Danmarks Nationalbank

Stress Tests 2nd Half

2011

DANMARKS NATIONAL BANK 2011

Stress Tests, 2nd Half 2011

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).

Stress Tests, 2nd Half 2011 can be downloaded from Danmarks Nationalbank's website: www.nationalbanken.dk under Publications.

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

Details may not add due to rounding.

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Contents

Summary

Overall, the liquidity of the Danish banks is good, but with a considerable spread between banks. The debt crisis has given rise to much uncertainty about the banks' funding conditions, and it has become difficult for many banks to refinance their debt in the market.

The banks should continue to prepare for a situation without government guarantees. It is important that banks make sure their business models are sustainable in the long term. A number of banks with customer funding gaps and individual government guarantees are faced with major challenges. Danmarks Nationalbank's expansion of its credit facilities to include, inter alia, 3-year loans and of the collateral basis to include credit claims of good quality will increase the banks' access to liquidity in the short term and ease the transition when the individual government guarantees expire.

The stress test of capitalisation shows that the large and medium-sized Danish banks are able to withstand economic scenarios that are considerably more adverse than the one that is expected. One bank will need additional capital.

In view of the general uncertainty and the more stringent capital requirements that are underway, the banks should continue to consolidate and strengthen their capitalisation.

The analyses in the report

Danmarks Nationalbank regularly assesses the robustness of the financial sector to shocks affecting liquidity and capital. The liquidity situation is assessed on the basis of data such as the banks' reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank, which is used to analyze the banks' resilience under various liquidity stress scenarios.

Danmarks Nationalbank's stress test model provides the basis for a general assessment of the Danish banks' capitalisation under various economic stress scenarios. The results take into account the interaction between macroeconomic and financial conditions, but are subject to some model uncertainty.

The European debt crisis and the banking sector

Over the past six months, the financial markets have been characterised by turmoil. The debt crisis has weakened confidence in European banks,

and many of them do not have access to market funding. This applies especially to long-term funding. The EU member states have agreed on the framework for government assistance to banks with the aims of easing the banks' access to funding and strengthening their capitalisation. The European Central Bank, ECB, has also taken several steps to reduce the liquidity problems, including to introduce 3-year loans, to expand the collateral basis and to reduce the banks' dollar funding costs. Looking ahead, there is substantial uncertainty about the banks' access to funding on market terms.

Liquidity conditions

The Danish banking sector continues to reduce its customer funding gap. The most significant challenge in the coming years is the large volume of senior debt maturing, especially government-guaranteed debt issued in the period 2009-10.

For the large banks, the volume of debt maturing in each of the coming years is in line with or lower than the issuance level in each of the years 2005-10. This means that it would be possible to refinance maturing debt in the market if market conditions were more favourable. But if the current market situation continues, this is not necessarily the case.

For the small and medium-sized banks, the volume of debt maturing is much larger than the previous issuance volumes. This is due to the fact that several banks, which previously had not been active in the bond market, took advantage of the option in 2010 to obtain additional funding by issuing debt with individual government guarantees. Some of these issuances were for precautionary reasons. Some banks have customer funding surpluses and are well prepared for the maturing of the government guarantees, but a number of small and medium-sized banks with customer funding gaps and individual government guarantees are faced with major challenges. At the same time, a downward trend in deposits among some of these banks is making it difficult to reduce customer funding gaps.

The banks should continue to prepare for a situation without government guarantees. It is important that banks make sure their business models are sustainable in the long term. To supplement the banks' funding access and to ease the transition to a situation without government guarantees, Danmarks Nationalbank has introduced a number of measures, including 3-year loans and expansion of the collateral basis to include the banks' credit claims of good quality.

These measures are expected to help banks that are not fully prepared when the government-guaranteed debt matures in 2012-13.

Stress test of capitalisation

The stress test examines the resilience of 15 of the largest Danish banks to a domestic recession of short duration and a worsening of the euro area debt crisis. The stress test shows that the large and medium-sized Danish banks are able to withstand economic scenarios that are considerably more adverse than the one that is expected. One bank will need additional capital. Furthermore, a test is performed of the banks' capital strength in the event of a strongly adverse economic development combining a worsening of the debt crisis with a domestic recession. In this scenario, six banks will have to strengthen their capitalisation. The probability that the harsh stress scenario materialises is assessed to be very low.

A sensitivity analysis to examine the effect of a strong increase in funding costs shows that the banks in general – and a few banks in particular – are vulnerable to rising funding costs.

In addition, new capital-adequacy rules will gradually increase the capitalisation requirements for banks until 2019. The banks should be aware that the capital markets may expect them to meet the new, more stringent capital requirements at an earlier date than stipulated in the transitional provisions.

Both the current uncertainty and the tightening of the capital requirements warrant that the banks continue recent years' efforts to strengthen their capitalisation. The challenges can be met in various ways, including by retaining profits, raising capital or reducing risks. Some banks have also announced plans to improve cost efficiency and reduce their balance sheets.

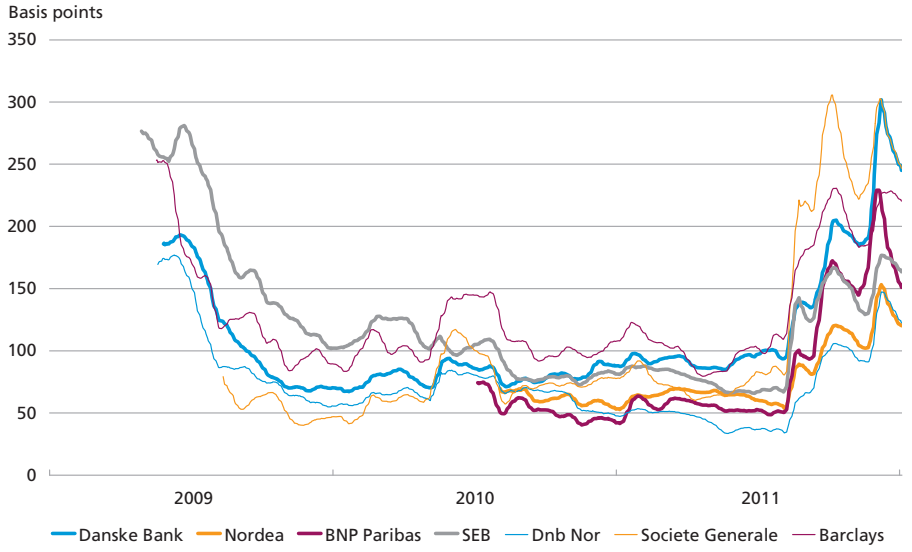
The European Debt Crisis and the Banking Sector

Over the past six months, the financial markets have been characterised by turmoil. The debt crisis has weakened confidence in European banks, and many of them do not have access to market funding. This applies especially to long-term funding. The EU member states have agreed on a framework for government assistance to the banks with the aims of easing the banks' access to funding and strengthening their capitalisation. The European Central Bank, ECB, has also taken several steps to reduce the liquidity problems, including to introduce 3-year loans, to expand the collateral basis and to reduce the banks' dollar funding costs.

The European debt crisis escalated in the autumn of 2011, and the financial markets are characterised by turmoil. The debt crisis has increased uncertainty about the strength of the European banking sector, especially banks from vulnerable EU member states and banks with considerable exposures to these member states. Danish banks have also been affected by the turmoil without being significantly exposed to the vulnerable southern European countries.

Liquidity conditions in the European banking sector tightened during the autumn of 2011, and many banks do not have access to the usual sources of funding. Since the summer, only a few European banks have issued uncollateralised senior debt, and total issuance is well below the volume in the preceding years. The market for issuance of collateralised bank bonds in the form of covered bonds has performed better than the uncollateralised market, but interest rates on issuance are high relative to previously. Price developments in the market for uncollateralised senior debt and the development in money-market interest rates also indicate much more difficult funding conditions for banks, cf. Chart 1. Credit spreads for uncollateralised senior debt from banks in vulnerable member states have widened the most, but also banks that are neither domiciled in nor particularly strongly exposed to these member states have seen substantial widening of spreads. The spread between uncollateralised and collateralised money-market interest rates has widened, both in the euro area and in Denmark, cf. Chart 2, which indicates lack of confidence among the banks as well as reluctance to place funds with other credit institutions.

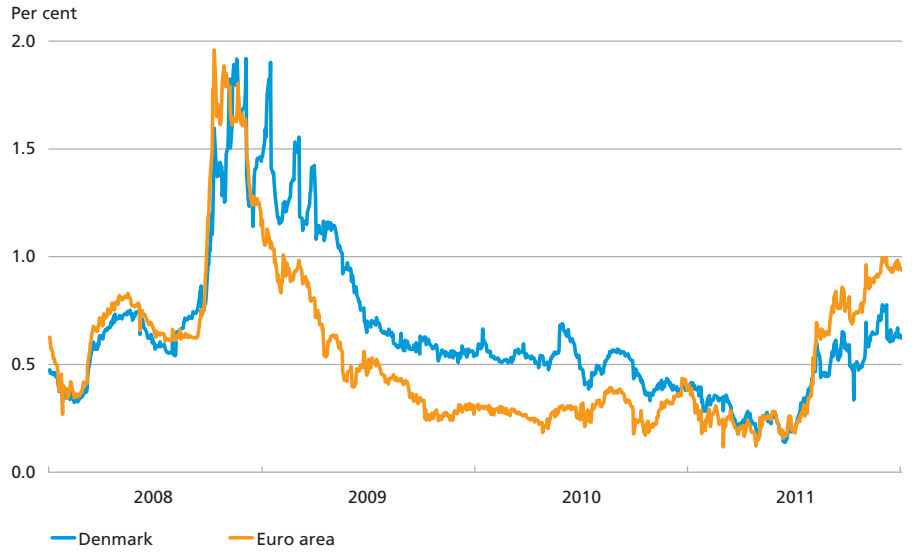
CREDIT SPREADS FOR BANK BONDS WITH MATURITY IN 2014-15 Chart 1



Note: The chart shows the asset swap spread for uncollateralised senior debt denominated in euro. On conclusion of an asset swap, the owner 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. The chart shows 10-day moving averages. The most recent observations are from 3 January 2012.

Source: Bloomberg.

SPREADS BETWEEN COLLATERALISED AND UNCOLLATERALISED MONEY-MARKET INTEREST RATES Chart 2



Note: Uncollateralised interest rates for Denmark and the euro area are 3-month Cibor and Euribor, respectively. Collateralised interest rates are 3-month rates on interest-rate swaps. The most recent observations are from 3 January 2012.

Source: Reuters EcoWin and Danmarks Nationalbank.

Investor behaviour reflects concerns about the risk of a negative spiral whereby the increasingly weakened banking sector reduces its extension of credit, which in turn weakens the real economy and public finances further. To address these problems, the EU heads of state or government in October 2011 agreed on the framework for government assistance to the banks comprising two elements. The first element concerns recapitalisation of the 71 largest European banks, which must have a Core Tier 1 capital ratio of 9 per cent[1] by the end of June 2012. If capital cannot be procured in other ways, government capital injections will be an option. The second element of the framework for government assistance to banks enables EU member states to re-introduce government guarantees for the banks' debt. Such guarantees must be given under uniform conditions defined by the European Commission.[2]

The European Central Bank, ECB, has also taken several steps to reduce the liquidity problems, including to introduce 3-year loans. At the first allotment on 21 December 2011, the demand was high. In addition, the central banks that are part of the Eurosystem can temporarily expand their collateral bases to include the banks' credit claims.

