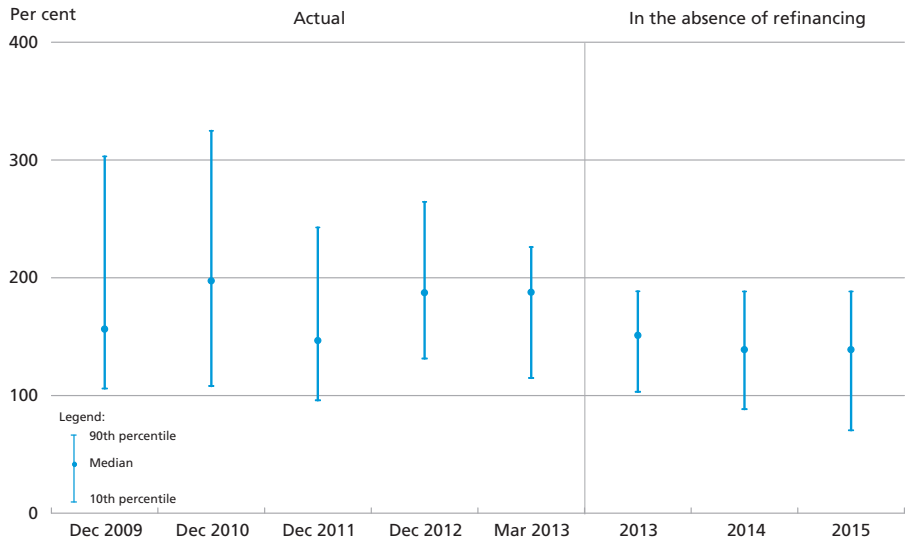
In order to assess the sustainability of the current liquidity situation, compliance with the Section 152 requirement and the funding ratio is analysed in scenarios in which the banks cannot refinance selected funding sources. The stress test of the Section 152 requirement assumes that the ten biggest term deposits and all long-term senior debt (original maturity of more than 1 year) maturing in 2013-15 cannot be refinanced. It is

[1] In a speech held in July 2012, the President of the ECB, Mario Draghi, stated that, within its mandate, the ECB would do whatever it takes to preserve the euro. In early September 2012, the ECB published the conditionalities for the Outright Monetary Transactions, OMT, purchasing programme.

[2] A detailed account of the measures is available in Danmarks Nationalbank, *Financial stability*, 2012, page 49.

EXCESS LIQUIDITY COVER, ACTUAL AND IN IF SENIOR DEBT AND THE 10 BIGGEST TERM DEPOSITS ARE NOT REFINANCED

Chart 3-7



Note: Maturing senior debt covers the period from April 2013 to December 2015. As a result of commitments to extend the individual government guarantees for Vestjysk Bank, the bank's government-guaranteed debt is assumed to be extended until 2016, cf. Box 3-1.

Source: Liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank and own calculations.

assumed that in the absence of refinancing the banks have to sell a similar volume of their liquid assets, resulting in lower excess liquidity cover. It is further assumed that other types of balance-sheet reduction are unavailable. In this stress scenario, all systemic and the majority of the non-systemic banks observe the limit value at end-2015, cf. Chart 3-7.

To assess the sustainability of the funding ratio it is tested whether the banks comply with the requirement, assuming that they cannot refinance long-term senior debt until 2015 and that Danmarks Nationalbank's 3-year loans cannot be refinanced by other long-term liabilities. The test shows that all banks continue to observe the limit value.

FUTURE EUROPEAN LIQUIDITY REGULATION

Looking ahead, Danish credit institutions will be subject to European liquidity regulation, which will be implemented into Danish law after the adoption of the CRD IV/CRR[1]. The EU rules are similar to the Basel Committee's international regulatory framework for credit institutions

[1] The new European regulation for credit institutions consists of a directive (Capital Requirements Directive IV, CRD IV) and a regulation (Capital Requirements Regulation, CRR). When adopted, a directive must be implemented into national law to be applicable, while a regulation is immediately applicable. Liquidity regulation is primarily part of the CRR.

(Basel III), but are designed to take account of European specificities. The future liquidity regulation falls into three parts: a short-term liquidity requirement, a long-term measure for stable funding and a number of additional monitoring tools to identify, *inter alia*, the concentration of funding sources on counterparty and instrument/product and the extent of asset encumbrance.

The short-term liquidity requirement, Liquidity Coverage Ratio, LCR, lays down requirements for the credit institutions' liquidity buffer. The purpose of the LCR is to ensure that the credit institutions have adequate high-quality liquid assets to cover the net cash outflows in a 30-day intensive liquidity stress scenario:

$$\frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash outflows over the next 30 calender days}} \geq 100 \text{ per cent}$$

In the EU, the LCR will be gradually phased in from 60 per cent at the beginning of 2015 to 100 per cent in 2018, albeit with an option to bring the LCR below the minimum requirement during periods of stress. The individual member states may accelerate the phasing-in, which has been recommended for Danish systemically important financial institutions, SIFIs, by the Committee on Systemically Important Financial Institutions in Denmark.[1]

A number of areas still need to be analysed in more detail and adopted by the European Commission in 2014, such as the definition of liquid assets, cf. below, and the effect of a minimum requirement of 60 per cent highly liquid assets in the liquidity buffer. In addition, derogations will have to be made for member states with insufficient liquid assets to comply with the LCR. This could be the case for member states with low government debts.

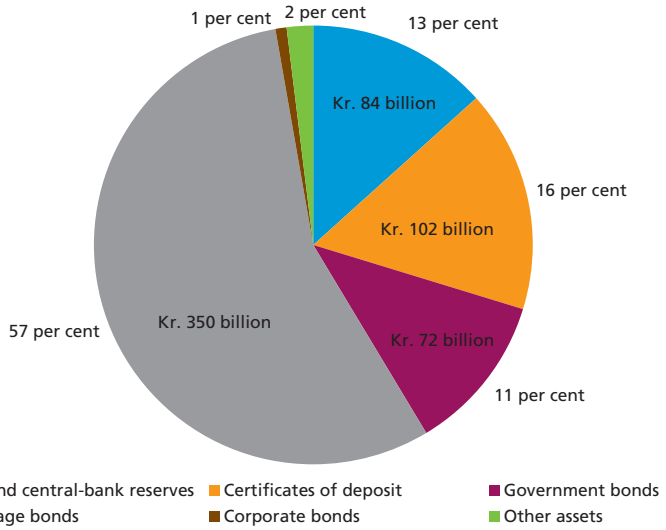
Liquid assets in the LCR

A major share of the liquid assets of Danish systemic credit groups[2] consists of mortgage bonds, cf. Chart 3-8, reflecting the composition of the Danish bond market. The Basel III regulations classify the credit institutions' liquidity buffer (the numerator of the LCR) into three types of assets: level 1, level 2a and level 2b. Level 1 is made up of highly liquid assets such as cash, central-bank reserves, certificates of deposit and government bonds. Level 2a and 2b comprise assets such as mortgage bonds and corporate bonds and will be subject to a haircut on inclusion in the liquidity buffer.

1 See Box 1-2, Chapter 1, for a description of the Committee's recommendations.
2 Here, systemic credit groups are defined as banks in the Danish Financial Supervisory Authority's group 1, including the mortgage activities of the groups.

COMPOSITION OF LIQUID ASSETS IN THE LCR FOR SYSTEMIC CREDIT GROUPS

Chart 3-8



Note: Liquid assets are shown before haircuts and without limitation of the ratio of liquid assets to highly liquid assets in the total liquidity buffer. Data has been calculated as at end-2012 under the Basel III regulations from January 2013.
Source: LCR reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

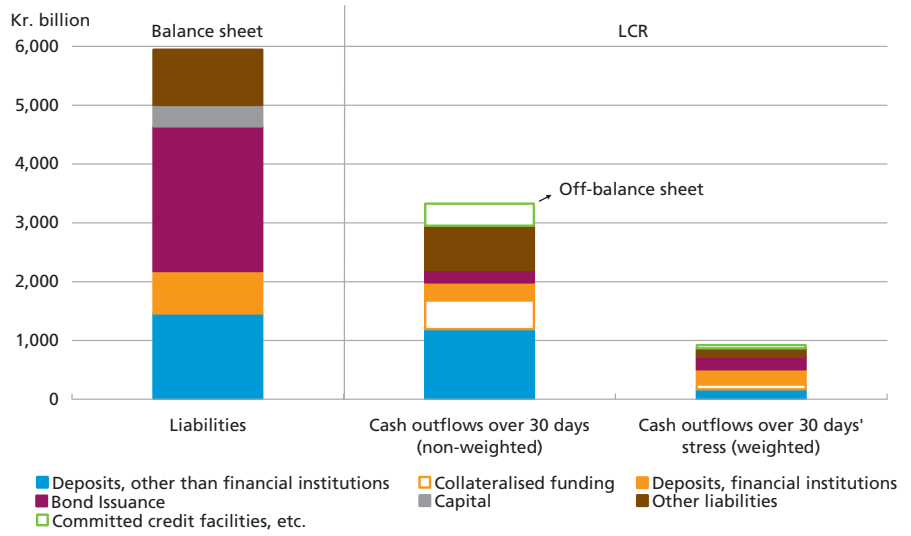
Unlike the Basel III regulations, the EU has decided that the classification of assets into highly liquid and liquid should be made on the basis of objective liquidity criteria. In the case of government bonds, however, the entire asset class is categorised as highly liquid in advance. It appears from the introductory notes to the legislation that mortgage bonds traded in transparent markets with an ongoing turnover would be expected to be among the most liquid assets, like government bonds. The final definition of the liquidity buffer and the classification into highly liquid and liquid assets await an analysis based on objective criteria. The classification of liquid mortgage bonds in the LCR will have a bearing on the Danish credit institutions' costs of complying with the requirement, see below.

It is positive that the EU has decided to classify assets on the basis of objective liquidity criteria, and at the same time a diversified portfolio of liquid assets is essential. If classified as highly liquid in the CRD IV/CRR, liquid mortgage bonds could contribute to this.

Net cash outflows in the LCR

The net cash outflows in the LCR (the denominator) are computed as the difference between the expected cash outflows and inflows in a 30-day liquidity stress scenario. The expected cash outflows in the LCR are determined on the basis of market funding contractually maturing over the

CASH OUTFLOWS IN THE LCR FOR SYSTEMIC CREDIT GROUPS Chart 3-9



Note: Data is sourced from two different sources, and there is no one-to-one relationship between the definitions in the accounts and the liquidity statements. Committed credit facilities, etc. do not appear from the balance sheet and are outlined in green. Data has been calculated as at end-2012. The LCR has been calculated under the Basel III regulations from January 2013.

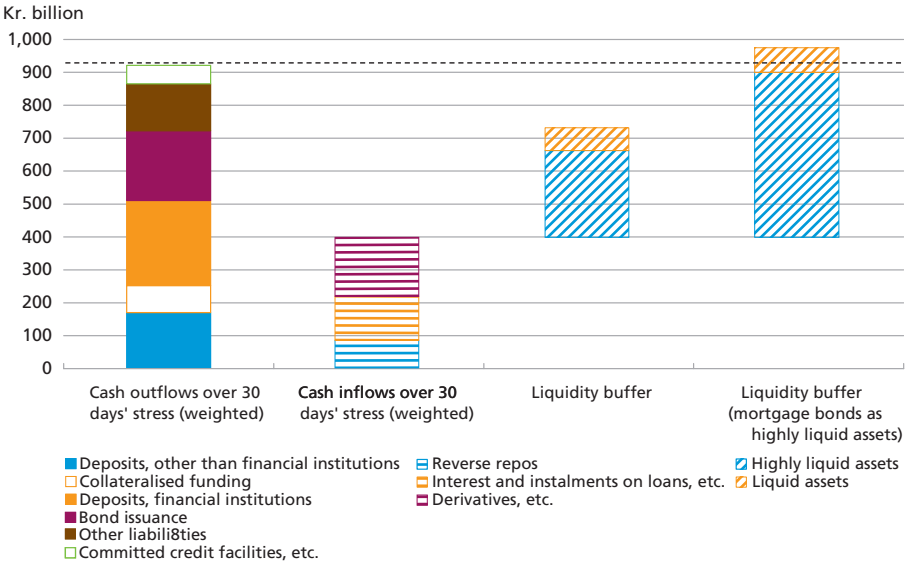
Source: Danish Financial Supervisory Authority, LCR reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank and own calculations.

next 30 days. In the case of funding and obligations with no contractual maturity date, the expected cash outflows are calculated by multiplying the individual liabilities and off-balance-sheet items by the rates at which they are expected to run off. The size of the run-off rate reflects the expected outflow from the individual items, e.g. drawings on overnight deposits. The expected cash inflows are given by the contractual receivables multiplied by the rates at which they are expected to flow in.

The new liquidity regulation provides the credit institutions with an incentive to attract stable deposits and extend the maturity of market funding. The reason is that less stable sources of funding are given a higher run-off rate and, hence, have to be covered by a larger volume of liquid assets. Deposits from financial institutions that can be withdrawn within 30 days are given a run-off rate of 100, while deposits from non-financial counterparties are given a run-off rate of between 5 and 40 depending on the counterparty and whether the deposit is covered by a deposit guarantee scheme. Drawings on the credit institutions' committed facilities etc. and the possibility of an increase in liquidity requirements in connection with derivatives trading should also be included in the stress scenario.[1] Thus, the composition of the credit

[1] See Box 7-1, Chapter 7, for a description of the liquidity need in connection with derivatives trading.

LCR SUBCOMPONENTS, SYSTEMIC CREDIT GROUPS Chart 3-10



Note: LCR exceeds 100 per cent if the sum of cash inflows and the liquidity buffer is higher than the cash outflows. The liquidity buffer is shown after haircuts and limitation of the share of liquid assets to 40 per cent of the buffer. The last column illustrates the liquidity buffer if the most liquid mortgage bonds are classified as highly liquid assets. The decomposition of mortgage bonds into highly liquid and liquid bonds is based on the institutions' own assessments. Data has been calculated as at end-2012 under the Basel III regulations from January 2013.
Source: LCR reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank and own calculations.

institutions' balance-sheet and off-balance-sheet items will have a bearing on the size of the cash outflows in the LCR. The relationship between the systemic credit groups' liabilities, possible cash outflows in the LCR over a 30-day period (non-weighted) and expected cash outflows in the LCR in a 30-day stress scenario (weighted by run-off rate) is illustrated in Chart 3-9.

LCR of systemic credit groups

The LCR exceeds 100 per cent if the liquidity buffer and the expected cash inflows offset the expected cash outflows in a 30-day liquidity stress scenario, cf. Chart 3-10. If the most liquid mortgage bonds are classified as highly liquid assets, the great majority of Danish systemic credit groups already comply with an LCR of 100 per cent. If, on the other hand, the Basel III definition of the liquidity buffer is used, according to which mortgage bonds can only constitute 40 per cent of the buffer, fewer systemic credit groups currently comply with the LCR requirement.

Historically, mortgage bonds have yielded a higher return than e.g. government bonds. Therefore, the final classification of liquid mortgage bonds will have an impact on the Danish banks' costs of complying with the LCR.

Danmarks Nationalbank welcomes the systemic credit institutions' efforts to prepare for the coming European liquidity regulation.

Non-systemic institutions' adjustment to the new requirement

The funding structure of small credit institutions is based on deposits to a greater extent than in large institutions, but this does not necessarily imply that the small institutions have a higher LCR. The LCR does not provide an unambiguous incentive to rely on deposits rather than market funding, but focuses on the stability of funding sources such as time to maturity for market funding and counterparty and type of deposit for deposit funding. Thus, credit institutions with customer funding gaps and market funding with a long time to maturity may have higher LCRs than institutions with customer funding surpluses and no market funding.[1] Moreover, two institutions with customer funding surpluses may, all else equal, have very different LCRs depending on the characteristics of their deposits. For instance, deposits from a large corporate customer are more unstable than those from small business customers and are therefore subject to higher cash outflows in the LCR.

Although the LCR will not be implemented until 2015 and its final calibration remains uncertain, it is important that also the non-systemic banks identify any adjustments necessary to meet the new requirement. This could be e.g. adjustment to relying more on stable sources of funding, to holding an adequate volume of high-quality liquid assets and to incorporating the need for liquid assets generated by the products into the valuation of the products.

As from end-2012, the Danish Financial Supervisory Authority and Danmarks Nationalbank have extended the LCR reporting to comprise the non-systemic banks and some mortgage banks that are not part of a group. The extension facilitates an analysis of the new liquidity regulation for a wider selection of business models and is also part of the credit institutions' preparation for the future requirements.

Market effect and use of central-bank facilities

Depending on the final calibration, central-bank facilities may be used to comply with the LCR, partly because central-bank deposits are considered to be highly liquid assets and, hence, are not subject to a haircut on inclusion in the liquidity buffer,[2] and partly because central-bank fund-

[1] This is illustrated by simple examples in Danmarks Nationalbank, *Financial stability*, 2011, Box 16.

[2] The calculation of the maximum share of liquid assets relative to highly liquid assets is, however, adjusted for short-term repo/reverse transactions (below 30 days) irrespective of the counterparty if the provided/received collateral qualifies for the liquidity buffer.

ing is assumed to roll over and therefore does not trigger a cash outflow in the LCR.

Both the EU and the Basel Committee are analysing the potential impact of the introduction of the new liquidity regulation on various monetary policy instruments, including an analysis of the credit institutions' incentive to use the central banks for placement and borrowing rather than exchanging liquidity among themselves.

4. The Corporate Sector and the Households

Since 2008, the banks have posted high loan impairment charges especially on lending to building and construction, property companies and agriculture. The risk of further losses and loan impairment charges in these industries still exists.

In 2012 the banks' loan impairment charges on firms in the trade and transport industries increased. Rising probabilities of default among vulnerable firms in these industries also pose a risk of loan impairment charges in the future. In total, these industries account for 8 and 11 per cent of the total loans and guarantees of the systemic and non-systemic banks, respectively.

