NORGES BANK

Financial Stability

2|11

November

Reports from the Central Bank of Norway No. 5-2011

Financial Stability 2/11

NORGES BANK

Norges Bank
Oslo 2011

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Setting and printing: 07 Gruppen AS

The text is set in 10.5 point Times New Roman / 9.5 point Univers

ISSN 1502 - 2749 (print)
ISSN 1503 - 8858 (online)

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This report is based on information in the period to 23 November 2011

Norges Bank's reports on financial stability

Financial stability implies a financial system that is robust to disturbances and is capable of ensuring funding, executing payments and distributing risk efficiently.

Financial stability is one of Norges Bank's primary objectives in the work on promoting economic stability. Norges Bank's tasks and responsibilities in this area are set out in Section 1 of the Norges Bank Act, which states that the Bank shall *"promote an efficient payment system domestically as well as vis-à-vis other countries",* but that the Bank may also *"implement any measures customarily or ordinarily taken by a central bank".* Section 3 states that *"the Bank shall inform the ministry when, in the opinion of the Bank, there is a need for measures to be taken by others than the Bank in the field of monetary, credit or foreign exchange policy".*

Norges Bank acts as lender of last resort. The central bank can provide extraordinary liquidity to individual institutions in the financial sector or to the banking system when liquidity demand cannot be satisfied from alternative sources. The role of lender of last resort provides an independent justification for Norges Bank's function in monitoring the financial system as a whole and its particular focus on the risk of systemic failure.

Experience shows that financial instability builds up in periods of strong credit growth and asset price inflation. Banks play a key role in credit provision and payment services – and they differ from other financial institutions in that they rely on customer deposits for funding. Banks are thus important to financial stability.

The *Financial Stability* report focuses on the prospects for banks' earnings and financial strength and the risk factors to which banks are exposed. The analysis is based on the same assessment of developments in the Norwegian and global economy as in the previous *Monetary Policy Report.* It is of particular interest to analyse how robust banks are to severe economic shocks. Stress testing of bank solvency in the *Financial Stability* report is therefore ordinarily based on alternative scenarios for the economy ahead with a lower probability of being realised than the alternative scenarios analysed in the *Monetary Policy Report*.

The *Financial Stability* report is published twice a year. The report is presented to the Executive Board for discussion of the main conclusions. On the basis of the analyses and the discussion, the Executive Board adopts recommendations for measures to be implemented by the authorities. The "Executive Board's assessment" is published in the report and communicated in a submission to the Ministry of Finance.

Norges Bank's *Annual Report on Payment Systems* provides a broader overview of risk and developments in the Norwegian payment system.

The Executive Board's assessment

At its meeting on 5 October, Norges Bank's Executive Board discussed issues relevant to this report. At its meeting on 23 November, the Board discussed the outlook for financial stability and the need for regulatory measures.

The outlook for financial stability

Owing to turbulence in international financial markets and weaker growth prospects abroad, the financial system in Norway is more vulnerable than at the time of publication of the May 2011 report. Already weak public finances in many countries have deteriorated further as a result of the financial crisis. The situation is bleakest in some euro area countries, and market participants are uncertain whether these countries will meet their debt obligations. Many European banks have large exposures to these countries. The situation in money and credit markets is strained.

Norwegian banks are well capitalised and have posted solid earnings so far in 2011. Direct exposures to the most vulnerable countries in Europe are very limited. However, banks' reliance on foreign sources of funding may pose a challenge in the short term. Wholesale funding costs have increased and accessibility is more limited, particularly for the longer maturities.

The two new quantitative liquidity requirements proposed by the Basel Committee (Basel III) are designed as stress tests of banks' funding structure. Pending the implementation of the new requirements in 2015 and 2018, Norwegian banks' should increase their liquidity buffers and their share of long-term market funding. It would be to banks' own advantage to ensure that their liquidity situation is sufficiently robust to withstand financial market turbulence. Banks should therefore make use of opportunities to raise long-term market funding where possible.

Norwegian enterprises are basically solid with good debt-servicing capacity. However, low growth among trading partners will affect Norwegian export firms and reduce their earnings, increasing banks' losses on loans and securities.

Challenges to the financial system may also arise further ahead. Household debt burdens are high and house prices are rising rapidly. There is a risk that household behaviour will in many cases result in vulnerability when interest rates rise again to more normal levels or if prospects for the real economy deteriorate in Norway. In such a situation, many households may find it challenging to service their loans and will have to reduce consumption. A marked fall in household demand will have a negative impact on corporate earnings, which may lead to higher bank losses on corporate loans further ahead.

Norges Bank has also conducted stress tests of banks' capital adequacy. The stress tests show that due to the increase in capital adequacy ratios since 2009 the Norwegian banking sector is better equipped to weather a severe international downturn, but that a further increase in capital adequacy ratios is necessary for banks to be able to maintain the supply of credit in bad times.

Follow-up measures by the authorities

The current challenges in international financial markets illustrate the need for a more robust long-term regulatory framework for the financial sector. A new directive is being drawn up within the EU to implement the Basel III framework to be introduced as from 2013. The Executive Board is of the view that these regulatory changes are important steps in the right direction. As the Executive Board has previously pointed out, it would be an advantage if the new capital adequacy requirements could be incorporated into Norwegian law as quickly as practically possible. Being subject to a robust and consistent regulatory framework can serve as a stamp of quality for banks in turbulent periods. The provisional requirement of a 9% Core Tier 1 capital ratio for the largest banks in the EU from 1 July 2012 may lead to the establishment of higher minimum capital adequacy requirements in the market. The largest Norwegian banks should therefore strengthen their Core Tier 1 capital ratios. In order to ensure relatively stable credit standards, it would be preferable if this was mainly achieved through earnings retention.

In November 2011, the G20 countries agreed that global systemically important financial institutions (G-SIFIs) will be subject to higher capital requirements as from 2016. In addition, the G20 countries agreed that the framework should also be adapted for banks that are systemically important at national level. The Swedish authorities have already proposed higher capital requirements for the four largest Swedish banks. According to the proposal, the banks will be required to have a 10% Core Tier 1 capital ratio as from 1 January 2013, increasing to 12% as from 1 January 2015. The Norwegian authorities should consider similar requirements for the largest Norwegian banks.

Current banking sector regulations in the EU/EEA impose minimum requirements on national regulation of banks, which is an advantage in a single market. However, the European Commission favours more harmonised banking regulations in the EU, and the proposed directive provides for limited national policy options allowing national authorities to apply stricter requirements. Structural and cyclical conditions in the financial sector may necessitate a stricter use of instruments in a country. The Norwegian authorities should therefore seek to influence the EU's work on the directive to achieve national leeway in financial sector regulation.

Housing market developments and household debt may be a source of instability in the Norwegian economy in the longer term. Bank credit standards may have a considerable impact on house prices and household borrowing. Prudent lending is therefore essential for financial stability. The share of high loan-to-value residential mortgages is now substantial and interest-free periods are used extensively. This gives cause for concern. The Executive Board is therefore positive to Finanstilsynet's (Financial Supervisory Authority of Norway) proposed tightening of the guidelines for prudent residential mortgage lending. The Executive Board would also stress the importance for financial stability of intensified efforts to ensure compliance. Non-compliance with the guidelines may be a sign of general shortcomings in banks' credit assessment. The Executive Board wishes to call attention to the possibility of applying higher capital requirements through Pillar 2 for banks that do not comply with the guidelines.

The Executive Board has on previous occasions highlighted the challenges related to low risk weights on residential mortgages for banks using internal models (IRB models) to calculate capital requirements. The National Budget for 2012 states that the Ministry of Finance will consider strengthening capital requirements related to residential mortgages within the limits set by the international framework, including stricter requirements regarding the IRB models used by banks. It is the view of the Executive Board that this will be an important step towards linking capital requirements for residential mortgage loans more closely to the risk high household debt burdens pose to the financial system and not just to the individual bank. The Executive Board has previously recommended retaining the Basel I transitional floor until Basel III has been introduced in order to prevent banks' from reducing equity capital in the years ahead due to lower risk weights.[1] The Ministry of Finance is now planning an extension of this transitional arrangement.

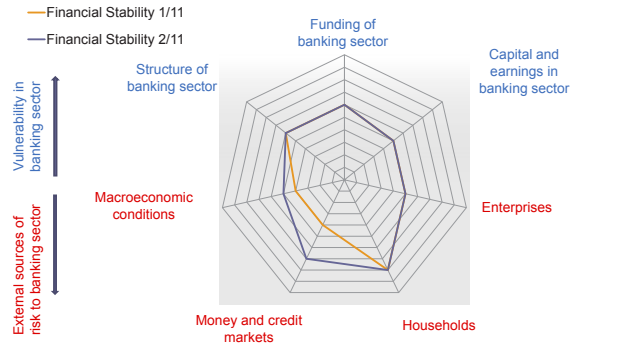
The international turbulence illustrates the importance of sound and credible plans for managing banking crises. Because of the absence of such plans during the financial crisis, a substantial share of banks' losses ended up on government balance sheets, contributing in some countries to the sovereign debt crisis. Passing on losses in this way may encourage increased financial sector risk-taking, making new crises more likely. As the Executive Board has previously indicated, the Norwegian crisis resolution system should also be improved. The authorities' powers to split up a bank to maintain essential public services performed by the bank without the use of public funds should be expanded. The forthcoming EU directive on crisis resolution and deposit guarantees will contribute to this. An important part of a crisis resolution regime is that credible plans for both recapitalisation and the orderly resolution of a troubled bank are in place. EU countries such as the UK and Spain have already begun to draw up such plans. Nordea is to complete its plans in the course of 2012 in order to meet the requirements recently agreed on by the G20 countries. The current state of the European banking sector may delay the EU's work on a new crisis resolution system. In the view of the Executive Board, there is no reason to wait for possible EU provisions before starting work on plans for the largest banks in Norway.

Inadequate information can lead to higher uncertainty in the financial system. Ready access to reliable and relevant information on banks' solvency and funding structure can dampen uncertainty. Banks that are transparent in these areas are also likely to strive for high standards and ensure that their funding structure is robust. The new liquidity requirements proposed by the Basel Committee and the European Commission require banks to disclose more information about their funding structure. In the opinion of the Executive Board, Norwegian banks should be instructed to disclose more detailed information on term structure, different types of deposit and volume of outstanding wholesale funding in different markets and currencies.

Øystein Olsen
29 November 2011

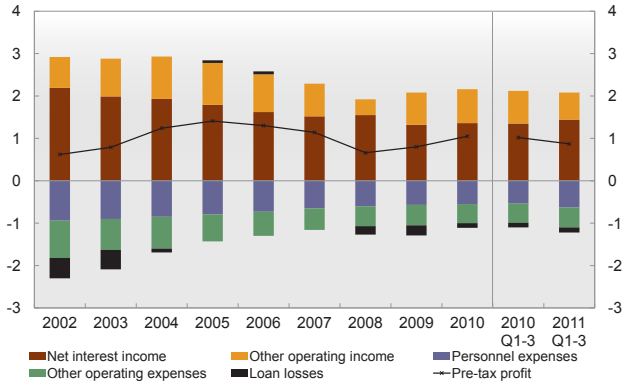
1 According to the transitional rule, the minimum capital requirement applying to banks in 2011 calculated under the Basel II requirements should be at least 80% of the capital calculated under the Basel I requirements. The requirement is referred to as the transitional floor

Chart 1.1 Vulnerabilities in the Norwegian banking sector and external sources of risk to the banking sector[1)]



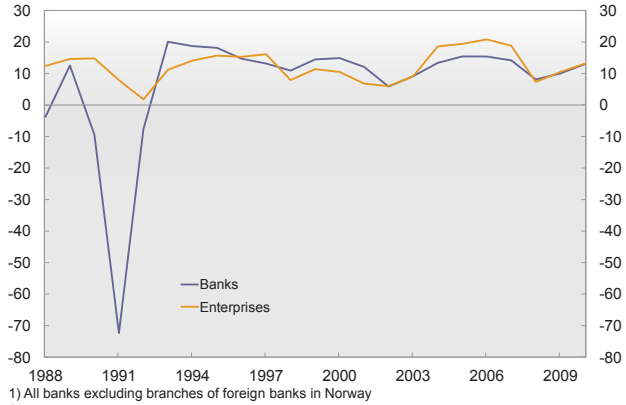
1) A value of 0, ie. origo, denotes the lowest level of risk or vulnerability. A value of 10 denotes the highest level of risk or vulnerability.
Source: Norges Bank

Chart 1.2 Banks'[1)] pre-tax profit as a percentage of average total assets. Per cent. Annual figures. 2002 – 2010. 2010 Q1 – Q3 and 2011 Q1 – Q3



1) All banks excluding branches of foreign banks in Norway
Source: Norges Bank

Chart 1.3 Return on equity. Norwegian banks[1)] and enterprises. Per cent. Annual figures. 1988 – 2010



1) All banks excluding branches of foreign banks in Norway
Source: Norges Bank

Outlook for financial stability

Norges Bank's analyses of financial stability provide an assessment of the resilience of the financial system in Norway to potential shocks. The outlook for financial stability will be positive if both vulnerability in the system is low and the probability of shocks is small.

The financial system in Norway is more vulnerable than at the time of publication of the May report. The increased risk of financial instability in Norway is in particular due to the situation in global money and credit markets (see Chart 1.1). Over the course of recent months, turbulence in global financial markets has intensified, resulting in higher risk premiums, while bank funding has become less accessible. Macroeconomic conditions are also giving rise to somewhat higher risk. Growth prospects for the global economy have weakened and uncertainty is high. The growth outlook for the Norwegian economy has also been revised down somewhat. In the longer term, household debt burdens and high house price inflation entail a risk of financial instability.

Sources of vulnerability in the Norwegian banking sector

Capital and earnings

Since 2009 Norwegian banks have posted solid earnings and increased equity ratios. Nevertheless, banks are vulnerable to turbulence related to the debt problems in Europe

Banks' earnings so far in 2011 are solid, but somewhat weaker than for the same period in 2010 (see Chart 1.2). The deterioration is primarily due to non-recurring effects[1] that boosted earnings in 2010. Adjusted for these effects, banks' earnings as a percentage of average total assets (ATA) are approximately as at the same time last year.

1 Personnel expenses in the first half of 2010 were unusually low owing to the implementation of new rules for the contractual early retirement scheme, while other operating income was high in the same period owing to a non-recurring gain related to the merger between Nordito (holding company for BBS and Teller) and the Danish company PBS Holding

Loan losses are low, amounting approximately to an annualised 0.1% of ATA through the first three quarters of 2011. At the same time, banks' net interest income was somewhat higher compared with the same period last year (see Chart 1.2).

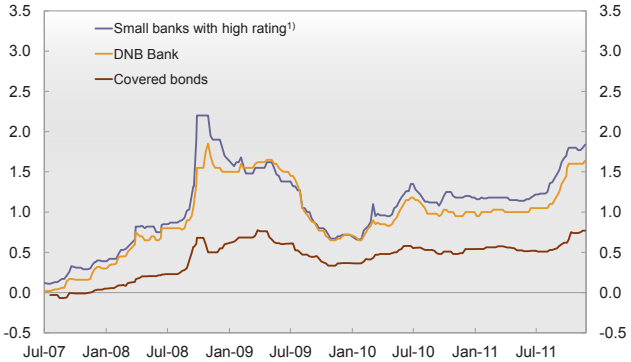
Solid earnings in recent years have boosted banks' return on equity. Banks' return on equity was 13% in 2010 (see Chart 1.3). This is higher than the average for the previous 15 years and approximately at the same level as for Norwegian enterprises. New capital and liquidity regulations will make banks more robust. This will make bank equity less exposed to risk and reduce the return on equity required by investors ahead.

Bank wholesale funding costs have risen since 2007 (see Chart 1.4). As funding raised before 2007 is eventually rolled over at higher premiums, bank funding costs will rise. Low loan losses and cost-cutting in the past decade have enabled banks to reduce their interest margins, with scant room for further reduction likely. However, banks have been reluctant to pass higher funding costs on to their mortgage and corporate customers so far this year (see Chart 1.5 and Chart 1.6). If banks are to maintain profitability, they will need to start passing on higher funding costs to customers. In Norges Bank's lending survey for 2011 Q3, banks reported that they would increase lending margins on loans to households and enterprises.

The debt crisis in the euro area may have an impact on banks' earnings. Norwegian banks' direct exposure to indebted euro area countries is limited. At end-2010, Norwegian banks' total direct exposures to the most heavily indebted euro area countries amounted to less than 1.3% of total assets. Nevertheless, claims on counterparties that in turn have claims on indebted countries may be a risk factor for Norwegian banks.