Since the summer of 2011, there have been signs of a shortage of dollars in parts of the European financial sector. US money-market funds, which have accounted for a substantial share of dollar lending to European banks, have reduced their exposures to the European banking sector, and in general dollars have become more expensive and harder to raise for European banks.

In order to ensure sufficient dollar liquidity and mitigate the impact on credit extension to households and the corporate sector, six central banks[3] in November 2011 lowered the interest-rate margin for the banks' dollar borrowing from the central banks from 100 basis points to 50 basis points. The use of the ECB's facilities has subsequently increased considerably.

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1 The capital test of the European Banking Authority, EBA, also includes government hybrid capital and new issuance of callable instruments meeting EBA requirements.

2 Communication from the Commission on the application, from 1 January 2012, of State aid rules to support measures in favour of banks in the context of the financial crisis, December 2011.

3 Central banks of Canada, UK, Japan, Switzerland, USA and the European Central Bank.

The Banks' Liquidity

The sector overall continues to reduce its customer funding gap, but a number of banks with customer funding gaps and individual government guarantees are still faced with major challenges. A downward trend in deposits among some of these banks is making it difficult to reduce customer funding gaps.

In the last six months, issuance of uncollateralised senior debt has been low, and total issuance in 2011 is well below the level seen in the preceding years. This has made it difficult for many banks to refinance their debt in the market.

To supplement the banks' funding access and to ease the transition to a situation without government guarantees, Danmarks Nationalbank has introduced a number of measures, including 3-year loans and expansion of the collateral basis to include the banks' credit claims of good quality.

These measures are expected to help banks that are not fully prepared for the maturing of government-guaranteed debt in 2012-13.

CUSTOMER FUNDING GAP

The customer funding gap, defined as lending less deposits, is often used as an indicator of a bank's need for market-based funding. The Danish banks' customer funding gap accumulated in the pre-crisis years and grew substantially from 2005 to 2008. Since 2008 the gap has narrowed, and overall the banks are still reducing the gap, cf. Chart 3.[1]

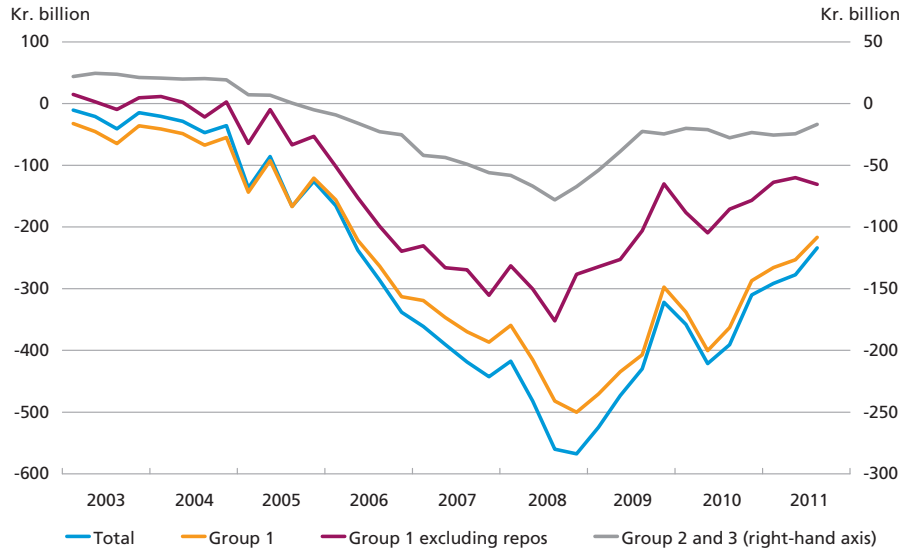
Most of the sector's aggregate customer funding gap is attributable to the large banks,[2] which have reduced their gap considerably since the 3rd quarter of 2008. The remaining gap in group 1 relates to foreign branches. However, there is still a considerable spread within the group.

Repos account for more than one third of the large banks' customer funding gap. Repos are loans collateralised by securities, which may often be re-lent, making the repos easier to finance than other loans. Hence, adjustment for repos provides a better picture of the structural development in the banks' customer funding gap, cf. Chart 3.

[1] The analysis of the banks' liquidity conditions comprises banks in the Danish Financial Supervisory Authority's groups 1-3 including foreign branches. Banks transferred to the Financial Stability Company are not included in the analysis.

[2] Large banks are those in the Danish Financial Supervisory Authority's group 1. Medium-sized banks are those in group 2, and small banks are those in group 3.

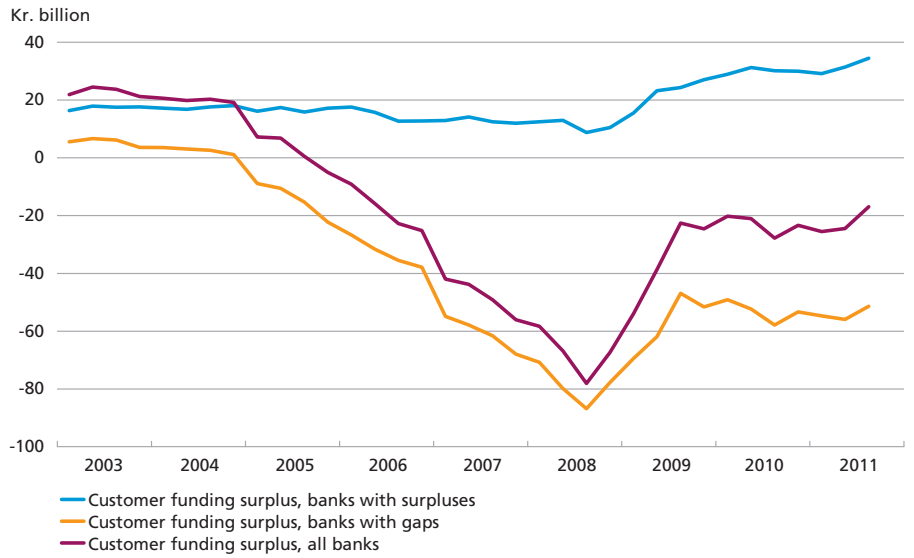
CUSTOMER FUNDING SURPLUS — Chart 3



Note: The most recent observations are from the 3rd quarter of 2011.
Source: Danmarks Nationalbank.

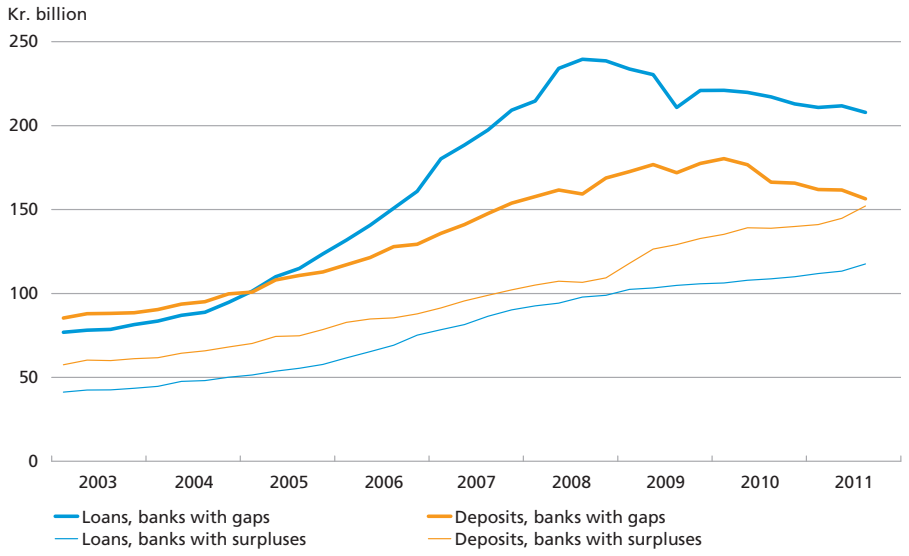
The small and medium-sized banks have also reduced their customer funding gap since 2008. It narrowed considerably until the 3rd quarter of 2009, but has remained virtually unchanged since then. However, banks

CUSTOMER FUNDING SURPLUS, GROUPS 2 AND 3 — Chart 4



Note: The most recent observations are from the 3rd quarter of 2011. The breakdown into banks with customer funding surpluses and customer funding gaps is based on the customer funding surplus in the 3rd quarter of 2011.
Source: Danmarks Nationalbank.

DEPOSITS AND LENDING, GROUPS 2 AND 3, BROKEN DOWN BY BANKS WITH CUSTOMER FUNDING SURPLUSES AND CUSTOMER FUNDING GAPS Chart 5



Note: The most recent observations are from the 3rd quarter of 2011. The breakdown into banks with customer funding surpluses and customer funding gaps is based on the customer funding gap in the 3rd quarter of 2011.
Source: Danmarks Nationalbank.

with customer funding surpluses and banks with customer funding gaps have developed differently, cf. Chart 4.

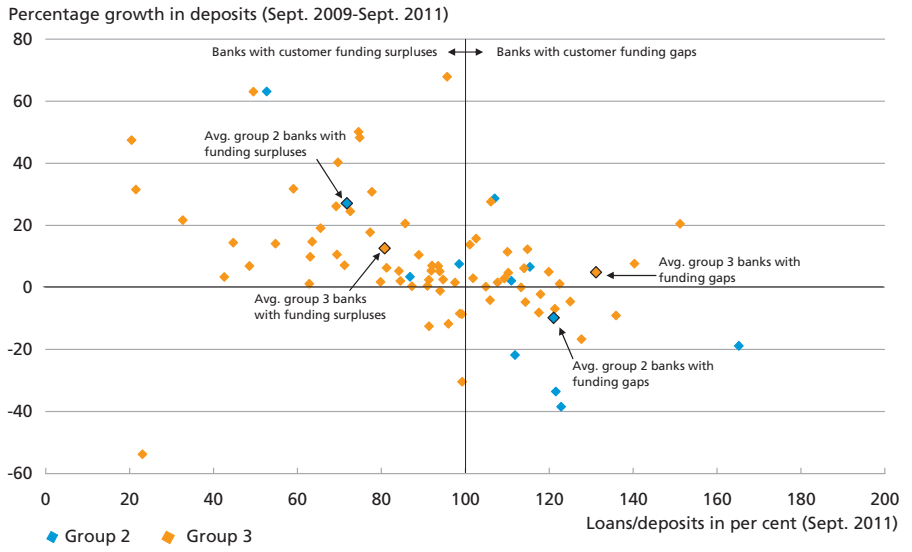
The total customer funding surplus for the small and medium-sized banks that have surpluses has grown in recent years. Both deposits and loans have risen, cf. Chart 5. At the same time, the total customer funding gap for the small and medium-sized banks that have gaps has been more or less unchanged. These banks' deposits and loans have decreased in recent years, cf. Chart 5.

With a few exceptions, banks with customer funding surpluses have posted positive growth in deposits in the last few years, while banks with customer funding gaps have posted negative growth in deposits, cf. Chart 6. The distribution of growth in deposits has contributed to maintaining banks in customer funding surpluses and customer funding gaps respectively. A drop in deposits makes it difficult to reduce the customer funding gap.