Throughout the crisis, bank loan impairment charge ratios on loans and guarantees to households have remained low. Since households account for a large percentage of total bank lending, they may still have a major impact on total bank loan impairment charges. Most households are resilient to negative shocks in the form of higher interest rates and unemployment. Besides, the assessment is that expiry of the deferred-amortisation period for mortgage loans is manageable, and that there is no need for new legislation.

There are considerable geographical differences in both housing market conditions and developments. Some regions show a clear over-representation of both arrears and enforced sales. If the current negative trend continues, there is a risk that loan impairment charges and losses will persist in these regions in the coming years.

CREDIT EXPOSURE

Credit institutions incur credit risks when granting loans or providing guarantees. The size of a potential resulting loss will depend, inter alia, on the value of the assets pledged as collateral for the loan. Hence, credit institutions are indirectly exposed to price developments for e.g. owner-occupied housing and commercial properties.

Lending by banks is broadly made up by various loan types and may be granted with or without collateral, whereas mortgage banks grant loans solely based on real property as collateral within statutory limits.[1] Banks

[1] The same loan-to-value (LTV) ratios apply to bank loans financed by issuance of covered bonds (SDOs). Danske Bank is the only Danish bank issuing SDOs.

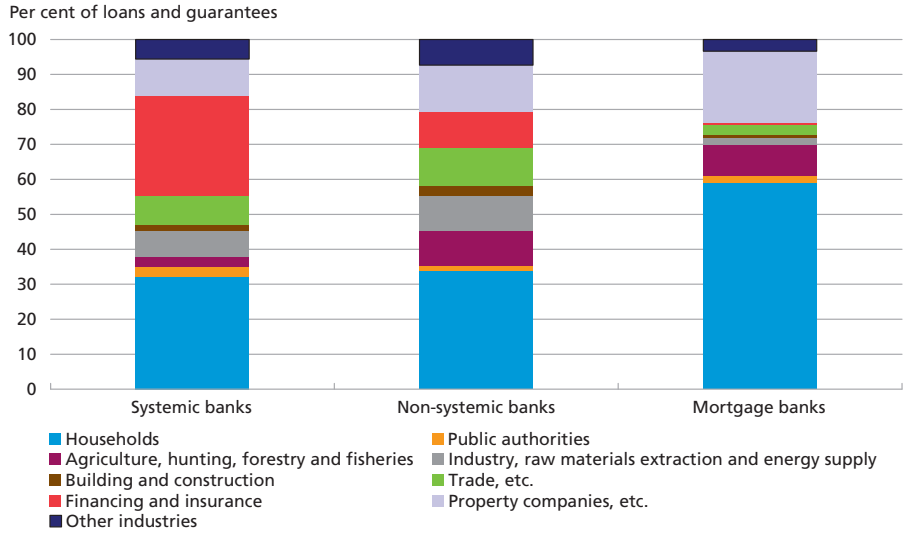
often contribute to the funding of real property in excess of those limits, i.e. with lower-ranking mortgages. Accordingly, the risk of losses in the event of default will be greater than for a mortgage bank.

Lending by systemic banks amounted to kr. 1,571 billion at the end of 2012, of which about half was provided to customers in Denmark. Lending by non-systemic banks amounted to kr. 146 billion, of which about 96 per cent was provided to customers in Denmark. Systemic banks are relatively more exposed to the financing and insurance sector than non-systemic banks, cf. Chart 4-1. In turn, the latter are relatively more exposed to agriculture and property companies, etc.

At end-2012, lending by mortgage banks amounted to kr. 2,521 billion. Households accounted for 59 per cent of mortgage lending, while agriculture and property companies, etc. accounted for 9 and 20 per cent, respectively.

Since 2008, the banks have posted high loan impairment charges especially on lending to building and construction, property companies etc. and agriculture, cf. Chart 4-2. Those industries constitute a relatively small percentage of the total exposure.

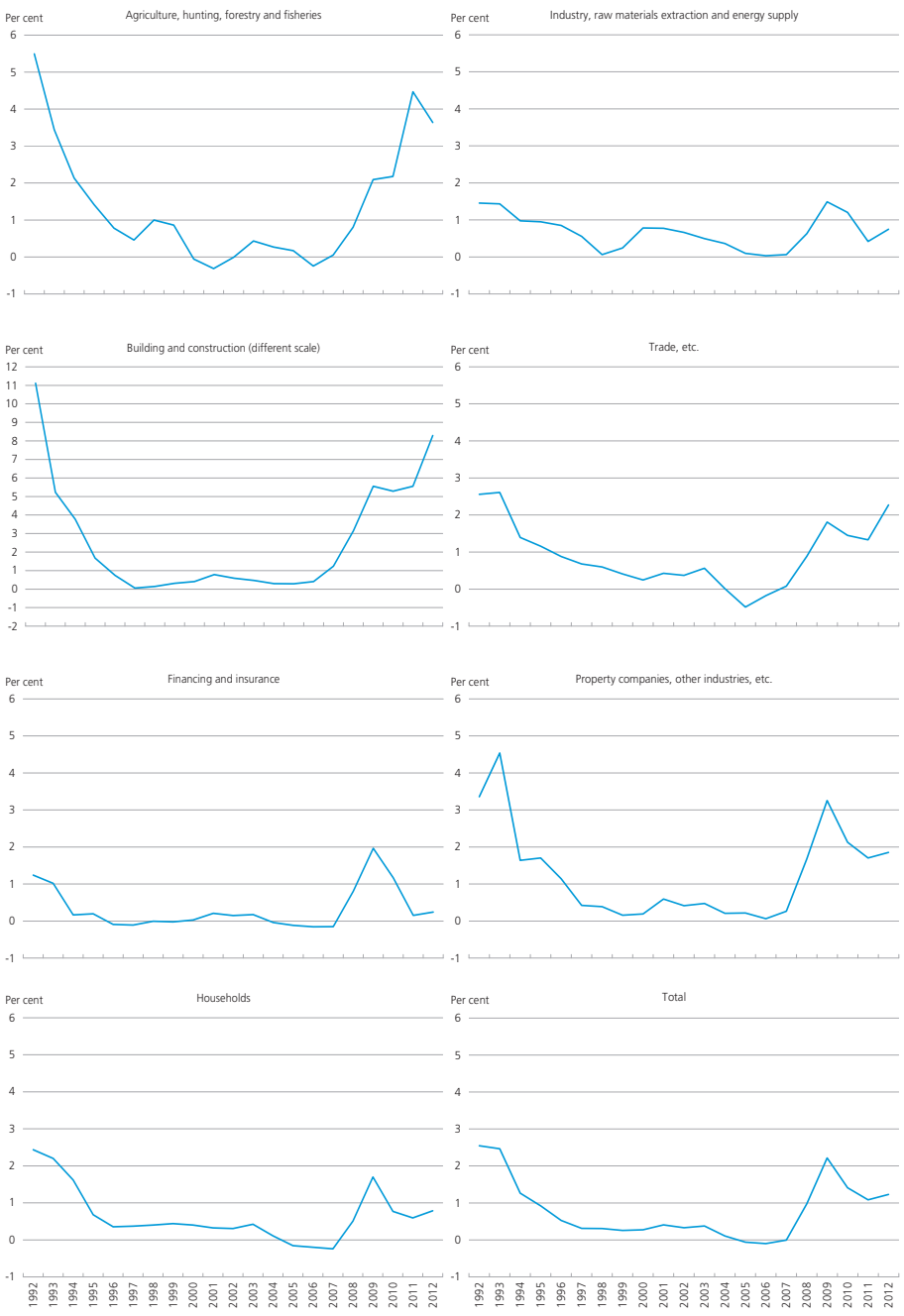
LOANS AND GUARANTEES BROKEN DOWN BY INDUSTRIES AND SECTORS Chart 4-1



Note: The breakdown by industries for mortgage banks is approximated to the Danish Financial Supervisory Authority's breakdown by industries for banks. See the note to Chart 4-2 for a detailed specification of the breakdown by industries. Data as at end-2012.

Source: Danish Financial Supervisory Authority and Danmarks Nationalbank.

BANKS' ANNUAL LOAN IMPAIRMENT CHARGE RATIOS BY INDUSTRIES Chart 4-2



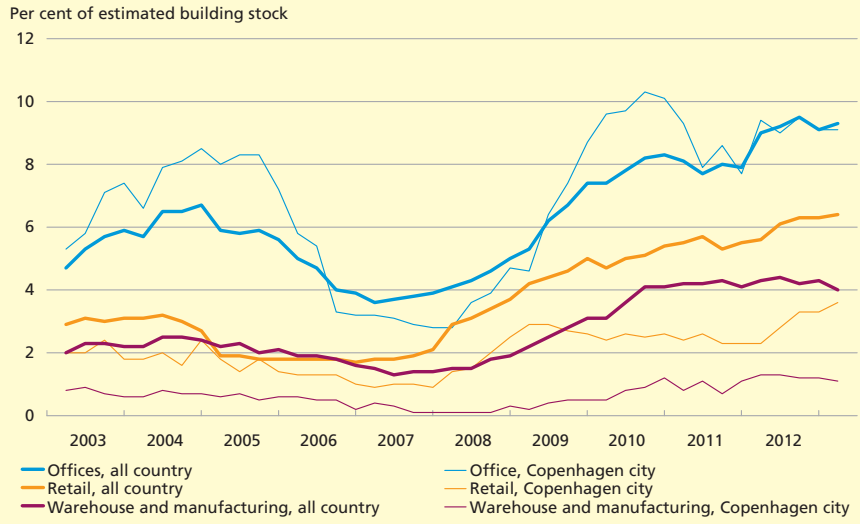
Note: The Chart shows banks' loan impairment charges as a ratio of loans and guarantees before loan impairment charges. Banks' total loan impairment charges have been achieved by weighing the loan impairment charges broken down by industries and sectors with loans and guarantees as the weight basis. Trade, etc. comprises trade, transport, hotels and restaurants as well as information and communication. Property companies, other industries, etc. comprises real estate, other private industries and public authorities. Households comprise employees and pensioners, etc., but not self-employed individuals. Lending to private individuals based on real property as collateral is included in Households and not in Property companies, etc.

Source: Danish Financial Supervisory Authority and own calculations.

COMMERCIAL PROPERTIES Box 4-1

Since 2008, the Danish market for commercial properties has been characterised by relatively low turnover and falling prices. A key explanatory factor behind the falling property prices is a higher vacancy rate for commercial properties, cf. the Chart. Vacancies contribute to putting rent levels under pressure and therefore may also affect rental income in fully rented properties. There are, however, considerable geographical differences. Prime locations in larger cities have generally shown the best performance. The high vacancy rate for commercial properties is attributable to the weak economy, but also to the fact that a large number of building projects were initiated in the period up to 2008, leading to a considerable increase in the existing building stock.

VACANCY RATES FOR COMMERCIAL PROPERTIES



Source: Oline-Lokalebørs Statistikken.

While the general level of interest rates is lower than in 2008, investors' required rates of return have been rising for most property types and locations outside the large cities. The reason why the required rates of return did not follow the downward trend of the interest rates may be influence from other factors such as growing uncertainty, increased risk aversion and a wish for compensation for rising illiquidity due to lower turnover in the property market. Furthermore, more difficult funding conditions may also have played a role.

Several banks have posted considerable losses and loan impairment charges on property-related exposures since 2008. This is particularly true of the banks which, in the years preceding the financial crisis, expanded strongly within this business area. At end-2012, loans and guarantees provided by systemic banks to property companies etc. were written down by 6.1 per cent on average. The equivalent figure for non-systemic banks was 9.0 per cent.

If there is objective evidence of impairment for loans where the customer is unable to service the loan or able only to service the loan to a

limited extent, the loan must be written down to the fair value of the collateral. This means that banks may be sensitive to the price of the assets pledged as collateral for the loan. This is particularly the case for the price trends for commercial properties, cf. Box 4-1, and agricultural land.

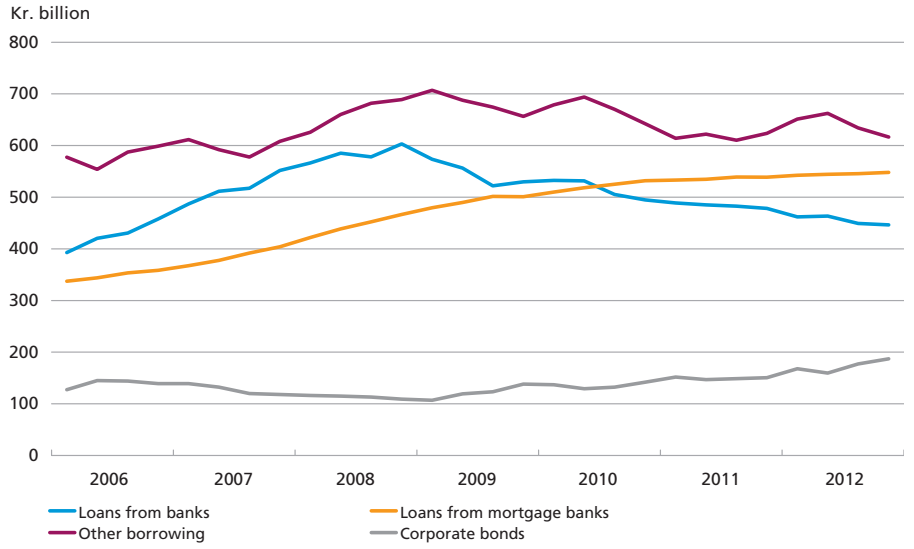
THE CORPORATE SECTOR

In Denmark, total corporate borrowing from banks has been reduced since the end of 2009, partly due to the corporate sector's considerable savings surplus. Corporate investments have been substantially reduced. Besides, substitution of funding sources has taken place from banks to mortgage banks and, to a lesser extent, to corporate bonds, cf. Chart 4-3. The majority of corporate bonds are issued by a few very large firms, but corporate bonds have also been issued by a few medium-sized firms recently.

A committee on corporate bonds as sources of funding for small and medium-sized enterprises was set up by the Minister for Business and Growth. In November 2012, the committee issued a number of recommendations with a view to removing legal barriers to the issuance of corporate bonds.

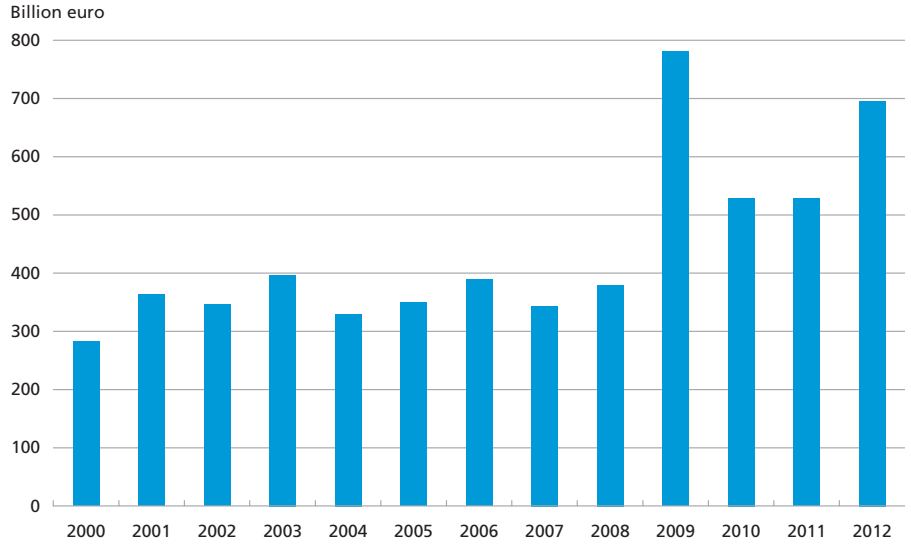
It appears from the agreement on a growth plan between the government and Venstre – The Liberal Party of Denmark, Liberal Alliance and

FUNDING STRUCTURE OF DANISH FIRMS Chart 4-3



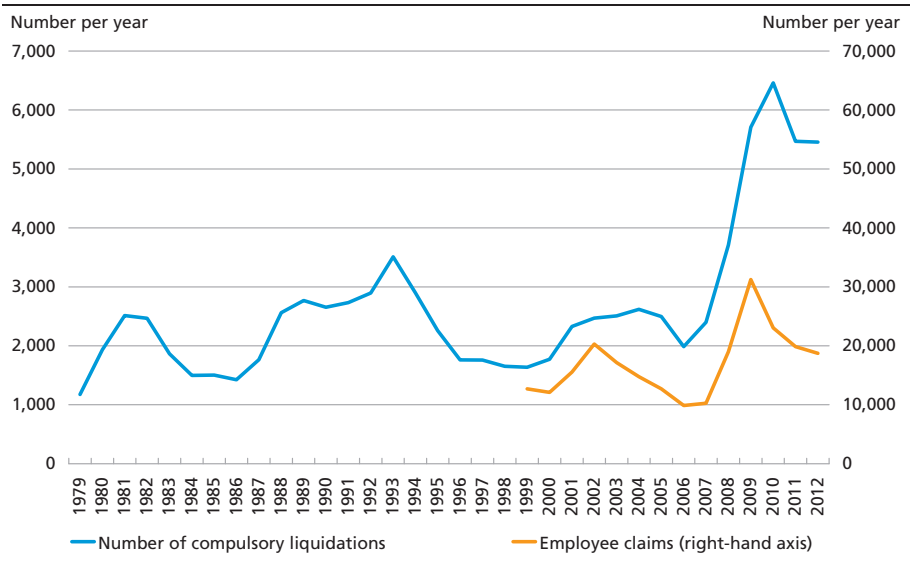
Note: Other borrowing comprises borrowing abroad (including intra-group loans), from public authorities, other financial intermediaries, etc.
Source: Danmarks Nationalbank.

BOND ISSUANCES BY EUROPEAN FIRMS — Chart 4-4



Note: The Chart comprises EU27.
Source: Dealogic and own calculations.

