



NORGES BANK

2014

FINANCIAL STABILITY REPORT

VULNERABILITIES AND RISKS

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This report is based on information in the period to 23 October 2014.

Norges Bank's *Financial Stability Report*

In the annual *Financial Stability Report*, Norges Bank assesses vulnerabilities and risks in the financial system, with particular focus on the long-term, structural features of banks, financial markets and the Norwegian economy that are of importance for financial stability. An ongoing assessment of financial imbalances and the banking sector is included in Norges Bank's *Monetary Policy Report with financial stability assessment* in conjunction with Norges Bank's monetary policy assessments and the decision basis for the countercyclical capital buffer for banks.

The Executive Board discussed the 2014 *Financial Stability Report* at its meeting on 22 October.

FINANCIAL STABILITY AND NORGES BANK'S ROLE

Financial stability implies a financial system that is resilient to shocks and thus capable of channelling funds, executing payments and distributing risk efficiently.

Financial stability is one of Norges Bank's primary objectives in its 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". Section 3 states that "the Bank shall inform the Ministry of Finance 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". Under the Payment Systems Act, which entered into force in 2000, Norges Bank is the licensing authority for interbank clearing and settlement systems.

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 and there is a threat to financial stability. As lender of last resort, Norges Bank monitors the financial system as a whole, with particular focus on the risk of systemic failure.

The Ministry of Finance shall set the level of the countercyclical capital buffer four times a year. Norges Bank has been assigned responsibility for preparing a decision basis and providing advice to the Ministry regarding the level of the buffer. The decision basis is published four times a year as part of the *Monetary Policy Report with financial stability assessment*.

EXECUTIVE BOARD'S ASSESSMENT

Norges Bank is responsible for monitoring and reporting on financial market conditions, including identifying measures to strengthen financial stability.

In this *Financial Stability Report*, Norges Bank assesses vulnerabilities and risks in the Norwegian financial system and presents its recommendations related to the upcoming liquidity regulatory framework for banks. The Executive Board discussed the content of the *Report* on 22 October.

The Executive Board places emphasis on the following developments:

- In the decade to 2008, Norwegian household and corporate debt grew rapidly. Since the financial crisis, debt growth has slowed, but overall debt is at a historically high level relative to mainland GDP.
- Profitability in the Norwegian banking sector has been solid and stable in recent years. Loan losses have been low, enabling banks to meet higher capital requirements by retaining profits. Capital adequacy must be further improved to comply with requirements in the coming years.
- Since 2008 banks have improved funding structures and reduced liquidity risk, partly in preparation for future liquidity requirements.
- Global financial markets have been characterised by low volatility, high risk appetite and low risk premiums over the past couple of years. Norwegian banks have had ample access to wholesale funding at favourable conditions. Funding maturities have edged down in the past year.

The Executive Board notes that household and corporate debt has remained at high levels since the financial crisis, in contrast to developments following the banking crisis in the 1990s. The high level of debt means that the vulnerabilities that built up are still present. Household debt has continued to grow more rapidly than income in recent years and this may amplify the effects of shocks to the financial system on the real economy. For banks, the probability of large losses on loans to households is nonetheless low. An abrupt slowdown in household demand for goods and services, on the other hand, could increase banks' losses on loans to the corporate sector.

High oil prices have contributed to firm growth in the Norwegian economy. Low energy prices over an extended period could lead to a fall in petroleum investment, with negative effects on the mainland economy. Household income expectations could change and amplify a setback. The analyses in this *Report* show that Norwegian banks' loan losses may then increase. The Executive Board is of the view that a further build-up of capital buffers will put banks in a better position to cope with large loan losses and lower the probability of a credit-driven downturn in the Norwegian economy.

Short-term foreign currency funding accounts for a large share of Norwegian banks' wholesale funding. USD funding is largely sourced from US money market funds. High concentration increases refinancing risk. It is the view of the Executive Board that banks should disclose more information about their funding structure and liquidity.

The Executive Board also notes that a new liquidity standard for banks, the Liquidity Coverage Ratio (LCR), will be phased in across the EU from 2015. The requirement will also be made applicable to Norwegian banks. The aim of the LCR is to ensure that banks maintain sufficient liquid assets to survive a period of stress in financial markets. The standard requires banks to be able to cover total net cash outflows in NOK and foreign currency for a period of 30 days.

It is the Executive Board's opinion that banks should as a starting point hold liquid assets in currencies in which they have liquidity needs. Banks with significant liquidity risk in foreign currencies should therefore comply with the LCR in each currency.

Norges Bank considers that the current stock of high-quality liquid assets in NOK is not sufficient for banks to be able to meet a 100% LCR for NOK in practice. The EU provides for three alternative mechanisms for LCR compliance: a central bank credit facility that can count towards the LCR; permitting banks to hold larger amounts of other liquid assets subject to the imposition of larger haircuts; and the use of high-quality liquid assets in another currency.

The purpose of the new liquidity requirement is to improve banks' resilience to turbulence in funding markets. The Executive Board is of the opinion that

it would not be appropriate to set up a new central bank facility with the sole purpose of enabling banks to meet the LCR requirement.

The Executive Board also holds the view that an appropriate LCR ratio for NOK would be in the order of 60%. Banks can comply with this liquidity requirement by holding securities such as government bonds and covered bonds issued by other banks. To comply with the all-currency LCR ratio, each bank would then have to hold liquidity in NOK above the minimum requirement for NOK or overcomply with the liquidity

requirements in foreign currency. A higher LCR ratio for NOK could have resulted in a substantial increase in the stock of other banks' covered bonds in banks' liquidity buffers. This could have increased systemic risk and reduced money market liquidity.

The recommendations in this *Report* are also presented in a box overleaf.

Øystein Olsen
28 October 2014

NORGES BANK'S RECOMMENDATIONS

Based on the analyses in this *Financial Stability Report*, Norges Bank recommends five specific measures to reduce vulnerabilities and risks. The recommendations are directed towards both banks and the government. An overview of earlier recommendations is presented in Annex 1 on page 48.

- 1) *Each quarter, banks should publish an LCR for all currencies combined, for NOK and other significant currencies.*

Publishes LCR each quarter

	Combined	NOK	Other significant currencies
DNB Bank	●	●	●
Nordea Bank Norge	●	●	●
SpareBank 1 SR-Bank	●	●	●
Sparebanken Vest	●	●	●
SpareBank 1 SMN	●	●	●
Sparebanken Sør	●	●	●
SpareBank 1 Nord-Norge	●	●	●

Publishes ● Does not publish ●

- 2) *Banks should publish the concentration of investor groups in banks' funding structures each quarter based on the EU's new additional monitoring metrics to be introduced in 2015.*

Publishes investor concentration

DNB Bank	●
Nordea Bank Norge	●
SpareBank 1 SR-Bank	●
Sparebanken Vest	●
SpareBank 1 SMN	●
Sparebanken Sør	●
SpareBank 1 Nord-Norge	●

Reporting starts in 2015 ●

- 3) *Banks should publish inflows and outflows by maturity (a maturity ladder) each quarter based on the new EU reporting requirements (additional monitoring metrics) to be introduced in 2015.*

Publishes maturity ladder

DNB Bank	●
Nordea Bank Norge	●
SpareBank 1 SR-Bank	●
Sparebanken Vest	●
SpareBank 1 SMN	●
Sparebanken Sør	●
SpareBank 1 Nord-Norge	●

Reporting starts in 2015 ●

- 4) *An LCR ratio for NOK should be explicitly required and the requirement should be set at about 60%. This recommendation is based on the assumption that Norges Bank will not establish a new central bank facility.*
- 5) *Banks with significant liquidity risk in foreign currencies should be directed to meet the LCR requirement in full for each of these currencies.*

SUMMARY

In this *Financial Stability Report*, Norges Bank assesses vulnerabilities and risks in the Norwegian financial system, and presents recommendations related to the upcoming liquidity regulation of banks.

RISK OUTLOOK

The outlook generally points to moderate growth in the Norwegian economy, but prospects may change rapidly if further financial market turbulence should arise or the economy is exposed to major shocks. There are signs that financial imbalances have built up in Norway. This may amplify a downturn.

Profitability in the Norwegian banking sector has been solid. Quarterly results so far this year indicate that profits will also be high in 2014, and banks are well positioned to meet the adopted capital requirements in the coming years.

Risk premiums in money and credit markets have been falling in recent years. Developments this autumn have pointed in a different direction, with increasing uncertainty in financial markets. Stability in the markets is fragile, and economic growth is weak in many countries, particularly in Europe.

NEW LIQUIDITY REQUIREMENT (LCR)

The new bank liquidity requirement, the Liquidity Coverage Ratio (LCR), will be phased in across the EU from 2015. The requirement will also be made applicable to Norwegian banks, but should be adjusted to Norwegian conditions. See Norges Bank's specific recommendations on page 8 and Section 2, "Bank funding and liquidity risk".

The regulation should set an explicit requirement both for NOK and for other significant currencies. Norges Bank considers that the current stock of high-quality liquid assets in NOK is not sufficient for banks to be able to meet a 100% LCR for NOK in practice. An appropriate LCR ratio for NOK would be in the order of 60%.

A high LCR requirement for NOK could lead to increased concentration of covered bonds in banks' liquidity buffers. Banks' liquidity buffers already contain large volumes of other banks' covered bonds.

With limited diversification of liquidity reserves and a high degree of interconnectedness, problems in one bank can more easily spread to other banks. This also increases the risk that assets presumed to be liquid may prove to be illiquid in a situation of market turbulence.

BANKS' CAPITAL BUFFERS CAN DAMPEN A DOWNTURN

Norwegian banks' capital ratios have risen gradually in recent years in pace with higher capital requirements, increasing banks' resilience. Banks' CET1 capital as a percentage of total assets is high in Norway compared with many other countries, albeit not higher than at the end of the 1990s.

A stress test shows that the largest Norwegian banks will experience high loan losses in the event of a pronounced downturn in the Norwegian economy (see Section 3, "Bank solvency"). The degree to which banks tighten lending in a situation of rising losses will affect both capital adequacy and the severity of the downturn. Capital buffers increase banks' room for manoeuvre, which may reduce the need to cut lending and mitigate the risk of banks contributing to a credit-driven downturn in the Norwegian economy.