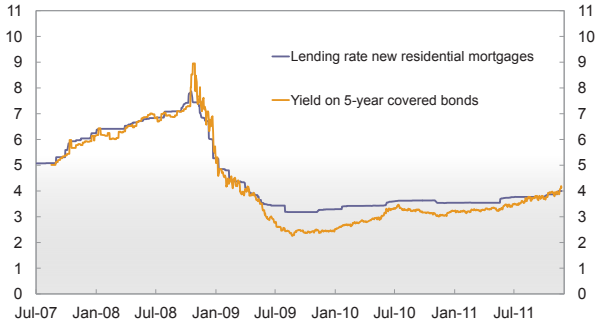
Financial market turbulence may result in impairment of banks' securities portfolios. Norwegian banks were not directly exposed to the US sub-prime market in 2008, but in the turbulence following the collapse of Lehman Brothers, capital losses on corporate bonds and equities accounted for half of the reduction in earnings for Norwegian banks

Chart 1.4 Indicative risk premiums on 5-year Norwegian bank bonds and covered bonds. Spread against swap rates. Percentage points. Weekly figures. 2 July 2007 – 23 November 2011



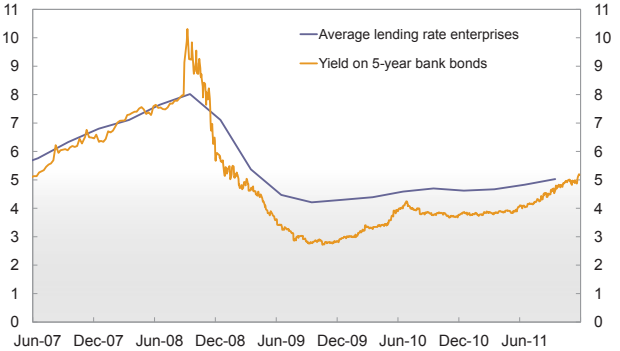
1) Banks with total assets between NOK 5bn and 15bn and rated A by DNB Markets
Source: DNB Markets

Chart 1.5 Yield on 5-year covered bonds[1] and weighted average lending rate on new residential mortgages[2]. Per cent. Daily figures. 2 July 2007 – 23 November 2011



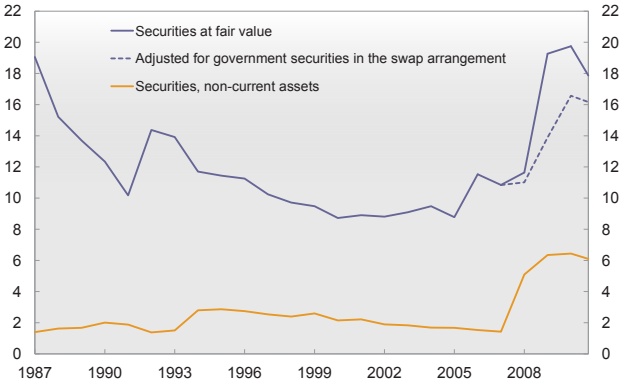
1) Sum of 3-month NIBOR and indicative credit spreads on 5-year covered bonds
2) Interest rate on new residential mortgages of NOK 1m within 60% of purchase price with variable interest rate. Figures for the 20 largest banks, weighted by market share
Sources: Norsk Familieøkonomi AS, DNB Markets and Norges Bank

Chart 1.6 Average bank lending rate for non-financial private enterprises[1] and yield on 5-year bank bonds[2]. Per cent. Quarterly and daily figures. 2007 Q2 – 2011 Q3 and 2 July 2007 – 23 November 2011



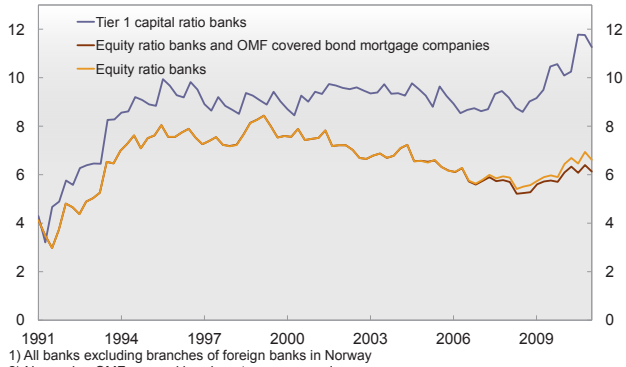
1) All Norwegian banks
2) Sum of 3-month NIBOR and indicative credit spreads on 5-year bank bonds
Sources: Statistics Norway, DNB Markets and Norges Bank

Chart 1.7 Banks'[1] securities holdings as a percentage of total assets. Per cent. Annual figures. 1987 – 2010 and 2011 Q3



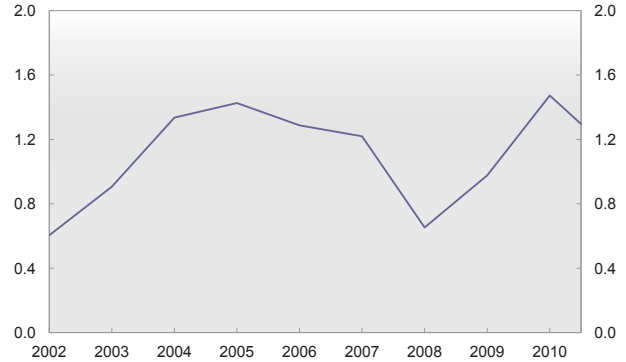
1) All banks excluding branches of foreign banks in Norway
Sources: Norges Bank

Chart 1.8 Banks'[1] and OMF covered bond mortgage companies'[2] Tier 1 capital ratio and equity ratio. Per cent. Quarterly figures. 1991 Q2 – 2011 Q3[3]



1) All banks excluding branches of foreign banks in Norway
2) Norwegian OMF covered bond mortgage companies
3) Figures for Tier 1 capital ratio as at 2011 Q2
Sources: Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

Chart 1.9 Banks'[1] after-tax profits as a percentage of risk-weighted assets. Sum of previous four quarters. Per cent. Annual figures 2002 – 2010. Quarterly figures 2011 Q2



1) All banks excluding branches of foreign banks in Norway
Source: Norges Bank

from 2007 to 2008 (see Chart 1.2). At end-2010, securities exposed to market fluctuations (carried at fair value) accounted for 19% of Norwegian banks' assets (see Chart 1.7). This is somewhat higher than at the beginning of 2008 when adjusted for banks' holdings of Treasury bills under the swap arrangement.[2] Approximately 6% of Norwegian banks' assets are securities classified as non-current assets (see Chart 1.7).[3] Although the carrying amount of these securities is not directly affected by changes in market value, banks will have to bear losses in the event of default.

Growth among Norway's trading partners has slowed, and there are prospects for low growth ahead. This will affect export firms and reduce their earnings (see "Enterprises", page 22), increasing banks' losses on loans and securities.

Solid earnings in recent years have helped to make Norwegian banks more robust. Since end-2009, banks have raised their equity ratios by approximately 0.7 percentage point (see Chart 1.8). Banks' total assets have grown in the same period. Equity ratios are therefore higher because banks have increased equity.

Norwegian banks meet the new minimum Tier 1 capital ratios under Basel III. However, some banks do not have Tier 1 capital ratios high enough to meet the proposed countercyclical buffer and capital conservation buffer requirements.

The provisional 9% Core Tier 1 capital ratio for the largest banks in the EU from 1 July 2012 may result in the establishment of higher minimum capital adequacy ratios in the market (see box "Measures to strengthen the EU banking sector", page 31). The largest Norwegian banks should therefore increase their Core Tier 1 capital ratios. Banks have ample opportunity to increase Tier 1 capital ratios by retaining a portion of earnings at year-end (see Chart 1.9).[4]

2 OMF covered bonds used by banks in the swap arrangement are also carried on the assets side in banks' balance sheets

3 Guidelines from 16 October 2008 permitted Norwegian banks to reclassify securities from current assets to non-current assets. Six banks availed themselves of this opportunity. This explains the sharp increase in securities carried as non-current assets in Chart 1.7.

4 For a discussion of banks' various adjustment options and projected effects, see also Jacobsen, Kloster, Kvinlog and Larsen (2011): "Makroøkonomiske virkninger av høyere kapitalkrav for bankene" [Macroeconomic effects of higher capital requirements for banks] (Norwegian only), *Staff Memo* 14/2011

Funding

Norwegian banks are vulnerable to a prolonged interruption in the supply of long-term wholesale funding. More long-term funding and more liquid assets will reduce banks' vulnerability to turbulence

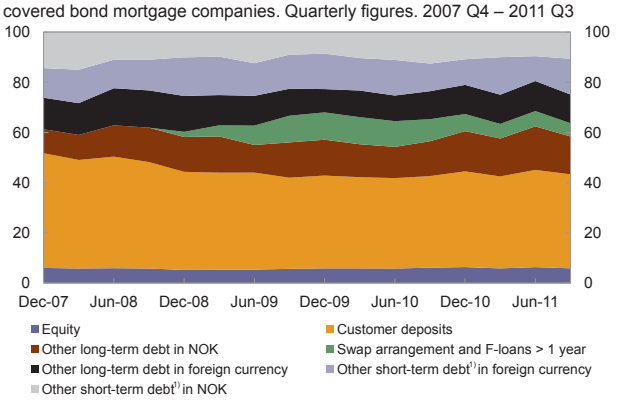
Deposits and long-term wholesale funding are the two most important funding sources for Norwegian banks and covered bond mortgage companies (see Chart 1.10). Institutions with a high proportion of funding in the form of deposits and long-term wholesale funding will be less vulnerable to funding market failure. The proportion of deposits is lower than before the financial crisis. Temporary measures undertaken by the authorities in 2008 and 2009 sustained and to some extent increased the share of long-term wholesale funding.

The largest Norwegian banks' share of long-term wholesale funding still falls far short of what is needed to meet proposed stable funding requirements (see Chart 1.11). These are international standards expected to be introduced in 2018. Banks that meet the standards early will be more robust to market turbulence.

Maturities for Norwegian banks' and covered bond mortgage companies' long-term funding have shortened somewhat since the May report (see Chart 1.12). Turmoil linked to sovereign debt has made it difficult for European banks to roll over their long-term wholesale funding. Investors and counterparties are hesitant to lend at the same maturities as previously. While these problems have particularly affected bank bonds, it has also been somewhat more difficult to attract buyers for new covered bonds. Norwegian banks are vulnerable to a prolonged interruption in the supply of long-term wholesale funding (see Chart 1.13). In the coming months, maturities will be dominated by bank bonds.

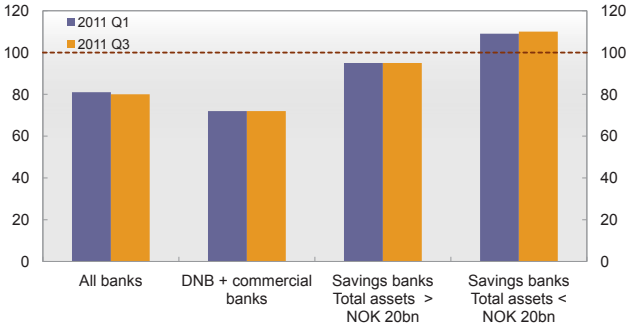
Norwegian banks are facing large amounts scheduled to mature in 2014 as the swap arrangement is wound up. This entails a considerable rollover risk. The Ministry of Finance has therefore provided for early termination of swap agreements. This will facilitate a more gradual winding-up of the swap arrangement and smooth banks' borrowing. In addition to replacing the amounts maturing in the swap

Chart 1.10 Funding as a percentage of assets. Norwegian-owned banks and covered bond mortgage companies. Quarterly figures. 2007 Q4 – 2011 Q3



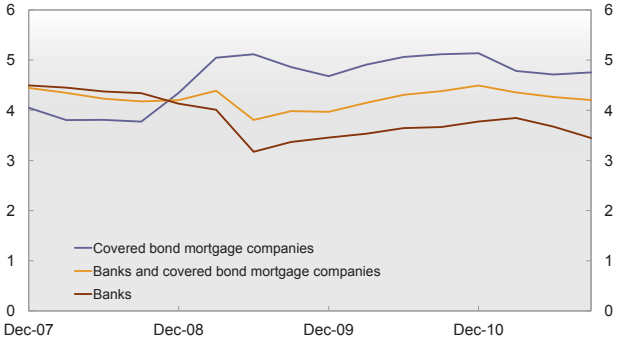
1) Short-term debt is debt with a maturity of 1 year or less
Source: Norges Bank

Chart 1.11 Banks'1) stable funding as a percentage of stable funding requirement (NSFR).2) Weighted average for group. End of quarter



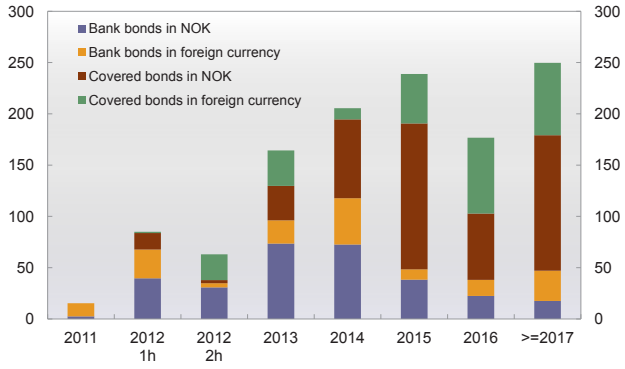
The broken line shows the requirement under the Net Stable Funding Ratio (Basel III)
1) All banks excluding branches of foreign banks in Norway.
2) Norges Bank's estimate
Source: Norges Bank

Chart 1.12 Banks and covered bond mortgage companies'1) weighted residual maturity of gross market funding maturing in more than one year. In years. Quarterly figures. 2007 Q4 – 2011 Q3



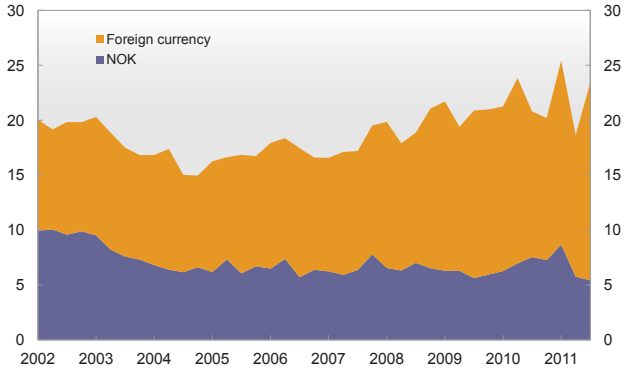
1) All banks and covered bond mortgage companies excluding branches and subsidiaries of foreign institutions in Norway. Break in series in 2009 Q2 as a result of more closely defined intervals
Source: Norges Bank

Chart 1.13 Banks and covered bond mortgage companies' senior bond debt by maturity in NOK and foreign currency. As of 23 November 2011. In billions of NOK



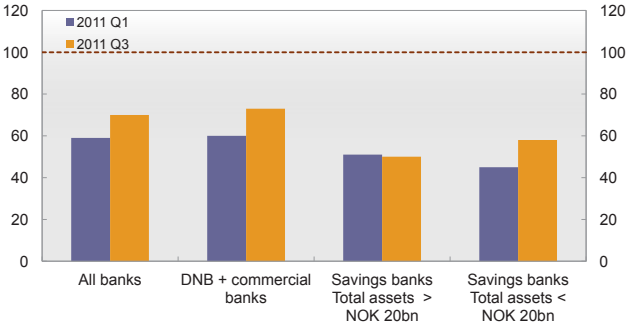
Sources: Bloomberg and Stamdata

Chart 1.14 Banks'[1)] gross short-term market funding as a percentage of total assets. Per cent. Quarterly figures. 2002 Q1 – 2011 Q3



1) All banks excluding branches and subsidiaries of foreign banks in Norway.
Source: Norges Bank

Chart 1.15 Banks'[1)] liquid assets as a percentage of required liquid assets (LCR).[2)] Weighted average for group. End of quarter



The broken line shows the requirement under the Liquidity Coverage Ratio (Basel III)
1) All banks excluding branches of foreign banks in Norway.
2) Norges Bank's estimate
Source: Norges Bank

arrangement with long-term borrowing in the market, banks need more long-term funding to meet proposed stable funding requirements.

In many countries, banks' access to important short-term funding markets has also been reduced. Maturities have also shortened for Norwegian banks. Norwegian banks rely on short-term funding (see Chart 1.14), a substantial share of which is in foreign currency. Banks reduce some of their liquidity risk by holding current assets in foreign currency. In turbulent times, such foreign funding may make banks more vulnerable if investors are less willing to finance foreign borrowers. So far, highly rated Scandinavian banks have retained the confidence of international credit market participants.

Banks with ample liquid assets will be better able to weather a turbulent market situation. Banks' stocks of government securities have fallen in the past two years as a result of government securities added to bank balance sheets through the swap arrangement in 2008 and 2009. Some of these are resold, and as swap agreements expire, banks' stocks of government securities will fall further.

Many banks do not meet the new liquidity coverage requirement expected to be introduced in 2015 (see Chart 1.15). The requirement is designed as a stress test of whether banks' liquid assets are capable of covering substantial customer withdrawals over a 30-day period of severe market stress. Banks can adjust to the requirement by increasing their holdings of high quality liquid assets or by obtaining more stable funding. This will make banks better positioned to weather periods of turbulence in their funding markets.

Structure

Customer deposits are an important source of funding for smaller banks in Norway, while large banks rely on foreign sources of funding

There are considerable differences in the way Norwegian banks obtain funding. For large banks, debt to other credit institutions is an important funding source (see Chart 1.16). Small and medium-sized banks rely to a greater degree on customer deposits for funding, and a higher

proportion of deposits are guaranteed by the Norwegian Banks' Guarantee Fund. These banks are too small for it to be profitable to issue bonds in foreign markets.

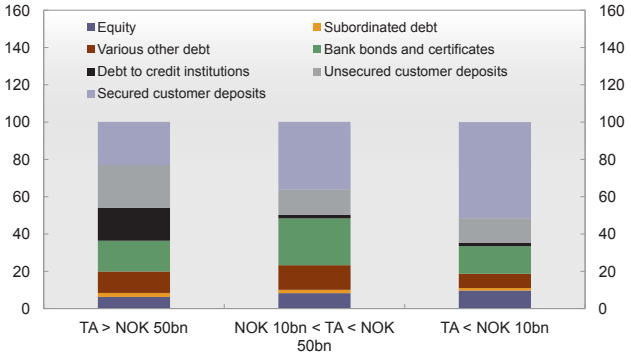
Issuing covered bonds has become an important funding source for banking groups. For the two largest Norwegian banking groups, DNB Bank and SpareBank 1 SR-Bank, covered bonds accounted for approximately 1/6 of funding at end-2010 (see Chart 1.17). Joint ownership of covered bond mortgage companies, such as Terra Boligkreditt, gives collaborating banks heft, enabling several Norwegian covered bond mortgage companies to obtain funding in foreign bond markets.