COMPULSORY LIQUIDATIONS AND CLAIMS TO THE EMPLOYEES' GUARANTEE FUND — Chart 4-5



Note: Data up to and including 2008 comprises all compulsory liquidations announced in the Danish Official Gazette, including compulsory liquidations of financial institutions and personal bankruptcies. The number of personal bankruptcies is modest, however. As from 2009, personal bankruptcies have been omitted from the statistics.
Source: Statistics Denmark and annual reports for the Employees' Guarantee Fund.

the Conservative People's Party that the market for issuance of corporate bonds in Denmark should be strengthened in order to promote a market-based alternative to bank funding. According to the agreement, this is to be achieved by allowing the use of representatives in connection with bond issuance and by enabling banks to issue bonds on the basis of a portfolio of corporate loans.

In Europe, the use of corporate bonds has been increasing in recent years, cf. Chart 4-4. A possible explanation is that funding in the bond markets has become more attractive to large firms due to uncertainty about conditions in the banking sector. Increasing use of corporate bonds could reduce the lending volumes of large banks in particular, thus putting downward pressure on earnings as well as the capital need. Since banks often sell a number of services to the corporate sector in connection with bond issuances, the effect on earnings is not clear, however.

Defaults

The number of defaults in 2012 was at an unchanged high level compared with 2011, cf. Chart 4-5. Many defaulting firms had few or no employees, and around 95 per cent of the firms defaulting in 2012 had turnover of less than kr. 15 million.

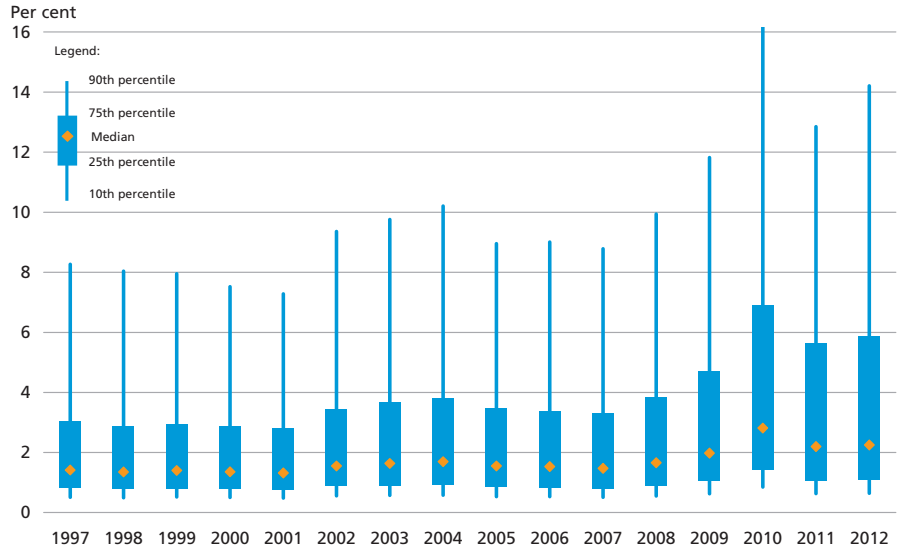
Estimated probabilities of default are more dispersed in 2013 compared with the two preceding years, but the median probability of default is at the 2012 level, cf. Chart 4-6.[1] The more pronounced dispersion is mainly driven by rising probabilities of default for firms that were already subject to high probabilities of default. This is particularly true of firms in the trade and transport sectors, which is reflected in the banks' increased loan impairment charges on loans to the trade sector, etc. in 2012.

Agriculture

Agricultural debt to banks and mortgage banks nearly doubled from early 2003 to 2010. In subsequent years, the debt was fairly stable, amounting to kr. 338 billion at end-2012, cf. Chart 4-7. Most of the debt is made up by variable-rate loans, and more than half of the mortgage debt is made up by deferred-amortisation loans. The greater part of the debt is in Danish kroner or euro.

[1] Danmarks Nationalbank's failure-rate model, KIM, is used to estimate the probabilities of default among Danish firms based on information on their return on assets, debt, size, capital base, form of ownership, age, industry, geographical location and real GDP growth in the Danish economy.

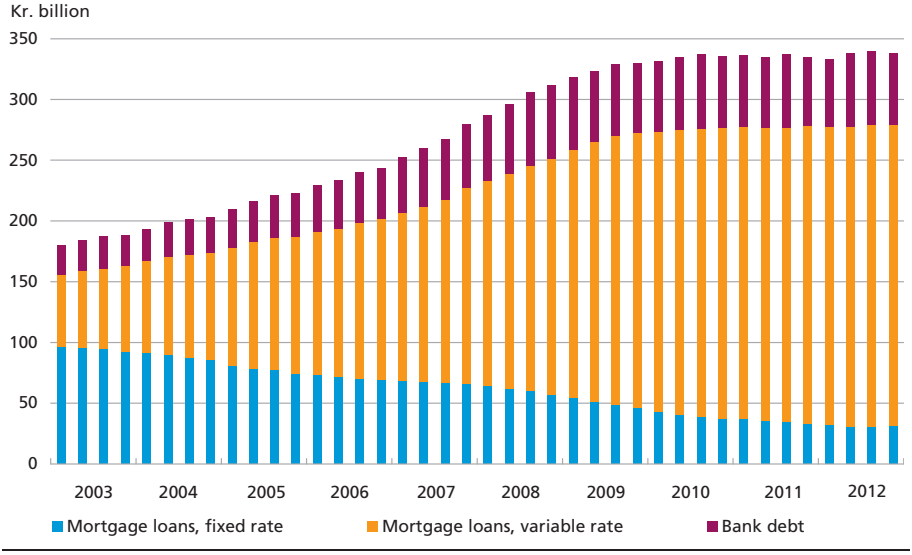
CORPORATE PROBABILITIES OF DEFAULT Chart 4-6



Source: Experian A/S, Statistics Denmark and own calculations.

The banks' loan impairment charges on loans and guarantees decreased compared with 2011, but remain at a high level of 3.6 per cent. At end-2012, the accumulated loan impairment charges on bank lending to agriculture amounted to 12.5 per cent. The mortgage banks' loan impairment

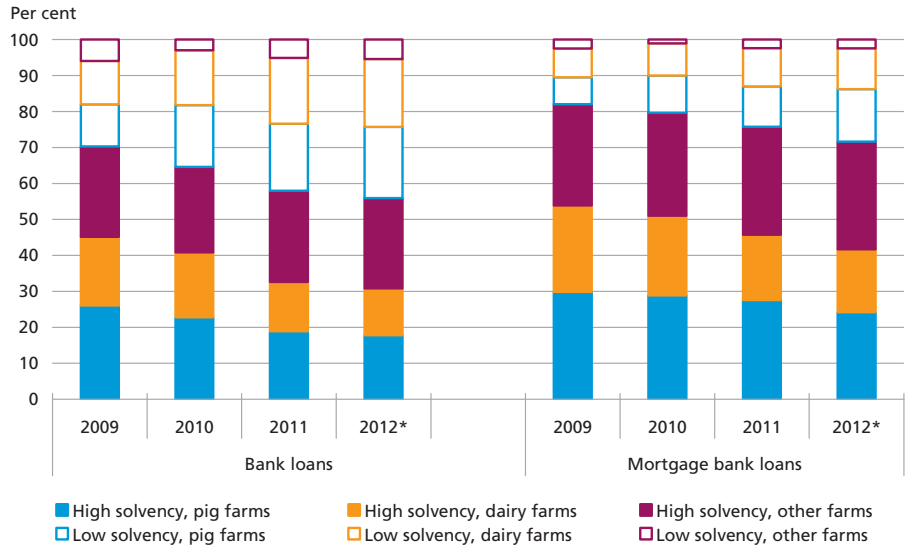
AGRICULTURE's DEBT TO BANKS AND MORTGAGE BANKS Chart 4-7



Note: The industry comprises agriculture, hunting, forestry and fisheries.
Source: Danmarks Nationalbank.

AGRICULTURE's DEBT TO BANKS AND MORTGAGE BANKS BY TYPE OF FARM AND SOLVENCY

Chart 4-8



Note: Full-time farmers. Low solvency is defined as farms with equity amounting to less than 15 per cent of assets. 2012* has been estimated using the sample of farm financial statements from 2011 on which Statistics Denmark's latest accounts statistics for agriculture are based. Other farms comprise: furred animals, crop production, other cattle and other farms.

Source: Statistics Denmark and own calculations.

charges on loans to farm properties amounted to 0.1 per cent in 2012, while the accumulated loan impairment charges amounted to 0.4 per cent. As regards the three largest mortgage banks for agriculture, the average LTV ratio is between 50 and 64 per cent, and 88 per cent of agriculture's total mortgage debt has an LTV ratio of less than 60 per cent. The maximum LTV ratio for mortgage banks is between 60 and 70 per cent for agriculture.[1]

While agriculture's total debt has been fairly stable in recent years, equity has been decreasing in step with falling land prices, among other factors. Consequently, the proportion of farms with a slight equity base and thus low solvency – defined as farms with equity capital of less than 15 per cent of their assets – increased from 15 per cent at end-2011 to just under 17 per cent at end-2012.[2] Dairy and pig farms in particular are characterised by low solvency, thus accounting for a large part of the debt, cf. Chart 4-8.

The accumulation of debt coincided with a surge in land prices in the years preceding the crisis. Prices have fallen since then and now seem to

[1] The maximum LTV ratio depends on whether the loan is funded via covered bonds (SDOs), covered mortgage bonds (SDROs) or via traditional mortgage bonds (ROs).

[2] The estimation of profit and equity for 2012 takes as its point of departure the sample of farm financial statements from 2011 on which Statistics Denmark's latest accounts statistics for agriculture are based, cf. Danmarks Nationalbank, *Financial stability*, 2012, p. 64, Box 10.

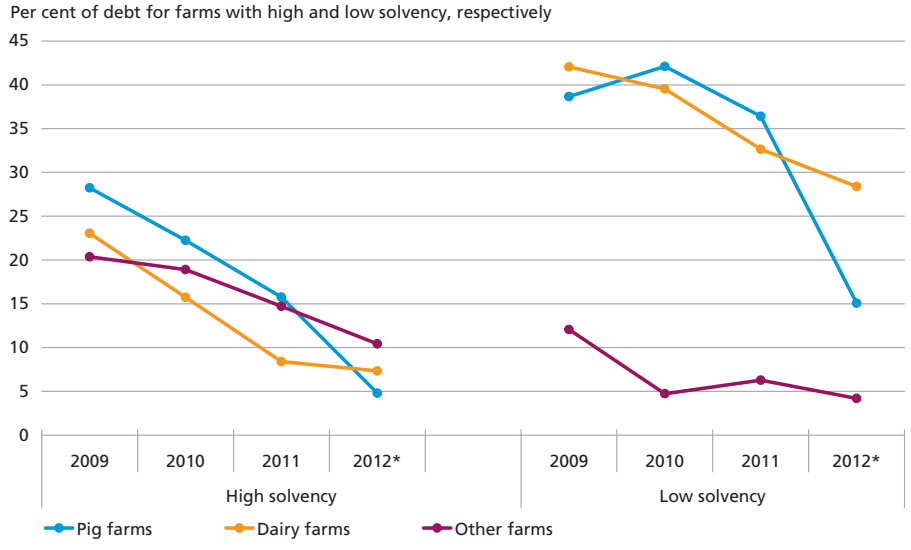
have stabilised. A further fall in land prices will increase the number of farms with low solvency and thus potentially lead to rising losses if farmers are unable to service their debt.

The estimated annual results for 2012 indicate improved earnings for most of the farms. This is mainly due to the trend in sales prices which, apart from milk prices, have generally been rising.

Loss-making farms account for a declining share of total debt to the agricultural sector for farms with high or low solvency alike, cf. Chart 4-9. Among the vulnerable loss-making farms with low solvency, dairy and pig farms account for the greater part of the debt. The performance of pig farms improved considerably in 2012, however.

Overall, the most vulnerable loss-making farmers with low solvency account for 26 and 12 per cent, respectively, of the agriculture's debt to banks and mortgage banks at end-2012. If interest rates increase by 2 percentage points, vulnerable loss-making farmers with low solvency would account for 32 and 16 per cent, respectively, of the agricultural sector's debt to banks and mortgage banks. Hence, the annual results are highly sensitive to interest-rate increases, and there continues to be a risk of further losses and loan impairment charges. A minor part of agriculture's debt is to banks that were taken over by the Financial Sta-

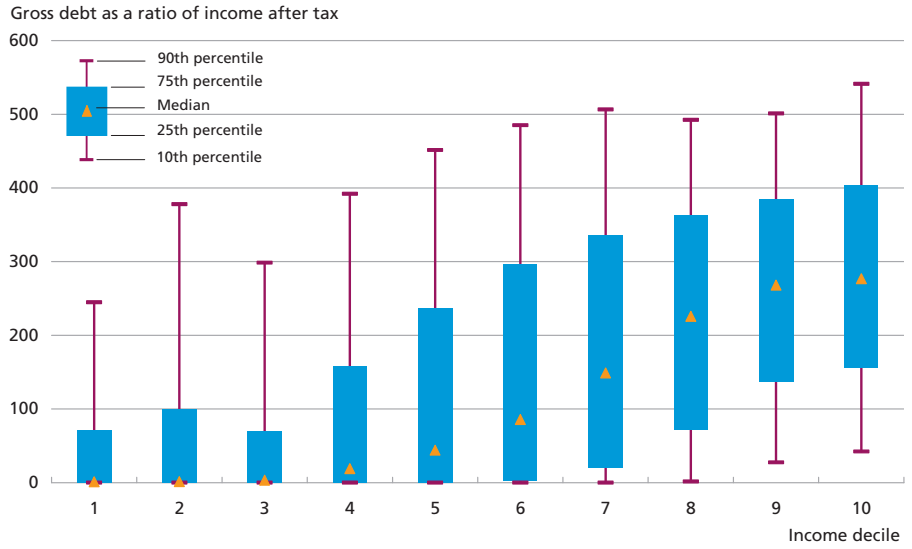
AGRICULTURE'S DEBT TO BANKS AND MORTGAGE BANKS, LOSS-MAKING FARMS BROKEN DOWN BY SOLVENCY AND FARM TYPE — Chart 4-9



Note: Full-time farmers. Calculated as percentage of debt to farms with high and low solvency, respectively. The result for 2012 is estimated, cf. Chart 4-8. Other farms comprise: furred animals, crop production, other cattle and other farms. Loss-making furred animals farms in 2010, 2011 and 2012 and other cattle farms where solvency was low in 2009, 2010, 2011 and 2012 are not included in other farms, since the samples contain less than three farms.

Source: Statistics Denmark and own calculations.

BREAKDOWN OF HOUSEHOLD GROSS DEBT RATIO BY INCOME DECILE, 2011 Chart 4-10



Note: The grouping of households into income deciles is based on income after tax.
Source: Statistics Denmark and own calculations.

bility Company. For systemic banks overall, agricultural lending accounts for less than 8 per cent of total lending before loan impairment charges. Lending to agriculture averages 10 per cent of total lending by non-systemic banks. For two non-systemic banks, however, agricultural loans account for up to 20 per cent of their total lending. Together, the two banks have a total market share of just under 2 per cent of bank lending in Denmark.

Lending to farm properties averages 11 per cent of mortgage bank lending. For DLR Kredit, a credit institution specialising in lending to agriculture, lending to farm properties accounts for 63 per cent of the credit institution's total lending. 89 per cent of the credit institution's lending to farm properties has an LTV ratio of maximum 60 per cent.

HOUSEHOLDS

Danmarks Nationalbank has conducted an analysis of household indebtedness.[1] The analysis shows that the households with the highest income are liable for the largest share of the debt and have the largest loans relative to income after tax, cf. Chart 4-10. The households that have

[1] For further information, see Asger Lau Andersen, Anders Møller Christensen, Nick Fabrin Nielsen, Sigrid Alexandra Koob, Martin Oksbjerg and Ri Kaarup, The wealth and debt of Danish families, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 2012, Part 2. The data is limited so as to include only families without self-employed members, with full tax liability and with an annual income of more than kr. 25,000.

raised the debt are assessed to have the means to service it. At the same time, most households hold many assets, including liquid financial assets and assets tied up in property and pension. Approximately 80 per cent of households had net assets at end-2010.[1]

Danmarks Nationalbank also conducted an analysis showing that most households are resilient to negative shocks in the form of interest-rate increases and unemployment.[2] The findings are based on an assessment of households' financial scope after fixed expenses and a given disposable amount (the financial margin), in the baseline scenario and various stress scenarios. If the financial margin is negative, it is to be expected that households will find it difficult to pay current expenses, e.g. to service debt, unless they have other assets at their disposal. Based on a tight budget[3], only 8 per cent of Danish households initially have higher expenses than income at end-2011. Those households account for only a minor part of the debt to banks and mortgage banks. If the analysis solely considers households with mortgage loans, only 3 per cent have a negative financial margin. Of those 3 per cent, approximately every third household has an LTV ratio of more than 80 per cent. In the event of interest-rate shocks of 5 and 9 percentage points, respectively, expenses would exceed income for 5 and 7 per cent, respectively, of households with mortgage debt. Of those, 37 and 40 per cent, respectively, have an LTV ratio of more than 80 per cent. Besides, the financial margin becomes negative for very few households if the principal earner loses his or her earned income for three or six months. The assessment is that they do not pose a threat to financial stability.

Expiry of deferred-amortisation period

In 2003, it became possible to obtain deferred-amortisation mortgage loans. If a 10-year deferred-amortisation period is assumed, it will expire for the first loans this year. For many loans it will not expire until 2019 and 2020, however, cf. Chart 4-11. For loans with an original term to maturity of 30 years, expiry of the deferred-amortisation period means that the loan has to be repaid over 20 years, unless the loan is converted.