HIGH HOUSEHOLD DEBT

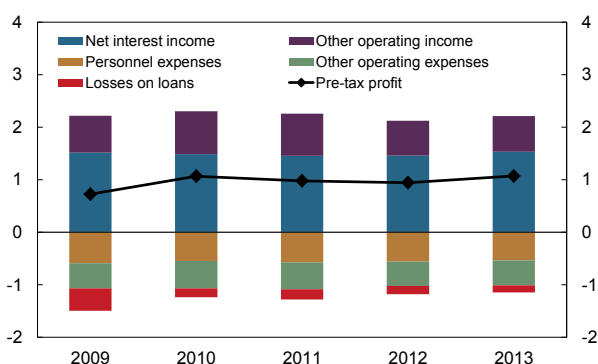
Household debt rose considerably in the 2000s, increasing more rapidly than both house prices and household income and financial assets. The increase has been pronounced in all age groups. Household assets are dominated by housing and a large proportion of household equity will be eroded in the event of a fall in house prices.

The analyses in Section 4, "High household debt" show nonetheless that the risk of a substantial increase in defaults is moderate, even in the event of large shocks such as a pronounced fall in house prices and abrupt interest rate increases. On the other hand, if such shocks were to occur, high debt could induce households to make considerable adjustments in demand for goods and services.

1 RISK OUTLOOK

This report analyses vulnerabilities and risks in the financial system and the Norwegian economy. The outlook generally points to moderate growth in the Norwegian economy, but prospects may change rapidly if further financial market turbulence should arise or the economy is exposed to major shocks.

Chart 1.1 Decomposition of developments in banks¹ pre-tax profit.² Percentage of average total assets. 2009 – 2013



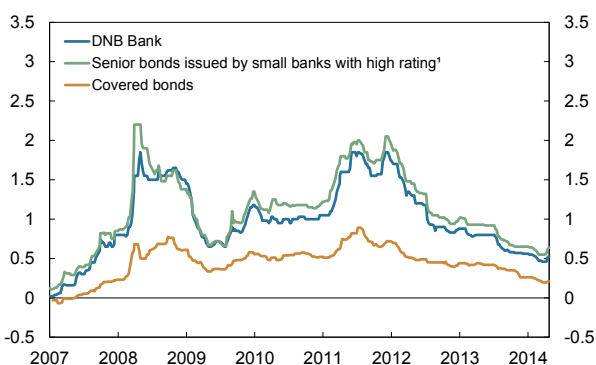
1) The six largest Norwegian banking groups at end-2013.
2) Commission income from SpareBank 1 Boligkreditt and SpareBank 1 Næringskreditt to the owner banks is reclassified as interest income.
Sources: The banking groups' annual reports and Norges Bank

VULNERABILITIES AND RISKS IN NORWAY

Norwegian banks' loan losses are currently low and funding market conditions have been favourable. Although new regulation is strengthening banks' resilience, banks will continue to be vulnerable to market turbulence and shocks. There are signs that financial imbalances have built up in Norway. This may amplify a downturn.

Profitability in the Norwegian banking sector has been solid (see Chart 1.1). Quarterly results so far this year indicate that profits will also be high in 2014, and banks are well positioned to meet the adopted capital requirements in the coming years.

Chart 1.2 Indicative risk premiums for 5-year Norwegian bank bonds and covered bonds. Spread against 3-month NIBOR. Percent. Week 27 2007 – week 43 2014



1) Banks with total assets between NOK 5bn and NOK 15bn with an A rating from DNB Markets.
Sources: DNB Markets and Norges Bank

Banks' sound results must be viewed in the context of firm growth and low unemployment in the Norwegian economy. High oil prices and substantial investment activity on the Norwegian continental shelf have contributed to economic growth for several years. In addition, volatility has been low and risk appetite high in financial markets over the past couple of years, providing ample access to wholesale funding at favourable conditions (see Chart 1.2).

Even though the general outlook¹ points to moderate growth in the Norwegian economy, prospects may change rapidly if turbulence should arise in financial markets or the economy is exposed to shocks. Market stability may be fragile, and risk premiums may increase considerably from today's low levels. Lately, there has been a significant increase in risk premiums on high-yield bonds. The contagion of uncertainty may also affect investment grade bonds, in which case access to wholesale funding and equity capital may become more difficult and more costly for Norwegian banks.

1 See the September 2014 Monetary Policy Report with financial stability assessment (3/14).

The consequences of renewed turbulence will depend on how it is triggered. Persistently low energy prices could affect households and enterprises in Norway. At worst, this could lead to a severe and prolonged downturn in the Norwegian economy. This could result in higher bank loan losses and more limited access to funding.

Financial imbalances can also trigger or amplify a downturn.² From the mid-1990s until 2008, total debt in the mainland economy grew markedly faster than GDP (see Chart 1.3). Household debt grew more rapidly than both house prices and household income and financial wealth (see Chart 1.4). In contrast to the Norwegian banking crisis around 1990, debt and real estate prices after the financial crisis have remained at high levels. Compared with the banking crisis, growth in the Norwegian economy through the financial crisis was fairly solid, and a large, abrupt shift in household balance sheets was avoided.

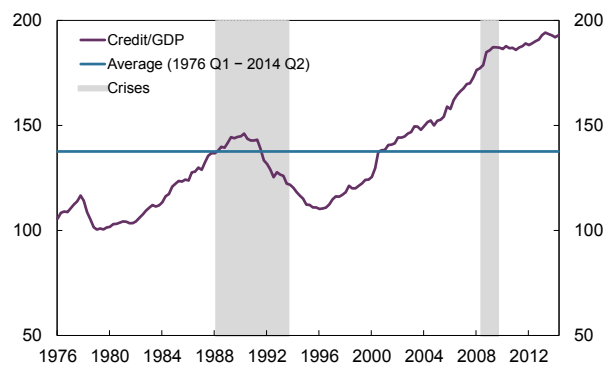
A persistently low interest rate level in surrounding countries will affect the interest rate level in Norway. This could in isolation increase the risk of a further build-up of financial imbalances, with renewed house price inflation and debt accumulation, particularly if growth in the Norwegian economy remains firm.

Key characteristics of the Norwegian banking sector also affect banks' resilience. Even though there are a large number of banks in Norway, the sector has a relatively high degree of concentration. DNB Bank has a lending market share of over 30% (see Chart 1.5). Close to 40% of banks' funding is in foreign currency. Although this increases funding diversification, it also links banks more closely to international financial markets, increasing their vulnerability to turbulence in these markets.

GLOBAL RISK OUTLOOK

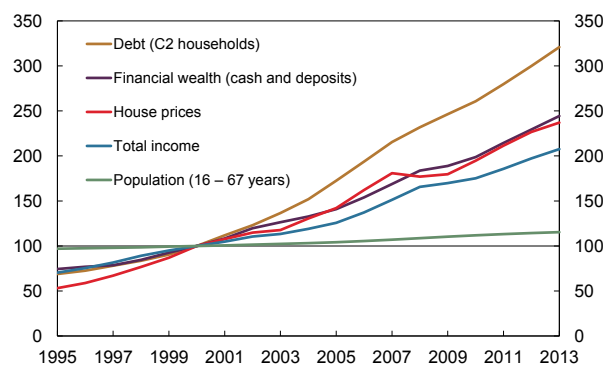
Risk premiums in money and credit markets have fallen in recent years, while stock prices have increased. Developments this autumn have pointed in a different direction, with increasing uncertainty in financial markets. Market stability is fragile, and economic growth is weak in many countries, particularly in Europe.

Chart 1.3 Total credit¹ mainland Norway as a percentage of mainland GDP. Percent. 1976 Q1 – 2014 Q1



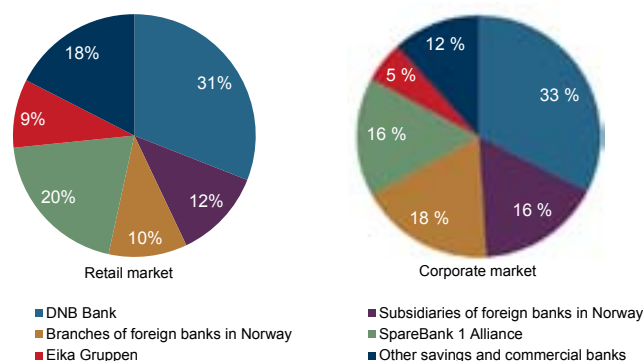
1) The sum of C2 households and C3 non-financial enterprises in mainland Norway (all non-financial enterprises pre-1995). C3 comprises C2 and foreign debt. Sources: Statistics Norway, IMF and Norges Bank

Chart 1.4 Household debt and other relevant variables. Indexed. 2000 = 100. 1995 – 2013



Sources: Statistics Norway and Norges Bank

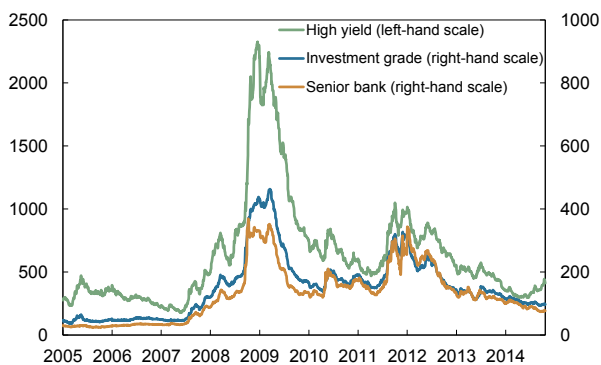
Chart 1.5 Lending market shares in the Norwegian banking sector. Percent. At year-end 2013



Source: Norges Bank

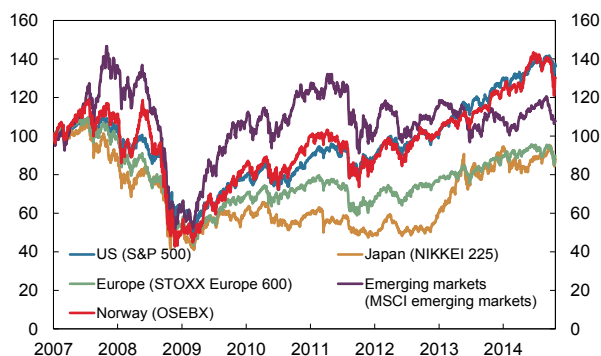
² See decision basis for the countercyclical capital buffer in the September Monetary Policy Report (3/14). The countercyclical capital buffer is set at 1%, effective from 30 June 2015.