The largest Norwegian banks rely heavily on foreign funding. For a number of years, lending growth in the Norwegian banking sector has been higher than deposit growth and the Norwegian bond market has not been large enough to breach this funding gap. From end-1999 to end-2010, bank and covered bond mortgage company lending to customers grew by 232%, while customer bank deposits grew by 154%.

A substantial share of large banks' debt to credit institutions comes from foreign sources. One reason is that the three largest foreign-owned institutions, the subsidiary Nordea Bank Norge and the branches Fokus Bank and Handelsbanken, largely rely on funding from their foreign parent banks. Market funding in foreign currency gives banks access to more investors and enables banks to issue larger volumes. On the other hand, reliance on foreign funding sources may make the Norwegian banking sector vulnerable to severe turbulence in international financial markets.

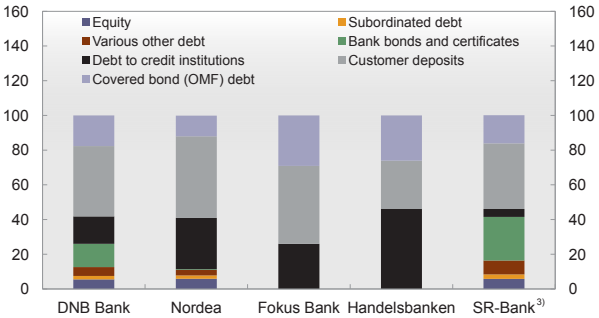
Because of their funding structure, subsidiaries and branches of foreign banks in Norway are dependent on parent banks' funding capacity. Parent banks obtain funding in international markets. Centralising banking groups' funding activities in this way probably lowers funding costs and offers greater opportunities for diversification of funding sources. Funding capacity also depends on investors' views of a parent bank's solvency, which is affected by the economic situation in its home country and in other countries where the bank operates. Thus, a poor economic outlook in its home country may

Chart 1.16 Funding structure of Norwegian banks[1]. Division into groups based on total assets (TA).[2] Percentage of total assets. As at 2011 Q2



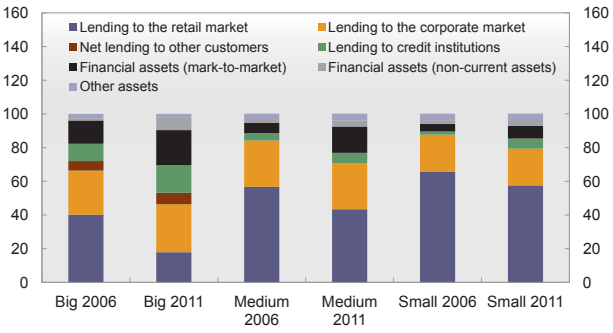
1) All banks excluding branches of foreign banks in Norway
2) Nordlandsbanken is included in the group TA > NOK 50bn
Source: Norges Bank

Chart 1.17 Funding structure of the five largest banking groups.[1] Percentage of total assets.[2] As at 2010 Q4



1) DNB Bank, Nordea Bank Norge, Fokus Bank filial av Danske Bank, Handelsbanken NUF and SpareBank 1 SR-Bank
2) Shares of lending for Fokus Bank filial av Danske Bank and Handelsbanken NUF
3) Including loans transferred to SpareBank 1 Boligkreditt
Sources: Public financial information from the institutions and Norges Bank's estimates

Chart 1.18 Composition of Norwegian banks'[1] assets. Division into groups based on total assets (TA) as at 2011 Q2.[2] Percentage of total assets. As at 2006 Q4 and 2011 Q2



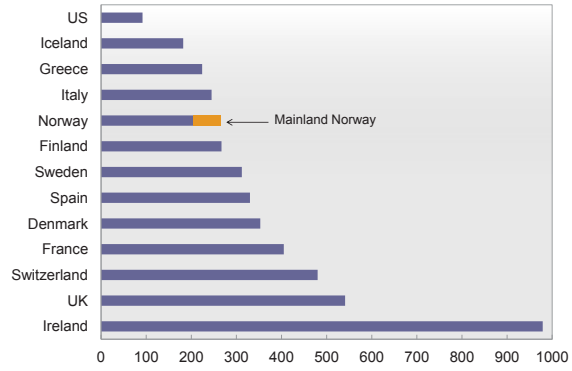
1) All banks excluding branches of foreign banks in Norway
2) Big: TA > NOK 50bn, medium: NOK 10bn < TA < NOK 50bn, small: TA < NOK 10bn
Nordlandsbanken is included in the group of big banks
Source: Norges Bank

The size of the banking sector in different countries

The banking sector in Norway accounts for a smaller share of the economy than the banking sector in a number of other countries (see Chart 1). During the financial crisis, there were several examples of how a large banking sector can pose a risk to government finances. Iceland and Ireland were two of the clearest examples, but countries such as the UK and Switzerland have also become keenly aware of this risk. When banks need government support, the government's financial position is weakened. When the banking sector is large in relation to the economy and government debt is already high, such an additional burden can trigger a sovereign debt crisis. The crisis now plaguing Europe stems from this type of situation in some countries such as Ireland and Spain, while in other countries such as Greece and Italy the crisis is more related to increased focus on old debt.

The relationship between banking crises and sovereign debt crises is not new. Reinhart and Rogoff document in their book *This Time Is Different* that such a relationship is a common feature of crisis situations. But the relationship can go both ways. Banking crises can trigger sovereign debt crises, but sovereign debt crises can also trigger banking crises. The latter may now occur in many European countries where banks have large sovereign exposures.

Chart1 Total assets in the banking sector as a share of GDP in different countries. Per cent. As of 31 December 2010



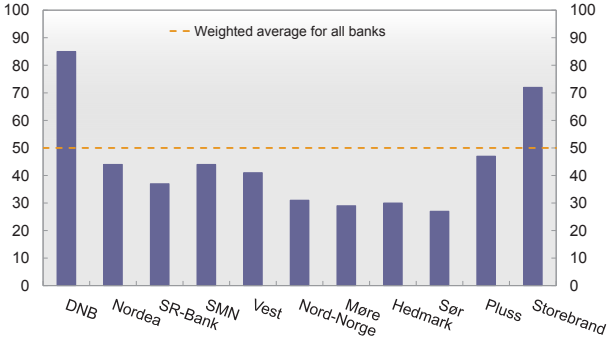
Sources: Central banks, Thomson Reuters, FDIC, Statistics Norway and Norges Bank

also reduce the parent bank's willingness and capacity to fund subsidiaries and branches. On the other hand, the presence of foreign banks in Norway may help to make Norwegian banking sector funding less vulnerable in periods when economic developments in the Norwegian economy are weaker than abroad.

Since the rules pertaining to covered bonds were introduced in 2007, banks have transferred large portions of their residential mortgage loans to covered bond mortgage companies. This has led to substantial changes in the composition of bank assets (see Chart 1.18). The share of retail market lending, 82% of which was residential mortgages at end-2011 Q3, has fallen sharply, declining most for large banks. At the same time, the share of financial assets carried at fair value and lending to credit institutions have increased.

At end-2011 Q3, residential mortgage lending by Norwegian banks and covered bond mortgage companies amounted to approximately NOK 1,540bn, with covered bond mortgage companies accounting for 51%. The percentage transferred to covered bond mortgage companies varies considerably across banks (see Chart 1.19). Over 80% of DNB Bank's residential mortgages have been transferred to DNB Boligkreditt, while most other large and medium-sized banks have transferred around 40%. If all Norwegian banks transferred an equally large fraction of their residential mortgages as DNB Bank, an additional NOK 530bn of current residential mortgages could be transferred to covered bond mortgage companies.

Chart 1.19 Share of mortgage loans that banks[1] have transferred to covered bond mortgage companies. Average for all banks.[2] Per cent. As at 2011 Q2[3]



1) Banks with more than NOK 35bn in total assets as at 2011 Q2
2) All banks excluding branches of foreign banks in Norway
3) As at 2010 Q4 for Nordea Bank Norge
Sources: Public financial information from the institutions and Norges Bank's estimates

Only residential mortgages with a maximum loan-to-value ratio of 75% count as part of a covered bond mortgage company's cover pool. Thus, covered bonds cannot be issued based on all the loans in a bank's residential mortgage portfolio. The particular share each bank elects to transfer will depend on the composition of that bank's residential mortgage portfolio and the amount that can, in the view of the bank's governing bodies, be transferred without affecting the bank's credit rating and funding costs. To meet the regulatory requirement for the value of the cover pool at any given time to exceed the value of issued covered bonds, covered bond mortgage companies are overcollateralised. This means that they do not issue covered bonds for the entire volume of residential mortgages in their balance sheets.

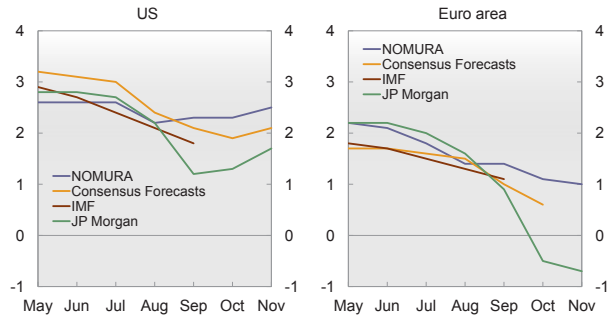
External sources of risk for the banking sector

Macroeconomic conditions

Global growth prospects have weakened. Uncertainty about future economic developments is particularly high in Europe

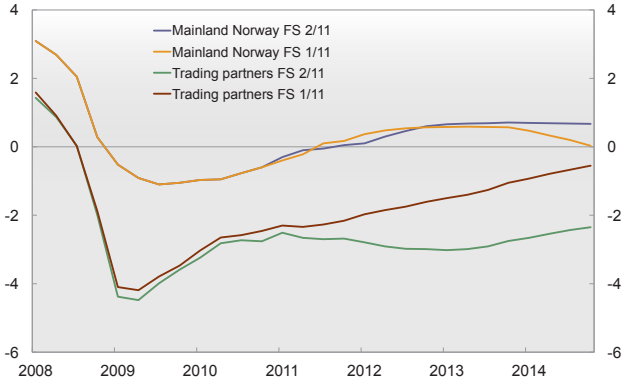
Prospects for the real economy have weakened since the May report. Growth for most trading partners has been revised down for 2011 Q1, with the upswing slowing markedly in several countries in 2011 Q2. Advanced economies are likely facing a prolonged downturn. The turbulence related to sovereign debt in some European countries has intensified, spreading to more countries and markets (see "Money and credit markets", page 17). At the same time, private demand for goods and services remains weak and unemployment high in many countries. High sovereign debt in Europe, combined with unease among market participants as to debt-servicing capacity in the long term, provides little leeway for fiscal policy. In the US, households need to deleverage further, and while the housing market now appears to have stabilised somewhat, developments continue to be weak. Various market participants have gradually revised down their growth forecasts for Europe and the US (see Chart 1.20), and leading indicators of future activity in OECD countries have fallen. Growth abroad is now expected to be lower than envisaged in the May report (see Chart 1.21).

Chart 1.20 Projected GDP growth in 2012, US and euro area. Per cent. Monthly figures. Projections through 2011



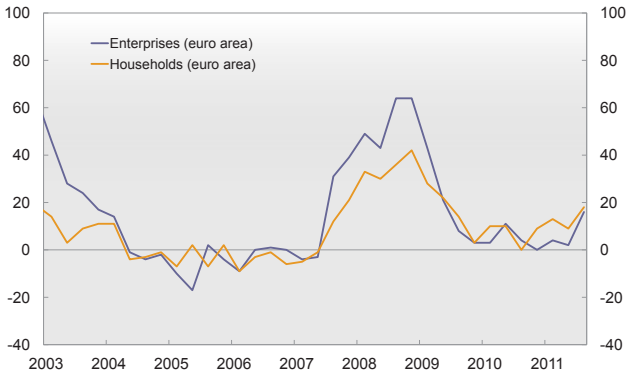
Sources: Nomura, Consensus Economics, IMF and JP Morgan

Chart 1.21 Projected output gap[1] for mainland Norway and Norway's trading partners. Per cent. Quarterly figures. 2008 Q1– 2014 Q4



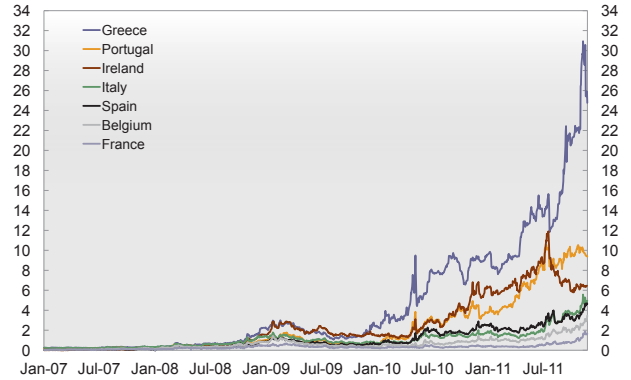
1) The output gap measures the percentage deviation between GDP and projected potential GDP
Sources: Statistics Norway, IMF and Norges Bank

Chart 1.22 Bank lending surveys in the euro area. Net share of banks that have tightened credit standards. Quarterly figures. 2003 Q1– 2011 Q3



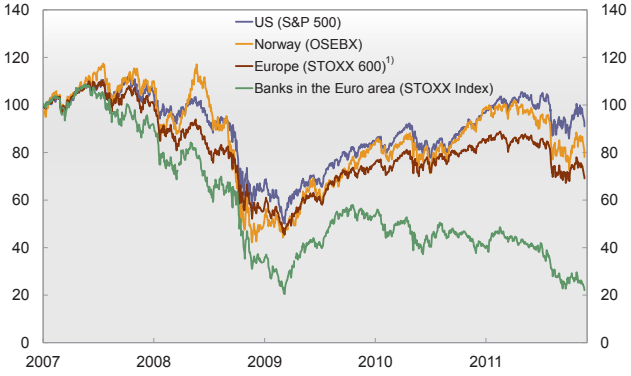
Source: ECB

Chart 1.23 Government bond spreads. Compared with German government bonds. 10-year maturity. Percentage points. Daily figures. 1 January 2007 – 23 November 2011



Source: Thomson Reuters

Chart 1.24 Equity index prices. Indices. 1 January 2007=100. Daily figures. 2 January 2007 – 23 November 2011



1) STOXX 600 Banks is a capital-weighted index comprising European banks
Source: Thomson Reuters

The IMF's assessment is that the risk associated with global financial stability has increased considerably since April.[5] Uncertainty with regard to developments ahead is high, and an exacerbation of debt problems in Europe may further dampen growth prospects. Several European banks are carrying a high proportion of government securities issued by heavily indebted countries in their balance sheets. Low market confidence in the debt-servicing capacity of the most heavily indebted countries is thus spreading to banks. Banks are tightening credit standards (see Chart 1.22), further weakening growth prospects. On the other hand, a credible plan to deal with debt problems would improve growth prospects. Bank recapitalisation (see box on page 31) could restore market confidence in the banking system and economic activity ahead.

The high level of activity in Norway is being sustained by favourable terms of trade, high population growth, solid growth in petroleum investment, fiscal stimuli and low interest rates. Registered unemployment has been stable and wage growth has edged up. But financial market turbulence and weaker demand for goods and services by Norway's trading partners are dampening activity in the export sector. Household confidence indicators in Norway have fallen owing to international unrest. If turbulence abroad continues and the downturn becomes deeper and more prolonged than expected, both households and enterprises may become more cautious. Moreover, reduced demand from other countries and lower export prices could dampen activity in Norwegian export industries and have ripple effects on other sectors.

Money and credit markets

Turbulence in international money and credit markets has gradually led to more costly and less accessible bank funding

Turbulence in money and credit market has intensified since the May report. Yields on bonds issued by highly indebted sovereigns have risen sharply and are at a very high level (see Chart 1.23). The turbulence has led to substantial volatility and high uncertainty in equity markets (see Chart 1.24). European banks are being

5 See IMF (2011): *Global Financial Stability Report*, October

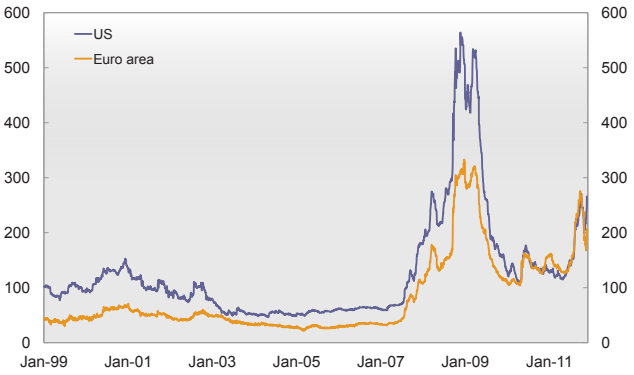
affected by the sovereign debt crisis through several channels. Losses on banks' sovereign portfolios are dragging down earnings. Weaker earnings and a fall in the collateral value of government securities pledged by banks are reducing banks' access to funding. In addition, government guarantees lose value with deteriorating government finances. Some banks have been benefiting from less expensive wholesale funding due to investor expectations that governments will cover those banks' losses. When government finances deteriorate government guarantees lose value, possibly resulting in less favourable funding terms for banks with such implicit government guarantees.

Risk premiums on European bank bond funding are higher than at time of publication of the May report (see Chart 1.25). Higher premiums reflect both increased credit risk and reduced market liquidity. Many banks are experiencing funding problems and the European Central Bank (ECB) has had to supply liquidity. Since July 2011, European banks have issued a very low volume of senior bonds. Uncertainty regarding the haircuts holders of senior bonds will have to accept as part of a bank bailout may have reduced demand for unsecured bonds.