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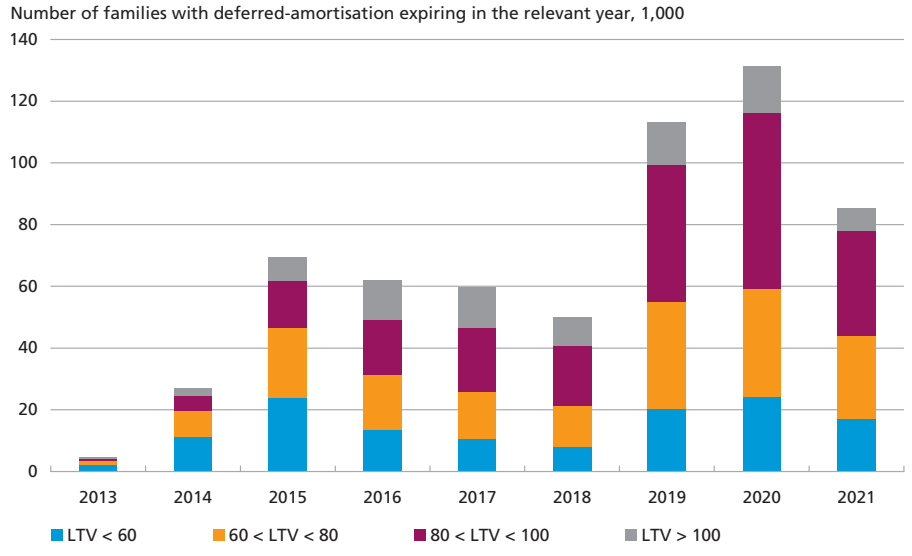
1 The net assets are calculated as the household's total assets consisting of liquid financial assets, housing wealth and pension savings adjusted for taxes, less the household's total debt.

2 A detailed analysis is available in Asger Lau Andersen, Anders Møller Christensen, Charlotte Duus and Ri Kaarup, Danish families' financial robustness, variable rates and deferred amortisation, Danmarks Nationalbank, *Monetary Review*, 4th Quarter 2012, Part 2. The results here are updated from data for 2010 to data for 2011. The data is limited so as to include only families without self-employed members, with full tax liability and with an annual income of more than kr. 25,000.

3 A tight budget is defined as the average consumption of households with an annual gross income of less than kr. 150,000 plus a sufficient disposable amount.

EXPIRY OF DEFERRED-AMORTISATION PERIOD Chart 4-11



Note: The Chart shows the number of households with at least one deferred-amortisation loan for which the deferred-amortisation expires no later than in the year stated. The year of expiry has been calculated on the basis of the starting date for the most recent period of deferred-amortisation and assuming that the total deferred- amortisation period is 10 years. The same household may be included in different years if it has more than one deferred-amortisation loan. The LTV ratio covers the remaining debt as a ratio of the property value of the property pledged as collateral for the loan. The property value is the mortgage bank's valuation as at end-2011. If a household has several deferred-amortisation loans expiring in the same year, but with different properties as collateral, the loan with the highest LTV ratio is shown in the Chart.

Source: Mortgage banks, Statistics Denmark and own calculations.

Most households with deferred-amortisation mortgage loans have sufficient financial scope to be able to amortise their mortgage debt. Danmarks Nationalbank's analysis shows that approximately 9 per cent of households will be unable to amortise their debt over the remaining 20 years of the loan's term to maturity.

A good many households with deferred-amortisation loans had an LTV ratio[1] of more than 80 per cent at end-2011, cf. Chart 4-11. Rising house prices could limit the number of households with an LTV ratio of more than 80 per cent. Danmarks Nationalbank's most recent forecast predicts that house prices will rise, though moderately.

According to the Minister for Business and Growth, households with an LTV ratio of more than 80 per cent have several options if they do not wish to repay their loans over the remaining term to maturity.[2] One option is to convert to 30-year annuity loan with amortisation; another is to raise a new deferred-amortisation mortgage loan up to the 80 per

[1] The LTV ratio indicates the remaining debt as a ratio of the property value of the mortgaged property. The property value is the mortgage bank's assessment as at end-2011.

[2] See www.evm.dk/ministeren/taler/2013/09-04-13-realkreditforeningens-aarsmoede for Annette Vilhelmsen's speech at the annual meeting of the Danish Mortgage Banks' Federation on 9 April 2013 (in Danish only).

DEBT BY FINANCIAL MARGIN AFTER LOAN CONVERSION, HOUSEHOLDS WITH DEFERRED-AMORTISATION AND AN LTV HIGHER THAN 80 PER CENT, 2011 Table 4-1

Annual financial margin, 1,000 kr.	Number of households	Mortgage debt, kr. billion	Mortgage debt, per cent	Bank debt, kr. billion	Bank debt, per cent	Other debt, kr. billion	Other debt, per cent
Less than 0	8,315	18.2	1.5	5.1	1.0	0.6	3.3
0-75	25,346	31.8	2.7	6.0	1.2	0.4	2.4
75-150	39,746	52.2	4.4	10.7	2.1	0.6	3.7
150-250	60,032	93.4	7.8	22.4	4.3	1.1	6.4
More than 250	106,311	225.7	18.9	52.0	10.1	2.8	16.3
Total	239,750	421.2	35.3	96.1	18.6	5.5	32.1

Note: Only households with at least one deferred-amortisation loan with an LTV of more than 80 per cent at end-2011 have been included in the Table. However, the ratios stated have been calculated relative to the total debt of all households, not only the debt of the included households.
Source: Mortgage banks, Statistics Denmark and own calculations.

cent limit and to supplement it with a bank loan with amortisation for the remaining part of the debt. Finally, the mortgage banks can offer households under particular pressure a new deferred-amortisation loan as a loss-preventing measure. For such an exposure, there will be objective evidence of impairment, and the mortgage bank must consequently calculate a loan impairment charge.

Approximately 240,000 families have deferred-amortisation loans and an LTV ratio of more than 80 per cent. If those households are to begin amortising their deferred-amortisation loans from end-2011, the number of households with a negative financial margin will increase from 5,800 to 18,800. If the households instead convert their loans to new deferred-amortisation mortgage loans within the 80 per cent limit, while funding their remaining debt with a 20-year bank loan, the number of households will only increase to 8,300.[1] Those households will only be liable for 1.5 and 1.0 per cent, respectively, of the households' total debt to mortgage banks and banks, cf. Table 4-1. Hence, it is found that expiry of the deferred-amortisation period for mortgage loans is manageable and that there is no need for new legislation.

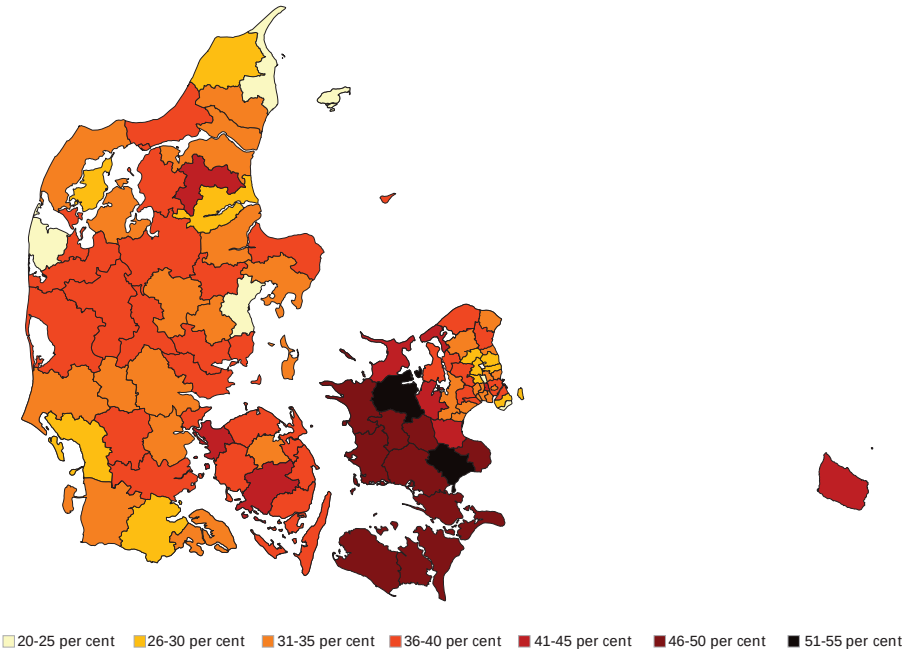
Considerable geographical differences in the housing market

In general, house prices have stabilised. Seasonally adjusted house prices have fluctuated at around the same level since the spring of 2012, while prices for owner-occupied flats have risen. Turnover of properties remains low, and time on market is long.

There are considerable geographical differences in both housing market conditions and developments. The housing market is improving pri-

[1] The new mortgage loan is assumed to have an interest rate of 3 per cent p.a., while the bank loan has an interest rate of 7 per cent p.a.

HOUSEHOLDS WITH A HIGH LTV AS A PERCENTAGE OF HOUSEHOLDS WITH MORTGAGE LOANS, BY MUNICIPALITIES, 2011 Chart 4-12



Note: LTV covers the remaining debt as a ratio of the property value of the property pledged as collateral for the loan. The property value is the mortgage bank's valuation as at end-2011. The figures indicate the percentage of households with an LTV of more than 80 per cent relative to all households with mortgage loans in the individual municipalities.

Source: Mortgage banks, Statistics Denmark and own calculations.

marily in Greater Copenhagen, which has progressed with shorter time on market, fewer homes for sale and a slight increase in the number of homes sold. An explanatory factor could be that since 2008, households have tended to move from the peripheral areas to Greater Copenhagen in particular, but also to some extent to eastern Jutland.

Western and southern Zealand experience the longest time on market and are among the regions that have seen substantial price falls. Accordingly, home owners in western and southern Zealand may find it difficult to sell their properties, and a sale may result in a loss to those households. Moreover, there is a clear over-representation of both arrears and enforced sales in western and southern Zealand.[1] At end-2011, the region accounted for approximately 12 per cent of all households with mortgage loans, but around 23 per cent of all households in arrears.

[1] An analysis of the enforced sales trend is available in Danmarks Nationalbank, Financial stability, 2012, Chapter 9.

Some Danish regions have a clear over-representation of households with an LTV ratio of more than 80 per cent, cf. Chart 4-12. Consequently, the potential losses on default on loans are higher in those regions. This applies e.g. to western and southern Zealand, which accounts for around 10 per cent of total lending by banks and around 11 per cent of total lending by mortgage banks. As mortgage banks and systemic banks generally have loan portfolios with considerable geographical dispersion, they are not overexposed to the vulnerable regions. If the current negative trend continues, there is a risk that loan impairment charges and losses will persist in these regions in the coming years.

5. Stress Test of the Banks' Capitalisation

Danmarks Nationalbank's stress test shows that the capitalisation of the systemic banks is robust. The five systemic banks comply with the capital requirements of all scenarios and their Common Equity Tier 1 capital remains above 9 per cent.

Two of the non-systemic banks will need to strengthen their capitalisation in the baseline scenario. In the stress scenarios, several non-systemic banks will need to strengthen their capitalisation.

In the assessment of Danmarks Nationalbank, any problems arising among non-systemic banks can be solved through business initiatives or within the current framework for mergers and resolution without appreciably affecting financial stability in Denmark.

DANMARKS NATIONALBANK'S STRESS TEST MODEL

Danmarks Nationalbank' stress test model provides the basis for a general assessment of the resilience of Danish banks in terms of capitalisation in various scenarios. The five systemic and nine non-systemic banks in the stress test account for 84 and 8 per cent, respectively, of Danish banks' loans and guarantees.

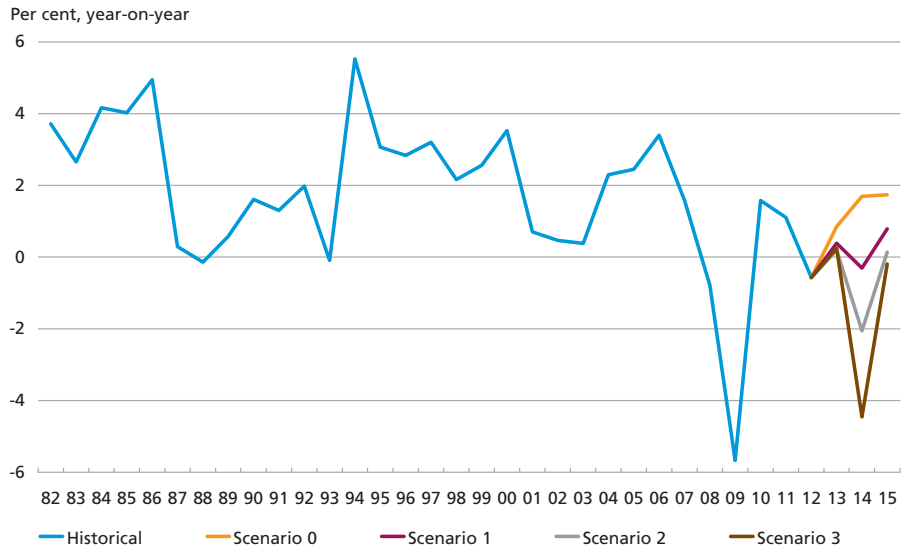
The stress test model projects the profit and loss accounts and balance sheets in various macroeconomic scenarios and thus provides scope for assessing the development in bank capitalisation. The model applies relations for historical links between macroeconomic developments in Denmark on the one hand and bank earnings and loan impairment charges on the other.[1]

The model does not take bank liquidity risks into account. An analysis of the robustness of banks' liquidity positions shows that banks will continue to have healthy excess liquidity cover in a situation in which the 10 largest term deposits and all long-term senior debt maturing in 2013-15 cannot be refinanced, cf. Chapter 3.

The capitalisation of banks is assessed in four scenarios, cf. Chart 5-1. Scenario 0 is the baseline scenario, reflecting Danmarks Nationalbank's macroeconomic forecast, cf. *Monetary Review*, 1st Quarter 2013. As the model is based on a number of assumptions in the projection of the

[1] For a description of the estimation method for calculation of banks' loan impairment charge ratios, see Danmarks Nationalbank, *Financial stability*, 2012, Chapter 8.

GROWTH IN REAL GDP Chart 5-1



Source: Statistics Denmark and own calculations.

capitalisation of banks, the scenario does not represent a forecast of the banks' capitalisation, cf. *Financial stability*, 2012, Box 11.

The other three scenarios imply various negative shocks to the economy, cf. Table 5-1 and Box 5-1. The three scenarios have been developed in cooperation with the Danish Financial Supervisory Authority. Appendix 3 provides a detailed description of the scenarios.

SCENARIOS, SELECTED KEY VARIABLES Table 5-1

	Scenario 0	Scenario 1	Scenario 2	Scenario 3
2013				
GDP, per cent year-on-year	0.8	0.4	0.2	0.2
Private consumption, per cent year-on-year	0.7	0.2	0.3	0.0
Export market growth, per cent year-on-year	3.9	3.9	1.3	2.0
Unemployment rate	4.4	4.5	4.6	4.5
House prices, per cent year-on-year	2.0	0.3	0.3	0.7
2014				
GDP, per cent year-on-year	1.7	-0.3	-2.1	-4.5
Private consumption, per cent year-on-year	1.7	-0.7	-1.0	-4.2
Export market growth, per cent year-on-year	6.2	6.2	-4.6	-7.0
Unemployment rate	4.5	5.3	6.0	6.6
House prices, per cent year-on-year	3.0	-4.3	-8.7	-12.5
2015				
GDP, per cent year-on-year	1.7	0.8	0.1	-0.2
Private consumption, per cent year-on-year	1.8	0.3	0.2	0.3
Export market growth, per cent year-on-year	6.3	6.3	3.5	1.0
Unemployment rate	4.2	5.6	7.4	8.6
House prices, per cent year-on-year	2.9	-0.2	-4.0	-9.2

Note: Annual average. Unemployment is expressed as a ratio of the labour force.

STRESS SCENARIOS Box 5-1

Scenario 1
The scenario implies a continuation of the slow economic activity of 2012. The economic slowdown is driven by a negative shock to private consumption, private investment and house prices. Since other countries are assumed to follow the baseline scenario, export market growth is not affected.

Scenario 2
The scenario implies a global shock to business and consumer confidence. Export market growth is reduced relative to the baseline scenario. The Danish economy is also affected by an erosion of confidence, leading to negative shocks to private consumption, residential investment and house prices.

Scenario 3
This scenario implies a strong global shock to business and consumer confidence, reflected in an even sharper decline in export market growth than envisaged by scenario 2.

In the three stress scenarios, interest rates are assumed to follow the baseline scenario with slightly rising interest rates. Higher interest rates will have a positive impact on the banks' net interest income, but may also exert upward pressure on loan impairment charges. Many banks have hedged their interest rate exposure in full or in part, entailing that the value of their net assets does not drop sharply in case of a rise in interest rates.

STRESS TEST RESULTS

The analysis is based on the banks' financial statements for 2012. The stress test period runs for three years, entailing that the banks' profit and loss accounts and balance sheets have been projected forward until and including the 4th quarter of 2015.

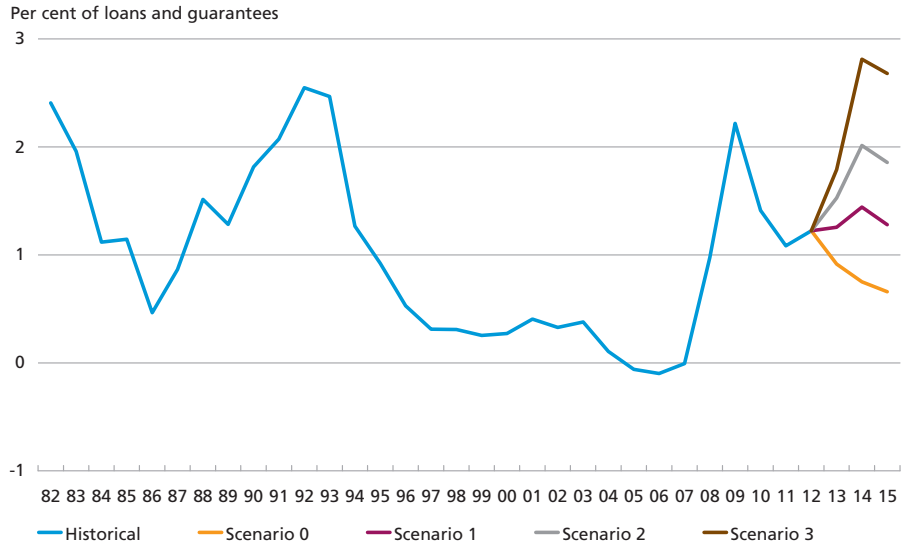
Earnings and loan impairment charges

Bank earnings remained low in 2012, cf. Chapter 2. All systemic and five non-systemic banks emerged from 2012 with a profit. Earnings remain low in all scenarios during the stress test period.