Chart 1.6 Risk premiums on European bonds. Corporate and bank bonds. Basis points over German government bond yields. 3 January 2005 – 23 October 2014



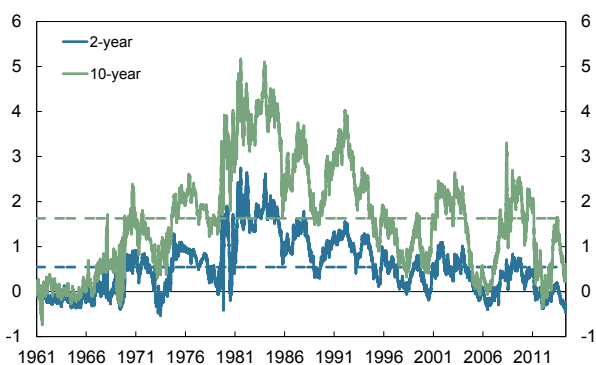
Source: Thomson Reuters

Chart 1.7 Stock indices. Indexed. 1 January 2007 = 100. 1 January 2007 – 23 October 2014



Source: Bloomberg

Chart 1.8 Estimated maturity premiums for US 10- and 2-year government bonds. Percent.¹ 14 June 1961 – 23 October 2014



1) Broken green and blue lines show average maturity for 10- and 2-year government bonds respectively.

Source: Federal Reserve Bank of New York

With several years of low interest rates, and expectations that interest rates will remain low ahead, investors' search for yield has become demanding. Low interest rates, easy access to liquidity and the gradual improvement in underlying macroeconomic developments have led to steadily rising demand for risky assets. Investors have moved from sovereign bonds to investment grade non-financials and on to high yield bonds, pushing up prices for these assets.

Risk premiums in European bond markets reverted to the low levels observed before the financial crisis early this autumn (see Chart 1.6). Stock prices have risen for several consecutive years. The rise was particularly marked in the US, where stock indices at their peak this summer were 40% higher than at the beginning of 2007 (see Chart 1.7). Estimated maturity risk premiums in fixed income markets are at very low levels (see Chart 1.8). There have also been signs of rising demand for complex financial products.

Shocks can quickly lead to higher risk premiums. Monetary policy tightening in one or more countries can have the same effect. Markets reacted strongly when the Federal Reserve announced in summer 2013 that monetary policy would be slightly less expansionary. Turbulence in one market can easily spread to another. Stock prices have fallen through autumn, and risk premiums on high-yield bonds have risen.

Issuance activity in bond markets has been high for a long period, particularly in the high-risk segment. Liquidity risk in these markets may be higher now than before the financial crisis in 2008, as banks presumed ability and willingness to use their balance sheets for proprietary trading has decreased and less professional investors have considerably increased their exposure to bond markets.³ Both increased liquidity risk and low maturity premiums could amplify the impact on bond markets of any shocks.

UNCERTAINTY WITH REGARD TO DEVELOPMENTS IN CHINA AND THE EURO AREA

The recovery in the global economy is continuing at a moderate pace (see Chart 1.9). The projections in the September *Monetary Policy Report* imply that growth will edge up from 2015. The financial market turbulence in autumn may reflect heightened uncertainty with regard to the recovery, primarily in Europe.

³ See IMF *Global Financial Stability Report* 2/2014.

At the same time, the recent decline in oil prices may in isolation underpin higher global growth.

Strong economic growth and still increasing oil demand from China have pushed up oil prices considerably since the beginning of the 2000s (see Chart 1.10). A possible downturn in China could have an impact on energy prices.

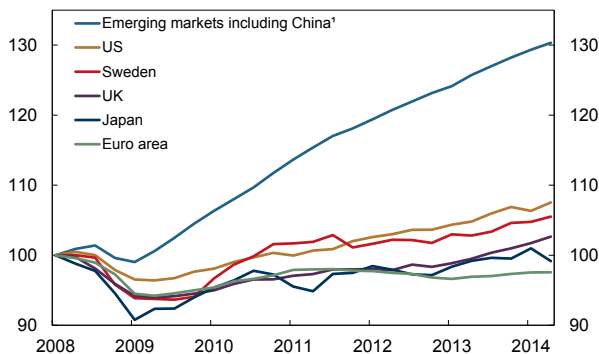
Growth in China has slowed in the years following the financial crisis and has been around 7½% over the past year (see Chart 1.11). According to Norges Bank's forecast, growth will slow further to below 7% in the years ahead. There is nonetheless a risk that growth will be even lower. The real estate sector

is showing signs of weakness.⁴ After several years of strong growth in construction activity, construction starts and home sales have shown a decline so far this year (see Chart 1.12). House price inflation has also slowed.

Housing investment accounts for a substantial share of GDP in China, and construction industry demand for goods and services from other sectors is high. In addition, local authorities rely on land sales and tax income from the real estate sector to finance investment in infrastructure. Many real estate developers are highly leveraged, and an abrupt fall in turnover and prices could have ripple effects on the banking sector in China. An abrupt slowdown and a sharp fall

⁴ See "Consequences of an abrupt slowdown in China's property market", *Economic Commentaries* 5/2014, Bjørnar K. Slettvåg, Norges Bank.

Chart 1.9 GDP. Seasonally adjusted volume index. 2008 Q1 = 100. 2008 Q1 – 2014 Q2



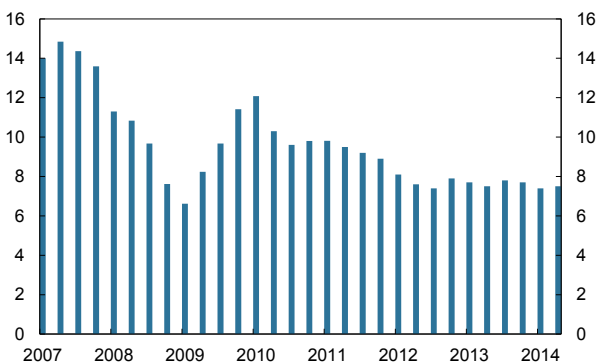
¹ Emerging markets comprise China, Thailand, Poland, Turkey, Russia, Indonesia, India and Brazil. Weighted by Norwegian export weights. Sources: Thomson Reuters and Norges Bank

Chart 1.10 Oil price.¹ USD per barrel. 3 January 2000 – 23 oktober 2014



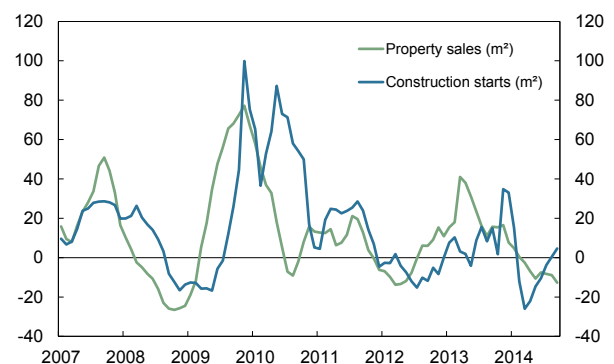
¹ Brent Blend. Source: Thomson Reuters

Chart 1.11 GDP China. Percent. Four-quarter growth. 2007 Q1 – 2014 Q2



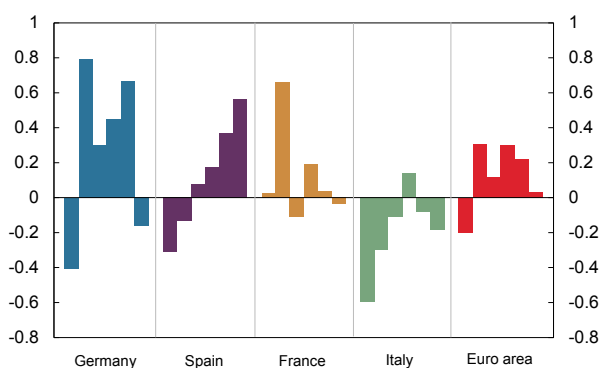
Source: Thomson Reuters

Chart 1.12 Construction starts and property sales in China.¹ Twelve-month growth. Percent. Three-month moving average. January 2007 – September 2014



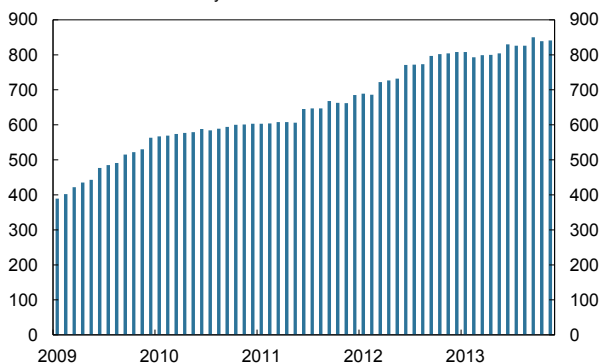
¹ Residential, office and commercial buildings. Source: CEIC

Chart 1.13 GDP in selected euro area countries.
Percent. Quarterly growth. 2013 Q1 – 2014 Q2



Source: Thomson Reuters

Chart 1.14 Non-performing loans. Euro area banks.
In billions of EUR. January 2009 – November 2013



Source: IMF

in housing investment could therefore lead to a marked decline in economic growth in China, which in turn could have substantial global ripple effects.

The recovery in the euro area is fragile. Growth in 2014 Q2 was weak in many countries (see Chart 1.13). The sanctions between the European Union and Russia have probably had a dampening impact on growth recently. Inflation is very low, and the European Central Bank (ECB) has further reduced its key rate and announced new programmes for the purchase of private sector securities. The ECB has also introduced a new loan arrangement, offering banks loans on favourable terms provided they increase lending to small and medium-sized enterprises.

Some positive developments are evident in the European banking sector. Funding costs have fallen in pace with the general increase in risk appetite in recent years (see Chart 1.6). Banks have also obtained fresh capital, which combined with reduced lending has resulted in a marked increase in capital ratios. In the ECB second quarter bank lending survey, banks reported an easing in credit standards for both households and enterprises.

Banks nonetheless still face considerable challenges. Credit quality has deteriorated since 2009 and defaults have increased (see Chart 1.14). Since setting deposit rates below zero is demanding for banks, low key rates have exerted considerable pressure on the interest margin. Profitability is low for a number of banks, and many do not hold sufficient capital to implement the write-downs that are necessary to repair their balance sheets. This may result in continued reluctance on the part of banks to provide new loans and weigh down on growth in the euro area.