The increased focus on reducing the customer funding gap has sharpened competition for depositors. Data from Mybanker[1], which primarily includes small banks, shows that the interest rates offered for term deposits have risen in 2011, cf. Chart 7. Among the large and medium-sized banks a similar trend has been seen for corporate term deposits.[2] A

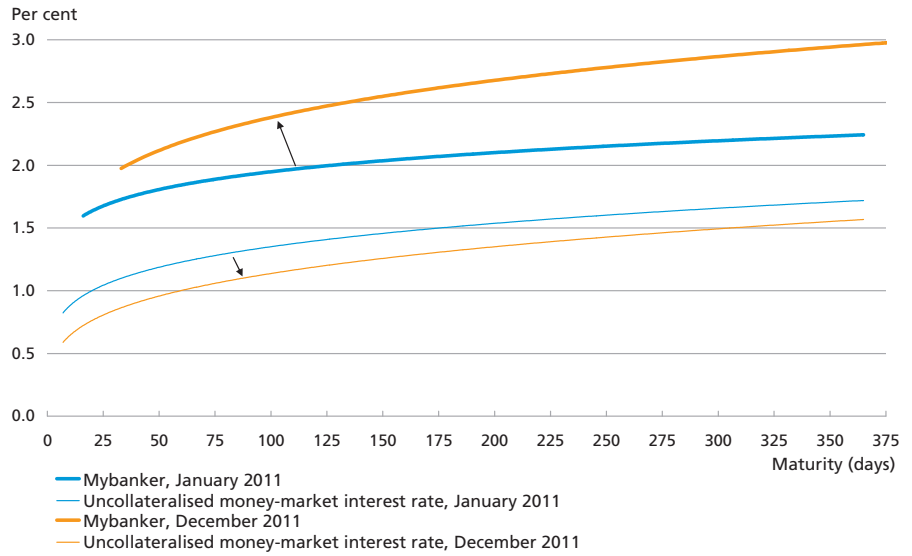
1 32 banks offer deposit rates via Mybanker, cf. mybanker.biz.
2 This can be seen from the banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

CUSTOMER FUNDING GAPS AND DEPOSIT GROWTH, GROUPS 2 AND 3 Chart 6



Note: The averages shown for groups 2 and 3 are weighted averages. Banks with no deposits are not included in the chart.
Source: Danmarks Nationalbank.

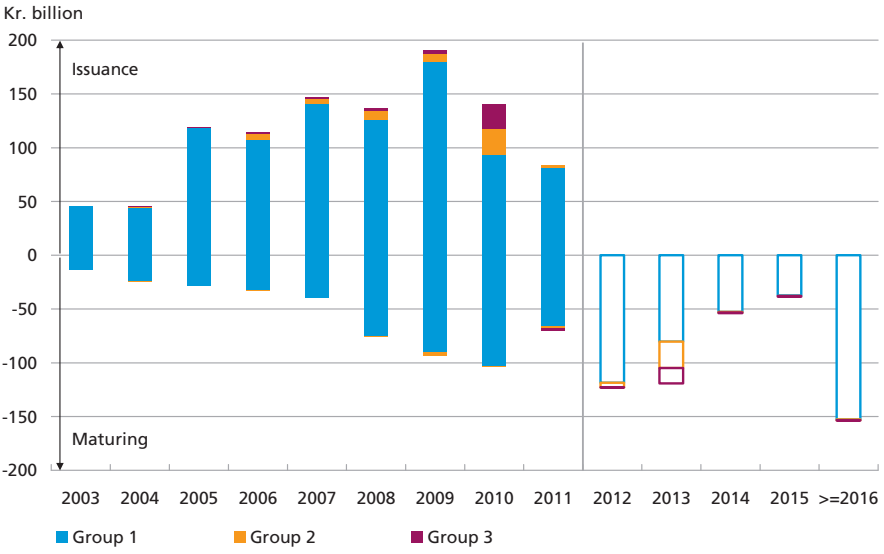
ESTIMATED YIELD CURVES IN THE TERM DEPOSIT MARKET ON THE BASIS OF MYBANKER DATA AND UNCOLLATERALISED MONEY-MARKET INTEREST RATES Chart 7



Note: Yield curves estimated on the basis of the preceding 14 days' highest interest rates for amounts exceeding kr. 1 million.
Source: Mybanker and Danmarks Nationalbank.

ISSUANCE AND MATURING OF BANK DEBT INSTRUMENTS WITH MATURITIES OF MORE THAN 1 YEAR

Chart 8



Note: Nominal value of the banks' issuances with original maturities of more than 1 year. The maturity profile in 2012 and onwards is based on debt issued as at end-November 2011. The maturity profile is elaborated on in Chart 9.
Source: Danmarks Nationalbank.

few banks that are losing deposits offer relatively low deposit rates and may therefore have some scope to raise interest rates.

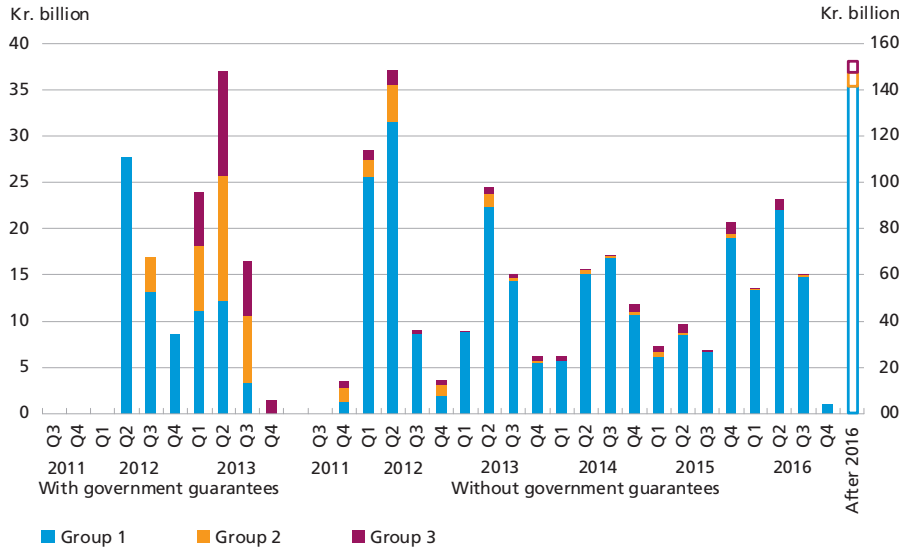
REFINANCING OF LONG-TERM DEBT

The banks are dependent on access to funding in order to keep up their lending activities and maintain sufficient liquidity. As the financial turmoil intensified in 2011, it became more difficult to obtain funding in the market. In the 1st half of 2011 several banks issued debt, whereas activity decreased more and more in the 2nd half of the year. The last months of 2011 have seen practically no issuance in the market for medium and long-term uncollateralised senior debt. Some issuance of bank bonds in the form of covered bonds have however taken place.

From 2005, issuance of debt instruments acquired an increasingly important role in terms of bank funding. In 2009 and 2010 the level of issuance was high on account of the option to issue with individual government guarantees. As a result, the maturity profile of the banks' long-term funding shows that large volumes will mature in 2012 and 2013 when the government guarantees expire, cf. Chart 8.

For the large banks, the volume of debt maturing in each of the coming years is in line with or lower than the issuance level in each of the years 2005-10. This means that it would be possible to refinance

MATURING OF DEBT ISSUED WITH AND WITHOUT GOVERNMENT GUARANTEES Chart 9



Note: Data from end-November 2011.
Source: The banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

maturing debt with and without government guarantees in the market if market conditions were more favourable. But if the current market situation continues, this is not necessarily the case.

For the small and medium-sized banks the volume of debt maturing in 2013 is much larger than the previous issuance volumes. This is attributable to an extraordinarily high issuance volume in 2010, when some banks that had not previously been active in the bond market took advantage of the option to obtain funding with individual government guarantees. Some of these issuances were for precautionary reasons. Most of these issues will mature within the first nine months of 2013, cf. Chart 9.

Among the small and medium-sized banks that have issued debt with individual government guarantees, approximately one in four has a customer funding surplus. All other things being equal, these banks are in a better position when the government guarantees expire. Conversely, small and medium-sized banks with customer funding gaps will need to assess the sustainability of their business models and make the necessary adjustments to their balance sheets and business models.

At the end of 2010, the outstanding debt with individual government guarantees amounted to kr. 193 billion.[1] Since then, a few banks have prematurely redeemed or cancelled debt with individual government

[1] Including issuance by mortgage banks, Faroese banks and banks transferred to the Financial Stability Company, cf. www.finansielstabilitet.dk.

guarantees, and the remaining debt issuance totalled kr. 165 billion in December 2011.

Danmarks Nationalbank has expanded its credit facilities, including the introduction of 3-year loans and the expansion of the collateral basis to include the banks' credit claims of good quality. This will contribute to increasing the banks' access to liquidity in the short term, as well as easing the transition when the individual government guarantees expire, cf. the section on Danmarks Nationalbank's expansion of its credit facilities.

LIQUIDITY REQUIREMENTS

The banks must hold sufficient liquidity pursuant to the statutory requirements. The current minimum requirement for bank liquidity is defined in section 152 of the Danish Financial Business Act, cf. Box 1. From the end of

SECTION 152 LIQUIDITY REQUIREMENT AND FUNDING RATIO — Box 1

Under section 152 of the Danish Financial Business Act, a bank should have adequate liquidity. As a minimum, the banks must hold liquid assets constituting the higher of:

- 15 per cent of the debt exposures that, irrespective of possible payment reservations, are payable by the bank on demand or are redeemable at less than one month's notice, and
- 10 per cent of the total debt and guarantee exposures of the bank, less subordinated debt that may be included in calculations of the total capital.

The liquidity requirement is supplemented with the supervisory diamond, which was introduced in 2010. The supervisory diamond defines a number of benchmarks for special risk areas and specifies limit values that the banks must observe from the end of 2012. Under these rules, the excess liquidity cover must constitute at least 50 per cent of the minimum requirement.

The supervisory diamond also introduces a measure for stable funding, known as the funding ratio. The aim is for the banks to achieve a funding structure comprising funding sources with longer maturities.

The funding ratio reflects the relationship between lending on the one hand and working capital less bonds maturing within 1 year on the other, where working capital comprises deposits, bonds issued, subordinated debt and equity. As from 1 January 2012, the banks may also include loans raised at Danmarks Nationalbank with a remaining term to maturity of more than 1 year. According to the supervisory diamond, the funding ratio should be less than 1:

$$\frac{\text{Lending}}{\text{Working capital} - \text{bonds maturing within 1 year}} < 1$$

From the end of 2012, non-observance of the limit values of the supervisory diamond may result in a supervisory response. For example, the Danish Financial Supervisory Authority may give the bank risk information (i.e. draw the bank's attention to special risks in connection with its operations), which is to be published. A supervisory response will however always be based on a specific, individual assessment and does not automatically go hand in hand with non-observance of the limit values.

2012 the requirement will be supplemented with the supervisory diamond's benchmark for liquidity that stipulates an excess liquidity cover of at least 50 per cent relative to the minimum requirement. The supervisory diamond will also introduce a limit value for stable funding, cf. Box 1.

As part of the forthcoming international regulative framework for credit institutions, a new Liquidity Coverage Ratio, LCR, will be introduced. Implementation of the LCR is to ensure that the banks have sufficiently large liquidity buffers to resist short-term shocks to liquidity. Elements of the LCR, including the definition of liquid assets, have yet to be finalised. The requirement is expected to be implemented in 2015 following an observation period. The implementation of a Net Stable Funding Ratio, NSFR, is also being considered.