The banks' loan impairment charges showed a slight increase from 2011 to 2012, cf. Chart 5-2. In scenario 0, loan impairment charges decline gradually in response to the recovery of the Danish economy. In the scenario, the sum of annual loan impairment charge ratios for the years 2013-15 is 2.3 per cent.

In scenario 1, loan impairment charges remain at the 2012 level, with a small increase in 2014. Developments are driven by sustained low economic growth in Denmark. In scenario 1, the sum of annual loan impairment charge ratios is 4.0 per cent.

ANNUAL LOAN IMPAIRMENT CHARGE RATIOS — Chart 5-2



Note: Loan impairment charges are calculated as a ratio of loans and guarantees before loan impairment charges. The historical series up to 2012 is based on banks in the Danish Financial Supervisory Authority's groups 1-3. The estimated loan impairment charge ratios in 2013-15 are calculated as a weighted average for the 14 banks in the stress test. The calculations use bank-specific loan impairment charge ratios, cf. Danmarks Nationalbank, *Financial stability*, 2012, Chapter 8.

Source: Cato Baldvinsson, Torben Bender, Kim Busch-Nielsen and Flemming Nytoft Rasmussen, Dansk Bankvæsen (The Danish banking system), 5th edition, Forlaget Thomson, 2005, Danish Financial Supervisory Authority and own calculations.

In scenarios 2 and 3, loan impairment charges increase considerably in response e.g. to global macroeconomic shocks in the scenarios. During the stress test period, the sum of annual loan impairment charge ratios increases to 5.4 and 7.3 per cent, respectively, in scenarios 2 and 3.

STRESS TEST CAPITAL REQUIREMENTS — Box 5-2

The stress test provides a total of four requirements for bank capital: two "soft" and two "hard" requirements. The two "soft" requirements are the same throughout the stress test period, while the "hard" requirement for Common Equity Tier 1 capital increases over the period, cf. the Table.

THE TWO "SOFT" AND THE TWO "HARD" REQUIREMENTS

"Soft" requirement I	"Soft" requirement II	"Hard" requirement I	"Hard" requirement II
Total capital must exceed the individual capital need, which is assumed to be constant during the period	The individual capital need in excess of 8 per cent must be met by Common Equity Tier 1 capital	Common Equity Tier 1 capital must be at least 2.0, 4.0 and 4.5 per cent, respectively, in 2013, 2014 and 2015	Total capital must be at least 8 per cent.

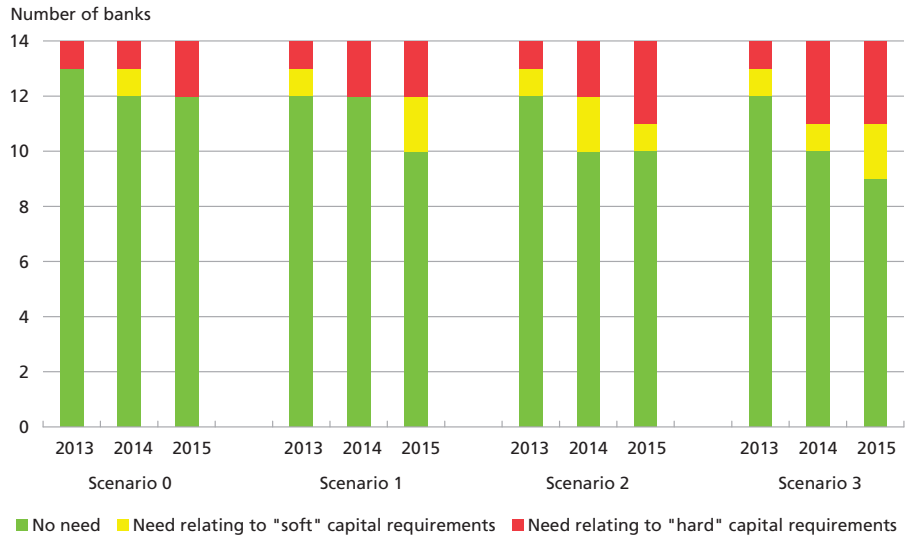
Capitalisation

The future capital adequacy rules, CRD IV/CRR, entail higher minimum requirements for banks' Common Equity Tier 1 capital in the period until 2019.

As from December 2012, the individual capital need has been changed from a "hard" to a "soft" requirement. Non-compliance with a "soft" requirement entails that the Danish Financial Supervisory Authority may impose transaction restrictions and implement a number of supervisory processes, while non-compliance with a "hard" requirement entails that the Danish Supervisory Authority will revoke the bank's licence to operate as a bank unless it restores its capital within a short period of time. With the introduction of CRD IV/CRR and the amended rules on the individual capital need, the stress test provides a total of four requirements for bank capital, cf. Box 5-2.

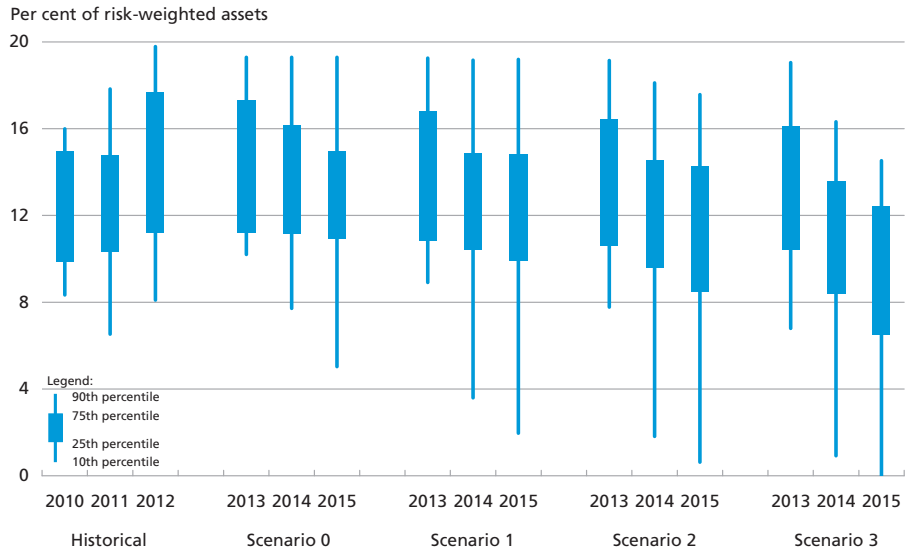
The five systemic banks will comply with all capital requirements in all scenarios. Two of the non-systemic banks will need to strengthen their capitalisation to comply with the "hard" capital requirements in scenario 0, cf. Chart 5-3. In scenario 1, a further two non-systemic banks will need to strengthen their capitalisation to comply with the "soft" capital requirements. In scenario 2, a total of three non-systemic banks will need to strengthen their capitalisation to comply with the "hard" capital requirements.

THE BANKS' NEED TO STRENGTHEN THEIR CAPITALISATION, BROKEN DOWN BY "SOFT" AND "HARD" CAPITAL REQUIREMENTS — Chart 5-3



Source: Danish Financial Supervisory authority and own calculations.

COMMON EQUITY TIER 1 CAPITAL Chart 5-4



Source: Danish Financial Supervisory Authority and own calculations.

In scenario 3, most banks will see a decline in Common Equity Tier 1 capital, cf. Chart 5-4. The Common Equity Tier 1 capital of all the systemic banks remains above 9 per cent. One additional non-systemic bank will need to strengthen its capitalisation to comply with the "soft" capital requirements in scenario 3.

Banks have various options when it comes to increasing their capital, for instance by retaining dividends, raising capital in the market, reducing balance sheets or risks, or improving cost efficiency. Subsidiary banks in financial groups also have the option of receiving a capital injection from the parent company. For some banks, a merger could also be a solution.

HOUSEHOLD SENSITIVITY CALCULATIONS

Throughout the crisis, banks' impairment charge ratios on loans and guarantees to households have remained low. However, since households account for a large percentage of total bank loans and guarantees, impairment charges on households may have a major impact on total impairment charges.

A sensitivity calculation of the banks' impairment charges on loans and guarantees to households has been performed to assess the resilience of banks to very high impairment charges on a large percentage of their total loan portfolios.

The sensitivity calculation was performed by doubling the estimated annual impairment charge ratios on households in scenario 3 of the stress test. As a result, the sum of the sector's annual impairment charge ratios on loans and guarantees to households in the years 2013-15 reaches 13.8 per cent. Given that the vast majority of households are resilient, cf. Chapter 4, the sensitivity calculation represents a severe shock to households.

Despite very high loan impairment charge ratios, all systemic banks comply with the "hard" capital requirements. Two of the systemic banks experience a slight need to strengthen their capitalisation to comply with the "soft" capital requirements during the final year of the stress test. The calculations illustrate the banks' resilience to very high loan impairment charge ratios on a large percentage of their loan portfolios. In the sensitivity calculation, about half of the non-systemic banks will need to strengthen their capitalisation.

6. Mortgage Banks

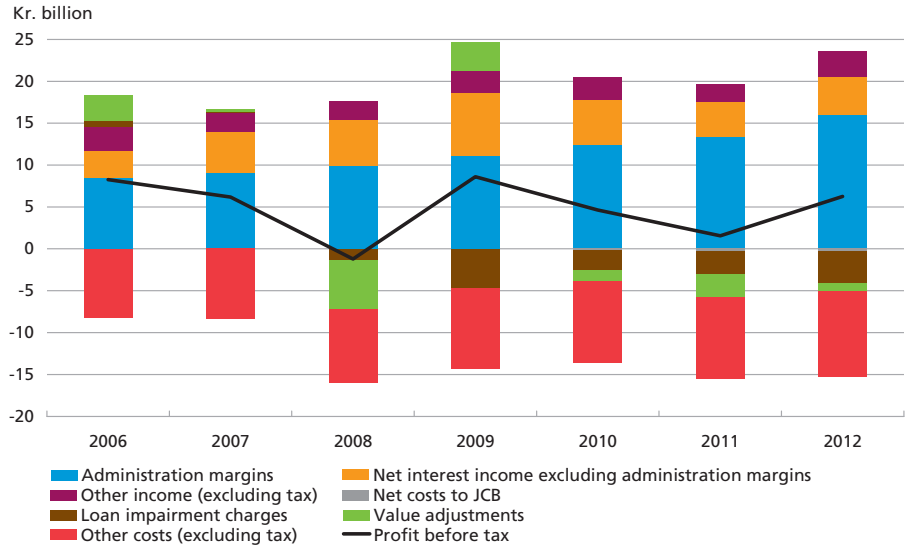
The mortgage banks' earnings increased in 2012 as a result of rising administration margins, higher remortgaging activity and growth in total lending.

Fundamental investor confidence in the creditworthiness of mortgage bonds is at the core of the Danish mortgage-credit system. In order to preserve this confidence, the mortgage banks should take a prudent approach and not go too near the statutory limits.

DEVELOPMENTS IN THE MORTGAGE-CREDIT SECTOR

The earnings of the mortgage banks improved in 2012. Their total profit before tax was kr. 9.0 billion, up from kr. 4.8 billion in 2011, cf. Chart 6-1. Earnings in 2012 reflected rising administration margins, but higher remortgaging activity and increased lending also played a role. Total lending by mortgage banks rose by approximately 3 per cent in 2012, to kr. 2,522 billion.

EARNINGS BROKEN DOWN BY KEY ITEMS, MORTGAGE BANKS — Chart 6-1

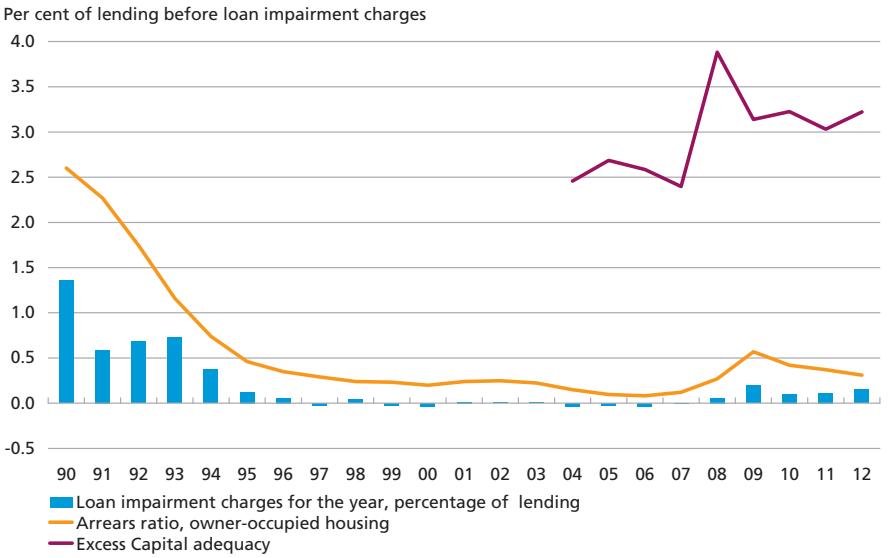


Note: "Other income" comprises dividend, other operating income and profit from temporarily held assets. "Other costs" comprises other operating costs, staff and administration costs and depreciation of assets. In order to avoid double inclusion of the profit for Totalkredit, the profit from equity investments in associates and group enterprises is not included.

Source: Danish Financial Supervisory Authority, annual accounts and own calculations.

LOAN IMPAIRMENT CHARGE AND ARREARS RATIO AND EXCESS CAPITAL ADEQUACY

Chart 6-2



Note: The arrears ratio indicates the proportion of the total instalments and interest that had not been paid 3.5 months after the September settlement date at the latest. The negative loan impairment charges in 2004-06 can be attributed e.g. to changes in accounting practices leading to a reversal of prior loan impairment charges.

Source: Danish Financial Supervisory Authority, Association of Danish Mortgage Banks and Danish Mortgage Banks' Federation.

Loan impairment charges increased to kr. 3.9 billion in 2012 from kr. 2.8 billion in 2011, but remained low at less than 0.2 per cent of the lending volume, cf. Chart 6-2. The growth in loan impairment charges related to both households and the corporate sector. Despite a slight increase in loan impairment charges, the arrears ratio declined further to 0.31 per cent in 2012, down from 0.37 per cent in 2011.

The mortgage banks' excess capital adequacy averaged more than 3 per cent of lending at end-2012. However, there was a considerable spread – from 1.5 to 14.2 per cent – across the sector.[1] Nordea Realkredit, Totalkredit and BRFkredit are among the mortgage banks with the lowest excess capital adequacy. Of these, Nordea Realkredit and Totalkredit belong to large financial groups and may therefore have relatively easy access to additional capital from their parent companies.

Since the onset of the crisis, the mortgage banks have gradually raised their administration margins. From 2008 onwards, loan impairment charges have totalled kr. 15.1 billion. In the same period, higher average administration margins have boosted earnings by kr. 6.7 billion. At the current earnings level, the mortgage banks are resilient to a considerable increase in loan impairment charges.

[1] FIH Realkredit A/S is not included in these figures as it is being wound up.

SECURITY OF THE MORTGAGE-CREDIT SYSTEM

The mortgage-credit system plays a key role in credit intermediation in Denmark. Fundamental investor confidence in the creditworthiness and liquidity of the bonds is at the core of the system. The Committee on Systemically Important Financial Institutions in Denmark has identified the market for Danish mortgage bonds as systemically important.

It is essential to preserve this confidence and thus the security of the system. The Danish Mortgage Credit Act includes stringent rules for the relationship between lending by mortgage banks and issuance of bonds to finance the loans. The purpose is to prevent mortgage banks from taking on any other risk than the credit risk on the borrower when granting loans. Within this framework, the mortgage banks have a certain degree of flexibility. This is reflected in the product development over time and also in the various initiatives and proposals seen in recent years, aimed at addressing e.g. risks related to refinancing and top-up collateral.[1]

Adjustable-rate loans entail a refinancing risk as the underlying bonds have much shorter maturities than the loans. Consequently, the mortgage banks need to be able to issue bonds in the market on a regular basis in order to fund the loans. In this respect adjustable-rate loans differ from fixed-rate loans, which are financed throughout the loan term when they are granted.

The refinancing risk in relation to adjustable-rate loans makes it imperative that the ability of the mortgage banks to meet their obligations can never be called into doubt. In other words, these loans make demands on the business models of the mortgage banks.

Legislation on covered bonds (SDOs) entails that top-up collateral must be pledged if the value of the individual loan financed by SDOs or covered mortgage bonds (SDROs) exceeds a given percentage of the value of the underlying collateral. This increases the need for top-up collateral if house prices fall. The SDO legislation allows the mortgage banks to fund their need for top-up collateral by issuing Junior Covered Bonds, JCBs.

It is important that a mortgage bank's willingness and ability to defend the SDO status of a capital centre is not called into doubt. If the SDO status is lost owing to pronounced house price falls, this could jeopardise the reputation of not only the relevant capital centre, but also the mortgage bank as such. Moreover, there is a risk that the uncertainty could spread to other mortgage banks. Mortgage banks opting to issue SDOs or SDROs should therefore adapt their business models to ensure resilience to falling house prices.

[1] For a review of the various initiatives, see Danmarks Nationalbank, *Financial stability*, 2012, Chapter 6.

It is up to the mortgage banks themselves to ensure that the credit risk on their borrowers remains low, so as to prevent any doubt whatsoever about the ability of the mortgage banks to meet their obligations to investors. When granting loans, they can do so by ensuring that individual borrowers do not take on greater risks than their finances allow. In other words, ensuring that borrowers are resilient to shocks such as falling house prices, expiry of the period of deferred amortisation and higher interest rates. Danmarks Nationalbank's analyses show that most households are resilient to negative shocks in the form of higher interest rates, cf. Chapter 4. However, adjustable-rate loans and deferred amortisation are used to a great extent, and loan-to-value (LTV) ratios are generally high.

From 1 May 2013, new rules have been introduced to the effect that mortgage banks may only offer variable-rate loans and/or deferred amortisation to borrowers who would be able to service a fixed-rate loan with amortisation.[1] It is positive that a framework is being introduced to limit the credit risks mortgage banks may incur.