An extensive stress test of capital adequacy and a thorough review of the assets of the largest banks in the EU are being conducted by the ECB in 2014.⁵ The aim is to enhance transparency, expose weaknesses and implement measures where appropriate. This may build confidence in banks.

5 The ECB *comprehensive assessment*, testing 130 European banks.

2 BANK FUNDING AND LIQUIDITY RISK

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The financial crisis revealed a need for improved management of banks' liquidity and funding structure. New regulatory requirements are in the pipeline and will help reduce vulnerabilities in the banking system. However, because of shortcomings in these requirements, there will still be vulnerabilities in the banking sector and new risks may emerge. Greater transparency with regard to banks' funding structure and liquidity may provide incentives to reduce vulnerabilities. A limited supply of Norwegian government securities gives grounds to adjust the new liquidity coverage ratio (LCR) requirement to Norwegian conditions.

LIQUIDITY RISK AND REGULATION

Liquidity risk arises in the banking system when banks accept deposits with no fixed term and offer loans with long maturities. Banks encountered liquidity problems during the financial crisis in 2008–2009. New requirements are being introduced in the EU and Norway. This may increase banks' resilience.

BANKS SHOULD EXPOSE THEMSELVES TO LIQUIDITY RISK

One of banks' main tasks is to convert deposits with no fixed term into loans with long maturities (see Chart 2.1). This gives savers a safe and liquid repository for surplus funds and enables investments to be debt-financed. This maturity transformation entails exposing banks to liquidity risk. Both deposits and wholesale funding generally have much shorter maturities than loans. Banks face significant refinancing risk because they must replace deposits that are withdrawn, or roll over funding that matures, before loans are repaid. In addition, banks are often exposed to the same types of borrowers and also have exposure to one another. One bank's refinancing problems can therefore spread to other banks and lead to serious problems in the financial system, as became clear in 2008.

Banks can reduce their liquidity risk by taking deposits from many small depositors, having long maturities on wholesale funding and holding liquidity buffers. Assets in liquidity buffers normally yield lower returns than other assets.

Extraordinary loans from central banks and other measures by the authorities can reduce the risk of liquidity problems at one bank escalating into a financial crisis.

Chart 2.1 Illustration of maturity transformation

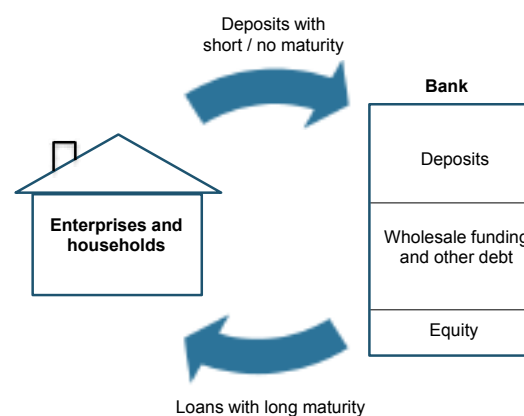
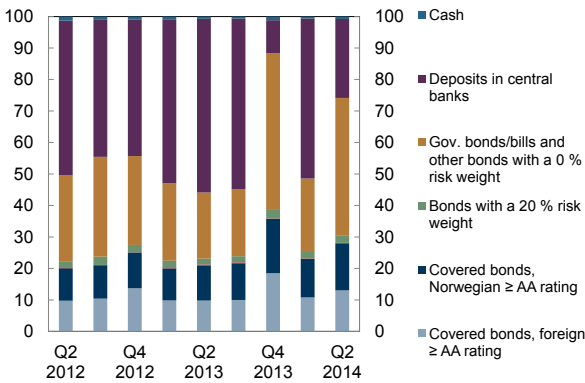


Chart 2.2 Norwegian banks' liquidity buffers.¹ Percent. 2012 Q2 – 2014 Q2



1) High quality liquid assets under LCR before haircuts. Sources: Finanstilsynet and Norges Bank

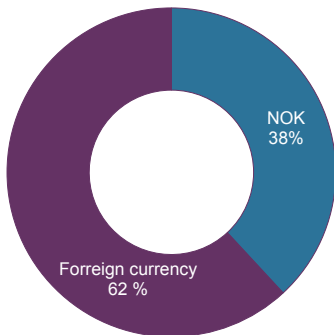
On the other hand, expectations of such measures could lead to excessive risk-taking by banks and funding costs that do not reflect banks' risk exposure.

New banking regulation aims to reduce both the risk and the consequences of financial crises. An overriding objective is to increase banks' and investors' loss-absorbing capacity, thereby reducing the likelihood that the government has to foot the bill in a crisis. Quantitative liquidity and funding requirements are part of this regulation.

LIQUIDITY BUFFERS - ENABLING BANKS TO COPE WITH MARKET TURBULENCE

Liquidity buffers put banks in a better position to cope with periods of market turbulence. Banks can defer the need to raise funding in the market by selling securities from the buffer or borrowing against them.

Chart 2.3 Liquidity buffers by currency.¹ Norwegian banks. Percent. As at 30 June 2014

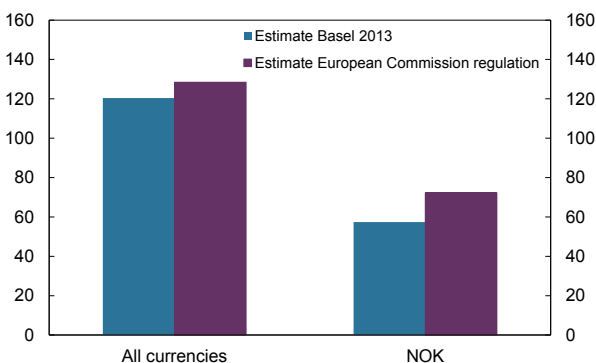


1) High quality liquid assets under LCR before haircuts. Sources: Finanstilsynet and Norges Bank

Government securities account for a large proportion of banks' liquidity buffers in NOK, although these holdings have decreased with the phase-out of the government swap arrangement². Banks also hold government securities in foreign currency. In addition, a large share of banks' liquidity buffers is in the form of central bank deposits (see Chart 2.2). The bulk of these are DNB's deposits in foreign central banks. Norwegian and foreign covered bonds currently account for just under 30% of banks' liquidity buffers.

Less than half of Norwegian banks' liquidity buffers are in NOK (see Chart 2.3). With large amounts of liquidity in the banking system as a result of unconventional monetary policy, DNB and other large Nordic banks

Chart 2.4 LCR.¹ Norwegian banks. Percent. As at 30 June 2014



1) Liquidity Coverage Ratio. Simplified estimates. Sources: Finanstilsynet and Norges Bank

NORWEGIAN COVERED BONDS (OMFs)

Norwegian covered bonds are debt instruments issued by covered bond mortgage companies and secured on residential or commercial mortgages. The mortgage companies are owned by banks. Norwegian covered bonds are widely used to fund residential mortgage lending and to some extent in lending to the commercial property sector.

1 Norwegian banks and covered bond mortgage companies, hereinafter referred to as "banks".
2 The arrangement introduced in 2008 and terminated in 2014 whereby banks and the government swapped covered bonds for Treasury bills for an agreed period.

have liquidity buffers in EUR and USD. Even though a large portion of banks' funding is also in foreign currency, the need for NOK liquidity is high because much of this foreign currency funding is swapped into NOK.

NEW LIQUIDITY REGULATION IN NORWAY

New international liquidity and funding requirements for banks are being introduced both in the EU and in Norway (see also the box on page 18). The liquidity coverage ratio (LCR) will be phased in across the EU from 2015, and the net stable funding ratio (NSFR) requirement is expected to be introduced by 2018.

LIQUIDITY COVERAGE RATIO (LCR) REQUIREMENT

The LCR requirement specifies the required size of liquidity buffers, the types of asset that qualify, and provides for requirements in different currencies. The LCR measures to what extent banks have sufficient liquid assets to survive a 30-day period of stress in funding markets. These assets should be able to be readily sold without a substantial drop in value.

Banks can adjust to the new liquidity requirements by increasing their holdings of safe and readily saleable assets or by increasing funding maturities. Liquid assets funded by debt with a residual maturity of more than 30 days will improve a bank's LCR.

The European Commission presented a delegated regulation with regard to the LCR in the EU in October. The regulation allows banks to hold a much higher percentage of covered bonds in their liquidity buffers and with smaller haircuts than recommended by the Basel Committee. This may have implications for the future composition of banks' liquidity buffers (see subsection "Covered bonds in banks' liquidity buffers").

On average, Norwegian banks meet the LCR requirement of 100% by a good margin for all currencies combined (see Chart 2.4). Compliance with the LCR for NOK is lower, but the European Commission's regulation may raise the level of compliance as it permits a higher share of covered bonds, thereby pushing up banks' eligible holdings of high-quality liquid assets in NOK. This is a particular advantage for smaller banks that hold more covered bonds.

Finanstilsynet (Financial Supervisory Authority of Norway) will present a proposal by summer 2015 as to how the LCR is to be implemented in Norway. Banks

should be transparent about their liquidity situation. This will provide an incentive to reduce vulnerabilities. Of the largest Norwegian banks, only DNB reports its LCR.

Each quarter, banks should publish an LCR for all currencies combined, for NOK and other significant currencies.

Publishes LCR each quarter

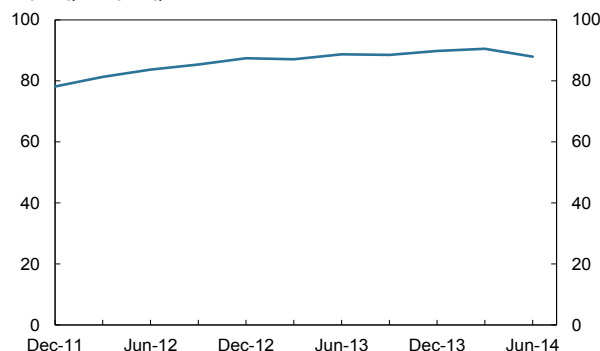
	Combined	NOK	Other significant currencies
DNB Bank	●	●	●
Nordea Bank Norge	●	●	●
SpareBank 1 SR-Bank	●	●	●
Sparebanken Vest	●	●	●
SpareBank 1 SMN	●	●	●
Sparebanken Sør	●	●	●
SpareBank 1 Nord-Norge	●	●	●

Publishes ● Does not publish ●

STABLE FUNDING REQUIREMENT (NSFR)

The proposed net stable funding ratio (NSFR) requires banks to fund illiquid assets with stable funding. Loans to customers and encumbered assets are examples of illiquid assets. Stable funding will include regulatory capital, bond funding with a residual maturity of more than one year, and several types of customer deposit. A consultative document has been published by the Basel Committee, but the detailed specification of the requirement is not yet complete (see also the box on page 18). As measured by the NSFR, there has been a slight reduction in liquidity risk at Norwegian banks in recent years (see Chart 2.5). To comply with the requirement, the ratio of stable funding to illiquid assets must be improved further.