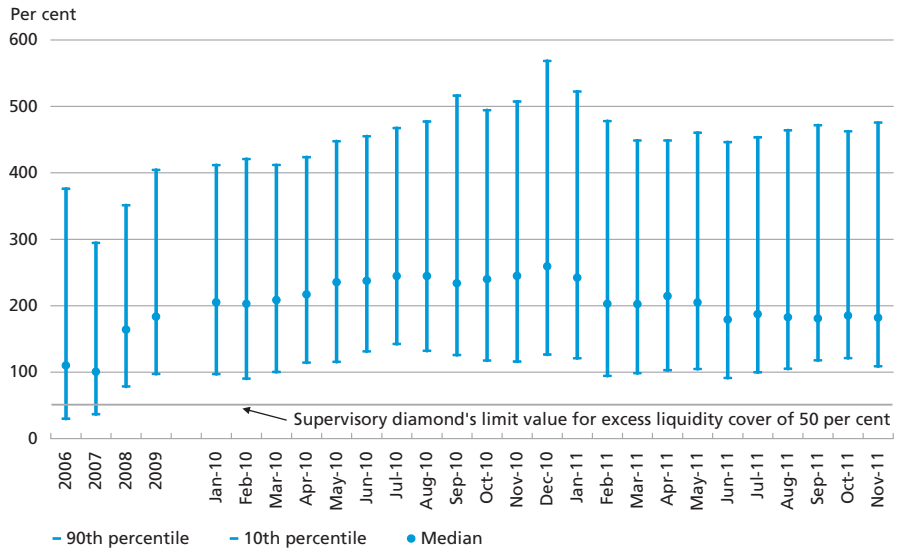
In the autumn of 2011, the Danish Financial Supervisory Authority and Danmarks Nationalbank began to collect data for monitoring LCR and NSFR for the large Danish banks. Reporting of data for the LCR calculations takes place on a monthly basis, while NSFR reporting is quarterly.

Sustainability of the liquidity situation

In November 2011, most banks' excess liquidity cover was well above the supervisory diamond's limit value for excess liquidity cover of 50 per cent, cf. Chart 10. However, there is a considerable spread within the sector.

The banks' observation of the section 152 requirement in 2012 and 2013 may be affected by the expiry of government guarantees. In order

THE BANKS' EXCESS LIQUIDITY COVER — Chart 10

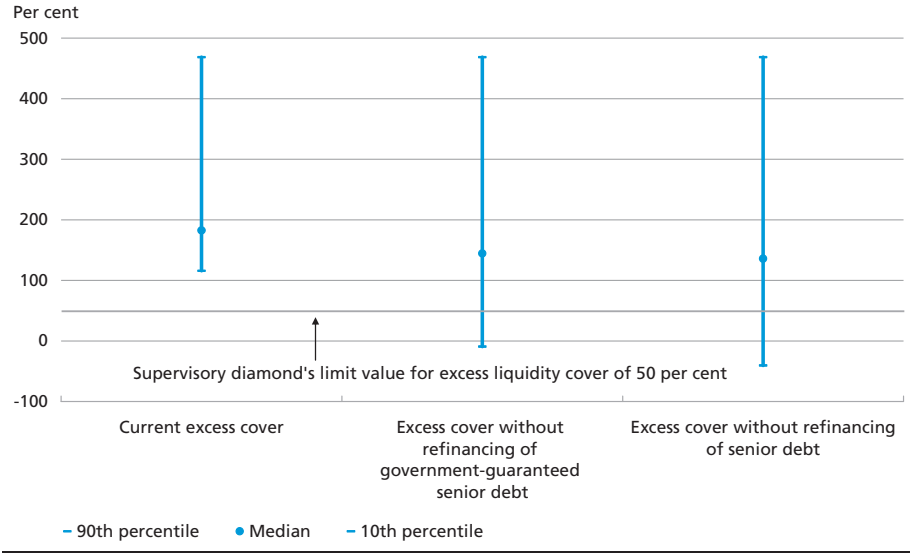


Source: The banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

to assess the sustainability of the banks' liquidity situation, the development in the requirement is analysed under various scenarios for refinancing of maturing debt. Other sources of funding, such as short-term debt, deposits, etc. are assumed to remain unchanged. If all debt issued under government guarantees matures without refinancing before the end of 2013, the excess liquidity cover for the median bank will decline to 144 per cent, compared with 182 per cent at end-November 2011, cf. Chart 11. In the absence of new funding, 10 out of 85 banks will have negative excess liquidity cover at the end of 2013. These banks' government guarantees account for approximately 50 per cent of the total government-guaranteed debt among banks in groups 1-3. One bank accounts for 32 per cent by itself.

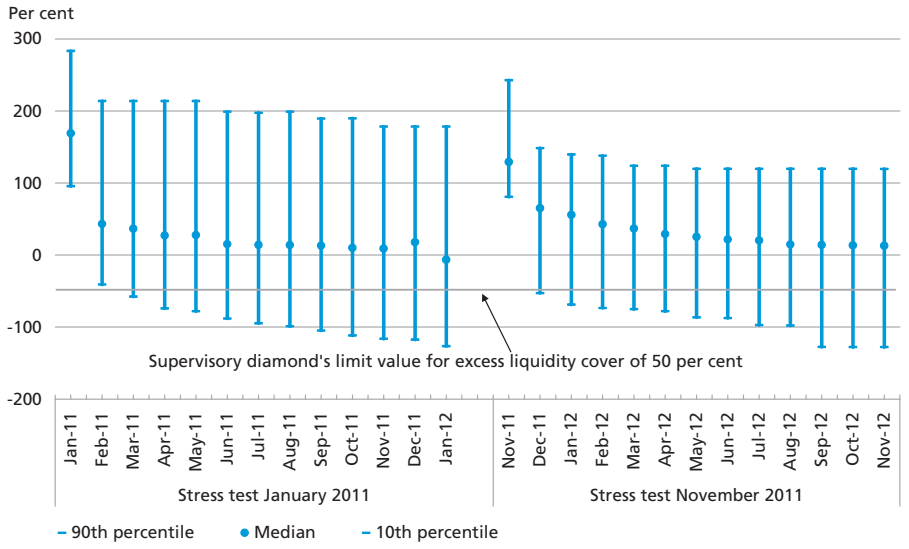
If neither senior debt with nor without government guarantees maturing in 2012-13 is refinanced, 12 out of 85 banks will have negative excess liquidity cover by end-2013. Under this very harsh stress scenario, one bank in four would be unable to meet the supervisory diamond's limit value of 50 per cent excess liquidity cover. Most of these are small banks, but some of the large and medium-sized banks would also be challenged. Danmarks Nationalbank's expansion of the collateral basis to include credit claims of good quality will contribute to observation of the section 152 requirement, cf. the section on Danmarks Nationalbank's expansion of its credit facilities.

EXCESS LIQUIDITY COVER IF SENIOR DEBT IS NOT REFINANCED IN 2012-13 Chart 11



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

EXCESS LIQUIDITY COVER IN STRESS TESTS, GROUPS 1 AND 2 Chart 12



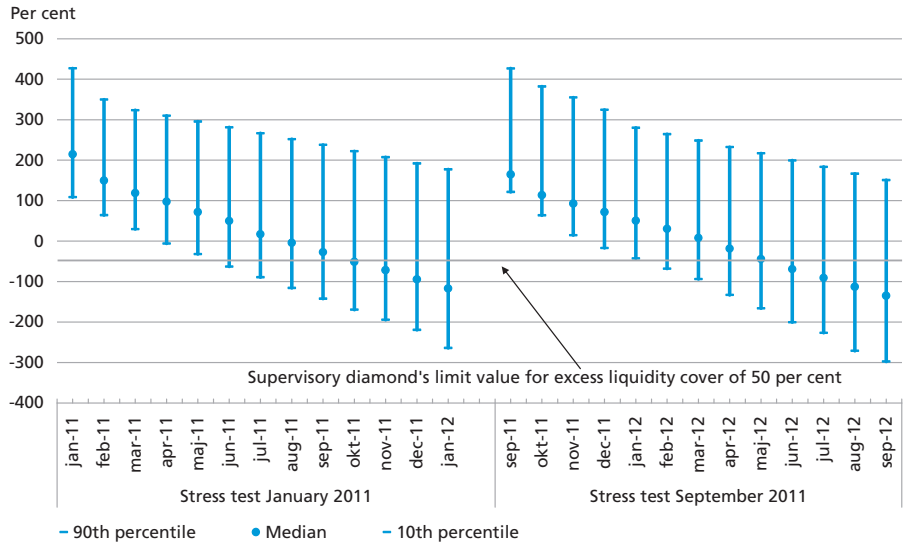
Note: Based on results of the Danish Financial Supervisory Authority's and Danmarks Nationalbank's stress tests of 14 banks in group 1 and 2.
Source: The banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

The banks' observation of the liquidity requirement will depend on a number of other factors besides the maturing of senior debt, e.g. maturing of short-term debt and development in deposits. The banks report results of stress tests to the Danish Financial Supervisory Authority and Danmarks Nationalbank for this purpose. The stress tests are based on a number of assumptions regarding the run-off of various sources of funding within the 12-month stress test horizon.[1] For senior debt it is assumed that it is not refinanced upon maturity. Since the majority by far of government-guaranteed debt do not mature until 2013, the maturity dates have no impact on the results of the current stress tests.

For the large and medium-sized banks, the stress test has been designed by the Danish Financial Supervisory Authority and Danmarks Nationalbank, while the small banks until September 2011 applied a model developed by the Association of Local Banks in Denmark, LoPi. The two models differ, which is reflected in the development in excess cover, cf. Charts 12 and 13. In the LoPi model, stress is evenly distributed over the period, while in the model for the large and medium-sized banks it is relatively strong in the first month. For example, the LoPi model operates with a small monthly decline in deposits over the entire stress test period, while the model designed by the Danish Financial Supervisory Authority and Danmarks Nationalbank assumes a relatively strong fall in deposits

[1] The assumptions behind the stress test are described in *Financial stability*, 2011, Box 4 and in *Stress Tests,* 2nd Half, 2010, Box 6.

EXCESS LIQUIDITY COVER IN STRESS TESTS, GROUP 3 Chart 13



Note: Based on stress tests from 36 banks in group 3, applying the stress test model of the Association of Local Banks in Denmark. The most recent stress tests according to this model is based on data as of end-september 2011.
Source: The banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

from retail and corporate customers during the first month, after which deposits stabilise. The strong drop in excess cover in the first month for the large and medium-sized banks also reflects these banks' dependence on short-term market-based funding, since maturing debt is not refinanced in the stress test.