European banks' access to short-term wholesale funding has been weakened. The USD market, where US money market funds are important investors, has been an important funding source for European banks. In recent months, US money market funds have considerably reduced their holdings of short-term loans to European banks. However, US money market funds have increased their lending to Scandinavian banks in the same period, reflecting the view that Scandinavian banks are safer than a number of other European banks. In the period ahead, European banks may also feel the impact of the situation in the US economy, which is being affected by weak growth, high unemployment and political disagreements over how to deal with fiscal problems in the US.

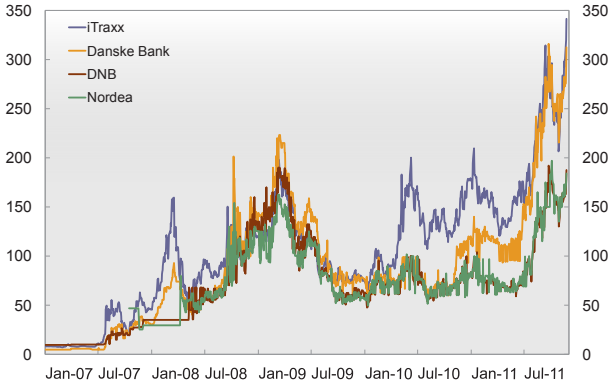
Turbulence abroad raises the risk premiums Norwegian banks and mortgage companies need to pay on new bond issues (see Chart 1.4). Even though DNB's CDS prices have risen as a result of the international turbulence, they are still lower than the average CDS prices of several European

Chart 1.25 Risk premium on European and US bank bond indices. 5-year average maturity. AA-rating. Basis points.
30 December 1996 – 23 November 2011



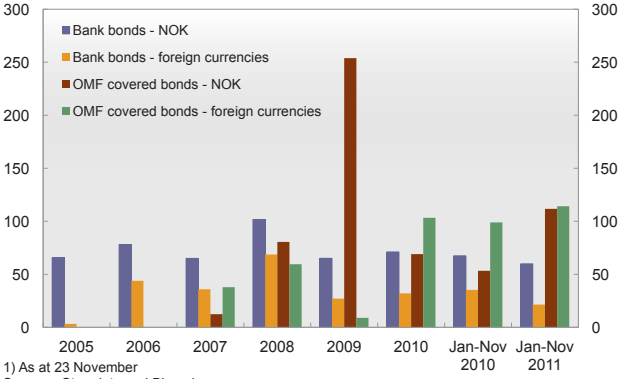
Source: Thomson Reuters

Chart 1.26 CDS prices. iTraxx Senior Financials[1)] and Nordic banks. Basis points. Daily figures. 1 January 2007 – 23 November 2011



1) iTraxx Senior Financials comprises 25 large European financial institutions
Source Bloomberg

Chart 1.27 Volume of bonds and OMF covered bonds issued by Norwegian banks and mortgage companies. In billions of NOK. Annual and monthly figures. 2005–2010. January – November[1)] 2010 and 2011

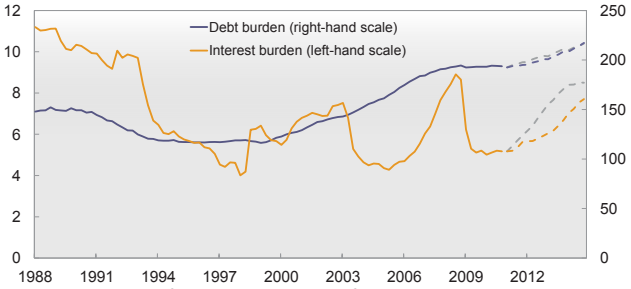


1) As at 23 November
Sources: Stamdata and Bloomberg

Chart 1.28 Spread between 3-month money market rate and market expectations as to the key rate.[1] Percentage points. 5-day moving average. Daily figures. 5 January 2007 – 23 November 2011

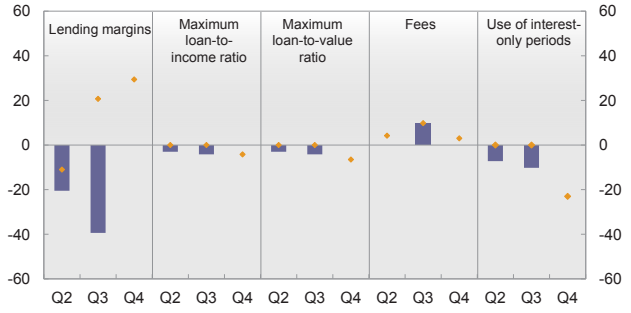
1) Expected key rates are derived from Overnight Indexed Swaps (OIS). OIS for Norway estimated by Norges Bank
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 1.29 Household debt burden[1] and interest burden[2]. Per cent. Quarterly figures. 1988 Q1 – 2014 Q4[3]



1) Debt as a percentage of disposable income adjusted for estimated reinvested share dividends for 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2014
2) Interest expenses after tax as a percentage of disposable income adjusted for estimated reinvested share dividends 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2014, plus interest expenses
3) Projections for 2011 Q1 – 2014 Q4 from *Monetary Policy Report* 3/2011. The grey broken lines show projections from *Monetary Policy Report* 2/2011
Sources: Statistics Norway and Norges Bank

Chart 1.30 Change in loan conditions for households. Factors affecting credit standards. Net percentage balances.[1] [2] As at 2011 Q3



1) Net percentage balances are calculated by weighting together the responses in the bank survey. The blue bars show developments in the past quarter. The yellow diamonds show expectations for the next quarter. The yellow diamonds have been moved forward one quarter
2) Positive net percentage balances for lending margins and fees indicate tighter credit standards. Negative net percentage balances for the other factors denote tighter credit standards
Source: Norges Bank

banks (see Chart 1.26). This suggests that investors continue to regard Norwegian banks as being among the most robust European banks. Risk premiums on covered bonds have not risen as sharply as those on senior bonds. So far in 2011, Norwegian banks have issued a lower volume of senior bank bonds and a higher volume of covered bonds than in the corresponding period in 2010 (see Chart 1.27). Higher demand for covered bonds and lower demand for senior bank bonds reflect lower appetite for credit risk among investors in an environment of high market uncertainty.

The risk premium in the Norwegian money market has risen substantially in recent months (see Chart 1.28). Higher money market rates are pushing up longer-maturity wholesale funding rates, since money market rates are used as a benchmark for pricing long floating-rate loans. In normal times, money market risk premiums in Norway have often been higher than in other countries, which may be an indication that in periods the Norwegian money market does not function well enough. To improve interbank liquidity distribution in Norway, Norges Bank has introduced a system from 3 October 2011 whereby a certain quota of banks' deposits at Norges Bank will bear interest at the key rate. The interest rate on deposits in excess of this quota will be lower. The new liquidity management system has likely boosted activity in the Norwegian money market.

Households

With high debt levels and elevated house prices, vulnerability in the household sector is high. This poses a risk to financial stability in the longer term

Household debt continues to grow faster than disposable income, increasing household debt burdens and making households vulnerable to higher interest rates and loss of income (see Chart 1.29). More households will have less funds available for consumption, and some may encounter debt-servicing problems. Lower household demand will have a negative impact on corporate earnings, which may lead to higher losses on corporate loans.

According to tax statistics, the share of households with a debt burden above 500% was reduced somewhat from 2008 to 2009, but the share is still high.

With the current low interest rates, the household interest burden is low (see Chart 1.29), contributing to solid short-term debt-servicing capacity. However, because of the heavy debt burden, the interest burden fluctuates more in tandem with interest rates. In the longer term, it must therefore be assumed that the interest burden will increase.

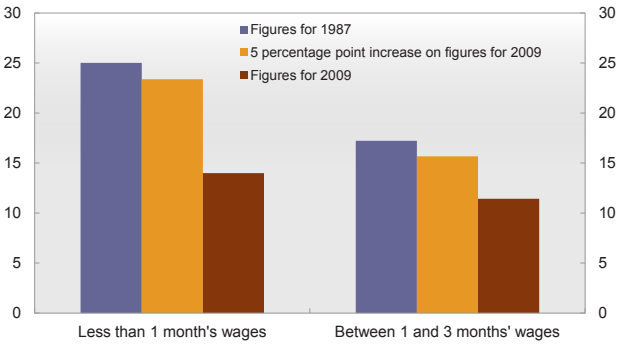
Finanstilsynet's (Financial Supervisory Authority of Norway) residential mortgage loan survey shows that the share of mortgages with a loan-to-value ratio above 90% has risen from 34% to 38% from 2010 to 2011. Finanstilsynet has proposed tighter guidelines for prudent residential mortgage lending, including lowering the maximum prudent loan-to-value ratio from 90% to 85%.[6] In the short term it is likely that tighter rules will primarily dampen borrowing by first-time buyers. Based on previous analyses of regulation of credit standards, the tighter rules will likely have a moderate impact on household borrowing.[7]

According to Norges Bank's lending survey for 2011 Q3, banks plan to tighten credit standards for households (see Chart 1.30). They will especially tighten the use of interest-only loans and increase lending margins. Tighter credit standards may dampen household debt growth.

Household financial margins are household liquid assets after tax, debt servicing and standard living expenses, including principal payments. The number of households with low financial margins declined up until 2007, but has increased somewhat since then. In 2009, 14% of households (approximately 300,000) had a financial margin of less than a month's wages. This is a clearly lower percentage than in 1987 (see Chart 1.31). However, these households will be vulnerable to higher interest rates and loss of income. With a five percentage point interest rate increase, the share of households with a low financial margin will rise to 23%. This is approximately the same level as in 1987 (see Chart 1.31).

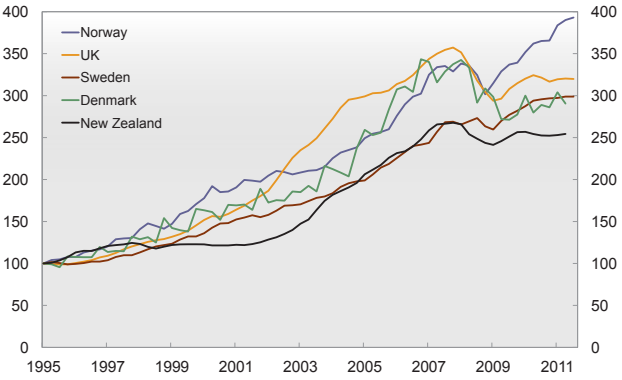
6 See http://www.finanstilsynet.no/Global/Venstremeny/Rapport/2011/Finansielle_utviklingstrekk_2011.pdf (Norwegian only)
7 See Vatne (2010): "Hva er virkningen av reguleringer av boliglån?" ["What is the effect of regulating residential mortgages"], *Penger og Kreditt* 1/2010, Norges Bank, pp. 20–24 (Norwegian only)

Chart 1.31 Share of households with less than three months' wages as financial margin[1]. Annual figures. 1987 and 2009



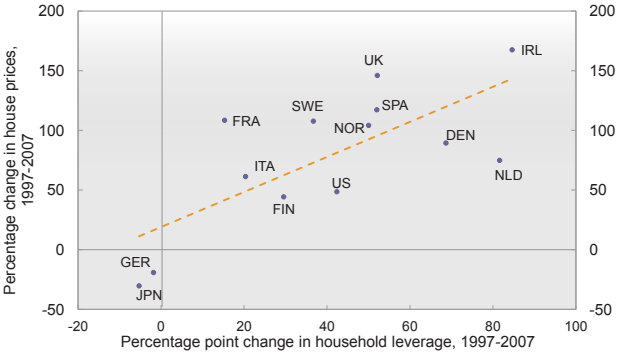
1) Financial margin is yearly wages after tax less interest expenses and standard living expenses (as defined by National Institute for Consumer Research, SIFO)
Sources: Statistics Norway and Norges Bank

Chart 1.32 House prices in selected countries. Indices. 1995 Q1 = 100. Quarterly figures. 1995 Q1 – 2011 Q3[1]



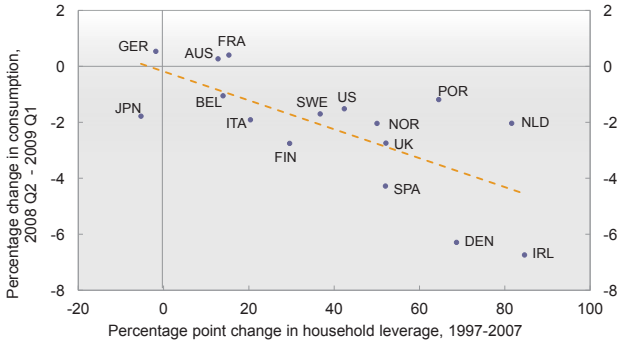
1) For Denmark and New Zealand to 2011 Q2
Source: Thomson Reuters

Chart 1.33 Change in household leverage and house prices before the financial crisis. Per cent. Annual figures. 1997-2007



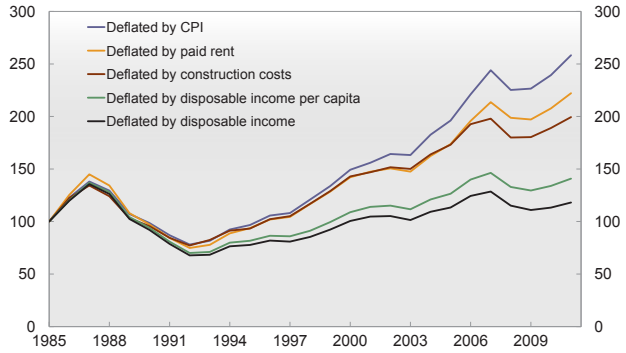
The broken line depicts the best fit relationship in the data as generated by a simple least square statistical regression
Sources: OECD, Haver Analytics and Eurostat

Chart 1.34 Change in household leverage before the financial crisis and consumption during the financial crisis. Per cent. Annual and quarterly figures. 1997-2007 and 2008 Q2 – 2009 Q1



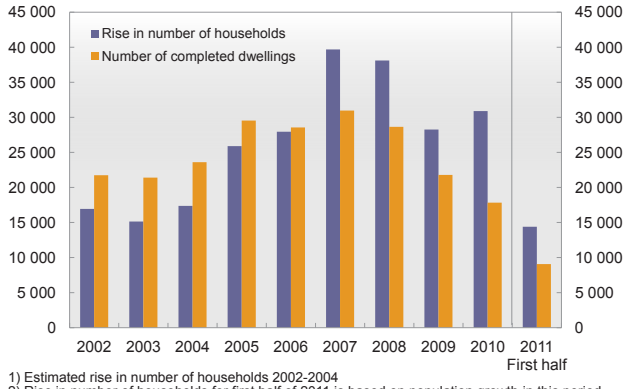
The broken line depicts the best fit relationship in the data as generated by a simple least square statistical regression
Sources: OECD, Haver Analytics and Eurostat

Chart 1.35 Deflated house prices. Indices. 1985 = 100. Annual figures. 1985 – 2011[1)]



1) Projections for 2011
Sources: Association of Norwegian Real Estate agents, Association of Real Estate Agency firms, Finn.no, Econ Pöyry, Statistics Norway and Norges Bank

Chart 1.36 Rise in number of households[1)] and completed dwellings. Annual figures. 2002 – 2011[2)]



1) Estimated rise in number of households 2002-2004
2) Rise in number of households for first half of 2011 is based on population growth in this period
Sources: Statistics Norway and Norges Bank

During the banking crisis in Norway from 1988 to 1992, banks' direct losses on loans to households were low. Heavier debt burdens, high house price inflation and a more skewed distribution of loans among households imply that the risk of losses on such loans has increased. The introduction of the Debt Settlement Act in 1993 may have also led to somewhat higher credit risk on banks' loans to households.

Approximately 85% of household debt is secured on a dwelling. Over time, there is a close relationship between household debt growth and developments in the housing market.

As in a number of other countries, house price inflation in Norway has been high the past 15 years. In the years following the financial crisis, house prices in very many countries have levelled off or edged up, after falling sharply during the financial crisis. In Norway, however, house price inflation has increased sharply following the financial crisis (see Chart 1.32). Studies show that the countries with the highest house price inflation in the decade prior to the financial crisis were also among those with the largest increases in household leverage (see Chart 1.33),[8] the same countries where household consumption fell the most during the financial crisis (see Chart 1.34).

Adjusted for CPI inflation or changes in rents, house prices are higher than at the previous peak in summer 2007 (see Chart 1.35). There is a relationship between house prices and residential construction costs over the long term. Adjusted for increases in building costs, house prices are at a high level. However, land costs are not included in the calculation of building costs. Relative to growth in disposable income, house prices have risen less (see Chart 1.35).

Firm growth in household income, low borrowing rates and positive expectations concerning economic developments have likely contributed to high house price inflation. In addition, few dwellings have been built relative to population growth and to centralisation over the past four years (see Chart 1.36).[9] In the larger cities, where population growth is substantial, house price inflation is high while the

8 For a further description of the analysis, see Glick and Lansing (2010): "Global household leverage, house prices and consumption". FRBSF *Economic Letter* 2010-01
9 See Molden (2011): "Beregninger av boligbehov i Norge" [Estimating the need for housing in Norway], forthcoming article in Norges Bank *Economic Commentaries*

supply of new dwellings in recent years has been limited. Residential construction has picked up over the course of 2011, but new home-building will take time to complete.

Continued brisk growth in house prices is expected ahead, but there is a high level of uncertainty regarding price developments. If high house price inflation leads to expectations of further price rises, this in itself can contribute to increasing house price inflation. This may set the stage for a sharper future house price correction if expectations of sustained rises reverse. If the financial turbulence in EU countries has more severe consequences for the Norwegian economy than currently envisaged, house price inflation may be curbed more quickly. In the longer term, a gradual increase in the interest rate level and residential construction will likely result in lower house price inflation. This will reduce the danger of a sharp house price correction further ahead.