Chart 2.5 NSFR. Banks¹ stable funding as a percentage of the net stable funding requirement. Consolidated figures. At end of quarter. 2011 Q4 – 2014 Q2



1) The sample consists of 17 banks in Norway, primarily the largest. Sources: Finanstilsynet and Norges Bank

LIQUIDITY REGULATION

Under the **Liquidity Coverage Ratio (LCR)**, banks must hold an adequate stock of unencumbered high-quality liquid assets (HQLA) to meet their liquidity needs for a 30-day period of financial market stress. The LCR has two components:

- a) The value of the stock of HQLA after haircuts for assumed price declines in the stress period.
- b) Total net cash outflows in the stress period, defined as expected outflows minus expected inflows, based on assumptions of an inability to roll over wholesale funding and a run-off of a proportion of deposits.

$$\text{LCR} = \frac{\text{Stock of HQLA (a)}}{\text{Total net cash outflows (b)}} \geq 100\%$$

In the European Commission regulation, banks must meet the LCR for all currencies combined. It is not an explicit requirement for banks to fully comply with the LCR requirement by currency. If the stock of liquid assets in a currency is insufficient, the proposal provides for three alternative mechanisms to enable LCR compliance: i) use of a central bank facility, ii) use of HQLA in a different currency, iii) a higher share of Level 2 assets.

Under Basel III¹ and CRD IV/CRR² the LCR requirement will be phased in from 2015. In the EU, the phase-in will begin on 1 October 2015 and the requirement will apply in full as from 1 January 2018. Finanstilsynet will prepare draft liquidity regulations for Norwegian banks by the end of May 2015.

¹ See Basel III January 2013 phase-in timetable.

² See Capital Requirement Regulation (CRR) of 26 June 2013.

The **Net Stable Funding Ratio (NSFR)** requires banks' illiquid assets to be financed by long-term funding. The NSFR has two components:

- a) The value of funding expected to be stable, including regulatory capital, long-term bond funding and household deposits, multiplied by a defined available stable funding (ASF) factor.
- b) The value of assets and off-balance sheet exposures assumed to require stable funding, including encumbered assets and loans to customers, multiplied by a defined required stable funding (RSF) factor.

$$\text{NSFR} = \frac{\text{Available amount of stable funding (a)}}{\text{Required amount of stable funding (b)}} \geq 100\%$$

The Basel Committee's revised proposal for the NSFR³ was issued for comment in 2014. The NSFR will be introduced under Basel III on 1 January 2018. The NSFR is yet to be clearly defined in EU regulations, and it is uncertain when and in what form this requirement will enter into force. The European Commission will submit draft legislation for the NSFR by the end of 2016 in order to introduce the NSFR as a requirement by 2018.

³ See Consultative Document, Basel III, Net Stable Funding Ratio (NSFR) of 11 April 2014.

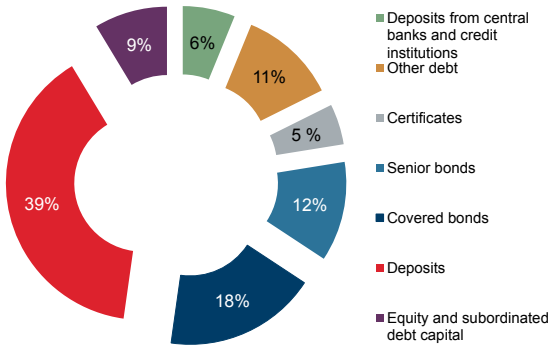
In the Commission's regulation⁴ for the LCR, the following assets qualify, with assumptions regarding price declines in stress periods (haircuts):

Level	Liquid asset	Specifications	LCR haircut
Level 1	Banknotes, coins and central bank deposits		0%
	Government securities		0%
	International organisations/PSEs/Local authorities	Assigned a risk weight of 0% under the CRD	0%
	Covered bonds	Issue size of min. EUR 500m. Subject to asset coverage and rating requirements	7%
Level 2A	Local authorities/PSE authorities securities	Assigned a risk weight of 20% under the CRD	15%
	Covered bonds	Issue size of min. EUR 250m. Subject to asset coverage and rating requirements	15%
	Corporate debt securities	Issue size of at least EUR 250m. Subject to rating requirement	15%
Level 2B	Asset-backed securities (ABS)	Underlying assets: mortgages, auto loans, SME loans, consumer loans. Tranches of min. EUR 250m	25-35%
	Corporate debt securities	Issue size of min. EUR 250m. Subject to rating requirement	50%
	Equities		50%
	Covered bonds	Issue size of min. EUR 250m. Subject to asset coverage requirement	30%
	Restricted-use committed liquidity facilities (RCLF)	Backed by assets specified by the central bank	

Securities issued by the banking group itself do not qualify. The list is not exhaustive.

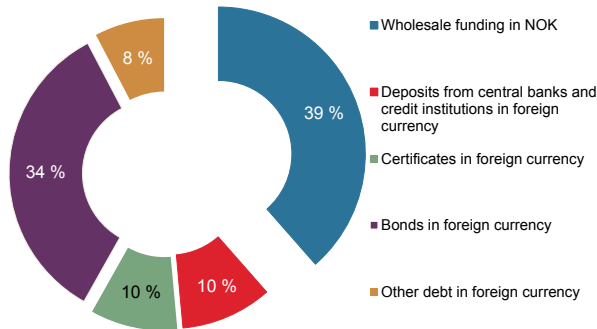
⁴ See Commission Delegated Regulation with regard to the LCR of 10 October 2014.

Chart 2.6 Funding structure of Norwegian banks and covered bond mortgage companies.¹ Percent. As at 30 June 2014



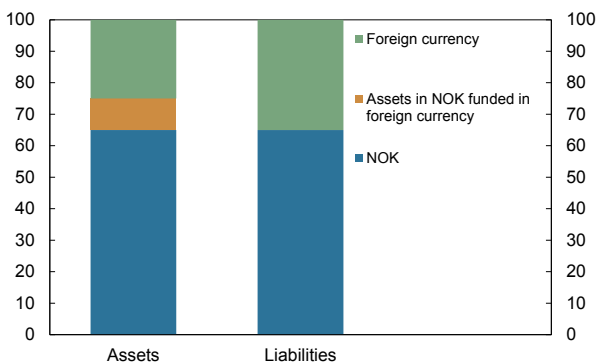
1) Sum of all banks and covered bond mortgage companies excluding branches and subsidiaries of foreign banks in Norway.
Source: Norges Bank

Chart 2.7 Wholesale funding of Norwegian banks and covered bond mortgage companies.¹ By currency. Percent. As at 30 June 2014



1) Sum of all banks and covered bond mortgage companies excluding branches and subsidiaries of foreign banks in Norway, less intragroup items.
Source: Norges Bank

Chart 2.8 Norwegian banks' and covered bond mortgage companies' balance sheets by currency.¹ Percent. As at 30 June 2014



1) Sum of all banks and covered bond mortgage companies excluding branches and subsidiaries of foreign banks in Norway.
Sources: Norges Bank

COMPLEX FUNDING STRUCTURE

Norwegian banks fund most of their assets with deposits and bonds (see Chart 2.6). Customer deposits account for more than a third and long-term wholesale funding for around 30%. These two funding sources, as well as equity, are generally assumed to be stable. Banks with stable funding are better equipped to cope with periods of turbulence.

Banks also rely on short-term wholesale funding. Norway's largest bank, DNB, has access to foreign certificate markets. These securities have a maturity of less than one year and account for around 5% of Norwegian banks' funding. In addition, banks hold deposits from other banks, which account for 6%. These deposits are assumed to be more volatile than ordinary customer deposits.

FOREIGN CURRENCY FUNDING

More than half of banks' wholesale funding is in foreign currency (see Chart 2.7). This funding consists primarily of senior bank bonds, covered bonds, short-term funding and deposits.

There are several reasons why Norwegian banks choose foreign currency funding. Banks' foreign currency assets are best funded in the corresponding currency (see Chart 2.8). The remainder of their foreign currency funding is swapped into NOK, primarily to fund lending in NOK. Foreign currency funding has been available on favourable terms, which has influenced banks' choice of funding. Solid economic growth and sound government finances in Norway may have given Norwegian banks a competitive advantage in funding markets. In addition, extraordinary monetary policy measures in Europe and the US have contributed to low interest rates for borrowing in EUR and USD (see Chart 2.9).

The size of the current account and capital flows to and from Norway affect the supply and terms of banks' wholesale funding. Exports of oil and gas have resulted in large current account surpluses, which have to be invested abroad. Outflows of capital from Norway have, however, been significantly higher than the current account surplus (see Chart 2.10). The offsetting entry to these additional outflows is an inflow

of capital into Norway mainly related to banks' foreign currency funding.³

Most of the capital outflows have been in the form of transfers to the Government Pension Fund Global. Norwegian insurers, pension funds and investment companies have also accounted for a significant share, as they seek investment opportunities abroad to maximise risk-adjusted return. Insurers and pension funds must also meet regulatory limits on exposure to individual issuers and products, which restricts demand from Norwegian institutional investors for domestic covered bonds and bank bonds. As a result, foreign currency funding is an attractive alternative for Norwegian banks in normal times.

Banks also seek to diversify their funding sources. By raising funding in other currencies, banks gain access to more markets and investors and funding becomes more diversified. Banks' vulnerability to stress in one particular market may then be reduced.

While foreign funding enhances funding diversification, it also links banks more closely to global financial markets, increasing their vulnerability to turbulence in these markets. Turbulence can in particular have a major impact on the supply and price of funding if investors prioritise the domestic market in volatile periods. Norwegian banks may therefore be particularly vulnerable to stress in global markets.