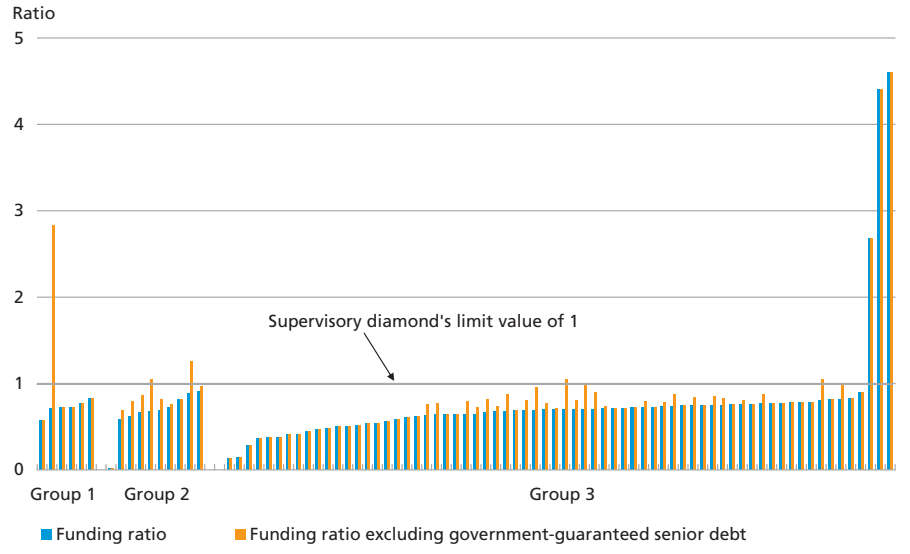
The results of the stress test show that under this very intensive stress scenario the excess cover of the vast majority of banks will fall below the supervisory diamond's limit value of 50 per cent within a few months, cf. Charts 12 and 13. Since January 2011 results have improved a little for the large and medium-sized banks, as the excess cover for most of them will now fall below the limit value of 50 per cent a few months later, cf. Chart 12. The results for the small banks in group 3 are practically unchanged since January, cf. Chart 13.

Stable funding requirement

At the end of the 3rd quarter of 2011, all large and medium-sized banks were able to meet the supervisory diamond's benchmark of a funding ratio of less than 1, cf. Box 1 and Chart 14. Only a few small banks did not meet the limit value. These banks operate with special business models under which they have few or no deposits and obtain funding via their parent companies.

The funding ratio will be affected by the maturing of government-guaranteed debt one year before the maturity date, when the debt can

FUNDING RATIOS AS AT 30 SEPTEMBER 2011 Chart 14



Note: The ratio must be lower than 1.
Source: The banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank and own calculations.

no longer be included in the calculation. If it is assumed that the banks are unable to replace government-guaranteed debt with new, stable funding, a few banks will not be able to meet the benchmark with their current balance sheets, cf. Chart 14. Drawings on Danmarks Nationalbank's 3-year facility, cf. the following section, may, from 1 January 2012, be included in the calculation of stable funding in the first two years of the 3-year period.

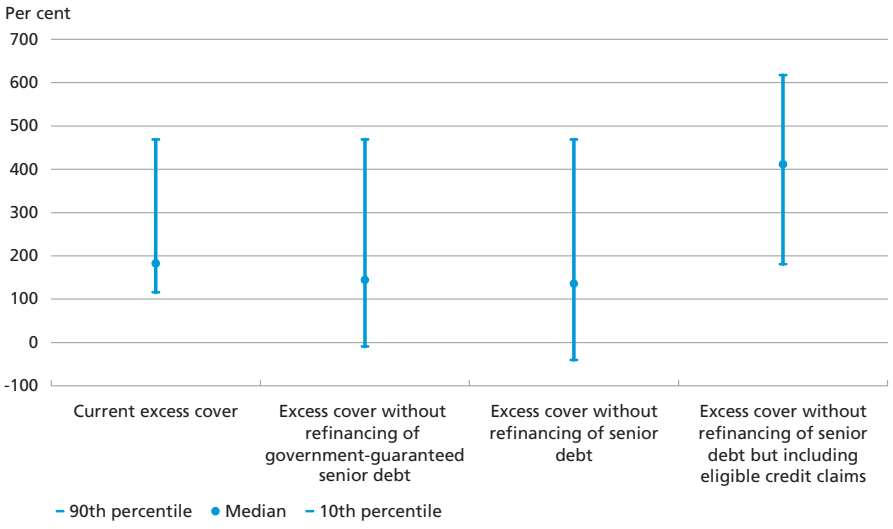
DANMARKS NATIONALBANK'S EXPANSION OF ITS CREDIT FACILITIES

On 1 October 2011, Danmarks Nationalbank expanded its collateral basis for monetary-policy loans to include the banks' own credit claims of good quality. At the same time, Danmarks Nationalbank introduced 6-month monetary-policy loans in addition to the 7-day loans at an interest rate which follows Danmarks Nationalbank's 7-day monetary-policy lending rate. In December 2011, 3-year loans were announced. Similar facilities have been implemented by the ECB, and at an allotment on 21 December 2011 European banks borrowed 489 billion euro at a maturity of 3 years.

Danmarks Nationalbank's initiatives are intended to supplement the banks' access to raise loans, thereby easing the transition to a situation without government guarantees when these guarantees expire in 2012-13.

EFFECTS OF THE EXPANSION OF THE COLLATERAL BASIS ON THE EXCESS LIQUIDITY COVER

Chart 15



Note: The calculation is based on a number of estimates. The Danish Financial Supervisory Authority's guideline limits are not included.

Source: The banks' liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank and own calculations.

In addition, Danmarks Nationalbank in August 2011 expanded the collateral basis to include shares in companies jointly owned by the banks, such as shares in data centres, Nets and jointly owned mortgage banks. This facility is a partial re-introduction of the temporary expansion of the collateral basis introduced in September 2008 and phased out in February 2011.

The expansion of the collateral basis improves the observation of the section 152 requirement

Within certain limits, the banks can include the access to credit facilities at Danmarks Nationalbank in their section 152 liquidity, irrespective of whether they have pledged the credit claims to Danmarks Nationalbank or have obtained drawing rights at Danmarks Nationalbank.[1]

The Danish Financial Supervisory Authority has set up guideline limits for the banks' inclusion of Danmarks Nationalbank's credit facility. Inclusion should not exceed one third of a bank's aggregate liquidity. The aim is to ensure that the banks develop business models that are sustainable in the long term.

[1] The expansion of the collateral basis are described in more detail in the article "New Credit Facilities at Danmarks Nationalbank", *Monetary Review*, 4th Quarter 2011, Part 1.

Without the expansion of the collateral basis, the debt with and without government guarantees that matures in the coming years would have to be replaced by other funding in order for the liquidity requirement to be met – provided that the balance-sheet total is unchanged. If it is assumed that the expansion of the collateral basis is exploited fully, the liquidity contribution from this facility is, for most banks, assessed to make up for a situation in which government-guaranteed debt and other senior debt cannot be refinanced before the end of 2013, cf. Chart 15. The calculation is based on a number of assumptions, cf. Box 2, and the actual effect may thus deviate from the calculation.

Danmarks Nationalbank's measures are expected to help banks which are not fully prepared for the maturing of the government guarantees in 2012-13. In that situation, the individual bank may include Danmarks Nationalbank's supplementary credit facilities beyond the guideline limits,

ESTIMATE OF THE COLLATERAL VALUE OF THE BANKS' CREDIT CLAIMS OF GOOD QUALITY — Box 2

In connection with Danmarks Nationalbank's expansion of the collateral basis to include the banks' credit claims of good quality, Danmarks Nationalbank disclosed an estimate of kr. 400 billion for the collateral value of the banks' credit claims. This estimate is based on the banks' statistical reporting to Danmarks Nationalbank as at 30 June 2011 of lending in DKK or EUR to non-financial residents in Denmark. In addition, a number of assumptions and preconditions have been applied in areas not covered by statistics:

- The banks' credit claims have not been pledged to other creditors, and no other conditions prevent pledging to Danmarks Nationalbank.
- No offsetting of deposits.
- As regards small banks, for which data coverage is limited, a number of assumptions have been made regarding the volume of lending to financial institutions.
- Assumptions of the quality of credit claims are based on the banks' reporting to the Danish Financial Supervisory Authority of quality categories at end-2010. At end-June 2011, banks that apply the IRB approach to determining credit risk did not have to report quality categories to the Danish Financial Supervisory Authority. For these banks, the share of credit claims of good quality has been estimated on the basis of reporting of quality categories by the other Danish banks.
- Reporting of quality categories to the Danish Financial Supervisory Authority is only done for credit claims of a certain size. The share of credit claims of good quality is assumed to apply to the whole lending portfolio.
- A number of further assumptions have been made regarding the volume of overdraft facilities.

The actual collateral value of the banks' credit claims may differ from Danmarks Nationalbank's estimate if the above assumptions do not apply to an individual bank, for example if the credit claims have been pledged to another creditor or if contractual conditions prevent pledging to Danmarks Nationalbank.

following consultation with the Danish Financial Supervisory Authority and subject to an individual assessment.

FUNDING IN FOREIGN CURRENCY

Funding in foreign currency has been reduced since end-2008, from 51 per cent of total funding to 47 per cent, cf. Chart 16. Notably, borrowing in dollars has been reduced significantly and now constitutes 9 per cent of total funding, down from 15 per cent at end-2008.

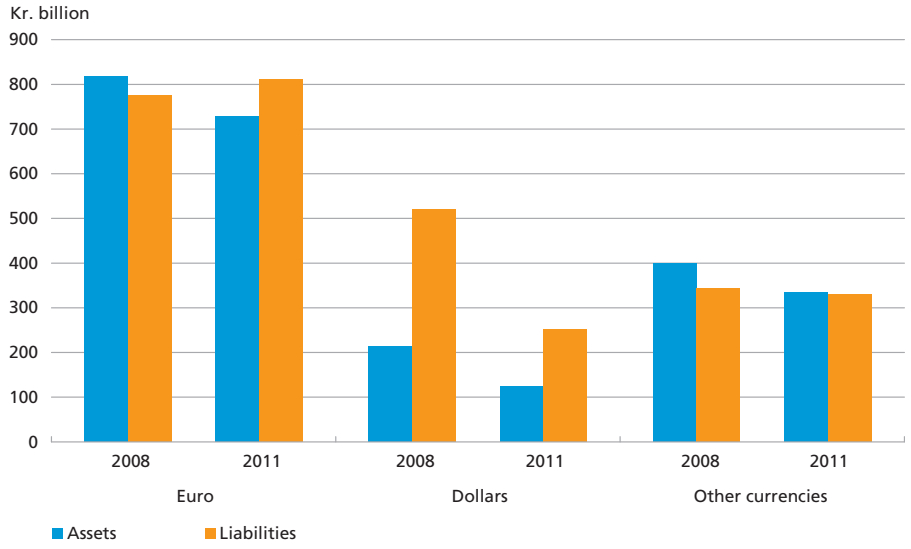
Borrowing in dollars is used for funding of assets in dollars and as inexpensive funding of assets in other currencies, involving swapping of dollars for other currencies in the swap market. Dollar funding was previously ample and inexpensive, and some, primarily large banks, have raised more funding in dollars than the value of their dollar assets, cf. Chart 17.

The Danish banks' access to dollars is mainly by way of issuing short-term debt instruments, and in the 2nd half of 2011 maturities have become even shorter, resulting in a need to refinance more frequently. Investors in this market tend to respond rapidly to negative information. This has most recently been seen in connection with the European debt crisis, as US money-market funds have reduced their exposures to the European banking sector.

THE BANKS' FUNDING BROKEN DOWN BY CURRENCIES — Chart 16

Note: Foreign branches not included. Observations for 2011 as at end-November.
Source: Danmarks Nationalbank.

THE BANKS' FOREIGN-EXCHANGE ASSETS AND LIABILITIES Chart 17



Note: Foreign branches not included. Observations for 2011 as at end-November.
Source: Danmarks Nationalbank.

By covering a substantial share of the aggregate funding requirement via short-term borrowing in dollars the banks risk having to find alternative funding if they no longer have access to dollars. So it is important for the banks to diversify and to ensure market access to alternative sources of funding, even in periods when funding costs in these markets are relatively higher.