When assessing whether a customer is able to service a fixed-rate loan with amortisation, it should also be taken into account that interest rates fluctuate over the business cycle. It is important that the current very low interest rates for fixed-rate loans do not lead to households being granted variable-rate and/or deferred-amortisation loans if they are only just able to service a fixed-rate loan.

Fundamental investor confidence in the creditworthiness of mortgage bonds is at the core of the Danish mortgage-credit system. In order to preserve this confidence, the mortgage banks should take a prudent approach and not go too near the statutory limits. For example, they could refrain from granting variable-rate and deferred-amortisation loans right up to the statutory limits. This same applies to loans funded via issuance of SDOs or SDROs. Alternatively, the mortgage banks may opt for higher capitalisation or build up a sufficient buffer of top-up collateral well in advance. This would boost the resilience of the system to falling property prices, higher interest rates and other negative shocks to the economy. One mortgage bank, Nykredit Realkredit, has chosen no longer to offer adjustable-rate loans with annual refinancing, deferred-amortisation loans and SDO-financed loans right up to the statutory loan-to-value limits.

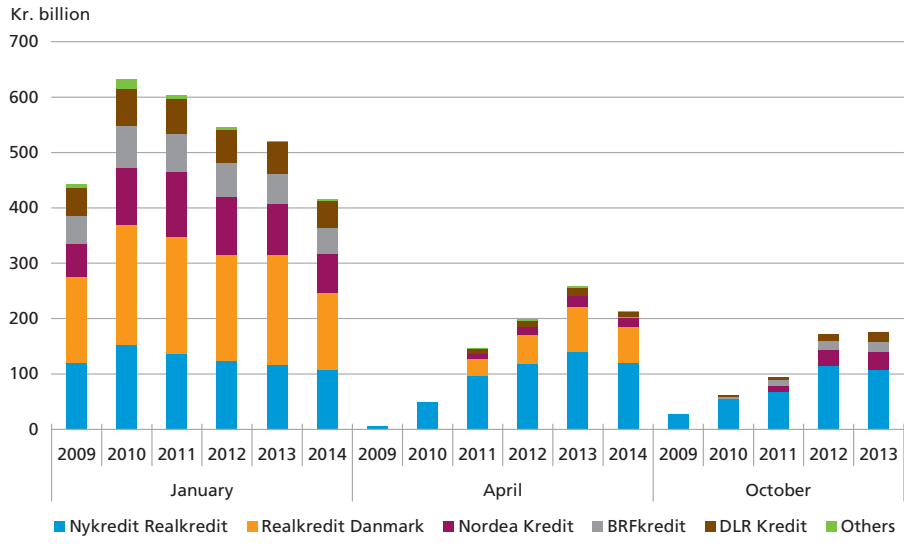
Status as regards spreading of adjustable-rate loans

The sector is working to reduce the refinancing risk, e.g. by spreading auctions more. Previously, refinancing of the bonds behind adjustable-

[1] These changes were introduced by the Executive Order on good practice for financial enterprises, investment associations, etc. of 20 December 2012, which came into force on 1 May 2013.

MATURING BONDS FOR FINANCING ADJUSTABLE-RATE LOANS BY MONTH AND INSTITUTION

Chart 6-3



Note: Maturing bonds on the basis of the nominal outstanding volume at the end of the preceding month. Bonds maturing in October 2013, January 2014 and April 2014 are, however, based on the outstanding volume at end-March 2013. In 2012, Nykredit granted adjustable-rate loans based on bonds maturing in July. They are not included in the Chart. Owing to factors such as principal payments and prepayments the full amount will not be refinanced.

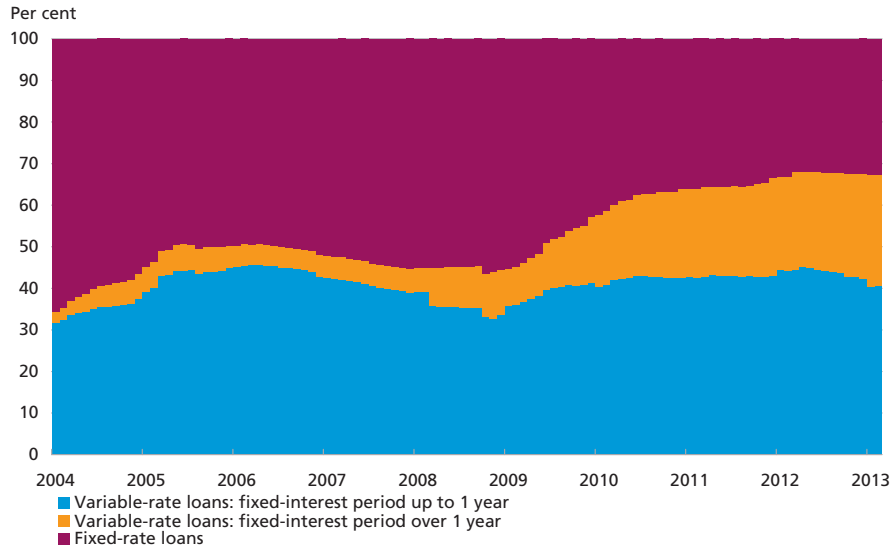
Source: Danmarks Nationalbank.

rate loans was concentrated in December. On the basis of discussions between Danmarks Nationalbank, the Association of Danish Mortgage Banks and the Danish Mortgage Banks' Federation in 2009, the volume of new adjustable-rate loans based on bonds maturing in January has been very limited since 2010. Today, new loans are based on issues maturing in April, July or October. This has led to a more even distribution of the refinancing requirement over the year. Around half of the refinancing now takes place in other months than December, cf. Chart 6-3. Nykredit Realkredit has spread the refinancing requirement so that it is evenly distributed on January, April and October, and in 2012 it began to grant loans based on bonds maturing in July. The other mortgage banks have not achieved the same spread across the year.

The mortgage banks are also encouraging customers to choose loans with longer fixed-interest periods. Since the beginning of 2012, the outstanding volume of loans for owner-occupied housing and summer cottages with fixed-interest periods of up to 1 year has been reduced by kr. 40 billion, while the volume with fixed-interest periods of 1-5 years has risen by kr. 69 billion. The volume of fixed-rate loans has been more or less constant, cf. Chart 6-4. As the average fixed-interest period increases, the annual refinancing requirement is reduced. This lowers the refinancing risk, as the mortgage banks are less exposed to short periods of market turmoil.

LENDING BY MORTGAGE BANKS FOR OWNER-OCCUPIED HOUSING AND SUMMER COTTAGES BY FIXED-INTEREST PERIOD

Chart 6-4

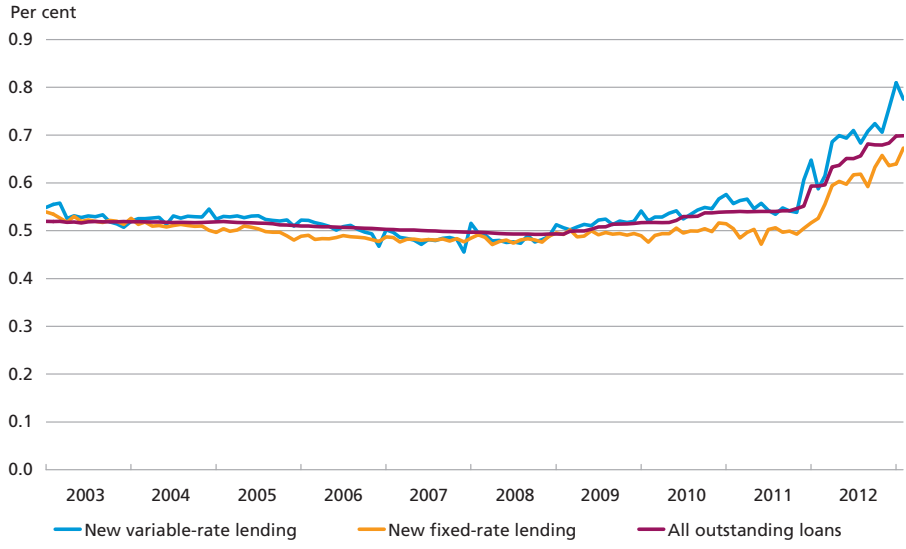


Note: Variable-rate loans comprise adjustable-rate loans and variable-rate loans.
Source: Danmarks Nationalbank.

The mortgage banks have given their customers a price incentive to re-mortgage into loans with longer fixed-interest periods. Since 2009, the average administration margin has been higher for new variable-rate

MORTGAGE BANKS' AVERAGE ADMINISTRATION MARGINS ON LOANS TO HOUSEHOLDS

Chart 6-5



Note: Variable-rate loans cover both adjustable-rate loans with a fixed-interest period of up to 10 years and variable-rate loans.
Source: Danmarks Nationalbank.

loans to households than for new fixed-rate loans, cf. Chart 6-5. Before 2009, administration margins for these two loan types were virtually identical. For borrowers, falling interest rates have easily offset recent years' increase in administration margins.

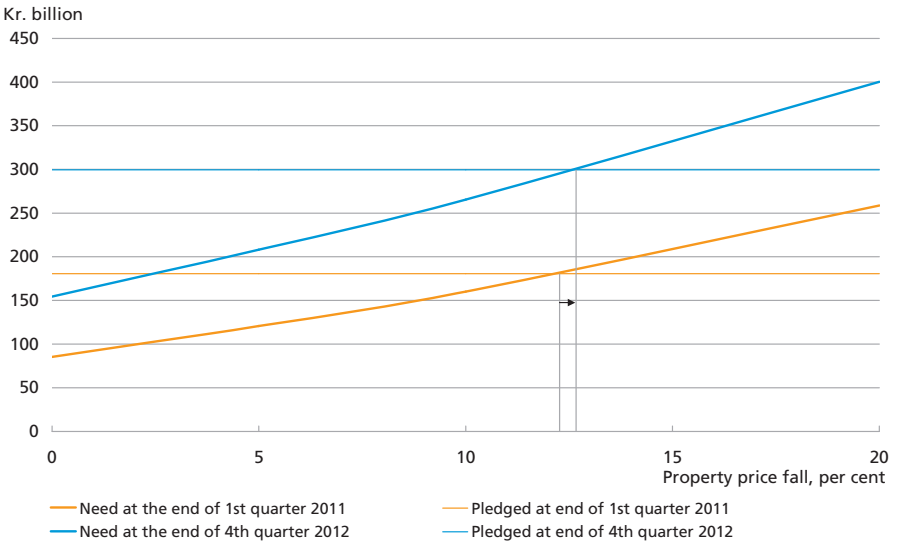
Status regarding the need for top-up collateral

Recent years' falling house prices have resulted in an aggregate need for top-up collateral of kr. 154 billion in the 4th quarter of 2012, cf. Chart 6-6. This is an increase of kr. 69 billion compared with the 1st quarter of 2011.

The sector has pledged top-up collateral with a value of kr. 299 billion and therefore has a kr. 145 billion buffer relative to the statutory requirements. All in all, the mortgage banks have pledged top-up collateral that will allow them to withstand a property price fall of 13 per cent or so. In addition to the SDO legislation, credit rating agencies also require a certain level of collateral to back the bonds issued if a given credit rating is to be maintained. These requirements have a strong impact on the volume of collateral pledged.

In December 2012, the possibility of issuing JCBs was expanded, so now the mortgage banks may also issue JCBs purely with a view to increasing their level at collateral, e.g. in order to achieve or maintain a certain credit rating. This option also includes traditional mortgage bonds that do not require constant observance of LTV ratios.

NEED FOR TOP-UP COLLATERAL ON FALL IN PROPERTY PRICES — Chart 6-6



Note: The need in connection with a fall in property prices is estimated on the basis of the banks' own sensitivity calculations. As the sensitivities are calculated on the basis of the banks' individual models, and because the calculations used are staggered, the data should be interpreted with some caution.

Source: Danish Financial Supervisory Authority and own calculations.

Special Topic Section

7. Encumbrance of Assets

Encumbrance of assets in connection with various transactions is a standard element of a credit institution's activities, e.g. when credit institutions pledge assets as collateral for loans from central banks or from each other. This reduces the counterparty's credit risk on the institution.

Due to the international financial crisis, credit institutions in many countries now fund a larger share of their balance sheet on a collateralised basis. Increasing asset encumbrance is not a reason for the international financial crisis, but a result of the crisis – reflecting factors such as shortage of capital and high liquidity risk among credit institutions in many countries – and may have had a stabilising effect on the financial system as it has enhanced funding opportunities in periods of market turmoil and uncertainty.

However, asset encumbrance for credit institutions is not without risk. Most risks are linked to the individual institution, but some are linked to the financial system as such.

A low degree of transparency may reinforce risks associated with encumbrance of credit institutions' assets because this makes it more difficult for unsecured creditors to assess their ranking in the event of default. It is important to ensure a high level of information in relation to encumbrance of bank assets, including contingent encumbrance. The European Systemic Risk Board, ESRB, has recommended that the European Banking Authority, EBA, develop guidelines with disclosure requirements for both the level and evolution of credit institutions' encumbered and unencumbered assets.

In the negotiations concerning the future crisis management directive it is being discussed whether, in the event of default, depositors should rank before other unsecured creditors. For investors in unsecured senior debt, this would correspond to all depositors receiving collateral for their deposits. In other words, the degree of asset encumbrance would rise dramatically. Therefore this could potentially bar access to other unsecured debt than deposits for a number of credit institutions.

The issue of asset encumbrance is not relevant to the Danish mortgage banks, which may only grant loans against real property as collateral. The mortgage banks do not receive deposits, and they fund their entire lending portfolio by issuing mortgage bonds, but – in order to increase excess capital adequacy in capital centres – they may issue senior debt in the form of Junior Covered Bonds, JCBs. It is possible for JCB investors to assess their ranking in the event of default.

BACKGROUND – ENCUMBRANCE AND FUNDING

Besides equity, credit institutions' funding comprises unsecured claims and subordinated debt. In the event of default, unsecured creditors will share the assets prior to the subordinated debt and equity. When credit institutions pledge assets as collateral for loans, the lender/creditor gains privileged access to the assets. This is at the expense of the unsecured creditors, as there will be fewer assets to cover their claims (creditors are subordinated).

Encumbrance of assets in connection with various transactions is a standard element of a credit institution's activities, e.g. when credit institutions pledge assets as collateral for loans from central banks, when they obtain secured loans from each other in the form of repos or when they pledge assets as collateral in connection with various derivatives transactions and settlement in clearing centres, etc.

In the event of growing market turmoil, institutions may be compelled to make further collateral available in order to borrow money at an acceptable rate of interest, and as a result the volume of assets to cover the claims of unsecured creditors will fall. This can be illustrated in stylised form.

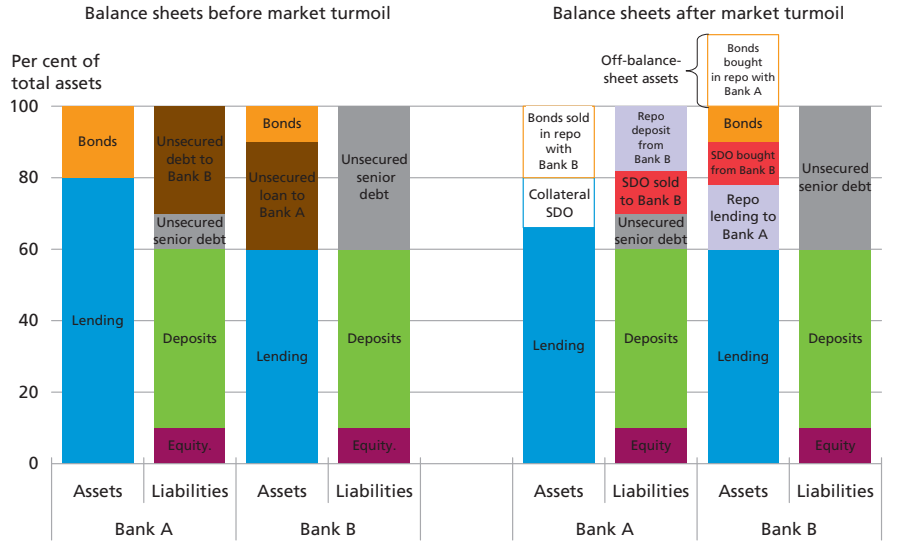
Before market turmoil set in, Bank A funded part of its balance sheet via an unsecured loan from Bank B, cf. Chart 7-1 (left).[1] Now assume that Bank B, in response to the market turmoil, either requires a higher price for continuing to provide unsecured credit or requires Bank A to pledge collateral. Bank A's borrowing from Bank B can continue at a relatively low price if Bank A encumbers some of its assets in favour of Bank B. In the example, Bank A sells its bond portfolio to Bank B in a repo transaction, and furthermore Bank A registers part of its lending (in the form of home loans) as collateral for SDOs that are sold to Bank B, cf. Chart 7-1 (right). These transactions minimise Bank B's credit risk on Bank A. At the same time, Bank B gains possession of bonds that can be sold – possibly in a repo transaction – if Bank B's unsecured senior debt cannot be refinanced.

Bank A's funding structure after market turmoil, Chart 7-1 (right), entails that the bank's unsecured creditors, e.g. investors in unsecured senior debt, have less security if the bank defaults. The reason is that Bank B now ranks before them in relation to Bank A's bonds and the part of its lending that has been registered as collateral for SDOs. This effect is amplified if a haircut is applied in the repo transaction and/or a certain degree of excess cover is required as collateral for SDOs.[2] For the unse-

[1] Bank B in the example can also be seen as a group of banks with which Bank A does business.

[2] In Chart 7-1, the haircut in the repo transaction and the excess cover for SDOs are illustrated as follows: the book value of the bonds Bank A has sold in a repo transaction exceeds the repo deposit, and the book value of the assets Bank A has registered as collateral for SDOs exceeds the value of the SDOs sold.

ASSET ENCUMBRANCE BEFORE AND AFTER MARKET TURMOIL Chart 7-1



cured senior debt this means that the expected losses if Bank A defaults will be higher, while for deposits covered by a deposit guarantee scheme the potential disbursements under this guarantee will increase.