Enterprises[10]

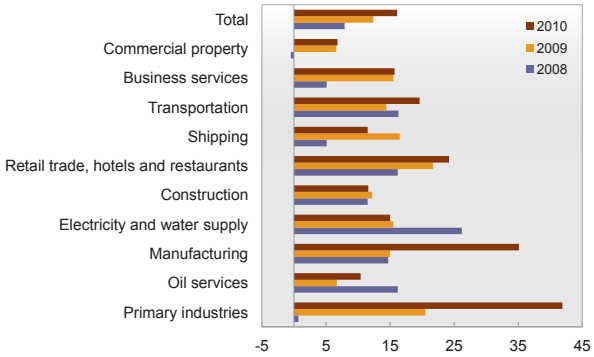
The financial position of non-financial enterprises is solid, but international turbulence and sector-specific conditions constitute risk factors

The most liquid listed companies' debt-servicing capacity is approximately unchanged since the May report. At the end of the first half of 2011, debt-servicing capacity, measured as enterprises' pre-tax profits as a percentage of interest-bearing debt, was approximately at the average level of the past ten years.

Listed companies publish earnings every quarter, while most other enterprises only prepare annual financial statements. Since the May report, enterprises have presented their financial statements for 2010. Annual financial statements for Norwegian listed companies show that higher earnings helped improve debt-servicing capacity in a number of sectors in 2010 (see Chart 1.37).

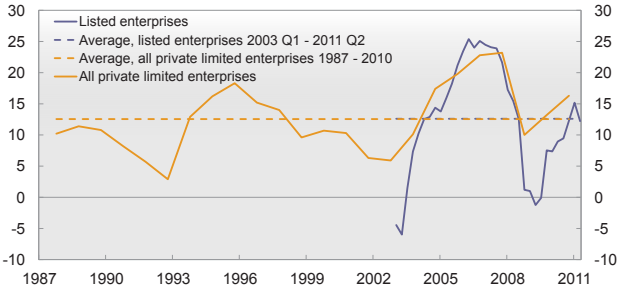
Overall, enterprises showed improved profitability from 2009 to 2010, while profitability for listed companies edged down in 2011 Q2 (see Chart 1.38). Historically, there has been a relatively close relationship between the direction of profitability trends in listed companies and

Chart 1.37 Debt-servicing capacity[1] for different industries. Per cent. Annual figures. 2008 – 2010



1) Profit before tax, depreciation and impairment losses as a percentage of bank and bond debt. Intragroup funding is not included. Only enterprises with debt are included
Source: Norges Bank

Chart 1.38 Return on equity[1] for listed enterprises[2] and all private limited enterprises[3]. Quarterly figures for listed enterprises, annual figures for all private limited enterprises. Per cent. 1987 – 2011



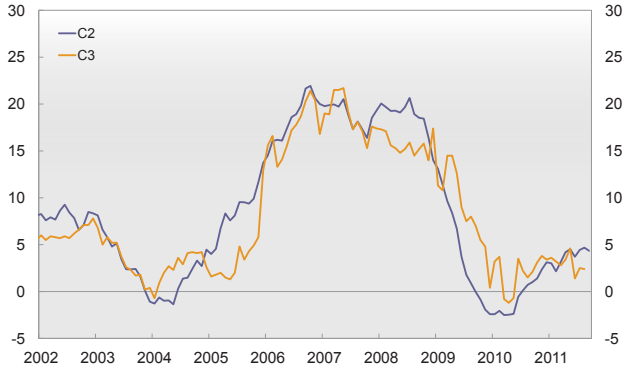
1) Profit before tax as a percentage of book equity. Return on equity for listed enterprises is based on profits over the previous four quarters
2) Non-financial listed enterprises (excl. Statoil)
3) Public administration, bank/insurance and extraction of primary resources are not included in the sample
Sources: Statistics Norway and Norges Bank

Chart 1.39 Output growth. Enterprises in Norges Bank's regional network. Aggregated. Annualised index[1] (left-hand scale) and per cent (right-hand scale). October 2002 – September 2011. Estimate for March 2012

1) The index ranges from -5 to 5, where -5 indicates a sharp fall and +5 indicates strong growth
Source: Norges Bank's regional network

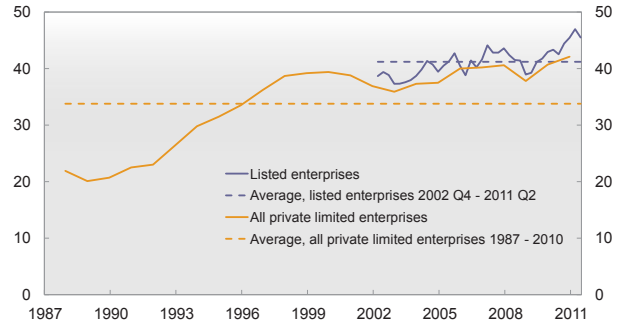
10 Non-financial enterprises

Chart 1.40 12-month growth in domestic credit (C2) and total debt (C3) to non-financial enterprises. Mainland Norway. Per cent. Monthly figures. January 2002 – September 2011



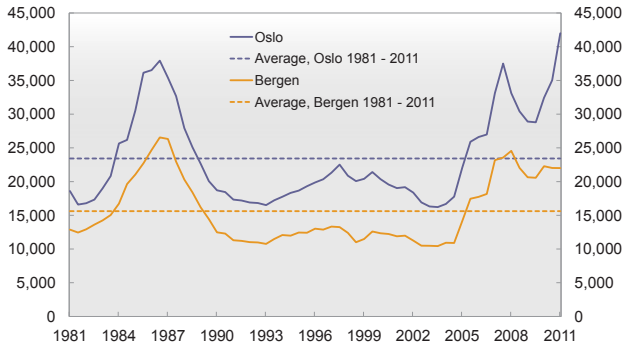
Source: Statistics Norway

Chart 1.41 Equity ratio for listed enterprises[1)] and private limited enterprises[2)]. Quarterly figures for listed enterprises, annual figures for all private limited enterprises. Per cent. 2002 – 2011



1) Non-financial listed enterprises (excl. Statoil)
3) Public administration, bank/insurance and extraction of primary resources are not included in the sample
Sources: Statistics Norway and Norges Bank

Chart 1.42 Real selling prices[1)] for office premises in Oslo and Bergen.[2)] NOK per square metre. Semi-annual figures. June 1981 – June 2011



1) Deflated by CPI
2) Average market value for high-standard offices centrally located in Oslo and Bergen
Sources: OPAK, Statistics Norway and Norges Bank

limited companies in general. Developments in listed companies may thus provide an indication of developments ahead for the Norwegian corporate sector as a whole.

Enterprises in Norges Bank's regional network interviewed in August and September 2011 reported marked growth in output in the past three months (see Chart 1.39). Operating margins improved slightly over the same period in 2010. Overall, contacts expected output growth to slow somewhat in the next six months. Many contacts were more uncertain than previously about the outlook ahead.

The higher an enterprise's debt, the higher future earnings must be to service that debt. Overall corporate credit growth remains at a moderate level (see Chart 1.40). Banks participating in Norges Bank's lending survey reported a slight increase in corporate credit demand in 2011 Q3. At the same time, banks tightened credit standards for enterprises somewhat. In the period ahead, banks expect a decline in overall corporate demand. So far in 2011, corporate borrowing in the Norwegian bond market is approximately at the same level as in 2010.

Enterprises' equity capital is an important buffer against turbulence and fluctuations in earnings. Financial strength has improved since the financial crisis in 2008, and at end-2010, the equity capital ratio was 42% (see Chart 1.41). Equity capital ratios for listed companies maintained a high level through the first half of 2011.

If international turbulence intensifies, this may weaken debt-servicing capacity and financial strength in several sectors. As at September 2011, bank debt in exposed sectors constituted approximately 40% of total corporate bank debt. Lower growth among Norway's trading partners may dampen demand for Norwegian goods and services. This will reduce export firms' revenues. Moreover, some sectors are exposed to changes in the krone exchange rate. Many enterprises use currency hedging to limit short-term foreign exchange risk. Developments abroad also affect the availability and price of financing for enterprises. According to Norges Bank's lending survey, lending margins on corporate loans increased somewhat in 2011 Q3 and banks expect to further tighten

credit standards ahead. The price of financing has also risen in the bond market.

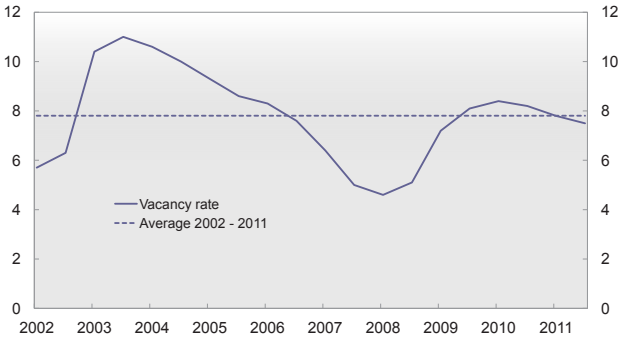
At end-2010, commercial property lending accounted for almost 40% of total bank lending to the corporate market, while lending to shipping constituted approximately 15%. Developments in profitability and collateral values in these sectors are therefore very important for banks.

In the commercial property sector, banks are primarily exposed to business and office properties. Rental and selling prices for office premises have edged up in the larger cities in the first half of 2011, but the rise in prices has been most pronounced in Oslo. Since end-2009, real selling prices for high-standard office premises in central Oslo have risen by nearly 45% (see Chart 1.42). In the Bergen area, real selling prices of centrally located office buildings rose by approximately 7% in the same period. Changes in commercial property prices often appear first in Oslo and the price level is normally higher than in other parts of the country. Market participants report that interest in investing in commercial property has grown, pushing down yield levels. In addition, expectations of higher rents and reduced financing costs have fuelled the rise in prices.

The office vacancy rate in the Oslo region has been declining for a period (see Chart 1.43). Completion of a large number of new buildings in the period 2012–2014 may result in a renewed rise in vacancy rates. This will likely curb the increase in rents and selling prices ahead. If the current price level is based on unrealistic expectations, the situation may be fragile. A fall in rental income will weaken property companies' debt-servicing capacity, while property asset write-downs may violate loan covenants. Thus, any price correction may result in loan losses in banks with exposure to property companies that are active in these market segments.

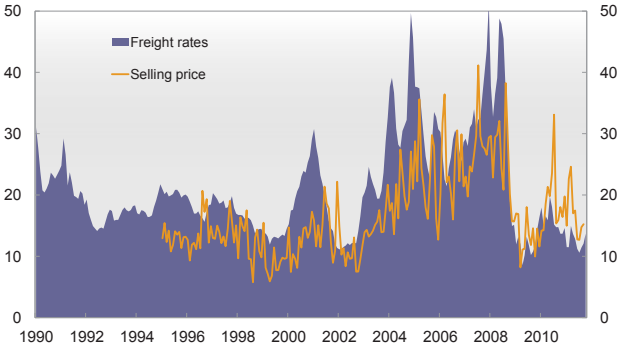
Some segments of the shipping sector, such as the oil tanker segment, continue to be marked by overcapacity. This is reflected in low freight rates and selling prices for ships in the second-hand market (see Chart 1.44). Impairment losses on ship values and low freight rates have weakened shipping sector earnings considerably. Ship values are also important for banks with collateral security in ships. DNB and Nordea account for a large share of Norwegian banks' lending to the shipping sector. The two banking groups' shipping loan portfolios are diversified across a number of different sector segments. Tanker and dry bulk, which are among the segments showing weak performance following the financial crisis, account for around 10% and 15%, respectively, of these banks' total shipping sector portfolios. Diversification across different segments reduces loan portfolio risk. In addition, Norwegian banks' losses on loans to the shipping industry have historically been low. Weaker activity abroad and reduced international trade may amplify problems in the shipping sector, resulting in higher loan losses further ahead.

Chart 1.43 Vacancy rate[1)] for office premises in Oslo, Asker and Bærum. Per cent of total square metres. Semi-annual figures.
March 2002 – September 2011



1) DNBs definition of office vacancy rate includes both direct lease and sublease and areas that will be ready for new tenants within the next 12 months
Source: DNB Næringsmegling

Chart 1.44 Freight rates (Clarksea index)[1)] in USD per day and selling price of ships in millions of USD. Monthly figures. January 1990 – October 2011



1) A weighted average for earnings in the tanker, bulk, container and gas segments. Deflated by US CPI
Source: Clarkson Research Services Ltd

Stress testing banks' capital adequacy

There is a high level of uncertainty in the global economy. The adverse scenario is intended to test banks' resilience during a low-probability, though not entirely implausible, course of events. This section presents an analysis of the consequences for Norwegian banks of a far deeper fall in GDP abroad than during the financial crisis in 2008–2009 combined with intensified turbulence in international financial markets. In the adverse scenario, bank losses rise. Capital adequacy ratios show a marked fall. If banks' Tier 1 capital adequacy ratios are to remain above 6%, as required under Basel III, credit growth must be reduced sharply. The stress test shows that as a result of the increase in capital adequacy ratios since 2009, the Norwegian banking sector is better equipped to weather a severe international downturn, but that a further increase in capital adequacy ratios is necessary for banks to be able to maintain the supply of credit in bad times.

Problems in the banking sector can arise through several channels (see box). The stress tests[1] discussed in this section focus on banks' ability to absorb losses on assets, especially on loans and securities. To what extent banks' funding structure makes them resilient to a liquidity crisis is discussed in the subsections on liquidity coverage requirements (LCR) and stable long-term financing (NFSR) in Section 1. In the stress test in this section, a difficult funding situation is reflected in wider margins between the central bank key rate and bank funding costs.

Adverse scenario and baseline scenario

The baseline scenario in this report builds on the projections in the October *Monetary Policy Report (*3/2011). Since the May *Financial Stability* report (1/2011), the uncertainty surrounding economic developments abroad, particularly in the euro area, has increased considerably. The adverse scenario is therefore based on the following risk factors:

- lower economic activity among trading partners
- a fall in oil prices owing to low demand
- increased turbulence in global money and credit markets

The period of analysis extends from 2012 to end-2014. The adverse scenario describes the effect of a substantial negative shock to the global economy in 2012. GDP among Norway's trading partners falls by around 6% in the first year of the projection period (see Chart 2.1). Growth is assumed to show a sharp fall in the euro area, with zero growth in the US and weak growth in China As about 70% of Norwegian exports go to the European market, the consequences for Norway are considerable. It is assumed that growth will pick up gradually in the following years, but that the level of GDP among trading partners will not revert to the 2007-level until the end of the projection period.

The sharp fall in global activity is assumed to reduce the oil price to around USD 45 per barrel in 2012. Petroleum investment in Norway declines. International turbulence and lower oil prices normally result in a depreciation of the krone. Unusually low interest rates and uncertain prospects for the future in many countries may contribute to counteracting this effect. The krone exchange rate is therefore the same in the adverse scenario and the baseline scenario.

Weaker debt-servicing capacity among borrowers and a drop in asset prices result in substantial losses for European banks. Uncertainty at the beginning of the projection period as to which banks would be left holding losses results in money market strains, and funding problems

1 The stress tests are conducted using a suite of models. For a more detailed description, see Andersen, Berge, Bernhardsen, Lindquist and Vatne (2008): "A suite-of-models approach to stress-testing financial stability". *Staff Memo,* 2/2008. Norges Bank

for European banks increase. This spreads to Norwegian money markets and interest rate premiums are assumed to rise by 200 basis points at the beginning of the projection period. Interest rate premiums are assumed to remain high for three quarters before falling back to settle somewhat above the levels observed in autumn 2011.

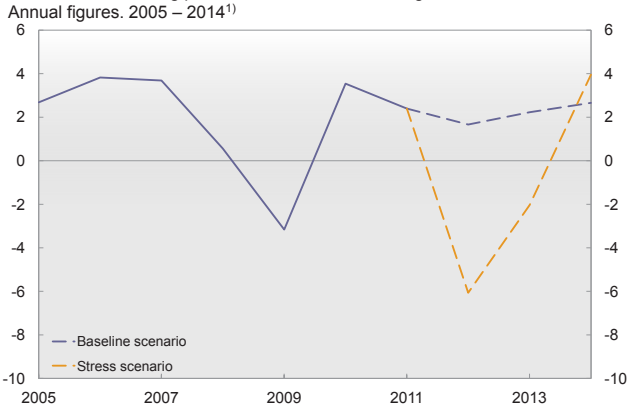
The decline in the global economy, the fall in oil prices and higher money market premiums have a considerable impact on economic activity in Norway (see Chart 2.2). The adverse scenario assumes a decrease in mainland GDP of 2.1% in the first year. How long it will take the economy to resume growth will partly depend on the supply of credit. In the adverse scenario, credit growth shows a marked fall, as the result of a reduction in both demand and supply. To the extent there is demand for credit, banks' capacity to meet this demand will be important for the economy. As an illustration, the chart shows a shift where the slowdown in credit growth is somewhat more moderate (see Chart 2.3). Under the latter scenario, activity in Norway will pick up again somewhat more rapidly (see Chart 2.2).

In the adverse scenario, banks[2] post negative results (see Chart 2.4), primarily because of loan losses. Lower domestic and external demand leads to a rise in corporate loan losses throughout the projection period. Owing to deteriorating competitiveness, the impact on the export industry is severe. Low oil prices lead to considerably lower activity in enterprises linked to the petroleum industry, while loan losses in shipping are assumed to be extra high. Higher unemployment, reduced income growth and lower house prices also result in a higher share of problem loans in the household sector. In the adverse scenario, loan losses rise to 2% of ATA. Net interest income stabilises as a result of low lending growth. The results are approximately the same with a less pronounced fall in credit growth.