Stress Test of the Banks' Capitalisation

Danmarks Nationalbank's stress test model provides the basis for a general assessment of the capitalisation of Danish banks under various economic scenarios. The stress test shows that the large and medium-sized Danish banks are able to withstand economic scenarios that are considerably more adverse than the one that is expected. One bank will need additional capital. In all scenarios, the largest Danish banks, which were included in the European Banking Authority's, EBA's, capital test at group level, have Common Equity Tier 1 capital ratios of more than 9 per cent, which was the requirement in the EBA's capital test.

The stress test analysis has been supplemented with a sensitivity analysis examining the impact of a strong increase in funding costs. If the stress scenarios' adverse macroeconomic developments are combined with rising funding costs, several banks will need to strengthen their capitalisation. Currently there is considerable uncertainty about the future course of the economy, and the banks should take this into account in their capital planning. In addition, new capital-adequacy rules will gradually increase the capitalisation requirements for banks until 2019. The banks should be aware that the capital markets may expect them to meet the new, more stringent capital requirements at an earlier date than stipulated in the transitional provisions.

BACKGROUND

Danmarks Nationalbank's stress test model provides the basis for a general assessment of the capitalisation of Danish banks under various macroeconomic scenarios.[1] Besides a baseline scenario, which develops in line with Danmarks Nationalbank's most recent macroeconomic forecast, robustness is tested in a number of scenarios with more adverse economic developments than expected: a stress scenario with a negative shock to the Danish economy only, a stress scenario in which the Danish economy is hit by a recession in the euro area via export market growth, and a particularly severe stress scenario with a strongly adverse economic development, including rising interest rates. The 15 largest Danish banks, which

[1] For a description of Danmarks Nationalbank's stress test model, see *Financial stability*, 2008.

jointly account for 89 per cent of the aggregate lending and guarantees of Danish banks, are included in the stress test.[1]

The stress test model projects the banks' capitalisation based on modelling of the development in income statements and balance sheets in the scenarios. The model does not take into account the banks' liquidity risks, which are analysed in more detail in the previous chapter. For example, it is assumed that the banks are able to refinance all senior debt that matures during the stress test period, including debt issued with individual government guarantees, either in the market or by using Danmarks Nationalbank's expanded credit facility.

In principle, funding costs are assumed to reflect historical experience. However, the current situation is characterised by great uncertainty, and worsening of the turmoil in the financial markets may lead to larger increases in funding costs than historically observed. Furthermore, uncertainty and risk aversion among investors entail an increased risk that problems in one bank will affect the funding costs of other banks. Consequently, the stress test has been supplemented with a sensitivity analysis to examine how the banks will be affected by funding stress.

SCENARIOS

The banks' capitalisation is assessed in four macroeconomic scenarios: a baseline scenario reflecting Danmarks Nationalbank's most recent forecast, and three stress scenarios reflecting different types of adverse shocks affecting the economy with different intensity, cf. Table 1. The probability that the stress scenarios materialise is generally low. This is particularly true of scenario 3, which has been designed with a view to testing the banks' capital strength in the event of a strongly adverse economic development. The scenarios run from the 4th quarter of 2011 until the end of the 4th quarter of 2013. The shocks to the economy in the stress scenarios are not assumed to have any impact until 2012. The developments in the four scenarios are specified in Appendix 1.

Baseline scenario

The baseline scenario is based on Danmarks Nationalbank's most recently published forecast for the Danish economy, see Monetary Review, 4th Quarter 2011. The scenario reflects that, following the strong downturn in 2009, the Danish economy is improving moderately, cf. Chart 18. GDP growth is slightly higher than the potential growth and hence contributes

[1] Compared with the most recent stress test performed by Danmarks Nationalbank, cf. *Financial stability*, 2011, Sammenslutningen Danske Andelskasser is now included as part of the merged company, Danske Andelskassers Bank.

BASELINE AND STRESS SCENARIOS, SELECTED MACROECONOMIC VARIABLES

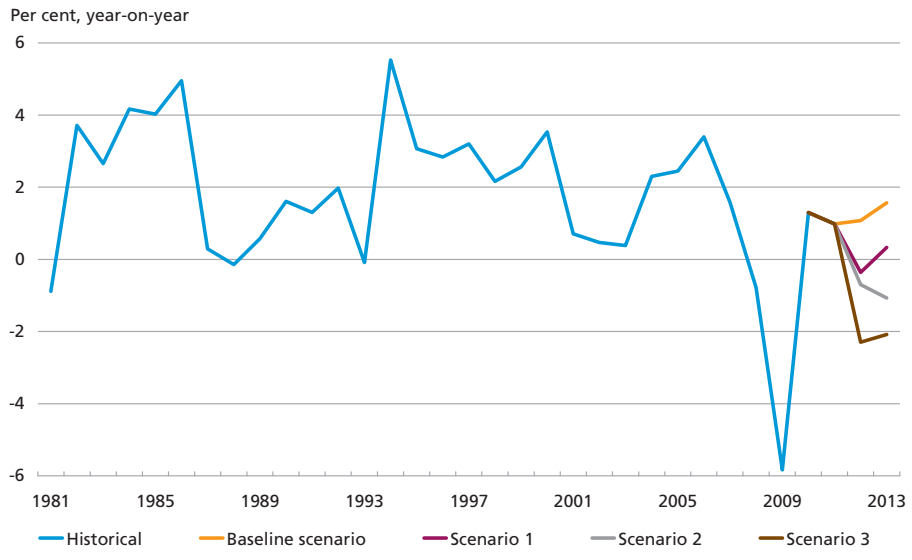
Table 1

	Baseline scenario	Scenario 1	Scenario 2	Scenario 3
2011				
GDP, per cent year-on-year	1.0	1.0	1.0	1.0
Private consumption, per cent year-on-year	-0.7	-0.7	-0.7	-0.7
Export market growth, per cent year-on-year	6.7	6.7	6.7	6.7
Unemployment rate, per cent	3.9	3.9	3.9	3.9
House prices, per cent year-on-year	-2.4	-2.4	-2.4	-2.4
Bond yields, per cent year-on-year	2.7	2.7	2.7	2.7
2012				
GDP, per cent year-on-year	1.1	-0.4	-0.7	-2.3
Private consumption, per cent year-on-year	1.1	-1.4	0.2	-2.3
Export market growth, per cent year-on-year	4.0	4.0	-8.8	-10.4
Unemployment rate, per cent	4.2	4.7	5.0	5.6
House prices, per cent year-on-year	0.2	-5.7	1.1	-13.0
Bond yields, per cent year-on-year	2.6	2.6	2.3	3.8
2013				
GDP, per cent year-on-year	1.6	0.3	-1.1	-2.1
Private consumption, per cent year-on-year	1.7	0.1	-0.5	-1.2
Export market growth, per cent year-on-year	6.1	6.1	0.5	0.2
Unemployment rate, per cent	4.0	5.4	7.0	8.6
House prices, per cent year-on-year	2.1	-1.3	1.8	-8.4
Bond yields, per cent year-on-year	3.1	3.1	2.8	4.3

Note: Annual averages. Unemployment stated as a percentage of the labour force.

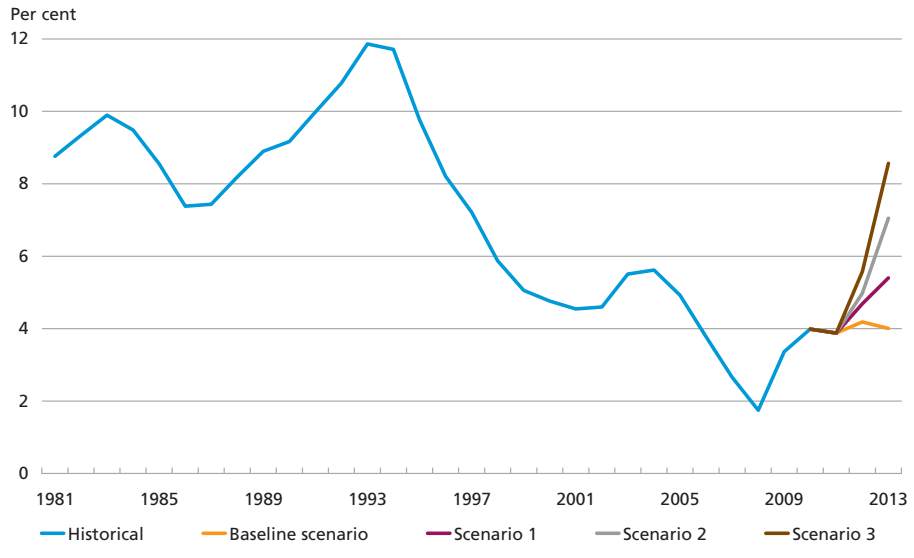
GROWTH IN REAL GDP

Chart 18



Source: Statistics Denmark and own calculations.

UNEMPLOYMENT Chart 19



Source: Statistics Denmark and own calculations.

to a decline in the spare capacity that arose after the crisis. Following a couple of years with strongly rising unemployment, the labour market is expected to stabilise in 2012, after which unemployment will fall slightly in 2013, cf. Chart 19.

Scenario 1 (temporary domestic recession)
This scenario describes a temporary domestic recession. It entails adverse shocks to private consumption, private investment and the house prices in Denmark, while developments abroad are assumed to be the same as in the baseline scenario. Interest rates remain unchanged compared with the baseline scenario, as the temporary recession does not lead to a notable increase in risk premiums. Accumulated GDP growth over the period is 2.8 percentage points lower than in the baseline scenario.

Scenario 2 (worsening of the euro area debt crisis)
This scenario describes a worsening of the euro area debt crisis, which affects economic activity in Denmark via exports. Compared with the baseline scenario, export market growth is reduced by 13 percentage points in 2012 and 6 percentage points in 2013. Interest rates in Denmark are assumed to fall marginally relative to the baseline scenario as foreign investors will be attracted to Denmark as a safe haven. Seen over the whole period, accumulated GDP growth is 4.5 percentage points lower than in the baseline scenario.

Scenario 3 (worsening of the euro area debt crisis and domestic recession)

In this scenario, a worsening of the debt crisis coincides with a strong domestic recession. Due to a decline in both domestic and foreign demand, output drops sharply in Denmark and unemployment rises. To add to the level of stress, it is assumed that uncertainty about the Danish economy and the financial sector in Denmark push up Danish interest rates. In 2012 and 2013, the average bond yield is 1.2 percentage points higher than in the baseline scenario. Accumulated GDP growth over the period is 7.1 percentage points lower than in the baseline scenario.