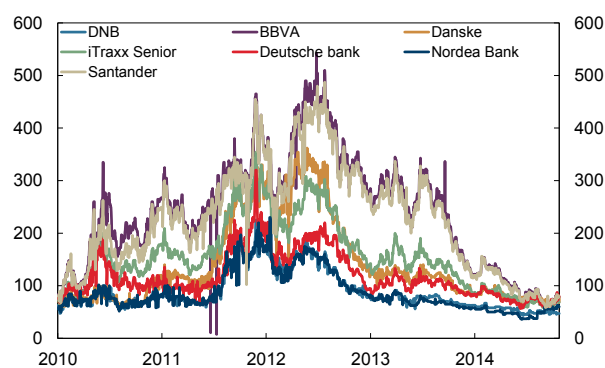
NEW REGULATION WILL NOT ELIMINATE ALL VULNERABILITIES

By adjusting to the new liquidity requirements, banks have reduced their liquidity risk. However, because of shortcomings in these requirements, there will still be vulnerabilities in the banking sector and new risks may emerge. Banks' share of short-term foreign funding is high. The EU's new regulation on the LCR may lead to a higher concentration of covered bonds in banks' liquidity buffers and an increase in systemic risk.

SHORT-TERM FOREIGN FUNDING AND REFINANCING RISK

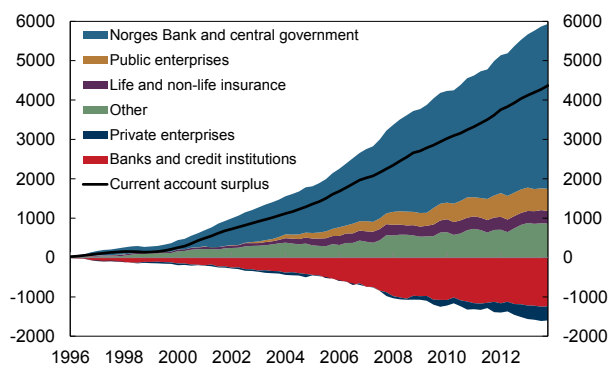
Large Nordic banks obtain a large share of their short-term funding in foreign currency, primarily USD and EUR. Some long-term bond funding is converted into

Chart 2.9 CDS prices¹ of a sample of Norwegian and foreign banks. Basis points. 1 January 2010 – 23 October 2014



1) Credit Default Swap.
Source: Bloomberg

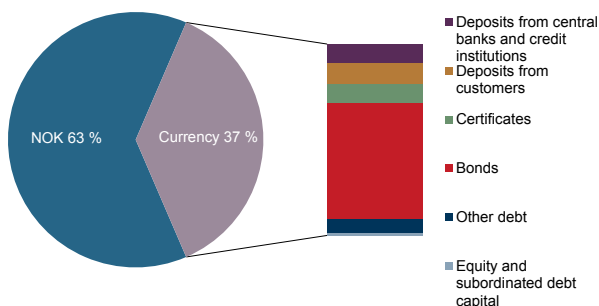
Chart 2.10 Net capital outflows from sectors in Norway. Accumulated. In billions of NOK. 1996 Q1 – 2013 Q2



Source: Statistics Norway

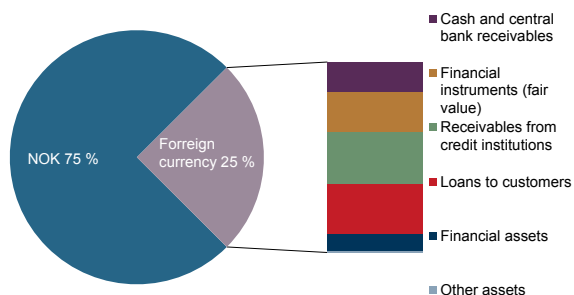
³ See "Norwegian banks' foreign currency funding of NOK assets", Staff Memo 2/2014, Jermund L. Molland, Norges Bank.

Chart 2.11 Norwegian banks' and covered bond mortgage companies' funding by currency.¹ Percent. As at 30 June 2014



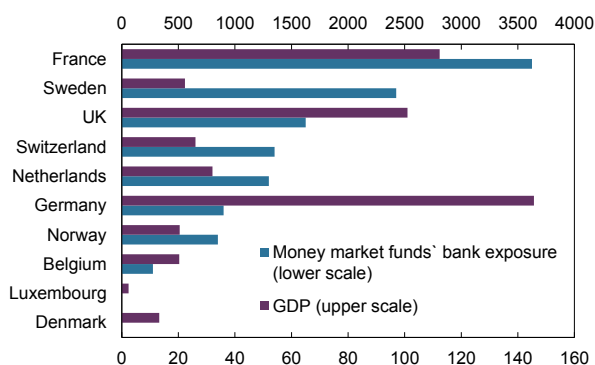
1) Sum of all banks and covered bond mortgage companies excluding branches and subsidiaries of foreign banks in Norway. Source: Norges Bank

Chart 2.12 Norwegian banks' and covered bond mortgage companies' assets by currency.¹ Percent. As at 30 June 2014



1) Sum of all banks and covered bond mortgage companies excluding branches and subsidiaries of foreign banks in Norway. Source: Norges Bank

Chart 2.13 Prime money market funds' total bank exposures¹ in Europe and GDP². In billions of USD. As at August 2014



1) J.P. Morgan estimate.
2) GDP 2013.
Sources: J.P. Morgan and SNL

NOK through currency swaps with considerably shorter maturities than the bonds issued.⁴

Refinancing risk depends on the maturity mismatch between assets and funding, the liquidity of the assets and the degree of funding diversification. Under the LCR requirement, funding with a maturity of more than 30 days does not need to be matched with liquid assets. Banks therefore have an incentive to obtain short-term funding with a maturity of more than 30 days, but not necessarily much more than that. Refinancing risk after 30 days may therefore be considerable. Any refinancing problems may quickly lead to a need to sell off assets rapidly from a bank's liquidity buffer or borrow against them.

DEPOSITS AND SHORT-TERM SECURITIES IN FOREIGN CURRENCY

Short-term funding in foreign currency consists of both deposits and short-term securities. Banks hold foreign currency deposits from money market funds, large firms and other banks without any fixed term. These deposits can be withdrawn without notice and are considered less stable. In addition, DNB, like large Swedish banks, borrows large amounts in the short-term securities market. Maturities vary from one day to one year and average 50 days in the US.⁵

Borrowing in the form of short-term securities⁶ in foreign currency totalled around NOK 200bn at the end of 2014 Q2 and accounts for a substantial share of Norwegian banks' funding. Deposits from foreign customers have increased in recent years and also amounted to around NOK 200bn (see Chart 2.11).

Because these volumes are so large, refinancing problems related to these borrowings may result in a need to borrow against or sell off large parts of a bank's securities portfolio. In such a situation, it will be essential to have sufficient liquid assets.

CENTRAL BANK DEPOSITS AND SECURITIES IN FOREIGN CURRENCY

Short-term foreign currency funding is largely matched by liquid assets in the same currency. Deposits in central banks total around NOK 130bn

4 See "Norwegian banks' foreign currency funding of NOK assets", Staff Memo 2/2014, Jermund L. Molland, Norges Bank.
5 As at 22 August 2014. Source: Federal Reserve.
6 Commercial paper (CP) and certificates of deposit (CDs).

(see Chart 2.12).⁷ These assets are very low-risk and liquid and do not present any refinancing risk. Other assets in foreign currency that qualify for the LCR amount to around NOK 230bn after haircuts and consist mainly of government securities and foreign covered bonds. Although these securities are defined as high-quality liquid assets under the LCR, their value could drop more than expected in stressed markets. High concentrations of covered bonds in liquidity buffers may increase the likelihood of this (see page 25).

Parts of banks' securities portfolios are tied up in payment settlement systems, or pledged as collateral in central banks or for currency swaps and other derivative contracts. Such assets will be difficult or impossible to sell in the event of refinancing problems.

Banks must also have sufficient securities to pledge as collateral in favour of Norges Bank should there be a need for extraordinary liquidity. If the securities have already been borrowed against or sold in the market, the possibility of borrowing will be reduced.

FUNDING FROM MONEY MARKET FUNDS AND CONCENTRATION RISK

Money market funds are important buyers of DNB's short-term securities in USD and also place substantial USD customer deposits in the bank overnight. DNB has ample access to this type of short-term funding on favourable terms. Banks from some other countries also have access to it at present (see Chart 2.13).

Conditions in the US money market can change quickly, and the supply of funding is almost binary. Rather than investors demanding higher risk premiums or shorter maturities, the supply may dry up altogether. This is partly because money market funds are bound by mandates limiting the types of asset eligible for investment. A downgrade in a bank's credit rating can mean that it is no longer able to source funding in the US money market, as experienced by Danske Bank in 2012.

News or attention in the market of a negative nature relating to a particular bank, regardless of whether it is actually experiencing problems, can also be enough for money market funds to withdraw their invest-

ments completely in the interests of their own customers and their preferences. The market can also be closed to a bank if developments in its home country or at other banks from the same country or region attract negative attention.

Short-term wholesale funding in USD is concentrated around a homogenous group of investors, which increases the refinancing risk. The EU's new liquidity reporting requirements, or "additional liquidity monitoring metrics", will shed light on concentration risk in relation to investor groups. Banks should also publish some of this information in their quarterly interim reports. This may help draw attention to poorly diversified funding and the risk it entails.

Banks should publish the concentration of investor groups in banks' funding structures each quarter based on the EU's new additional monitoring metrics to be introduced in 2015.

Publishes investor concentration

DNB Bank	●
Nordea Bank Norge	●
SpareBank 1 SR-Bank	●
Sparebanken Vest	●
SpareBank 1 SMN	●
Sparebanken Sør	●
SpareBank 1 Nord-Norge	●

Reporting starts in 2015 ●

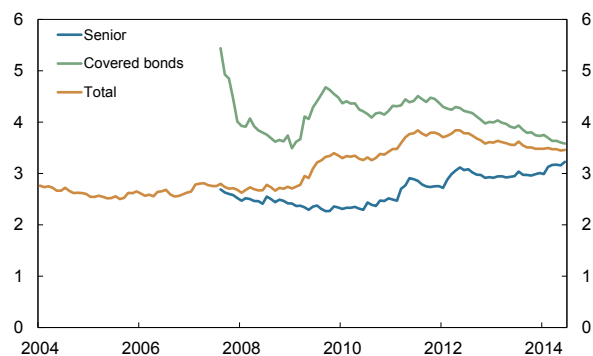
MATURITY OF BOND FUNDING HAS DECREASED

The upcoming NSFR aims to reduce maturity risk at banks. It is proposed that wholesale funding with a residual maturity of more than one year should be classified as stable. Maturities beyond one year can therefore be structured as banks find optimal. Banks are less vulnerable to market turbulence when the maturity of their wholesale funding is long and maturities are evenly distributed over time.