Banks' holdings of securities subject to market fluctuations account for about 19% of banks' balance sheets (see Section 1). In the adverse scenario, uncertainty as to future earnings and high risk aversion lead to a substantial fall

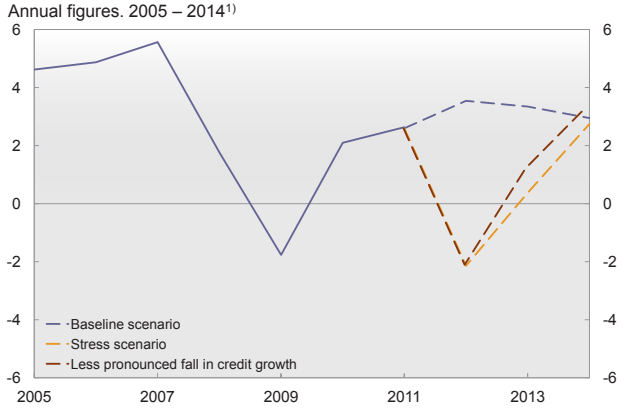
2 The banks in the stress test are: DNB Bank, Nordea Bank Norge, SpareBank 1 SR-bank, SpareBank 1 Midt-Norge, SpareBank 1 Nord-Norge and Sparebanken Vest

Chart 2.1 GDP trading partners. Annual volume change. Per cent. Annual figures. 2005 – 2014[1)]



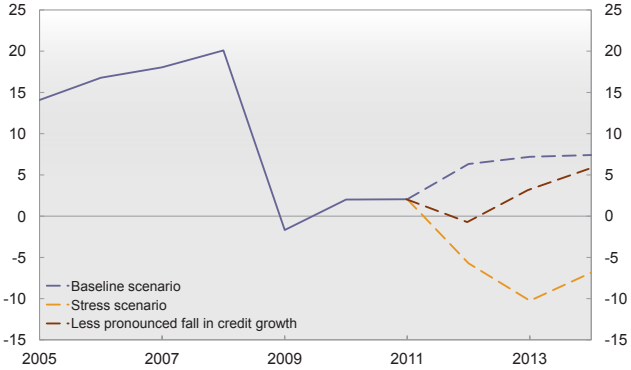
1) Projections for 2011 – 2014
Sources: Statistics Norway, IMF, Thomson Reuters and Norges Bank

Chart 2.2 Mainland GDP. Annual volume change. Per cent. Annual figures. 2005 – 2014[1)]



1) Projections for 2011 – 2014
Sources: Statistics Norway and Norges Bank

Chart 2.3 Growth in credit to enterprises (C3). Year-on year growth[1)]. Per cent. Annual figures. 2005 – 2014[2)]



1) Change in stock of loans measured at year-end
2) Projections for 2011 – 2014
Sources: Statistics Norway and Norges Bank

Box 1 What can be assessed in a stress test?

A stress test of a bank is an attempt to provide an indication of the effect of an unexpected negative shock on a bank's balance sheet. The negative shock is defined as an event of low, but positive probability. Negative shocks that rarely occur at the same time may, for example, be combined.

There are two important dimensions to consider when assessing a stress test:

- Which parts of a bank's balance sheet are the focus of the stress test?
- To what extent does the stress test take account of contagion effects on the wider economy of a specific shock?

There are three items on the asset side of a bank's balance sheet: cash, loans and securities. The liabilities side typically comprises customer deposits and bonds and notes issued by the bank. The bank's equity capital is the difference between assets and liabilities.

A bank's capital adequacy ratio is an important measure of its financial strength. The capital adequacy ratio is a ratio of bank's Tier 1 capital to its risk-weighted assets. High-risk assets are assigned a high risk weight, low-risk assets are assigned a low risk weight. In the stress test, an assessment is made of how the capital adequacy ratio will be affected by the negative shock to the economy.

The parts of the bank's balance sheet that will be regarded as most critical will depend on the type of shock:

- In the Norwegian banking crisis in the early 1990s, loan losses were the main driver behind banks' problems.
- During the financial crisis in 2008, however, bank liquidity and access to fresh funding was the problem – in other words, the problem was on the liabilities side of the balance sheet rather than on the assets side.
- In recent years, the question has been raised as to the consequences of writing down the value of sovereign debt. The European Banking Authority's stress tests over the past two years have therefore focused in particular on the securities on the assets side of banks' balance sheets.

There are two possible approaches to assessing the impact on banks' balance sheets:

- A sensitivity analysis explores the isolated effect of a specific shock.
- A macro stress test assesses the net effect on banks of a broadly structured macro scenario. Owing to interactions in the economy, some negative effects reinforce each other, while others counteract each other.

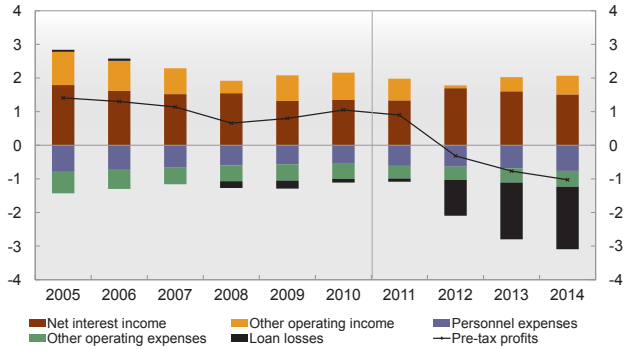
In this report, Norges Bank presents a macro stress test focusing on credit and market risk. The test illustrates the impact on Norwegian banks of a negative shock driven by a substantial decline in global economic growth. We also present an assessment of developments for different market prices. In combination, these provide a consistent projection of factors affecting the value of banks' assets.

In the light of experience from the financial crisis, work has also been focused on linking a macro stress scenario to an assessment of the risk of liquidity stress, which is related to the supply of capital and thereby to bank debt. There is, for example, a high probability that the economic developments outlined in the adverse scenario in this report may for a period pose substantial challenges to Norwegian banks' liquidity supply. This is built into the macro stress test by assuming higher risk premiums on banks' financing and a fall in value of the bonds in banks' trading books. The liquidity crisis in the stress test also has indirect effects, through a sharp fall in credit growth and an extraordinarily large decrease in activity. However, the liquidity situation in Norwegian banks itself is not analysed in this stress test, but in the discussion of the extent to which Norwegian banks meet the LCR requirement (see Section 1).[1]

It is important to emphasise that a stress test does not provide a set answer to the question of how the banking system will handle a severe crisis. But a stress test can shed light on key risk factors, such as the risk related to securities, concentration risk in lending portfolios and the importance of adequate Tier 1 capital.

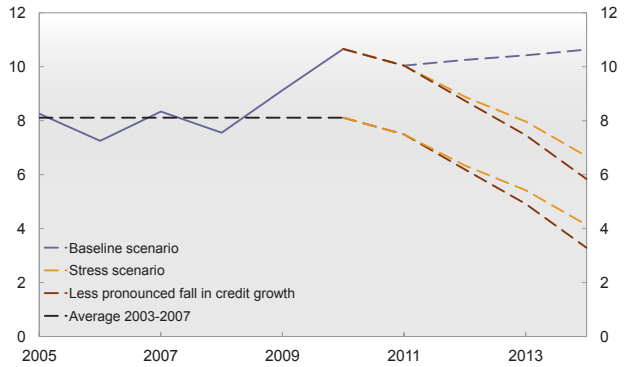
1 LCR is a sensitivity analysis which tests banks' ability to withstand a 30-day freeze in short-term funding markets

Chart 2.4 Banks[1)] pre-tax profits as a percentage of average total assets. Stress scenario. Per cent. Annual figures. 2005 – 2014[2)]



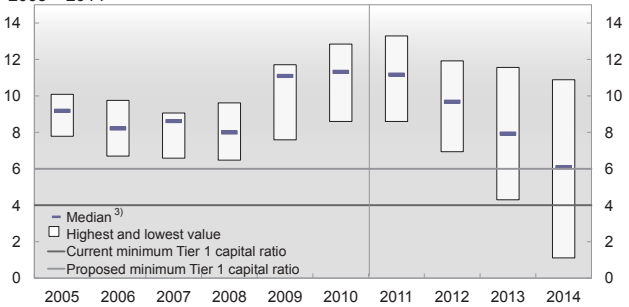
1) All banks excluding branches of foreign banks in Norway
2) Projections for 2011 – 2014 for DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
Sources: Statistics Norway and Norges Bank

Chart 2.5 Banks[1)] Tier 1 capital ratio. Per cent. Annual figures. 2005 – 2014[2)]



1) DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
2) Projections for 2011 – 2014
Sources: Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

Chart 2.6 Banks[1)] Tier 1 capital ratios with less pronounced fall in credit growth. Banks are ranked by Tier 1 capital ratio. Per cent. Annual figures. 2005 – 2014[2)]



1) DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
2) Projections for 2011 – 2014
3) Median is defined here as the middle bank in a list where half the banks have a lower Tier 1 capital ratio than the median bank
Sources: Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

in equity markets. Bond prices also show a considerable decline. In isolation, this reduces banks' results by about ½% of ATA. This calculation is based on the assumption that banks hedge portions of their securities portfolios, without which losses on securities would account for about 1% of ATA.[3]

In the adverse scenario, Tier 1 capital adequacy ratios fall below 7% (see Chart 2.5). Tier 1 capital adequacy is measured relative to a risk-weighted measure of a bank's assets. Risk weights will increase if a bank's assets are assessed as more risky. In the adverse scenario, collateral values fall. House prices, for example, fall by about 25%. The risk of loss when a borrower defaults on a loan increases. Corporate earnings decrease and unemployment rises. Many loan exposures are assessed as more risky. As a result, risk-weighted assets are assumed to increase by 5% in the adverse scenario.

Chart 2.5 illustrates the importance of credit growth for capital adequacy. A modest decline in credit growth leads to a considerable reduction in Tier 1 capital adequacy ratios. Under this assumption, three of the six banks in the stress test fall below the proposed Basel III requirement of 6% (see Chart 2.6).

Capital adequacy ratios in Norwegian banks are higher than in the pre-crisis period. If banks' Tier 1 capital adequacy ratios had been at the same level as in the period between 2003 and 2007, banks as a whole would have fallen below 6% in the adverse scenario (see Chart 2.5). Building up Tier 1 capital in periods of low loan losses and solid profits reduces the need for banks to tighten credit standards in a severe downturn.

3 A detailed review of the assumptions relating to securities will be presented in *Penger og kreditt* 3/2011 (Norwegian only)

Box 2 Projections of bank earnings – changes since the May 2011 *Financial Stability* report

Banks' earnings have shown somewhat weaker developments so far this year than in 2010 (see Chart 1), primarily due to the effect of non-recurring items that boosted earnings in 2010.

Problem loans[1] among both households and enterprises have so far this year been somewhat lower than in 2010 and lower than projected in the May report. One exception is write-downs of loans to the shipping industry, which have increased so far this year. The spread of loan losses shows that the impact on banks has varied widely (see Chart 2).

Growth in bank lending has also been somewhat weaker than assumed in the May report as an increasing share of banks' residential mortgage portfolios has been transferred to covered bond mortgage companies.[2] Overall credit growth has been approximately as expected.

Transferring mortgages to mortgage companies increases the average risk of the loans on bank's balance sheets. Banks' loan losses as a percentage of gross lending are therefore projected to edge up (see Chart 3). In the baseline scenario, the negative effect of losses is counteracted by positive developments in net interest income, which reflect higher interest rates on banks' remaining loans, pushing up the interest margin. In isolation, interest income rises as a share of average total assets (see Chart 4).

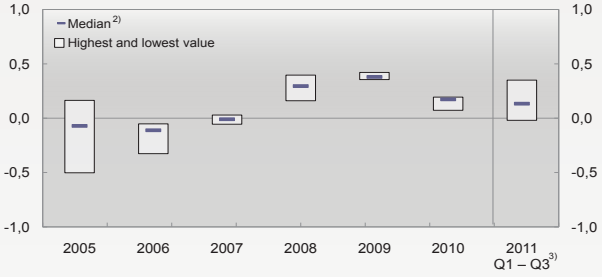
1 Sum of non-performing and other particularly doubtful loans

2 So far, the stress test of banks' capital adequacy published in *Financial Stability* report has been at parent bank level. Covered bond mortgage companies are therefore not included in the projections of bank developments. The article on stress tests published in *Penger og kreditt* 3/2011 shows the results of the stress test for consolidated banks and covered bond mortgage companies

Chart 1 Banks'[1)] pre-tax profits as a percentage of average total assets. Per cent. Annual figures. 2010 – 2011. 2011 Q1 – Q3

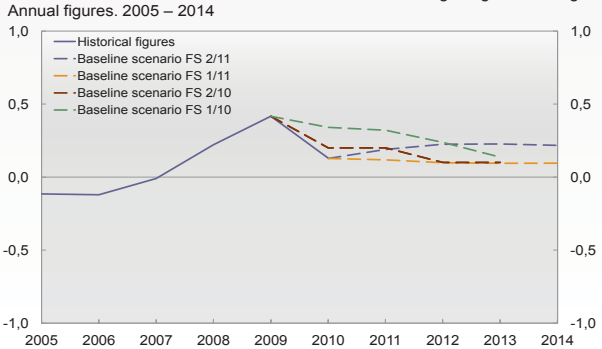
1) DnB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
2) Annualized
3) Baseline scenario in *Financial Stability Report* 1/2011
Sources: Statistics Norway and Norges Bank

Chart 2 Banks'[1)] loan losses as a percentage of gross lending. Per cent. Annual figures. 2005 – 2010. 2011 Q1 – Q3



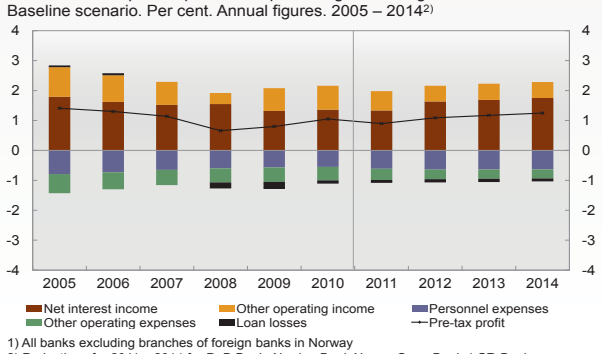
1) DnB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
2) Median is defined here as the middle bank in a list where half the banks have lower loan losses than the median bank
3) Annualized
Sources: Statistics Norway and Norges Bank

Chart 3 Banks'[1)] loan losses in baseline scenario. Percentage of gross lending. Annual figures. 2005 – 2014



1) DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
Sources: Statistics Norway and Norges Bank

Chart 4 Banks'[1)] pre-tax profits as a percentage of average total assets. Baseline scenario. Per cent. Annual figures. 2005 – 2014[2)]



1) All banks excluding branches of foreign banks in Norway
2) Projections for 2011 – 2014 for DnB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge
Sources: Statistics Norway and Norges Bank

Box 3 Low interest rates and low returns in securities markets are a problem for life insurers and pension funds

A prolonged global downturn with low interest rates and low returns in securities markets will in isolation require increased saving to meet future benefit obligations. Unlike a defined-contribution plan, a defined-benefit plan has a rate of return guaranteed by the life insurer or pension fund. A return on invested funds that is lower than the guaranteed rate must be compensated for by the pension plan in the form of higher premiums from member enterprises or more capital from the life insurer or pension fund.

Enterprises can avoid higher premiums due to low returns by introducing defined-contribution plans, thereby transferring market risk from employers to employees. However, for life insurers, termination of defined-benefit pension insurance may exacerbate problems related to the return guarantee. When a defined-benefit plan is terminated, the insurer issues paid-up policies on the basis of accumulated funds and premiums at termination.[1] Whereas life insurers may raise premiums on current plans to make up for shortfalls in the return on accumulated assets, they may not charge additional premiums on paid-up policies once these have been issued. For that reason, life insurers will be left with the entire return risk for paid-up policies until benefits are finally paid.

Total assets for life insurers and pension funds were NOK 1,076bn at end-June 2011. Total assets for life insurers were NOK 892bn. Approximately 90% of life insurers' liabilities are related to annual interest guarantees.[2] According to their annual financial statements, the two largest private sector life insurers, DNB Livsforsikring and Storebrand Livsforsikring, had total assets of NOK 595bn at end-2010. Insurance liabilities related to paid-up policies totalled just under NOK 115bn for these two insurers.

The magnitude of the problems life insurers or pension funds will have paying guaranteed benefits will depend on the duration of the period of low interest rates. Life insurers posted relatively solid earnings in the first half of 2011. However, the poor performance of equities in Q3 dragged down earnings. Profit before tax and allocation to customers amounted to 1% of total assets for the first three quarters, compared with 1.7% in the same period in 2010. In Q3 life insurers' buffer capital declined by NOK 14bn to NOK 40bn at the end of the period.

The future regulatory framework for insurance in Europe planned for introduction as from January 2013 will make it easier to identify risk associated with defined-benefit pensions than under current rules.[3] Under the new rules, assets and liabilities will be marked to market, with life insurers able to reduce capital needs by investing in assets with interest-rate sensitivity approximately equal to that of benefit obligations. In Norway, this kind of investment strategy is difficult to pursue because the market for bonds with long duration is thin. This makes it difficult to fully eliminate risk and thereby capital requirements associated with changes in interest rates. Even if the rules are still under discussion, the capital requirement for risk associated with defined-benefit pensions is likely to be raised. For that reason it cannot be ruled out that some pension vehicles may have to strengthen capital reserves if the economic downturn persists.[4]

1 According to Finance Norway (FNO), there were at end-2010 over 860,000 such paid-up policies outstanding.

2 According to *Financial Market Trends*, September 2011, Finanstilsynet (Financial Supervisory Authority of Norway.

3 The final wording of Solvency II has yet to be adopted. The most recent quantitative impact study of Solvency II rules (QIS 5) was conducted in autumn 2010. The results are available on the Finanstilsynet website: http://www.finanstilsynet.no/no/Forsikring-og-pensjon/Skadeforsikring/Tema/Solvens-II/Solvens-II-Resultater-fra-QIS5-er-publisert (Norwegian only). Ten life insurers participated, with the study showing a need for "significantly higher capital requirements" than under current rules

4 A prolonged period of low interest rates is regarded as a risk factor for defined benefit pensions plans and insurance schemes in a number of countries. A prolonged low-interest-rate scenario is mentioned as a risk factor by the European Insurance and Occupational Pensions Authority (EIOPA) in *Financial Stability Report 2011. First half-year report*, www.eiopa.europa.eu. Finanstilsynet performs quarterly stress tests (Stress Test I) applying rules close to those in Solvency II. As at the second half of 2011, this stress test revealed that for several companies, capital requirements were higher than their buffer capital

Box 4 Measures to strengthen the EU banking sector

The EU summit on 26 October 2011 approved several measures to safeguard financial stability in Europe. In addition to increasing loans to Greece and actions to ensure financing for other troubled sovereign borrowers in the EU, several measures were approved to increase European banks' resilience to future losses.