RESULTS OF THE STRESS TEST

The analysis is based on the banks' financial statements for the 3rd quarter of 2011. The stress test model projects income statements and balance sheets in the scenarios, thus providing a basis for assessing the development in the banks' capitalisation. The model's points of departure are relations for historical links between macroeconomic developments in Denmark on the one hand and the banks' earnings and loan impairment charges on the other. As a main rule, the estimated Danish loan impairment charge ratios are applied to all loans and guarantees, irrespective of the geographical location of the exposures. As in the analysis in *Financial stability*, 2011, separate loan impairment charge ratios are, however, applied to Danske Bank's exposures in Ireland.[1]

Earnings

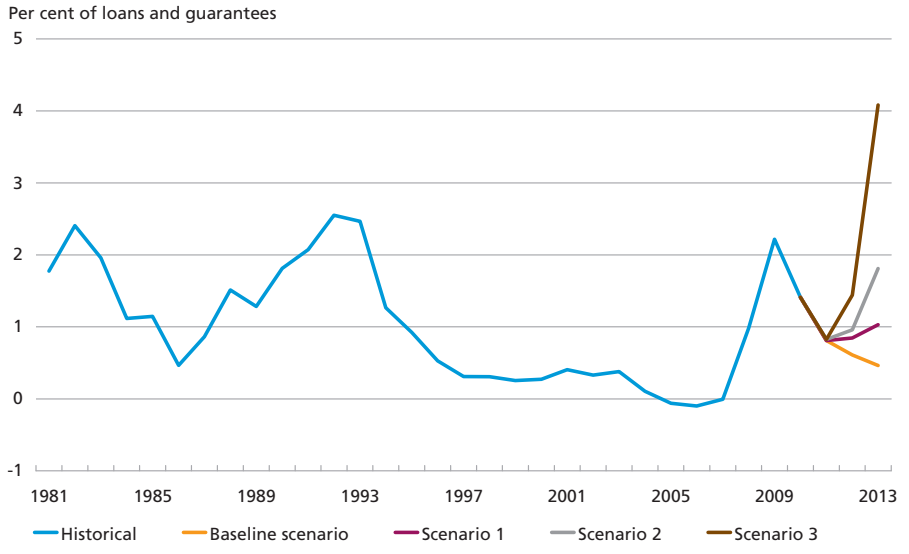
The banks' earnings before loan impairment charges and tax fell in the first three quarters of 2011 compared with the same periods of 2009 and 2010, but increase towards the end of the stress test period in all scenarios, mostly in scenario 3. This is attributable to a more or less parallel effect of rising interest rates on the banks' assets and liabilities. Since the banks hold more interest-bearing assets than liabilities, this will boost earnings. Higher earnings mean that the banks are able to absorb larger loan impairment charges without drawing on their capital bases.

Loan impairment charges

In 2009, loan impairment charges reached the highest level since the early 1990s. In 2010 they fell, and this trend continued in the first three quar-

[1] In March 2011, the Central Bank of Ireland performed a stress test of four of Ireland's largest banks. Loss ratios from the Irish stress test are used to estimate the loan impairment charges on Danske Bank's exposures in Ireland, taking into account the distribution of the exposures on industries, cf. *Financial stability*, 2011, Box 9.

ANNUAL LOAN IMPAIRMENT CHARGE RATIOS Chart 20



Note: Weighted averages. The historical series until 2010 is based on banks in the Danish Financial Supervisory Authority's groups 1-3. The estimated loan impairment charge ratios in 2011 to 2013 have been calculated for the banks included in the stress test only.

Source: Baldvinsson et al. (2005), *Danish Banks*, 5th edition, Forlaget Thomson, Danish Financial Supervisory Authority and own calculations.

ters of 2011. For the full year 2011, loan impairment charges are expected to be around 0.8 per cent in all scenarios, cf. Chart 20.

In the baseline scenario, loan impairment charges are expected to decline to 0.5 per cent in 2013. The modest level of loan impairment charges is attributable to the low level of interest rates and expectations of a moderate improvement in the Danish economy. In scenarios 1 and 2, loan impairment charges in 2013 are expected to rise to 1.0 and 1.8 per cent, respectively. The increase is driven by lower growth, employment and exports, while the low interest rates, viewed in isolation, will help to reduce loan impairment charges.

In scenario 3, loan impairment charges rise to 4.1 per cent in 2013 due to the combination of a severe macroeconomic shock and rising interest rates. Both factors will have a negative impact on the finances of the households and the corporate sector and hence their ability to service their debt, which will be reflected in the banks' loan impairment charges.

The model assumes a uniform credit quality across the banks for a given industry. In practice the quality of the banks' lending and guarantees will differ, so the model underestimates the spread in the banks' loan impairment charges.

CURRENT AND FUTURE CAPITAL REQUIREMENTS Box 3

Under existing legislation, a bank's total capital must at least match its individual capital need, but with a minimum threshold of 8 per cent. The individual capital need is a measure of capital adequacy as a percentage of risk-weighted items and reflects the bank's specific risks. The total capital is the sum of Tier 1 and 2 capital less deductions. The requirement for Tier 1 capital is that it must constitute more than half of the individual capital need and at least 4 per cent of risk-weighted assets. Tier 1 is the sum of Common Equity Tier 1 (equity capital after deductions) and Additional Tier 1. Additional Tier 1 may not exceed 15, 35 or 50 per cent, respectively, of the Tier 1 capital, depending on the contractual basis for the loan capital.

The forthcoming capital-adequacy rules, CRD IV, will tighten the requirements for Common Equity Tier 1. By 2015, the minimum requirement will be 4.5 per cent of risk-weighted assets. However, phasing-in begins in 2013, when the minimum requirement for Common Equity Tier 1 will be raised to 3.5 per cent. In addition, the Basel III rules and CRD IV include the introduction of capital buffers totalling 2.5-5 per cent to be covered by Common Equity Tier 1. Restrictions on distribution of dividends, share buy-backs and bonus payments apply in the event of non-compliance with the buffer requirement. Including the buffers, the required Common Equity Tier 1 capital will increase to at least 7-9.5 per cent. The buffers are expected to be phased in from 2016 to 2018.

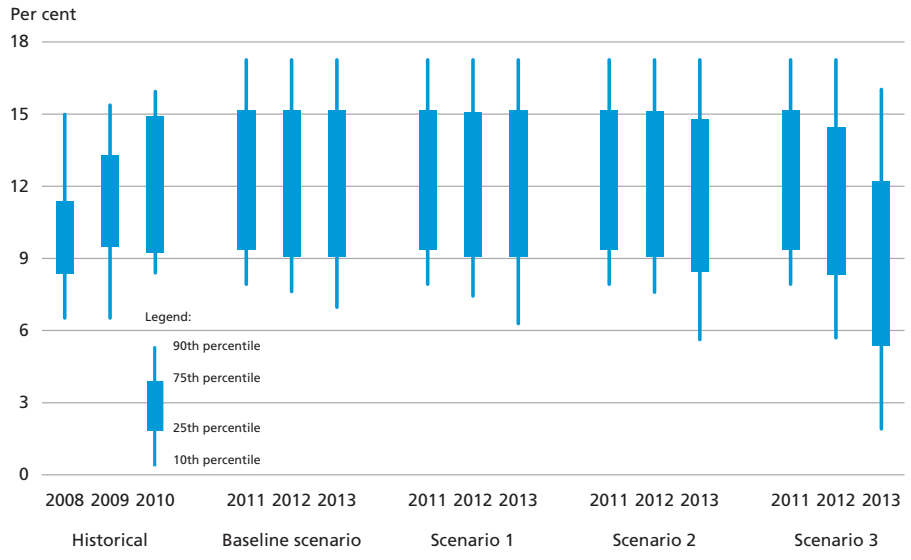
[1] For a detailed description of the future capital requirements, see *Financial stability 2011*, Chapter 6.

Common Equity Tier 1 capital

In the baseline scenario, the banks' loan impairment charges can generally be absorbed by earnings. All banks except two post positive net profits for all years in the stress test period and increase their equity capital. In the model, a profit does not entail higher Common Equity Tier 1 capital ratios, since the risk-weighted assets of banks with a surplus are assumed to rise proportionally with Common Equity Tier 1 capital. In scenarios 1 and 2, one bank posts a considerable loss, while most of the banks post profits. In scenario 3, all banks except one post losses.

The forthcoming capital-adequacy rules entail higher minimum requirements for the banks' Common Equity Tier 1 capital, i.e. 3.5 per cent of risk-weighted assets in 2013, cf. Box 3. Danish banks have strengthened their capitalisation in recent years and have high Common Equity Tier 1 capital ratios relative to the requirement at the point of departure, cf. Chart 21. 14 out of 15 banks in the stress test meet the regulatory requirement for Common Equity Tier 1 capital (and total capital, cf. below) in the baseline scenario as well as scenarios 1 and 2. One bank will need additional capital. The backdrop to the modest variations in Common Equity Tier 1 capital in scenarios 1 and 2 relative to the baseline scenario is that banks can generally absorb the loan impairment

COMMON EQUITY TIER 1 Chart 21



Source: Danish Financial Supervisory Authority and own calculations.

charges in their earnings in these scenarios. In the harsh scenario 3, six banks will need to strengthen their capitalisation during the period.

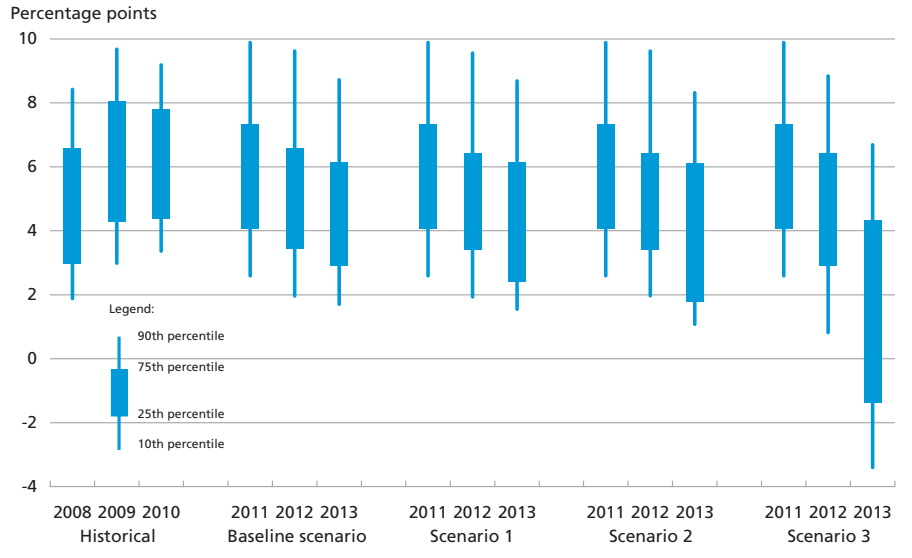
The banks should be aware that the capital markets may expect them to meet the new capital requirements at an earlier date than stipulated in the transitional provisions. According to the capital-adequacy rules, the banks' Common Equity Tier 1 capital must constitute at least 3.5 per cent of their risk-weighted assets in 2013, but when the capital requirements have been fully phased-in by 2019, the Common Equity Tier 1 capital requirements will be 7-9.5 per cent, cf. Box 3.

In the recent European capital test, the European Banking Authority, EBA, operated with a requirement of 9 per cent for Core Tier 1 capital[1] for the largest European credit groups, and the threshold in the EBA's most recent stress test from July was Core Tier 1 capital of 5 per cent. For the four banks included in the EBA's capital test via Danish credit groups, Common Equity Tier 1 capital remains above 9 per cent in all of Danmarks Nationalbank's three stress scenarios, even without the inclusion of government hybrid capital. Of the 30 largest Danish banks[2], measured by balance-sheet total, 26 had Common Equity Tier 1 capital of more than 9 per cent at the end of the 3rd quarter of 2011.

1 Unlike the Common Equity Tier 1 capital ratio, the Core Tier 1 capital ratio applied in the EBA's capital and stress tests also includes government hybrid capital and new issuance of callable instruments meeting EBA requirements.

2 Banks transferred to the Financial Stability Company are not included.

EXCESS CAPITAL ADEQUACY Chart 22



Source: Danish Financial Supervisory Authority and own calculations.

Total capital and excess capital adequacy

With the new capital-adequacy rules, the requirements for banks' total capital remain unchanged, i.e. the total capital must exceed the bank's individual capital need and must constitute at least 8 per cent of the risk-weighted assets, cf. Box 3. In the stress test, it is assumed that the individual capital need is unchanged during the stress test period.