The residual maturity of a bank's bond funding is the maturity of the bonds the bank has on its balance sheet as liabilities at any given time. Residual maturity increased steadily for Norwegian banks from 2008 through to summer 2012 (see Chart 2.14). Over the past two years, however, it has trended down and is now around 3.5 years. In isolation, this pushes up refinancing risk.

⁷ Norwegian-owned banks as at 30 June 2014.

Chart 2.14 Residual maturity on issued bonds.
Number of years. January 2004 – June 2014

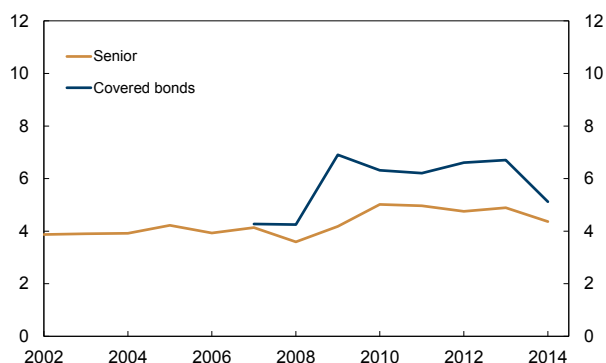


Sources: Bloomberg, Stamdata and Norges Bank

The composition of bond debt also has a bearing on residual maturity. The introduction of covered bonds in Norway helped increase residual maturity in the period after the financial crisis because covered bonds are issued with longer maturities than senior bonds.

The volume of bond issuance is also significant for residual maturity. In periods of strong credit growth and extensive new bond funding, residual maturity will often increase. In periods of lower credit growth and an ample supply of deposits, banks will have less need for wholesale funding. Residual maturity will then decrease as banks will have a larger share of existing debt with a lower residual maturity. This may have contributed to the recent decrease in residual maturities.

Chart 2.15 Maturity of new bonds issued.
Number of years. January 2002 – September 2014

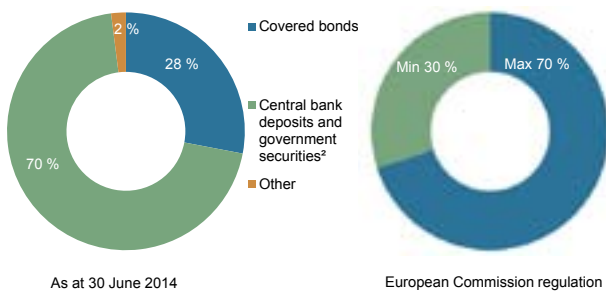


Sources: Bloomberg, Stamdata and Norges Bank

Banks can counteract this through active management of residual maturity. One option is to increase the maturity of the bonds they issue. Another is to buy back bonds in the market and replace them with new debt with a longer maturity. Banks do not appear to be making much use of either option.

Profitability considerations are influencing how banks adjust. It is normally cheaper to issue debt with short rather than long maturity. Banks appear to be favouring shorter-term funding with lower coupons even though premiums to increase maturity are currently low.

Chart 2.16 Norwegian banks' high quality liquid assets under LCR. Percent.
As at 30 June 2014



1) After haircuts.
2) Level 1 assets excluding covered bonds.
Sources: Finanstilsynet and European Commission

So far this year, banks have reduced the maturity of new bond issues (see Chart 2.15). This applies to both covered bonds and senior bonds. This adjustment indicates that banks consider that the optimal strategy is to accept the increased risk this may present. The increase in capital requirements may have provided an incentive to boost earnings by means of shorter-term funding.

Banks are adjusting maturities within the bounds of current banking regulation and internal guidelines. The most appropriate maturity for funding has to be assessed on the basis of the maturity of a bank's assets. Finanstilsynet plans to require banks to report the maturity structure of their assets and funding from mid-2015. This reporting will be based on the EU's additional monitoring metrics, which could prove a useful tool for the authorities in monitoring banks' liquidity risk ahead. Banks should also publish parts

of this information in their quarterly interim reports. This will promote financial stability.

Banks should publish inflows and outflows by maturity (a maturity ladder) each quarter based on the new EU reporting requirements (additional monitoring metrics) to be introduced in 2015.

Publishes maturity ladder

DNB Bank	●
Nordea Bank Norge	●
SpareBank 1 SR-Bank	●
Sparebanken Vest	●
SpareBank 1 SMN	●
Sparebanken Sør	●
SpareBank 1 Nord-Norge	●

Reporting starts in 2015 ●

COVERED BONDS IN BANKS' LIQUIDITY BUFFERS

The financial system features a high level of interconnectedness, partly because banks hold covered bonds⁸ in their liquidity buffers. Norwegian banks hold 30%–40% of covered bonds issued by Norwegian-owned banks in domestic currency, equivalent to NOK 150bn. Of this, more than NOK 100bn qualifies for the LCR.

Norwegian banks also have around NOK 100bn in covered bonds issued in foreign currency in their liquidity buffers. This includes bonds issued by both Norwegian and foreign banks. All in all, domestic and foreign covered bonds account for almost 30% of banks' liquidity buffers (see Chart 2.16).

NEW LIQUIDITY REQUIREMENT, LCR, COULD INCREASE CONCENTRATION RISK

One important reason why banks have large volumes of covered bonds in their liquidity buffers is the upcoming LCR requirement. The European Commission's delegated regulation permits as much as 70% of these buffers to consist of covered bonds, which is substantially higher than the Basel Committee's recommendation of 40%. The new regulation may induce Norwegian banks to further increase their holdings of covered bonds, primarily owing to the limited supply of liquid assets in NOK, which largely reflects the small market for government debt in Norway. Covered bonds also offer a better return than

many other securities that qualify for the LCR. In addition, covered bonds are among the most liquid types of bonds in Norway and are approved as collateral for loans from Norges Bank.

The aim of liquidity buffers is to be able to sell, or borrow against, liquid securities when banks are unable to refinance debt. The haircut in the LCR (see box, page 19) should ideally take account of declines in value in stressed markets, but there may be a need for larger haircuts if concentrations of covered bonds in liquidity buffers are high.

The possibilities for selling liquidity buffer assets in the market should not correlate with banks' funding possibilities. Poorly diversified liquidity buffers with a high percentage of covered bonds will increase this correlation.

In the event of severe market turmoil, funding may be difficult to source and banks may need to obtain liquidity by selling securities from their liquidity buffers. Because many banks will probably realise their liquidity buffers at the same time, there will likely be a substantial decline in demand for covered bonds and a fall in the value of buffer assets. New issuance may therefore be particularly demanding and costly, leading to further liquidity problems and sell-offs from liquidity buffers. Negative liquidity spirals of this kind were observed during the financial crisis. It is important to take account of this problem when formulating the LCR requirement for Norwegian banks.

LCR REQUIREMENT FOR INDIVIDUAL CURRENCIES

A limited supply of Norwegian government securities gives grounds to adjust the new LCR requirement to Norwegian conditions. There should be explicit requirements for both NOK and other significant currencies. The LCR for NOK should not be set too high.

The European Commission's delegated regulation does not specifically require banks to fully comply with the LCR requirement per currency. Banks should, however, hold liquid assets in the currencies in which they have liquidity needs. In currencies where the supply of high-quality liquid assets is not considered sufficient, the regulation provides for three alternative mechanisms to enable LCR compliance: a central bank

8 Both Norwegian and foreign covered bonds.

facility that can count towards the LCR, the use of high-quality liquid assets in another currency, or that banks may hold a larger proportion of high-quality liquid assets that are subject to higher haircuts.⁹

The aim of liquidity regulation is to improve banks' own resilience to financial market turbulence. This will mitigate liquidity risk in the system. It would not be appropriate to set up a central bank facility with the sole purpose of enabling banks to meet the LCR requirement. Instead, banks should be permitted to hold more high-quality liquid assets in foreign currency.

LCR REQUIREMENT FOR NOK SHOULD NOT BE SET TOO HIGH

Norges Bank estimates that high-quality liquid NOK assets are not currently available in sufficient amounts for banks to be able to meet a 100% LCR for NOK in practice without having a negative impact on bond markets. Other factors also suggest that the requirement should be set well below 100%.

A high LCR requirement for NOK would probably lead to a higher concentration of covered bonds in banks' liquidity buffers (see page 25). All else being equal, this could increase the need for liquidity support from Norges Bank.

Banks' need for liquid assets in NOK varies owing to factors such as the level of structural liquidity in the banking system and the need for liquid assets as collateral for derivative contracts. The actual LCR for NOK would therefore have had to be considerably higher than the requirement at times to ensure continuous compliance.

A high LCR requirement for NOK, together with the limited supply of liquid assets in NOK, could erode liquidity in the Norwegian money market. Such effects have already been observed at the ends of quarters when banks report LCRs to Finanstilsynet.

If the cost of meeting the LCR for NOK is higher than for foreign currency, it may be a competitive disadvantage for small Norwegian banks that have not developed the same possibilities as larger banks for handling currency exposure. At the same time, the largest banks will not as easily be able to buy and sell securities in the Norwegian market without

substantially impacting the market. A high LCR requirement for NOK will increase the largest banks' demand for liquid assets in NOK and make it more costly for smaller banks to comply with the LCR.

An LCR ratio for NOK should be explicitly required and the requirement should be set at about 60%.¹⁰

The remaining liquidity required to meet an all-currency LCR requirement can be achieved by holding high-quality liquid assets in foreign currency.

LCR REQUIREMENT SHOULD BE FULLY MET IN OTHER SIGNIFICANT CURRENCIES

It is primarily the largest Norwegian banks that have sizeable liquidity needs in foreign currency. Both DNB and Nordea Bank Norge currently have extensive liquidity buffers in foreign currency, reflecting very favourable funding conditions in foreign currencies, especially EUR and USD, over the past couple of years.

An LCR requirement for foreign currency has a bearing on Norges Bank's role as lender of last resort. If a bank has liquidity needs in a currency without sufficient buffers in that currency, the bank can obtain liquidity by selling securities in other currencies and converting liquidity from one currency to another. If the bank is unable to do this, it will probably need liquidity support from Norges Bank. Liquidity support for individual institutions is restricted to situations where financial stability would be endangered without such support. Norges Bank's scope to support banks with liquidity in foreign currency is limited. It is therefore especially important that banks hold liquid assets in the foreign currencies in which they have liquidity needs.