By end-June 2012, the 70 largest banks in the EU must have a minimum Core Tier 1 capital ratio of 9%. In addition, by the same date, these banks must hold capital reserves to fully cover potential losses on sovereign debt exposures. These capital reserves will be calculated on the basis of banks' capital holdings and sovereign bond yields as at end-2011 Q3. The European Banking Authority (EBA) has estimated a provisional capital target of EUR 106bn based on bank balance sheets as at end-2011 Q2 and sovereign bond yields as at end-2011 Q3.

To recapitalise, banks should primarily rely on private sources of capital, including constraints on dividend and bonus payments. If necessary, national authorities should contribute with capital injections. Euro area countries without government funds to recapitalise their banks may borrow from the European Financial Stability Facility (EFSF).

To ensure that banks improve their capital ratios without excessive deleveraging, banks are required to agree with their national supervisory authorities on the actions they intend to take to reach the new capital targets.

DNB took part in the EBA calculation of capital requirements, with EUR 1.3bn in required capital as the result. According to DNB, a Core Tier 1 capital ratio of 9% can be attained by reallocating capital from the parent holding company to the DNB banking group, and raising fresh capital is therefore not necessary.

The summit also expressed a need for guarantees to restart markets for more long-term bank funding. The European Commission will continue its efforts to design measures coordinated at EU level concerning criteria for access to guarantees and the fees and terms attached to them.

Box 5 "Living wills" for banks

During the financial crisis, as in many such crises in the past, banks in many countries were rescued by the authorities. In most cases, creditors did not have to bear losses. In some cases, even owners were partly shielded from losses. Coverage of banks' losses by the state increases expectations of future bail-outs. This may encourage additional financial sector risk-taking, making new crises more likely.

Banks perform a number of financial system functions that are so vital that the economy can suffer substantial losses if banks are closed – even briefly. If a distressed bank cannot be resolved without endangering the financial system, government assistance may be necessary. For that reason, banks may be averse to solving problems on their own. Requiring recovery and resolution plans (called "living wills") is intended to address this problem.

A living will has two elements, a recovery plan and a resolution plan, and must be approved by the authorities. The recovery plan describes how the bank, under its current management and board, will deal on its own with impending insolvency, payment problems or impaired access to funding. The resolution plan outlines the procedure for when the authorities take control of the institution when the severity of its problems makes this necessary.

The G20 recently adopted a resolution calling on the world's around thirty largest and most complex cross-border banks to have a living will in place by end-2012. The European Commission has proposed a recovery and resolution framework to apply to all EEA banks.[1] In the UK, a detailed set of rules has already been proposed for all banks to comply with, with the Bank of England in the process of drawing up the first living wills for the largest banks. Norges Bank has also proposed that all Norwegian banks should be directed to draw up a living will.[2]

For the smallest banks, drawing up living wills should be relatively straightforward. Living wills for larger banks, which do more in terms of performing large-scale and complex functions in the financial system, will require more. The resolution plan must provide a credible procedure for continuing systemically important functions while owners and creditors bear the losses. This credibility gives the bank's owners and management an incentive to draw up a viable recovery plan, while the bank's creditors will have an incentive to monitor the bank's risk-taking more effectively. And creditors will likely price their loans to the bank to reflect more accurately the risk the bank is taking. All in all, this can reduce the risk of financial crises.

Continuation of systemically important functions

Access to deposits and payment systems are systemically important functions. All banks must therefore ensure that insured deposits are readily accessible and that payment systems continue to function even in the event of closure. This can be achieved by quickly transferring insured deposits either to customers' accounts in other banks or to a bridge bank[3], as Finansiell Stabilitet AS in Denmark has done for a number of insolvent banks. In Denmark, all banks are required within 24 hours to submit the information that Finansiell Stabilitet AS needs for identifying insured deposits.

Functions other than deposit-taking and making payments, such as providing lines of credit to financial and non-financial enterprises or performing settlement or market maker functions, can also be systemically important. Whether a bank performs systemically important functions may depend on its size and dominance in certain markets and on whether other market participants can step in to replace the bank's activities in the event of interruption. A resolution plan must contain an overview of all systemically important functions and the legal entities in which they are performed. It must describe how the entities that perform systemically important functions can continue to

1 See the European Commission's consultation of 6 January 2011 http://ec.europa.eu/internal_market/consultations/2011/crisis_management_en.htm

2 See Norges Bank's submission to the Ministry of Finance of 29 November 2010 http://www.norges-bank.no/no/om/publisert/brev-og-uttalelser/2010/brev-29112010/ (Norwegian only)

3 A bridge bank is a provisional financial institution that can be run by the authorities without having to inject new capital. Bridge banks take over systemically important functions along with appurtenant funding. The remainder of the bank must follow a procedure resembling ordinary liquidation

operate, either through a sale to other private parties or under a bridge bank. This requires identifying relationships among the various entities in the banking group.

Resolution plans must also analyse the impact on market infrastructure and provide an outline of the bank's relationships with securities markets, settlement systems and central securities depositories. Moreover, a plan needs to be drawn up for external communication to prevent undue market uncertainty.

Requirement for bank reorganisation

The authorities should have the responsibility for ensuring that living wills provide credible resolution in the event of a crisis. If continuing systemically important functions will be difficult when remaining operations are closed, the authorities must have the power to require a bank reorganisation.

In general, government approval of a bank's organisation and living will should be based on whether the institution's legal structure corresponds to its commercial organisation. A close match simplifies crisis management. In particular, it may be relevant to require simplification of corporate group structure, separation of systemically important functions into separate legal entities, dissolution of guarantees, extinguishment of loans or credit lines or termination of other agreements between parts of the bank or improvements in IT systems.

The Swiss authorities have announced that they may instruct a bank to reorganise if the recovery and resolution plan reveals the bank to be unmanageable in a crisis. In the UK, further steps have been proposed to ensure manageability. In its report (the Vickers Report), the Independent Banking Commission has proposed ring-fencing of deposit-taking and lending to small and medium-sized enterprises from securities trading. Such deposit-taking institutions shall meet high capital and liquidity standards. They shall have their own board of directors and separate IT systems. And there should be strict limits on transactions between deposit-taking institutions and the rest of the banking group. According to the report, these rules may be adopted under current EU legislation.

Box 6 National options and discretions for capital requirements in the European Commission's proposed new banking regulation in the EU – CRD IV

The European Commission favours more harmonised banking regulations in the EU. The Commission's proposed Capital Requirements Directive (CRD IV), which is based on Basel Committee recommendations (Basel III), therefore provides for far fewer national policy options than previously.

There are arguments both for and against greater harmonisation. Since current rules set minimum standards for national regulations, there are regulatory divergences among member states. This needlessly complicates banking regulation in the EU, potentially leading to regulatory arbitrage and reduced efficiency in the internal market. Yet different countries may need different rules. Both structural and cyclical conditions may differ from country to country. Many EU member state governments therefore want more national options and discretions than the draft directive currently provides for. The political discussion within the EU will determine the extent of such national discretionary powers under the CRD IV. Basel III, which the CRD IV will implement, is to be phased in as from 1 January 2013.

The Commission's draft CRD IV gives national regulatory authorities three instruments for influencing bank capital requirements:

- Countercyclical capital buffers
- Stricter capital requirements for loans secured by real estate collateral for banks applying the standardised approach for credit risk
- Pillar 2 requirements for banks when supervisors find that minimum capital requirements under Pillar 1 are inadequate

Under the draft CRD IV, *countercyclical capital buffers* shall be determined by national authorities, but following European Systemic Risk Board (ESRB) guidelines. In determining the capital buffer, authorities shall take into account the deviation of the credit volume/GDP ratio from its long-term trend. The ESRB may recommend additional variables that may be applied when determining capital buffers. The draft CRD IV gives national authorities freedom to apply supplementary variables other than those recommended by the ESRB. However, under the proposal, the portion of the capital buffer determined on the basis of supplementary variables not recommended by the ESRB will not apply to loans extended by foreign banks. This limits the effectiveness of national policy discretion and departs from the principle of Basel III that a countercyclical capital buffer of up to 2.5% of risk-weighted assets should also apply to loans from foreign banks. Under the Commission proposal, national authorities may decide in the case of foreign countercyclical capital buffers above 2.5% whether the portion above 2.5% will apply to banks in their jurisdiction.

Stricter capital requirements for loans secured by real estate collateral for banks applying the standardised approach for credit risk will make these banks more robust and may reduce their incentives to extend residential mortgage loans. Under the proposal, this instrument will also apply to loans extended by foreign banks. However, as the banks dominating the Norwegian residential mortgage market calculate capital requirements using the internal ratings-based (IRB) approach, this instrument will not apply to them. IRB banks have lower capital requirements for residential mortgage loans than banks applying the standardised approach.

Pillar 2 gives national supervisory authorities fairly broad powers to impose on banks add-ons above minimum capital requirements, though these add-ons do not apply to branches of foreign banks. What is new in the draft CRD IV is that Pillar 2 requirements may be applied to address the risk a bank *poses to* the financial system. What is also new is that the Commission will allow Pillar 2 requirements for *groups* of banks. For example, this could enable national supervisory authorities to bring IRB banks' capital requirements for residential mortgage loans closer to requirements applicable to banks using the standardised approach.

Annex 1

Glossary

Adverse scenario: Alternative scenario for the Norwegian economy under which the occurrence of a number of unexpected economic shocks is assumed. Although the adverse scenario is not the most probable alternative to the baseline scenario, it represents an analysis of risk factors that can lead to problems for banks.

Baseline scenario: The baseline scenario represents the developments Norges Bank considers most probable under a number of assumptions. The baseline scenario derives from models, supplemented by discretionary assessment.

Corporate market: Sectors 710–790, which include non-financial private enterprises and the self-employed.

Covered bonds (OMF): Debt instruments secured by a cover pool to which investors have a preferential claim in the event of default. The cover pool can include residential mortgages, commercial property loans and public sector debt.

Customers: Sector term used for banks' customers and includes sectors 110, 380–890 and 941–990. In addition to the sectors included in the retail and corporate markets, customers also include the central and local government sector as well as foreign non-financial sectors.

Disposable income (households): All forms of income less taxes, interest expenses and other expenses. Norges Bank corrects disposable income for estimated reinvested share dividends for 2000–2005 and redemption/reduction of equity capital for 2006–2014.

Internal ratings-based (IRB) approach: Use of internal ratings-based risk models to calculate capital requirements on the basis of credit risk under the Basel framework.

Liquidity coverage ratio (LCR): The Basel Committee has proposed a minimum liquidity coverage standard, to be introduced in 2015 (Basel III). The liquidity coverage ratio (LCR) is defined as the stock of high-quality liquid assets as a percentage of total net cash outflows over 30 calendar days of severe market stress. The standard requires that the value of the ratio be no lower than 100%.

Net stable funding ratio (NSFR): The Basel Committee has proposed a minimum stable funding standard, to be introduced in 2018 (Basel III). The net stable funding ratio (NSFR) is defined as the available amount of stable funding as a percentage of the required amount of stable funding for all illiquid assets. This ratio must be greater than 100%.

NIBOR (Norwegian Inter Bank Offered Rate): NIBOR or the money market rate is the interest rate on interbank loans. Supply and demand in the money market determine money market rates. NIBOR is a currency swap rate.

Private and municipal sector: Sectors 510–890, which include the institutional sectors local government, public non-financial enterprises, private non-financial enterprises and households.

Retail market: Sector 810, which comprises wage earners, pensioners, benefit recipients, students etc.

Swap arrangement: Arrangement whereby banks obtain government securities in exchange for covered bonds (OMF) for an agreed period. Norges Bank administers the arrangement on behalf of the Ministry of Finance.

Total risk-weighted assets: Total risk-weighted assets comprise the denominator in the calculations of financial institutions' Core Tier 1 capital, Tier 1 capital and capital adequacy ratios. The risk weights that may be used in the calculations are set out in the Basel II capital adequacy standards.

Annex 2

Boxes 2006–2011

2/2011
What can be assessed in a stress test?
Projections of bank earnings – changes since the May 2011 *Financial Stability* report
Low interest rates and low returns in securities markets are a problem for life insurers and pension funds
Measures to strengthen the EU banking sector
”Living wills” for banks
National options and discretions for capital requirements in the European Commission's proposed new banking regulation in the EU – CRD IV

1/2011
Projections of bank earnings – changes since the May 2010 *Financial Stability* report
Liquid assets in the liquidity coverage ratio (LCR)
Stricter requirements for systemically important banks

2/2010
Projections of bank earnings – changes since the May *Financial Stability* report
New regulation of bank capital and liquidity
Discretionary countercyclical measures
Crisis resolution – systemically important banks
Effects of persistently low interest rates

1/2010
Projections of bank earnings – changes since the December *Financial Stability* report
Macroprudential supervision and systemic risk
Finanstilsynet’s new guidelines for prudent lending – effects on household debt
Consequences of Solvency II for banks
New accounting rules for valuation of financial assets

2/2009
Measures under discussion aimed at improving financial regulation
Capital requirements during the banking crisis in the early 1990s
Difficulties in comparing banks’ capital adequacy
In favour of wider use of central counterparties
Payment systems have functioned effectively
Shipping – a vulnerable sector

1/2009
The background for the financial crisis
Then and now – a comparison with the banking crisis of 1988–1993

2/2008
Banks’ capital requirements
How vulnerable is the financial system? An analysis using gap indicators
Stress-testing of bank losses and results

1/2008
Stress-testing of bank losses and results
Norges Bank’s Survey of Bank Lending
Central bank measures to address liquidity problems at banks

2/2007
Problems in the US residential mortgage market
Problems in interbank markets – central bank liquidity measures
Covered bonds
Stress testing of banks’ losses and results

1/2007
International experience of turnarounds in the housing market
Low share of fixed-rate loans in the household sector
Low household saving
An analysis of banks’ problem loans

2/2006
Substanital losses in Amaranth hedge fund
Housing investment and house prices
Higher debt in households in many countries
A fall in household consumption – what is the impact on credit risk in the corporate sector?
Basel II – what is the impact on banks’ capital adequacy?

1/2006
Implications of changes in pension fund regulations for the bond market
Long-term real interest rates and house prices
Household housing wealth and financial assets
Household margins
Banks’ pricing of corporate credit risk
The importance of Norges Bank’s key rate and the competitive climate for banks’ interest rates
Equity market valuation

Annex 3

Table 1 Key figures for Norwegian limited companies.[1)]
Per cent

	Share of debt[2)]		Operating margin[3)]		Return on total assets[4)]		Equity ratio[5)]	
	2009	2010	2009	2010	2009	2010	2009	2010
Primary industries	4.4	4.7	14.9	23	6.4	13.5	40.8	39
Oil services	6.7	1.8	20.1	14.5	3.5	5.1	32.2	34.5
Manufacturing	9.2	8.2	3.9	6	4.2	6.6	39.6	41.5
Electricity and water supply	3.6	3.9	44.3	43.6	8.6	8.3	43.5	41.7
Construction	6.6	7.3	5.7	5.1	6.2	6	31.2	34.5
Retail trade, hotels and restaurants	8.5	8.6	3.6	3.9	7.5	8.6	34.8	36.4
Shipping	10.5	11.3	2	7.8	3.6	3.7	51.3	51.7
Transportation	4.7	5.9	3.7	8.4	4.1	5.7	35.2	34.5
Business services	9.0	9.4	8.7	9.3	6.2	10.1	39.5	41.7
Commercial property	36.8	38.9	81.4	93.3	4	4.1	45.3	47.7
Total	100.0	100.0	7.2	8.6	5.4	7	40.7	42.2

1) Excluding extraction of primary resources, banki/insurance and public sector
2) The industry's share of enterprises' total debt to credit institutions
3) Operating margin as a percentage of turnover
4) Profits before tax as a percentage of total assets at year-end
5) Book equity as a percentage of total assets

Source: Norges Bank

Table 2 Structure of the Norwegian financial industry as of 30 September 2011

	Number	Lending (NOK bn)	Total assets (NOK bn)	Tier 1 capital ratio (%)[1)]	Capital ratio (%)[1)]
Banks (excluding branches of foreign banks)	132	1 682	3 236	11.3	13.3
Branches of foreign banks	12	332	612		
Mortgage companies (including branches of foreign companies)	32	1 150	1 552	10.4	11.9
Finance companies (including branches of foreign companies)	48	97	115	13.4	14.1
State lending institutions	3	239	254		
Life insurance companies (excluding branches of foreign companies)	12	38	890	11.3	13.8
Non-life insurance companies (excluding branches of foreign companies)	43	1	132	37.4	37.7
Memorandum:			(NOK bn)		
Market value of equities, Oslo Stock Exchange			1 424		
Outstanding domestic bonds and short-term paper debt			1 602		
Issued by public sector and state-owned companies			577		
Issued by banks			280		
Issued by other financial institutions			476		
Issued by other private enterprises			107		
Issued by non-residents			161		
GDP Norway, 2010			2 496		
GDP mainland Norway, 2010			1 937		