In the baseline scenario, the banks' excess capital adequacy, i.e. the difference between the total capital and the individual capital need, declines over the period, cf. Chart 22. This is by and large attributable to an assumption that subordinated debt with redemption incentives is redeemed when the incentives come into force. Such debt is not replaced in the stress test model. Moreover, it is assumed that 10 per cent of Additional Tier 1 capital and Tier 2 capital cannot be included in 2013 due to the implementation of new, more stringent quality requirements.[1]

All banks except one have positive excess capital adequacy in the baseline scenario and in scenarios 1 and 2. In scenario 3, the banks come under pressure due to a surge in loan impairment charges, and six banks will need to strengthen their capitalisation. By the end of 2013, one

[1] With Basel III, the requirements for Additional Tier 1 capital and Tier 2 capital are strengthened. Additional Tier 1 and Tier 2 capital that does not meet the new criteria must be phased out over 10 years from 2013. Government capital injections that do not meet the criteria, including Danish injections under Bank Rescue Package 2, may be included until January 2018. In the model, it is assumed that none of the existing Additional Tier 1 and Tier 2 capital meets the new requirements, so 10 per cent of this capital, except for government capital injections, is excluded in the calculations for 2013.

more bank is vulnerable with excess capital adequacy of less than 2 percentage points.

FUNDING STRESS

In the stress test model, the relationship between interest income and expenses and relevant balance-sheet items is calibrated to match the observed relationship in the 1st to 3rd quarters of 2011 for each bank. As the scenarios progress, rising interest rates for both assets and liabilities lead to a gradual improvement in the banks' net interest income.

If the development in the financial markets continues and deteriorates, this may cause the banks' funding costs to rise further without a corresponding increase in earnings on the assets side. To examine the banks' robustness to such developments, a sensitivity analysis is performed, in which the interest rate on the banks' funding (deposits, debt to credit institutions and bonds issued) rises by a further 50 or 100 basis points, respectively, relative to the scenarios. The analysis does not take into account that the interest rate on parts of the debt is fixed in the period.

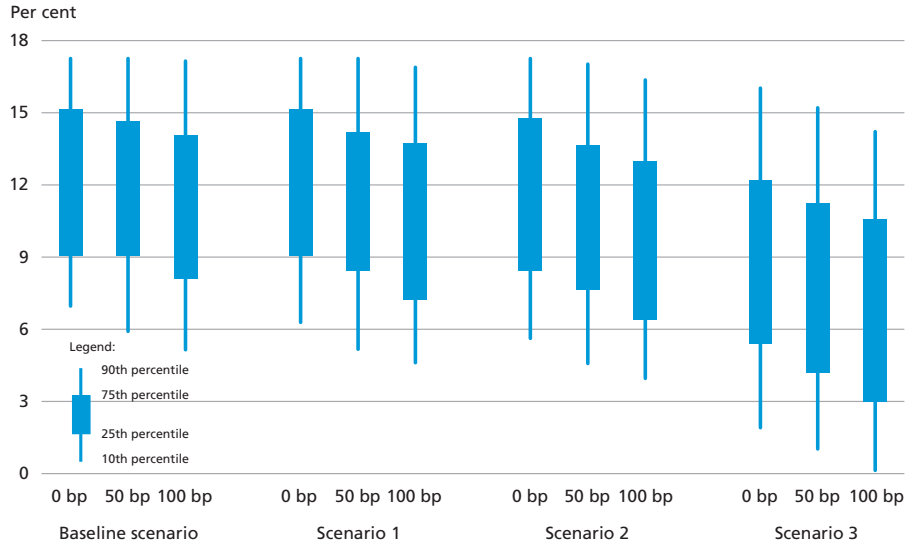
In addtion, it is assumed that the interest-rate increase which is attributable to the funding stress cannot be passed on to customers. This may reflect a situation in which a small part of the sector comes under pressure and cannot raise its lending rates for competitive reasons. This is not a realistic assumption if most of the sector is affected by rising funding costs. In other words, the analysis should be seen as a sensitivity analysis of individual banks rather than of the sector as a whole.

The rising funding costs lead to lower net interest income, reducing the degree to which loan impairment charges can be absorbed by profits. In the baseline scenario, the high funding stress (100 basis points) and resultant decline in the banks' earnings mean that most banks are no longer able to cover their loan impairment charges via earnings alone, leading to a decline in Common Equity Tier 1 capital ratios, cf. Chart 23. One bank will need to strengthen its capitalisation.

In scenarios 1 and 2, the Common Equity Tier 1 capital ratios of most banks fall substantially in connection with funding stress of 100 basis points. In scenario 1, one bank will need to strengthen its capitalisation, while three banks will have to do so in scenario 2.

In scenario 3, all banks see their Common Equity Tier 1 capital ratios decline markedly, given the severe funding stress, and seven banks will need to strengthen their capitalisation. Funding stress of 50 basis points means that six banks will need to strengthen their capitalisation. These are the same six that needed to do so in scenario 3 without the funding stress.

COMMON EQUITY TIER 1 CAPITAL IN 2013 WITH FUNDING STRESS Chart 23



Note: The chart shows the Common Equity Tier 1 capital ratios for each scenario at the point of departure and on addition of 50 and 100 basis points, respectively, to the calculated annual interest rates on debt to credit institutions, deposits and bonds issued.
Source: Own calculations.

In practice, the banks will probably be able to pass on some costs to the customers, cf. the most recent increases in lending rates in the sector.

The banks can address solvency problems in various ways, e.g. by retaining profits, raising capital or reducing risks. Subsidiary banks in strong groups have the option of capital injection from the parent company. Some banks have also announced plans to improve cost efficiency and reduce their balance sheets.

Appendix 1

The Appendix provides an overview of developments in a number of macroeconomic variables in the baseline scenario and the three stress scenarios specified in the Stress Test of the Banks' Capitalisation chapter.

SPECIFICATION OF SCENARIOS FOR THE DANISH ECONOMY — Table 1

	Baseline scenario	Scenario 1	Scenario 2	Scenario 3
2011				
Real growth, per cent year-on-year				
GDP	1.0	1.0	1.0	1.0
Private consumption	-0.7	-0.7	-0.7	-0.7
Public consumption	-0.1	-0.1	-0.1	-0.1
Residential investment	9.7	9.7	9.7	9.7
Business investment	-4.9	-4.9	-4.9	-4.9
Public investment	6.6	6.6	6.6	6.6
Inventory investment (contribution to GDP-growth)	0.4	0.4	0.4	0.4
Exports	7.3	7.3	7.3	7.3
- of which industrial exports	7.6	7.6	7.6	7.6
Imports	6.1	6.1	6.1	6.1
Export market growth	6.7	6.7	6.7	6.7
Nominal growth, per cent year-on-year				
Private sector disposable income	5.0	5.0	5.0	5.0
HICP	2.7	2.7	2.7	2.7
Hourly wages (industry)	2.1	2.1	2.1	2.1
House prices	-2.4	-2.4	-2.4	-2.4
Average level for the year				
Bond yield, per cent p.a.	2.7	2.7	2.7	2.7
3-month money-market interest rate, per cent. p.a.	1.0	1.0	1.0	1.0
Unemployment, thousands	110	110	110	110
Total employment, thousands	2,737	2,737	2,737	2,737
- of which private sector, thousands	1,733	1,733	1,733	1,733
Labour force, thousands	2,848	2,848	2,848	2,848
Unemployment rat, per cent	3.9	3.9	3.9	3.9
Net borrowing/net lending, private sector, kr. billion	189	189	189	189
Government budget balance, kr. billion	-67	-67	-67	-67
B.o.p. current account, kr. billion	118	118	118	118
Crude oil price, dollars/barrel	111	111	111	111

SPECIFICATION OF SCENARIOS FOR THE DANISH ECONOMY Table 2

	Baseline scenario	Scenario 1	Scenario 2	Scenario 3
2012				
Real growth, per cent year-on-year				
GDP	1.1	-0.4	-0.7	-2.3
Private consumption	1.1	-1.4	0.2	-2.3
Public consumption	0.8	0.8	0.8	0.8
Residential investment	2.0	-5.0	2.2	-4.5
Business investment	4.8	-9.3	3.0	-9.0
Public investment	10.0	10.0	10.0	10.0
Inventory investment (contribution to GDP-growth)	0.2	0.2	0.2	0.2
Exports	1.8	1.8	-4.6	-5.3
- of which industrial exports	3.1	3.2	-6.4	-7.1
Imports	3.5	0.3	-1.2	-4.5
Export market growth	4.0	4.0	-8.8	-10.4
Nominal growth, per cent year-on-year				
Private sector disposable income	3.9	2.9	2.2	1.1
HICP	2.2	2.3	2.3	2.3
Hourly wages (industry)	2.5	2.4	2.4	2.3
House prices	0.2	-5.7	1.1	-13.0
Average level for the year				
Bond yield, per cent p.a.	2.6	2.6	2.3	3.8
3-month money-market interest rate, per cent. p.a.	1.1	1.1	0.8	2.3
Unemployment, thousands	119	134	142	159
Total employment, thousands	2,733	2,718	2,710	2,693
- of which private sector, thousands	1,721	1,707	1,699	1,682
Labour force, thousands	2,852	2,852	2,852	2,852
Unemployment rat, per cent	4.2	4.7	5.0	5.6
Net borrowing/net lending, private sector, kr. billion	207	250	197	234
Government budget balance, kr. billion	-105	-118	-117	-131
B.o.p. current account, kr. billion	102	131	80	102
Crude oil price, dollars/barrel	108	108	108	108

SPECIFICATION OF SCENARIOS FOR THE DANISH ECONOMY Table 3

	Baseline scenario	Scenario 1	Scenario 2	Scenario 3
2013				
Real growth, per cent year-on-year				
GDP	1.6	0.3	-1.1	-2.1
Private consumption	1.7	0.1	-0.5	-1.2
Public consumption	0.4	0.4	0.4	0.4
Residential investment	2.6	-1.4	1.3	-8.4
Business investment	6.8	1.4	3.2	0.9
Public investment	-22.5	-22.5	-22.5	-22.5
Inventory investment (contribution to GDP-growth)	0.0	-0.3	-0.6	-0.9
Exports	3.3	3.4	-1.0	-0.8
- of which industrial exports	5.3	5.5	3.1	4.3
Imports	3.0	1.9	-0.7	-1.2
Export market growth	6.1	6.1	0.5	0.2
Nominal growth, per cent year-on-year				
Private sector disposable income	1.0	0.5	-1.0	-1.3
HICP	1.7	1.7	1.5	1.4
Hourly wages (industry)	2.8	2.2	1.6	1.0
House prices	2.1	-1.3	1.8	-8.4
Average level for the year				
Bond yield, per cent p.a.	3.1	3.1	2.8	4.3
3-month money-market interest rate, per cent. p.a.	1.4	1.4	1.1	2.6
Unemployment, thousands	114	154	202	245
Total employment, thousands	2,745	2,705	2,658	2,614
- of which private sector, thousands	1,731	1,691	1,644	1,600
Labour force, thousands	2,859	2,859	2,859	2,859
Unemployment rat, per cent	4.0	5.4	7.0	8,6
Net borrowing/net lending, private sector, kr. billion	156	227	163	221
Government budget balance, kr. billion	-55	-83	-95	-125
B.o.p. current account, kr. billion	100	143	67	96
Crude oil price, dollars/barrel	103	103	103	103