Developments in Europe

As a result of the financial crisis and the subsequent sovereign debt crisis in parts of Europe, many European banks have increasingly based their funding on transactions involving encumbrance of some of their assets. On the basis of data from 28 large European banks, the European Systemic Risk Board, ESRB, finds that the median value for encumbrance of assets as a percentage of total assets had risen from 7 per cent at end-2007 to 27 per cent at end-2011. Calculated as a weighted average, the percentage had risen from 10 to 32.[1] The increase has been particularly pronounced for banks with relatively low credit ratings. Furthermore, there is a clear tendency for banks located in countries with weak public finances to have a higher degree of encumbrance.

ASSET ENCUMBRANCE AND FINANCIAL STABILITY

The option to encumber assets can have a stabilising effect on the financial system as it increases funding opportunities in periods of market turmoil and uncertainty. But there are also risks associated with the encumbrance of credit institutions' assets. Most of these risks are linked to

[1] ESRB, Annex to the recommendation on funding of credit institutions, published 18 February 2013.

individual institutions, but some are linked to the financial system as such. As regards the latter, a high degree of asset encumbrance could mean increased payments from a deposit guarantee fund if an institution defaults, so that the remaining institutions will subsequently have to pay more into the fund. In addition, the degree of encumbrance may affect the handling of a distressed credit institution.

The risk of unexpected changes in the degree of asset encumbrance could make it more difficult for unsecured creditors to assess their ranking in the event of default. This increases uncertainty when investors determine the price of a bank's unsecured debt. This effect may also be amplified if the market has little information about encumbrance, as this entails a risk that unsecured investors partly base their decisions on rumours. Hence, it is important for credit institutions to have a high level of information regarding encumbrance of assets.

Moreover, there is a risk of self-fulfilling negative feedback loops, with investors in a credit institution's unsecured debt requiring higher interest rates to compensate for a high degree of asset encumbrance (possibly combined with little information and much uncertainty). As a result, the institution may rely even more on secured funding, and the unsecured creditors' return requirements will increase further, etc. This could lead to a situation in which it is very difficult for the institution to get back on the path towards a normal situation with unsecured funding.

Extensive use of secured funding may also reduce a credit institution's flexibility in the face of further funding stress, as the volume of unencumbered assets that can potentially be encumbered is reduced. The option to encumber assets can be seen as a buffer against funding stress. Obviously, it is important that credit institutions can use this buffer in a crisis. Similarly, it is important for the institutions to build up their buffers again as soon as this is possible. CRD IV/CRR will introduce a requirement for EU credit institutions to hold buffers of unencumbered liquid assets to cover liquidity outflows in a 30-day funding stress scenario.[1] However, in the event of long-term funding stress, liquid assets will not be the only assets that can be encumbered – for example, home loans may be pledged as collateral for SDOs. In other words, the buffer provided by the option to encumber assets is broader than the assets which may be included in the LCR.

As regards the credit institutions' lending capacity in periods of market turmoil, secured funding may help to keep the lending level stable, as secured markets are often more stable sources of funding than unsecured markets. On the other hand, funding sources and other activities

[1] The LCR is described in Chapter 3.

involving encumbrance of assets could make the financial sector vulnerable to fluctuations in the value, liquidity and credit quality of the assets encumbered. This is because it may be necessary to increase the volume of encumbered assets (contingent encumbrance) in order to maintain a certain funding level. For example, the haircut required by the counterparty to a repo transaction may increase if the value of the underlying asset is uncertain. It may also be necessary to register more loans or other assets as collateral for SDOs if the loan-to-value, LTV, ratio for the loans rises due to falling property prices. In addition, a derivative transaction may suddenly require pledging of more collateral if market fluctuations mean that the value of the transaction becomes negative or if the credit institution is downgraded.

To reduce the uncertainty that may exist among unsecured creditors in relation to contingent encumbrance it is expedient for credit institutions to disclose the volume of contingent encumbrance expected in various relevant stress scenarios, depending of the business areas of each institution and the composition of its liabilities.

THE ESRB's RECOMMENDATIONS

On 18 February 2013, the European Systemic Risk Board, ESRB, published a series of recommendations on the funding of credit institutions.[1] As regards credit institutions' encumbrance of assets, the ESRB's recommendations concern the following three areas:

Risk management by credit institutions

Among other things, the ESRB recommends that national supervisory authorities require credit institutions to put in place risk management policies to define their approach to asset encumbrance, as well as their management of the associated risks. Moreover, the credit institutions should include in their contingency plans strategies to address the contingent encumbrance resulting from relevant unlikely – but not unthinkable – shocks including downgrades in the credit institution's credit rating, devaluation of pledged assets and increases in margin requirements.

Monitoring by supervisors

Among other things, the ESRB recommends that national supervisory authorities monitor the evolution of asset encumbrance and the associated risks – including the evolution and credit quality of unencumbered

[1] Recommendation of the European Systemic Risk Board of 20 December 2012 on funding of credit institutions (ESRB/2012/2).

but encumberable assets, as well as the amount of additional encumbrance, which may arise in the event of stress scenarios. Furthermore, the ESRB recommends that the European Banking Authority, EBA, issue guidelines on harmonised templates and definitions in order to facilitate the monitoring of asset encumbrance.[1] Finally, the EBA should monitor the level and types of asset encumbrance, as well as unencumbered but encumberable assets at Union level.

Market transparency

The ESRB recommends that the EBA develop guidelines with disclosure requirements for the level and evolution of credit institutions' encumbered and unencumbered assets.[2] The aim is to reduce asymmetry of information so that unsecured investors can justify their return requirements on the basis of comparable information.

THE DANISH FINANCIAL SYSTEM

The evolution of encumbered assets in the overall Danish financial system is to a large extent influenced by the distribution of lending on banks and mortgage banks. If loans shift from banks to mortgage banks, the special business model of the mortgage banks entails that the loans are pledged as collateral for the mortgage banks' bond issuances. Since the peak in the 3rd quarter of 2008, lending by banks has declined by approximately kr. 350 billion, while lending by mortgage banks has increased correspondingly.[3] In a period of heightened risk aversion and uncertainty it is natural for borrowing to shift from banks to mortgage banks. In such periods, the mortgage banks help to ensure that the Danish financial sector overall functions as an efficient provider of capital.[4]

In Denmark, one bank, Danske Bank, is allowed to issue covered bonds, SDOs, for which part of the bank's assets in the form of home loans are registered as collateral to the SDO holders. In addition, a number of banks have concluded an agreement on joint funding with the mortgage bank BRFkredit. This gives these banks access to SDO funding against transfer of part of their assets to BRFkredit as collateral. However, the volume of joint funding has been limited so far.

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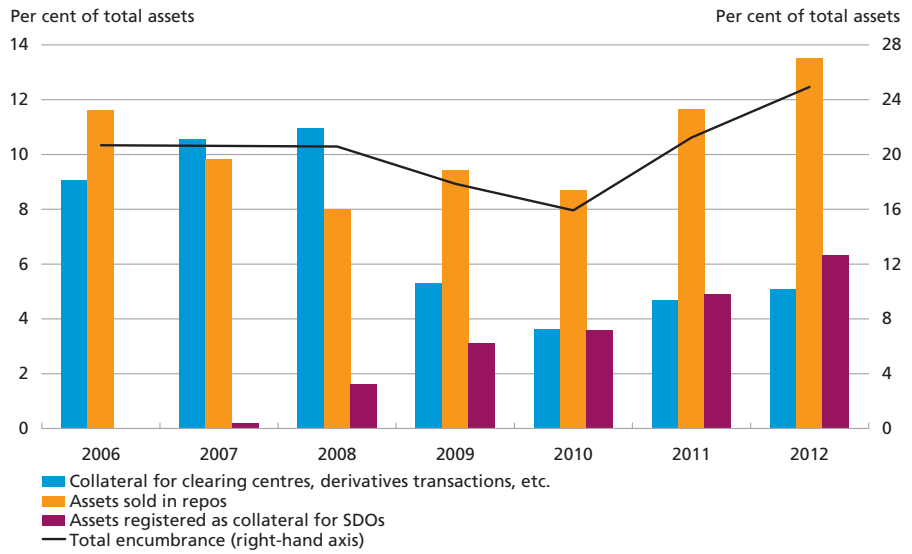
1 In the Capital Requirements Regulation, CRR, the EBA has been given a mandate to develop reporting templates for asset encumbrance. A consultation paper in this respect was published in March 2013.

2 In the Capital Requirements Regulation, CRR, the EBA has been given a mandate to issue guidelines for disclosure of unencumbered assets.

3 Lending to all sectors excluding MFIs. Lending by banks comprises lending by the Danish Financial Supervisory Authority's groups 1-4 excluding institutions taken over by the Financial Stability Company.

4 For an in-depth analysis, see Kim Abildgren, Financial structures and the real effects of credit-supply shocks in Denmark 1922-2011, Danmarks Nationalbank, *Working paper*, No. 78, 2012.

ASSET ENCUMBRANCE, DANISH SYSTEMIC BANKS Chart 7-2



Note: Assets sold in repo transactions also comprise securities lending. The Chart has been calculated at institution level and is subject to some uncertainty, since information from the institutions on encumbered assets is not completely comparable, neither across institutions nor over time.
Source: Danish Financial Supervisory Authority, annual accounts and own calculations.

Banks

Calculated as a weighted average, encumbrance of assets by Danish systemic banks has been in the range of approximately 16-25 per cent of total assets in the last seven years, cf. Chart 7-2. In its study, the ESRB concludes that the weighted average for 28 European banks was 32 per cent of assets at end-2011. However, this comparison is subject to great uncertainty as no standards exist for calculation of asset encumbrance.

The evolution of the Danish systemic banks' asset encumbrance masks a reduction of assets deposited as collateral to clearing centres, for derivatives transactions, etc., while encumbrance in connection with the banks' funding has increased. However, the large decline in assets deposited as collateral to clearing centres, for derivatives transactions, etc. is primarily attributable to an improvement of the calculation method over time so that it is now more accurate than at the beginning of the period. In future, derivatives transactions will increasingly be cleared by central counterparties, CCPs. It remains uncertain to which extent this will affect the volume of encumbered assets, cf. Box 7-1. Assets sold as part of repo transactions and assets registered as collateral for SDOs amounted to approximately 14 and 6 per cent, respectively, of total assets at end-2012. But there is a considerable spread among the banks. The increasing use of repo and SDO funding is a natural consequence of recent years' uncertainty in the financial markets.

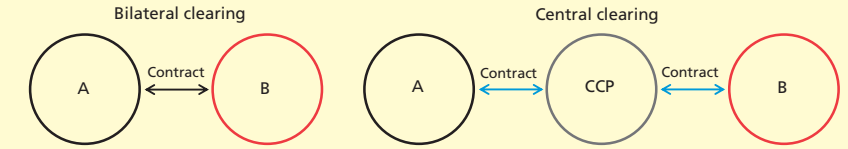
DERIVATIVES TRADING, CENTRAL COUNTERPARTIES AND PLEDGING OF COLLATERAL

Box 7-1

Credit institutions encumber assets in connection with derivatives trading when assets are pledged as collateral to the counterparties. New international legislation and increased focus on counterparty risk may result in increased pledging of collateral for derivatives and thus increased encumbrance of assets.

In the coming years, credit institutions and other financial enterprises, such as investment funds and hedge funds, will increasingly use central counterparties, CCPs, in their derivatives trading. CCPs undertake clearing of derivatives by acting as counterparties in all transactions, cf. the chart.

CONTRACTS IN BILATERAL AND CENTRAL CLEARING



Note: Instead of a contract between the two counterparties A and B, central clearing involves two new contracts between the CCP and A and B, respectively.

The trend towards central clearing is partly attributable to international legislation, in the EU implemented via the European Market Infrastructure Regulation, EMIR[1], which was adopted in 2012. A core element of the EMIR is that in the future credit institutions and other financial enterprises must clear all standardised OTC derivatives, such as interest-rate swaps and CDSs, via CCPs. This is to reduce the counterparty risk in connection with derivatives trading. Outside the EU, similar rules are being prepared and implemented.

The collateral requirements are normally higher for CCP clearing than for bilateral clearing. CCPs must require collateral for derivatives transactions in the form of an initial margin and a variation margin. In addition, CCPs must maintain a default fund, which is funded ex ante by credit institutions and the CCPs' other counterparties. The default fund is to cover losses if the collateral for the margins is insufficient.

So CCP margin requirements may increase the degree of encumbrance in the financial system, but on the other hand, CCPs often improve netting opportunities.[2]

Several attempts have been made to estimate the total global effect of increased use of CCPs on the volume of encumbered assets.[3] The estimations suffer from lack of data in this area, but all point to an increased need to pledge collateral in connection with more widespread use of CCP clearing.

To ensure that credit institutions have sufficient assets to meet the need for collateral in connection with derivatives transactions, the LCR will introduce a requirement to hold liquid unencumbered assets to meet this need in a 30-day stress scenario – irrespective of whether the derivatives are cleared via a CCP or bilaterally. The stress factors in the scenario include fluctuations in the market value of derivatives portfolios, but also a considerable element of downgrading of credit institutions.

[1] Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

[2] A detailed description of CCPs and netting opportunities can be found in Søren Korsgaard, Central counterparties in the derivatives markets, Danmarks Nationalbank, *Monetary Review*, 3rd Quarter 2010, and in Søren Korsgaard and Peter Restelli-Nielsen, Clearing via central counterparties in Denmark, Danmarks Nationalbank, *Monetary Review*, 3rd Quarter 2010.

[3] See e.g. Sidanius, Che and Filip Zikes, OTC derivatives reform and collateral demand impact, Financial Stability Paper, No. 18 2012, IMF, Global Financial Stability Report, April 2012 and ISDA, *Margin requirements for uncleared swaps for swap dealers and major swap participants*, 2011.

Mortgage banks

Owing to their special business model, Danish mortgage banks encumber the vast majority of their assets. This is because the entire loan portfolio is pledged as collateral for the bonds issued by the mortgage banks. In this respect mortgage banks differ from other credit institutions, which normally encumber only a limited share of their assets.

The mortgage banks do not receive deposits, and they fund their entire lending portfolio by issuing bonds, but – in order to increase excess capital adequacy in capital centres – they may issue senior debt in the form of Junior Covered Bonds, JCBs, cf. Box 7-2. JCB investors can assess their ranking and security in the event of default on the basis of the detailed descriptions of loans and collateral that mortgage banks publish quarterly for each capital centre. Already at the time of issuance, investors know that all loans granted by the capital centre in question are encumbered to investors in mortgage bonds, and they can determine their return requirements accordingly.

However, the mortgage banks may be vulnerable to contingent encumbrance, i.e. requirements for further encumbrance of assets in certain situations. With the introduction of SDO legislation in 2007, an obligation was imposed on the mortgage banks always to comply with the LTV limits for loans based on SDOs. Consequently, they must inject top-up collateral into a capital centre issuing SDOs if LTV limits are exceeded due to falling house prices. To fund the top-up collateral, the mortgage banks may have to rely on issuance of JCBs.

PERSPECTIVATION

Looking ahead, the evolution of asset encumbrance in Europe will depend on both economic and regulatory developments. Sustained uncertainty about the condition of a number of European credit institutions could mean that they will continue to be dependent on secured funding. And renewed market turmoil could lead to further encumbrance.

In the negotiations concerning the future crisis management directive it is being discussed whether, in the event of default, depositors should rank before other unsecured creditors. For investors in unsecured senior debt, this would correspond to all depositors receiving collateral for their deposits. In other words, the degree of asset encumbrance would rise dramatically, which could potentially bar access to other unsecured debt than deposits for a number of credit institutions.

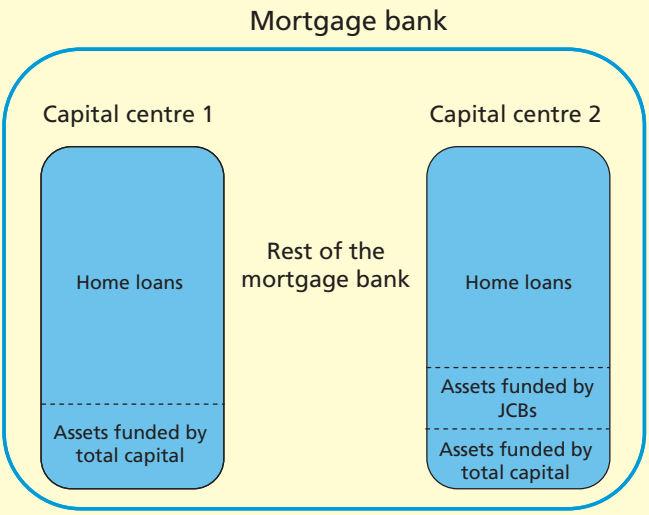
A market-based solution to unsecured investors' concerns about asset encumbrance could be to introduce "negative pledges" in new debt contracts. This means introducing a clause in the debt contract stating that

JUNIOR COVERED BONDS, JCBS, AND CAPITAL CENTRES Box 7-2

The option to issue JCBs with a view to maintaining SDO status was introduced with the SDO legislation in 2007. This legislation entails that top-up collateral must be pledged if the value of the individual loan exceeds a given percentage of the value of the underlying collateral. In December 2012, the possibility of issuing JCBs was expanded, so now the mortgage banks may also issue JCBs purely with a view to increasing their level of collateral, e.g. in order to achieve or maintain a certain credit rating. This option also includes traditional mortgage bonds that do not require constant compliance withof LTV ratios.

A number of factors make it possible for JCB investors to assess their ranking in the event of default. Mortgage banks are divided into capital centres, and when they issue JCBs the capital centre to which the proceeds will be allocated must be stated clearly, cf. the Chart.