1) Capital ratio and Tier 1 capital ratio as at June 2011

Sources: Oslo Stock Exchange, Statistics Norway and Norges Bank

Table 3 Market shares of banks and covered bond mortgage companies[1] in Norway as of 30 September 2011. Per cent

	Gross lending to		Deposits from	
	Retail market	Corporate market	Retail market	Corporate market
DNB Bank[2]	31.7	34.3	32.3	37.2
Subsidiaries of foreign banks in Norway[3]	13.0	17.7	8.9	16.9
Branches of foreign banks in Norway[4]	10.8	17.0	8.7	14.4
SpareBank 1-alliansen[5]	19.4	15.1	19.2	14.1
Terra-Gruppen[6]	8.7	4.2	11.0	5.7
Other savings banks[7]	13.3	9.6	14.6	9.7
Other commercial banks[8]	3.1	2.1	5.2	2.1
Total	100.0	100.0	100.0	100.0
Total market (in NOK bn)	1 733	1 102	751	611

1) The market shares are calculated by summing the balance sheet items for the institutions in the different groups
2) DNB Bank, Nordlandsbanken, DNB Boligkreditt and DNB Næringskreditt
3) Nordea Bank Norge, Santander Consumer Bank, SEB Privatbanken and Nordea Eiendomskreditt
4) Fokus Bank (branch of Danske Bank), Handelsbanken, SEB, Swedbank, Handelsbanken Eiendomskreditt, BNP Paribas, Skandiabanken + 6 other branches
5) SpareBank 1 SR-Bank, SpareBank 1 SMN, SpareBank 1 Nord-Norge, Sparebanken Hedmark + the 13 other savings banks in SpareBank 1-alliansen, SpareBank 1 Boligkreditt, BN Bank, Bank 1 Oslo Akershus + 1 commercial mortgage company and 1 other residential mortgage company
6) Terra BoligKreditt, Terra Kortbank and the 76 savings banks which are owners of Terra-Gruppen AS + 1 other residential mortgage company
7) Sparebanken Vest, Sparebanken Møre, Sparebanken Sør, Sparebanken Pluss and Sparebanken Sogn og Fjordane + 15 other savings banks and 10 residential mortgage companies
8) Storebrand Bank, Landkreditt Bank, Gjensidige Bank, Storebrand Boligkreditt + 8 other commercial banks and 2 other residential mortgage companies

Source: Norges Bank

Table 4 Results and capital adequacy in Norwegian banks for selected quarters[1)]

	Q3 10[2)]		Q4 10		Q1 11		Q2 11		Q3 11	
	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA
Net interest income	11.73	1.48	10.78	1.39	10.85	1.41	10.94	1.42	11.60	1.49
Other operating income	5.72	0.72	6.84	0.88	3.78	0.49	6.83	0.89	4.45	0.57
Commission income	2.67	0.34	2.86	0.37	2.59	0.34	2.82	0.37	2.74	0.35
Securities, FX and derivatives	2.25	0.28	3.73	0.48	0.16	0.02	3.88	0.50	1.72	0.22
Other operating expenses	8.46	1.07	7.99	1.03	8.49	1.10	8.10	1.05	8.77	1.13
Personnel expenses	4.82	0.61	4.40	0.57	4.74	0.61	4.61	0.60	5.23	0.67
Operating result before losses	8.98	1.13	9.63	1.24	6.14	0.80	9.66	1.26	7.28	0.93
Losses on loans and guarantees	0.63	0.08	0.71	0.09	0.88	0.11	0.76	0.10	1.07	0.14
Pre-tax profit	7.22	0.91	8.90	1.15	5.32	0.69	8.84	1.15	6.01	0.77
After-tax profit	5.50	0.69	6.87	0.88	3.96	0.51	6.70	0.87	4.24	0.55
Capital ratio (%)	12.5		14.2		13.9		13.3		NA	
Tier 1 capital ratio (%)	10.2		11.8		11.8		11.3		NA	

1) All banks excluding branches of foreign banks in Norway. Results as a percentage of average total assets (ATA) are annualised
2) DnB NOR Finans merged with DnB NOR Bank in September 2010

Source: Norges Bank

Table 5 Results and capital adequacy in Norwegian banks[1)]

	2008		2009		2010		2010 Q1-Q3		2011 Q1-Q3	
	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA
Net interest income	43.16	1.55	41.01	1.32	42.61	1.36	31.83	1.35	33.39	1,44
Other operating income	10.69	0.38	23.39	0.76	23.73	0.76	16.90	0.72	15.05	0,65
Commission income	9.34	0.34	9.46	0.31	10.60	0.34	7.74	0.33	8.14	0,35
Securities, FX and derivatives	-1.42	-0.05	12.70	0.40	9.07	0.29	5.34	0.22	5.77	0,25
Other operating expenses	29.57	1.06	30.70	0.99	31.08	0.99	23.09	0.98	25.37	1,09
Personnel expenses	16.72	0.60	17.71	0.57	17.15	0.55	12.75	0.54	14.58	0,63
Operating result before losses	24.28	0.87	33.71	1.09	35.27	1.12	25.64	1.09	23.07	0,99
Losses on loans and guarantees	5.41	0.19	7.29	0.24	3.30	0.11	2.59	0.11	2.71	0,12
Pre-tax profit	18.28	0.66	24.81	0.80	33.05	1.05	24.14	1.02	20.17	0,87
After-tax profit	13.02	0.47	17.60	0.57	25.30	0.81	18.43	0.78	14.91	0,64
Capital ratio (%)	11.2		13.1		14.2		12.5		NA	
Tier 1 capital ratio (%)	8.6		10.5		11.8		10.3		NA	

1) All banks excluding branches of foreign banks in Norway

Source: Norges Bank

Table 6 Rating by Moody's[1], total assets, capital adequacy[2] and return on equity for Nordic financial conglomerates, subsidiaries in Norway and Norwegian banks as of 2011 Q3. Consolidated figures.

	Financial strength	Short-term	Long-term	Total assets (NOK bn)	Tier 1 capital ratio (%)	Capital ratio (%)	Share of interim profits (%)	Return on equity		
								2009	2010	2011 Q1-Q3
Nordea Bank	C+	P-1	Aa2	5 293	9,9	11,1	0	11,3	11,5	10,0
Danske Bank	C	P-1	A2	3 584	16,0	18,0	100	1,7	3,6	1,7
DNB	C	P-1	Aa3	2 183	9,0	10,6	0	10,6	13,6	10,6
Handelsbanken	C+	P-1	Aa2	2 109	9,5	10,4	100	12,6	12,9	13,8
SEB	C-	P-1	A1	2 010	13,1	12,8	100	1,2	6,8	11,5
Swedbank	C-	P-1	A2	1 607	10,9	12,2	100	-12,5	8,1	15,0
Nordea Bank Norge	C	P-1	Aa2	552	8,1	10,2	0	10,1	15,6	11,0
SpareBank 1 SR-Bank	C-	P-1	A1	133	9,6	11,2	50	17,5	15,5	10,4
Sparebanken Vest	C-	P-1	A2	111	10,7	11,5	50	8,0	11,3	8,5
SpareBank 1 SMN	C-	P-1	A1	100	10,4	12,1	50	16,2	14,6	12,6
SpareBank 1 Nord-Norge	C	P-1	A1	72	11,1	12,0	0	18,2	15,3	13,8

1) Rating as of 15 November 2011. Moody's scale of rating: Financial strength: A+, A, A-, B+, B, B-, C+, C, C-,… Short-term: P-1, P-2,… Long-term: Aaa, Aa1, Aa2, Aa3, A1, A2,…

2) The higher the share of (positive) interim profits included, the higher are the capital adequacy ratios. If the institution has reported capital adequacy ratios with 0% of interim profits included, these ratios are used in the table. Varying national regulations, including consolidation of life insurance companies, imply that Norwegian financial conglomerates' capital adequacy ratios are not directly comparable with ratios of other Nordic financial conglomerates

Sources: Banks' websites and Moody's

Table 7 Balance sheet structure, Norwegian banks.[1)]
Percentage distribution

	2010	Q3 10	Q3 11
Cash and deposits	8.5	7.8	12.0
Securities (current assets)	19.7	20.8	17.9
Gross lending to households, municipalities and non-financial enterprises	53.7	53.7	52.0
Other lending	10.7	10.3	10.8
Loan loss provisions	-0.5	-0.4	-0.4
Fixed assets and other assets	7.8	7.8	7.8
Total assets	100.0	100.0	100.0
Customer deposits	46.6	44.4	47.1
Deposits/loans from domestic credit institutions	3.0	3.1	2.9
Deposits/loans from foreign credit institutions	12.2	11.9	14.5
Deposits/loans from Norges Bank	1.3	2.1	0.7
Other deposits/loans	6.1	6.3	4.4
Notes and short-term paper debt	3.4	3.7	4.0
Bond debt	14.7	15.0	13.1
Other liabilities	3.9	4.9	4.8
Subordinated loan capital	2.2	2.2	1.8
Equity	6.7	6.4	6.6
Total equity and liabilities	100.0	100.0	100.0
Memorandum:			
Total assets (NOK bn)	3 073	3 086	3 236

1) All banks excluding branches of foreign banks in Norway

Source: Norges Bank

Table 8 Balance sheet structure and profit/loss, covered bond companies[1)]

	2010	Q3 10	Q3 11
Balance sheet			
Percentage distribution			
Cash and deposits	1.6	3.1	1.4
Securities (current assets)	3.2	3.9	3.3
Gross lending	94.7	92.6	94.6
Loan loss provisions	0.0	0.0	0.0
Fixed assets and other assets	0.4	0.4	0.6
Total assets	100.0	100.0	100.0
Notes and short-term paper debt	0.1	0.1	0.6
Bond debt	70.0	72.1	73.0
Loans	22.2	21.1	19.9
Other liabilities	2.7	1.9	2.0
Subordinated loan capital	0.5	0.5	0.4
Equity	4.5	4.3	4.1
Total equity and liabilities	100.0	100.0	100.0
Profit/loss			
Percentage of ATA (annualised)			
Net interest income	0.71	0.84	0.52
Operating expenses	0.23	0.23	0.14
Losses on loans and guarantees	0.01	0.01	0.02
Pre-tax profit	0.60	0.44	0.40
Memorandum:			
Repayment loans (NOK bn)	539	510	631
Total assets (NOK bn)	804	783	931
of which Residential mortgage companies	760	740	871
of which Commercial mortgage companies	44	43	60

1) Mortgage companies with the right to issue covered bonds in accordance with the regulation that came into force on 1 June 2007 in December 2010, the figures are for 24 companies of which 19 companies are residential mortgage companies,in September 2010, the figures are for 23 companies of which 18 companies are residential mortgage companies,and in September 2011, the figures are for 24 companies of which 20 companies are residential mortgage companies.

Source: Norges Bank

Table 9 Stress testing[1] bank losses and profits

Macroeconomic scenario Percentage change from previous year unless otherwise stated	Baseline scenario[2]				Adverse scenario			
	2011	2012	2013	2014	2011	2012	2013	2014
Mainland GDP	2 ¾	3 ¾	3 ¼	3	2 ¾	-2 ¼	½	2 ¾
CPI	1 ½	1 ½	2	2 ¼	1 ½	1 ¼	½	1
Annual wage growth	4 ¼	4 ¼	4 ½	4 ¾	4 ¼	4	2 ½	1 ½
Registered unemployment (rate, level)	2 ¾	2 ½	2 ½	2 ½	2 ¾	2 ½	4	4 ½
Exchange rate (Level. Import-weighted 44 countries)	88	88 ½	89 ¼	89 ¾	88	88 ½	89 ¼	89 ¾
Oil price, USD per barrel (level)	110	97	94	94	110	46	47 ½	51 ¾
Bank lending rates (level)	4 ¾	5	5 ¼	5 ¾	4 ¾	5 ¼	4 ¼	4
House prices	9	8 ½	7 ½	4 ¾	9	-5 ¼	-11 ¾	-9
Credit to households[3]	7 ½	9	9	8 ½	7 ½	5	3	½
Credit to non-financial corporations[3]	2	6 ¼	7 ¼	7 ½	2	-5 ¾	-10 ¼	-6 ¾
Bank losses and profits								
Problem loans households[4] (percentage share of lending to the sector)	1	¾	¾	¾	1	1	1 ¼	1 ¾
Problem loans non-financial enterprises[4] (percentage share of lending to the sector)	3	3	3	2 ¾	3	4 ¾	10	11
Problem loans total[4] (percentage share of gross lending)	1 ½	1 ½	1 ½	1 ½	1 ½	2 ¼	3 ½	4
Loan losses (percentage of gross lending)	¼	¼	¼	¼	¼	2 ¼	3 ½	3 ¾
Pre-tax results (percentage of average total assets)	1	1	1 ¼	1 ¼	1	- ¼	-¾	-1
Net interest income (percentage of average total assets)	1 ¼	1 ½	1 ¾	1 ¾	1 ¼	1 ¾	1 ½	1 ½
Tier 1 capital (percentage of risk-weighted assets)	10	10 ¼	10 ½	10 ½	10	9	8	6 ¾

1) Norway's five largest banks and Nordea Bank Norge
2) Baseline scenario for CPI, annual wage growth, registered unemployment, oil price, exchange rate and mainland GDP are from *Monetary Policy Report* 3/2011
3) Change in stock measured at year-end
4) Non-performing loans and other loans that banks regard as particularly doubtful. All banks excluding branches of foreign banks in Norway

Sources: Statistics Norway, Technical Calculation Committee for Wage Settlements, Thomson Reuters, Association of Real Estate Agency Firms, ECON Pöyry, Finn.no, Association of Real Estate Agents, Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

Table 10 Key figures

	Average 1987–1993	Average 1994–2009	2010	Projections 2011	2012	2013–2014
Households						
Debt burden[1]	141	148	193	195	201	213
Interest burden[2]	9.7	6.0	5.2	5.7	5.9	7.2
Borrowing rate[3] after tax	9.1	4.8	3.0	3.1	3.3	3.7
Real interest rate after tax[4]	4.3	2.6	0.6	1.7	1.8	1.4
Net financial wealth[5]	8	43	28			
Rise in house prices[6]	-2.0	9.1	8.3	9.0	8.6	6.1
Enterprises						
Debt burden[7]	1 519	958	835			
Interest burden[8]		24	17			
Return on total assets[9]	2	5	7			
Equity-to-assets ratio[10]	23	38	42			
Banks[11]						
Profit/loss[12]	-0.4	1.1	1.1	0.9		
Interest margin[13]	5.2	2.9	2.4	2.4		
Non-performing loans[14]		1.8	1.8	1.8		
Loan losses[15]	2.3	0.2	0.2	0.2		
Lending growth[16]	4.7	9.7	-1.7	2.8		
Return on equity[17]		14.7	14.5	10.4		
Equity ratio[18]		7.2	6.7	6.6		
Tier 1 capital ratio[19]	6.3	9.5	11.8			

1) Loan debt as a percentage of disposable income adjusted for estimated reinvested share dividends for 2000–2005 and redemption/reduction of equity capital for 2006–2014
2) Interest expenses after tax as a percentage of disposable income adjusted for estimated reinvested share dividends for 2000–2005 and redemption/reduction of equity capital for 2006–2014 plus interest expenses
3) Banks' lending rates to households. Banks and covered bond mortgage companies from 2006 onwards
4) Lending rates adjusted for inflation measured by the CPI
5) Households' total financial assets less total debt as a share of disposable income adjusted for estimated reinvested share dividends for 2000–2005 and redemption/reduction of equity capital for 2006–2010
6) Based on house prices from Association of Norwegian Real Estate Agents, Association of Real Estate Agency Firms, ECON Pöyry and Finn.no
7) Enterprises' total debt as a percentage of profits before tax and depreciation. Limited enterprises in Norway. Exlusive of bank/insurance, public sector and extraction of primary resources. Figures include only enterprises with debt
8) Enterprises' total interest expenses as a percentage of profits before tax and interest expenses. Limited enterprises in Norway. Excluding bank/insurance, public sector and extraction of primary resources. Figures include only enterprises with debt. Figures available from 1999, hence the average is for the period 1999–2009
9) Enterprises' profits before tax as a percentage of total assets. Limited enterprises in Norway. Excluding bank/insurance, public sector and extraction of primary resources
10) Book equity as a percentage of total assets. Limited enterprises in Norway. Excluding bank/insurance, public sector and extraction of primary resources
11) Annual accounts and stock at year-end form the statistical basis. Figures for 2011 as of Q3. Profit/loss, loan losses, lending growth and return on equity are annualised
12) Pre-tax profit as a percentage of average total assets. For the period 1987–1989 branches of foreign banks in Norway and branches of Norwegian banks abroad are included. This does not apply for other periods
13) Percentage points. Average lending rate minus average deposit rate for all banks in Norway, based on stock at year-end
14) Non-performing loans as a percentage of gross lending to households, non-financial enterprises and municipalities
15) Loan losses as a percentage of gross lending to households, non-financial enterprises and municipalities for all Norwegian banks except branches of foreign banks in Norway and branches of Norwegian banks abroad
16) Per cent. Annual growth in lending to the corporate and retail market from all banks in Norway
17) Net profit as a percentage of average equity for all Norwegian banks excluding branches of foreign banks in Norway and branches of Norwegian banks abroad. The average for the period 1987–1993 cannot be calculated due to insufficient data on equity
18) Equity in per cent of assets for all Norwegian banks excluding branches of foreign banks in Norway
19) Regulatory Tier 1 capital to risk-weighted assets for all Norwegian banks except branches of foreign banks in Norway. The average for the period 1987–1993 is for the years 1991–1993 due to lack of data

Sources: Statistics Norway, Association of Norwegian Real Estate Agents, ECON Pöyry, Finn.no, Association of Real Estate Agency Firms, Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

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2011