STYLISED EXAMPLE – MORTGAGE BANK WITH CAPITAL CENTRES



In the event of default, JCB investors have collateral in the capital centre in which the proceeds are placed. JCB investors are subordinated investors in the mortgage bonds issued by the capital centre. Each capital centre is subject to a solvency requirement, and provided that they are solvent, the mortgage banks are free to shift the assets in which the total capital is invested around between the individual capital centres and the mortgage bank as such. So it can be expected that in the event of default the volume of assets funded via total capital will be very close to the solvency requirement in all capital centres and in the mortgage bank as such. Since mortgage banks have a close link between the individual loans and the mortgage bonds issued, a capital centre cannot suddenly issue more mortgage bonds without more loans being placed in that centre.

the borrower may not pledge certain assets, e.g. lending, as collateral to other creditors. In terms of financial stability, this would be unfortunate as it limits the funding opportunities of the individual credit institution in a crisis situation.

Low transparency can increase the risk that unsecured creditors require either very high returns or negative pledges because low transparency makes it more difficult for them to assess their ranking in the event of default. Standardised reporting templates and requirements to disclose standardised information for the market on encumbrance of assets would make it easier for supervisors, investors, credit rating agencies, central banks and the credit institutions themselves to understand and analyse the related pros and cons – for the individual institution and for the financial system overall.

In the absence of requirements to disclose standardised information, there is a risk that even institutions with low encumbrance levels choose not to disclose this due to uncertainty about how the market will interpret such information. For credit institutions based in countries with weak public finances, the markets already know that the level of encumbrance is generally higher than elsewhere, cf. the ESRB study. So for most institutions – even in countries with weak public finances – disclosure of standardised information is more likely to remove uncertainty in the market than to provide new information that will trigger a negative market response.

Appendices

Appendix 1: Population in the Report

The analyses of banks are based on the banks included in the Danish Financial Supervisory Authority's groups 1 and 2 as at 31 December 2012. The analyses of mortgage credit include all mortgage banks, cf. Table A1-1.

The Committee on Systemically Important Financial Institutions in Denmark has recommended that the five banks in the Danish Financial Supervisory Authority's group 1 be classified as systemically important. The report refers to them as systemic banks.

In contrast to the Danish Financial Supervisory Authority's group 2, Saxo Bank has been omitted from the population due to its very limited lending. The report refers to the other banks in group 2 as non-systemic banks.

The grouping also applies back in time. Banks that merged before the end of 2012 are included under the continuing bank.

The report is primarily based on financial statements at bank level.

TOTAL ASSETS FOR BANKS AND MORTGAGE BANKS IN THE POPULATION AS AT 31 DECEMBER 2012, KR. MILLION — Table A1-1

Group	Amount	Group	Amount
Systemic banks		**Mortgage banks**	
Danske Bank	2,357,358	Nykredit Realkredit	1,289,219
Nordea Bank Danmark	688,761	Realkredit Danmark	794,163
Jyske Bank	258,242	Totalkredit	632,397
Nykredit Bank	239,726	Nordea Kredit	407,044
Sydbank	152,911	BRFkredit	224,344
Systemic banks, total	*3,696,998*	DLR Kredit	148,887
		LR Realkredit	16,626
Non-systemic banks		FIH Realkredit	297
Spar Nord Bank	78,756	*Mortgage banks, total*	*3,512,976*
FIH Erhvervsbank	61,578		
Arbejdernes Landsbank	36,773	**Nordic groups (consolidated)**	
Vestjysk Bank	32,750	Nordea koncernen	5,053,756
Ringkjøbing Landbobank	17,682	Danske Bank koncernen	3,485,181
Sparekassen Kronjylland	17,420	DnB	2,299,044
Alm. Brand Bank	17,407	SEB	2,114,634
Sparekassen Sjælland	16,967	Svenska Handelsbanken	2,058,095
Danske Andelskassers Bank	13,857	Swedbank	1,591,878
Non-systemic banks, total	*293,189*	*Nordic groups, total*	*16,602,589*

Note: The total assets of Danish banks and mortgage banks are stated at bank-specific level, while the total assets of the Nordic banking groups are stated at group level.
Source: Danish Financial Supervisory Authority, company announcements and annual accounts.

Appendix 2: New Capital and Liquidity Requirements for Credit Institutions

In March 2013, EU's Ministers of Economic Affairs and Finance and the European Parliament agreed on a set of common rules to strengthen the regulation of credit institutions in the EU, CRD IV/CRR.[1] The new regulation entails stronger capital and liquidity requirements in particular. The aim of the new regulation is to strengthen the resilience of the financial sector to economic and financial turmoil and thus reduce the risk of a negative real-economic impact. The new rules are a codification of the new international regulatory framework for credit institutions as published by the Basel Committee on Banking Supervision, BCBS, i.e. Basel III. The new rules are designed to take account of European specificities. CRD IV/CRR is expected to enter into force on 1 January 2014 with a number of transitional arrangements and observation periods. In certain areas member states are allowed to conduct a faster implementation of the new requirements.

NEW CAPITAL REQUIREMENTS

According to CRD IV/CRR, the capital base of credit institutions must be of higher quantity and quality to make them better placed to withstand losses. Hence, the equity share of the institutions' capital base is increased, while the requirements with regard to the quality of their capital instruments are strengthened.

The total capital requirement remains unchanged at 8 per cent. The minimum requirements for Common Equity Tier 1 and total Tier 1 capital (including Additional Tier 1 capital) are, however, strengthened – 4.5 and 6 per cent, respectively. The new percentage requirements for Common Equity Tier 1 and total Tier 1 capital shall be fully phased in before 1 January 2015.

CRD IV/CRR defines a number of criteria for each of the three categories of capital – Common Equity Tier 1, Additional Tier 1 and Tier 2.

[1] The new regulation amends the existing Capital Requirements Directive and consists of a directive (Capital Requirements Directive IV, CRD IV) and a regulation (Capital Requirements Regulation, CRR). In the following, CRD IV/CRR is used as a generic term for the new requirements.

Compliance with the criteria is a precondition for the capital to be included in the institution's solvency statement.

Common Equity Tier 1 capital is subject to the strictest criteria. National supervisory authorities shall evaluate specific issuances before they can be classified as Common Equity Tier 1 capital. This is to ensure that the instruments are sufficiently loss-absorbing.

In accordance with the criteria for Additional Tier 1 capital, this type of capital shall be perpetual and the provisions governing the capital shall not include incentives to redeem (such as interest-rate step-up). Furthermore, the institution shall at all times have the option of cancelling dividends, payments of interest and instalments. Besides, Additional Tier 1 capital shall be able to absorb going concern losses either through a conversion to equity or through a write-down of the principal amount. Write-down/conversion shall be triggered automatically when Common Equity Tier 1 falls below 5.125 per cent of risk-weighted assets.

With regard to Tier 2 capital, it is stipulated that the capital shall have an original maturity of at least five years. Like Additional Tier 1 capital, the provisions governing Tier 2 capital shall not include any incentives to redeem. During the final five years of maturity Tier 2 capital will be amortised on a straight-line basis.

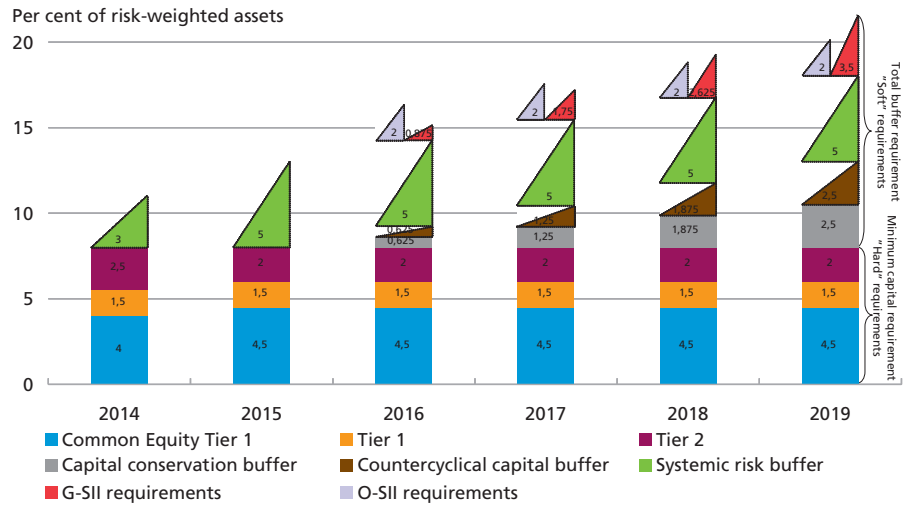
Already issued capital instruments that do not meet the new criteria of CRD IV/CRR will be gradually phased out until the end of 2021. Instruments with incentives to redeem that are not redeemed on their effective maturity are recognised without limit if they meet other criteria. The government capital injections do not meet the criteria, but they can be recognised until end-2017.

Introduction of capital buffers

A number of capital buffers are introduced for full implementation by 2019, cf. Chart A2-1.

- *A capital conservation buffer* which is the same for all institutions in the EU. The capital conservation buffer is equivalent to 2.5 per cent of risk-weighted assets. According to a special procedure, individual member states can temporarily increase the capital conservation buffer for national institutions to provide for macroprudential or systemic risks.
- *A countercyclical capital buffer* to be determined nationally. Initially, the countercyclical capital buffer will be in the range of 0-2.5 per cent of risk-weighted assets, but it can be higher. For the individual institution, the countercyclical capital buffer is calculated as the weighted average of the countercyclical buffer rates that apply in the jurisdictions where the relevant credit exposures of the institution are located.

PHASING IN CAPITAL REQUIREMENTS AND CAPITAL BUFFERS IN CRD IV/CRR Chart A2-1



- *A systemic risk buffer to prevent and mitigate long term non-cyclical systemic or macroprudential risks* not otherwise covered by CRD IV/CRR. The buffer can be applied with regard to all or a subset of national institutions. There is no upper limit on the systemic risk buffer. However, if a buffer exceeds specific percentages, the Commission must be involved.
- *Two capital buffers targeted at systemically important institutions*, distinguishing between global systemically important institutions, G-SII, and national (or European) systemically important institutions, O-SII. For G-SIIs, the buffer requirement is set in the range of 1-3.5 per cent of risk-weighted assets. For O-SIIs, the buffer requirement can be up to 2 per cent of risk-weighted assets. If there is a need to set a buffer requirement for G-SIIs or O-SIIs exceeding the limits of 3.5 and 2 per cent, respectively, the systemic risk buffer can be applied.

A common feature of all buffers is that they must be met by Common Equity Tier 1 capital which cannot also be used to meet other capital requirements. The overall buffer requirement is a soft requirement, i.e. an institution that no longer complies with the requirement will be subject to restrictions on distributions (including payments on Additional Tier 1 instruments), but will not be closed. Restrictions will become stricter, the further the institution is from complying with the buffer requirement. An institution that fails to meet its overall buffer requirement shall prepare a capital conservation plan indicating when and how it will meet the requirement. The plan shall be approved by the competent authority.

PHASING IN THE LIQUIDITY COVERAGE RATIO, LCR — Table A2-1

	2015	2016	2017	2018
Liquidity Coverage Ratio, LCR	60 per cent	70 per cent	80 per cent	100 per cent

NEW LIQUIDITY REQUIREMENTS

CRD IV/CRR introduces a new liquidity requirement, the Liquidity Coverage Ratio, LCR. The purpose of the LCR is to ensure that the institutions have adequate high-quality liquid assets to cover the net cash outflows in a 30-day intensive liquidity stress scenario. The need for liquid assets will depend on the liquidity risks faced by the institution.

The final calibration of the LCR is not yet in place. The EU has decided that the classification of assets should be made on the basis of objective liquidity criteria, and the final definition of the liquidity buffer and the classification into highly liquid and liquid assets is one of the areas that still await an analysis. Hence, the classification of Danish mortgage bonds has not yet been determined.

A reporting requirement for LCR has been introduced with an observation period until 2015.

In the EU, the LCR will be gradually phased in from 60 per cent at the beginning of 2015 to 100 per cent in 2018, cf. Table A2-1, albeit with an option to bring the LCR below the minimum requirement during periods of stress. The individual member states may accelerate the phasing-in, which has been recommended for Danish systemically important financial institutions by the Committee on Systemically Important Financial Institutions in Denmark.

In future, a long-term measure for stable funding is also expected to become part of the European liquidity regulation. The aim is to ensure that the institutions have sufficient long-term and medium-term funding to service their assets and any potential liquidity drain from off-balance-sheet assets. Stable funding is defined as funding with a maturity of more than one year.

CRD IV/CRR introduces a reporting requirement for the measure for stable funding with an observation period until 2016 with a view to assessing whether it should be introduced as a binding requirement from 2018.

Appendix 3: Stress test scenarios

The Appendix provides a detailed description of the macroeconomic scenarios used in the stress test in chapter 5.

SPECIFICATION OF SCENARIOS FOR THE DANISH ECONOMY — Table A3-1

	Scenario 0	Scenario 1	Scenario 2	Scenario 3
2013				
Real growth, per cent, year-on-year				
GDP	0.8	0.4	0.2	0.2
Private consumption	0.7	0.2	0.3	0.0
Public consumption	1.0	1.0	1.0	1.0
Housing investment	-0.6	-3.8	-3.8	-2.1
Business investment	3.1	0.0	2.5	0.9
Public investment	-8.8	-8.8	-8.8	-8.8
Inventory investments (contribution to GDP-growth)	0.1	0.1	0.2	0.3
Exsports	2.6	2.6	1.3	1.6
- of which industrial exsports	2.9	2.9	0.8	1.2
Imports	2.7	2.3	2.0	2.1
Export market growth	3.9	3.9	1.3	2.0
Nominal growth, per cent, year-on-year				
Private sectors disposable income	-0.1	-0.5	-0.7	-0.7
HICP	1.3	1.3	1.3	1.3
Hourly wages (industry)	2.1	2.0	2.0	2.1
House prices	2.0	0.3	0.3	0.7
Average level for the year				
Bond yield, per cent p.a.	1.7	1.7	1.7	1.7
3-month money market rate, per cent p.a.	-0.1	-0.1	-0.1	-0.1
Unemployment, thousands	128	130	132	131
Total employment, thousands	2,752	2,748	2,746	2,747
- of which private sector, thousands	1,750	1,746	1,744	1,745
Labour force, thousands	2,880	2,878	2,878	2,878
Unemployment rate, per cent	4.4	4.5	4.6	4,5
Net borrowing/net lending, private sector, kr. billion	106	113	103	105
Government budget balance, kr. billion	-20	-23	-24	-24
B.o.p. current account, kr. billion	85	89	79	80
Crude oil, dollar/barrel	109	109	109	109

SPECIFICATION OF SCENARIOS FOR THE DANISH ECONOMY — Tabel A3-2

	Scenario 0	Scenario 1	Scenario 2	Scenario 3
2014				
Real growth, per cent, year-on-year				
GDP	1.7	-0.3	-2.1	-4.5
Private consumption	1.7	-0.7	-1.0	-4.2
Public consumption	0.8	0.8	0.8	0.8
Housing investment	3.4	-10.8	-9.8	-12.6
Business investment	5.0	-5.5	0.7	-10.6
Public investment	-4.8	-4.8	-4.8	-4.8
Inventory investments (contribution to GDP-growth)	0.2	-0.0	-0.2	-0.7
Exsports	3.3	3.5	-2.4	-3.4
- of which industrial exsports	5.3	5.6	-2.2	-3.7
Imports	4.0	1.8	-0.5	-3.5
Export market growth	6.2	6.2	-4.6	-7.0
Nominal growth, per cent, year-on-year				
Private sectors disposable income	6.8	5.3	3.4	1.4
HICP	1.9	1.9	1.8	1.8
Hourly wages (industry)	2.3	2.0	1.9	1.7
House prices	3.0	-4.3	-8.7	-12.5
Average level for the year				
Bond yield, per cent p.a.	2.1	2.1	2.1	2.1
3-month money market rate, per cent p.a.	-0.0	-0.0	-0.0	-0.0
Unemployment, thousands	131	151	171	189
Total employment, thousands	2,759	2,725	2,692	2,663
- of which private sector, thousands	1,753	1,718	1,685	1,656
Labour force, thousands	2,889	2,876	2,863	2,851
Unemployment rate, per cent	4.5	5.3	6.0	6.6
Net borrowing/net lending, private sector, kr. billion	143	193	154	194
Government budget balance, kr. billion	-56	-77	-88	-107
B.o.p. current account, kr. billion	86	115	65	86
Crude oil, dollar/barrel	102	102	102	102

SPECIFICATION OF SCENARIOS FOR THE DANISH ECONOMY — Tabel A3-3

	Scenario 0	Scenario 1	Scenario 2	Scenario 3
2015				
Real growth, per cent, year-on-year				
GDP	1.7	0.8	0.1	-0.2
Private consumption	1.8	0.3	0.2	0.3
Public consumption	0.8	0.8	0.8	0.8
Housing investment	2.4	-7.5	0.1	-4.8
Business investment	4.5	-1.3	1.1	1.9
Public investment	0.5	0.5	0.5	0.5
Inventory investments (contribution to GDP-growth)	0.1	0.1	-0.2	0.0
Exsports	3.5	3.7	1.1	-0.4
- of which industrial exsports	5.6	5.9	5.3	3.5
Imports	4.1	2.8	1.4	0.7
Export market growth	6.3	6.3	3.5	1.0
Nominal growth, per cent, year-on-year				
Private sectors disposable income	3.5	3.1	2.3	2.3
HICP	1.8	1.7	1.3	1.2
Hourly wages (industry)	2.7	1.9	0.9	0.2
House prices	2.9	-0.2	-4.0	-9.2
Average level for the year				
Bond yield, per cent p.a.	2.6	2.6	2.6	2.6
3-month money market rate, per cent p.a.	0.1	0.1	0.1	0.1
Unemployment, thousands	122	162	211	243
Total employment, thousands	2,776	2,714	2,635	2,584
- of which private sector, thousands	1,766	1,704	1,625	1,574
Labour force, thousands	2,897	2,875	2,846	2,827
Unemployment rate, per cent	4.2	5.6	7.4	8.6
Net borrowing/net lending, private sector, kr. billion	141	221	177	216
Government budget balance, kr. billion	-51	-86	-109	-134
B.o.p. current account, kr. billion	88	134	67	81
Crude oil, dollar/barrel	97	97	97	97