As well as meeting the LCR requirement for all currencies combined, banks with significant liquidity risk in foreign currencies should be directed to meet the LCR requirement in full for each of these currencies.

⁹ Level 2A assets (see box on page 19).

¹⁰ When fully phased in.

3 BANK SOLVENCY

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BANK SOLVENCY AND BANKS' ADJUSTMENT

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Norwegian banks have posted solid profits since 2010, which have largely been used to strengthen equity capital. Banks' Common Equity Tier 1 (CET1) capital as a percentage of total assets is high in Norway compared with many other countries, albeit not higher than at the end of the 1990s. Solvency must be further improved to comply with the scheduled increases in capital requirements.

A stress test shows that the largest Norwegian banks will experience high loan losses in the event of a pronounced downturn in the economy. Funding costs increase in the stress test, but it is assumed that money markets function and that banks have access to wholesale funding. Bank behaviour may amplify the downturn. The stress test also shows that capital buffers may reduce the need to cut lending and thereby contribute to a milder downturn.

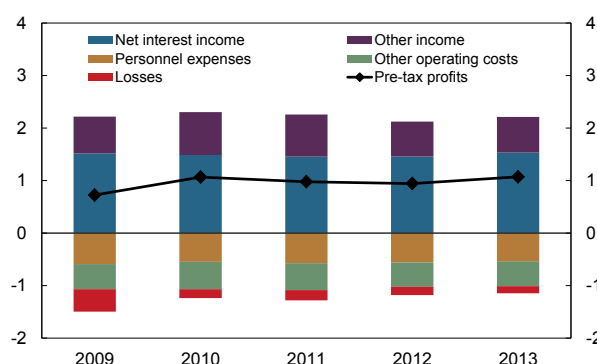
SOLID DEVELOPMENTS IN THE BANKING SECTOR

Norwegian banks' solvency has improved in recent years and is at a high level compared with other countries. Norwegian banks' exposure to the real estate market is high and has increased further over the past year.

Stable income and costs as a percentage of average total assets and low loan losses have resulted in solid earnings in the banking sector for several years (see Chart 3.1).

Sound profitability has enabled banks to meet rising capital requirements through profit retention. An analysis of the way the largest Norwegian banks have strengthened their CET1 capital ratios in the years 2009–2013 shows that increased CET1 capital has been the most important contributor (see Chart 3.2).¹ Reductions in risk-weighted assets have also lifted capital adequacy ratios, despite an increase of 26% in banks' total assets in the period.

Chart 3.1 Decomposition of developments in banks' pre-tax profits.² Percent of average total assets. 2009 – 2013

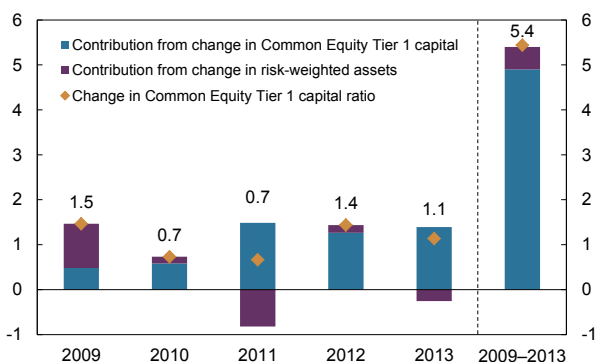


1) The six largest Norwegian banking groups at end-2013.
2) Commission income from SpareBank 1 Boligkreditt and SpareBank 1 Næringskreditt to their owner banks reclassified as net interest income.

Sources: Banking groups' annual reports and Norges Bank

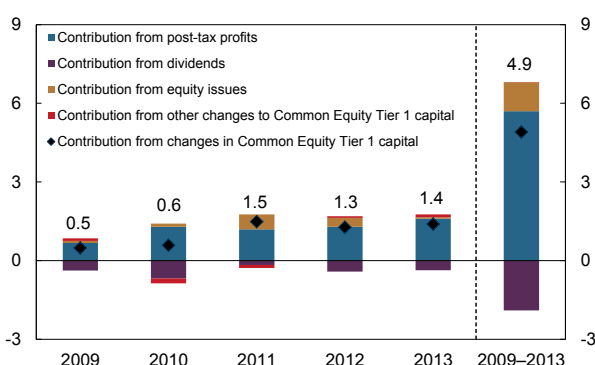
1 See "Norwegian banks' adjustment to higher capital requirements", Staff Memo 14/2014, H. Winje and L.T. Turtveit, Norges Bank.

Chart 3.2 Decomposition of change in banks¹ Common Equity Tier 1 capital ratio. Percentage points. 2009 – 2013²



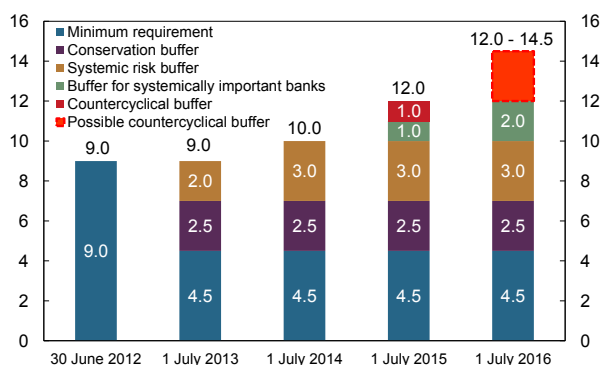
1) The six largest Norwegian banking groups at end-2013.
 2) Due to the methodology used, the contributions from each single year will not sum up to the total contribution over the period.
 Sources: Banking groups' annual reports and Norges Bank

Chart 3.3 Decomposition of contribution from Common Equity Tier 1 capital to change in banks¹ Common Equity Tier 1 capital ratio. Percentage points. 2009 – 2013²



1) The six largest Norwegian banking groups at end-2013.
 2) Due to the methodology used, the contributions from each single year will not sum up to the total contribution over the period.
 Sources: Banking groups' annual reports and Norges Bank

Chart 3.4 Common Equity Tier 1 capital requirements in Norway. Percent of risk-weighted assets. 30 June 2012 – 1 July 2016



Source: Ministry of Finance

Banks have increased CET1 capital primarily through profit retention (see Chart 3.3). Equity issues have also strengthened solvency, but dividend payments have exceeded capital raised by issuing equity. (See also the box on “New equity issues by banks” on page 37.)

CET1 capital requirements for Norwegian banks will continue to increase over the next two years (see Chart 3.4). At the end of the first half of 2014, all Norwegian banks satisfied the 10% CET1 requirement from 1 July 2014 by an ample margin (see Chart 3.5). Banks designated as systemically important, DNB and Nordea Bank Norge, must continue to increase equity capital to meet future capital requirements. Many non-systemic banks will likely also increase equity capital up to the same level as that imposed on systemically important banks in order to remain attractive to bond investors.

Norwegian banks' CET 1 capital as a percentage of total assets is high compared with large Swedish banks and many other European banks. Nevertheless, this ratio is not higher than it was after the recapitalisation of Norwegian banks following the banking crisis (see Chart 3.6). In recent years, DNB Bank Group's balance sheet has been inflated by short-term money market loans deposited risk-free in central banks. If all deposits in central banks are excluded, DNB Bank Group's CET1 capital as a percentage of total assets at the end of 2013 would have been around ½ percentage point higher, while for Norwegian banks overall it would have been approximately ¼ percentage point higher.

Owing to risk-weighting, CET1 capital requirements can in some cases conceal a bank's real capital base. CET1 capital as a percentage of total assets is a non risk-weighted solvency measure. It resembles the leverage ratio, which will likely be introduced as a capital requirement as from 2018. In January 2014, the Basel Committee published guidelines for calculating the leverage ratio and disclosure requirements for banks. In June 2014, the European Banking Authority (EBA) followed up by publishing technical standards.² On the basis of interpretation of the guidelines, most of the large Nordic and European banks have calculated their leverage ratio (see Chart 3.7). Of the banking groups in the chart, the DNB group scores highest on both solvency measures.

2 The leverage ratio is Tier 1 capital divided by total assets, adjusted for various items. A high level of debt relative to equity results in a low ratio.

Large Swedish banks have higher CET1 capital adequacy ratios than DNB. This is because the average risk weight³ for Swedish banks is lower than for DNB. A bank with a high CET1 capital ratio but a low level of CET1 capital as a percentage of total assets will be vulnerable if the bank's internal risk models underestimate the bank's real risk.

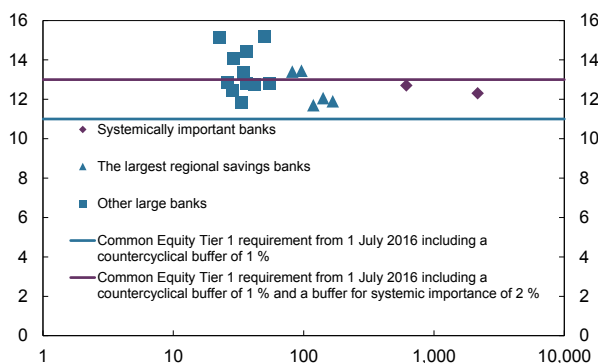
CREDIT RISK

Loans constitute the largest portion by far of Norwegian banks' assets. Credit risk is therefore the most important risk to which banks are exposed. At the end of the first half of 2014, loans by banks and covered bond mortgage companies in Norway to the retail market, corporate market and foreign customers totalled NOK 3 600bn, of which 58% were to the retail market, 32% to the corporate market and 10% to foreign customers. Almost all loans to foreign customers are corporate loans.

Exposure to real estate in bank lending portfolios is very high. Residential mortgages constitute as much as 93% of loans to the retail market, while loans to commercial real estate account for nearly half of the loans to the corporate market (see Chart 3.8). In addition, loans to the construction industry represent 10% of loans to the corporate market. In the stress test below, we assume a substantial fall in house prices. Large volumes of covered bonds in banks' liquidity reserves also contribute to banks' exposure to the Norwegian real estate market (see Section 2, "Bank funding and liquidity risk"). Analyses of bank losses in various countries during crises show that real estate-related corporate loans, especially to commercial real estate, have been an important source of losses.⁴

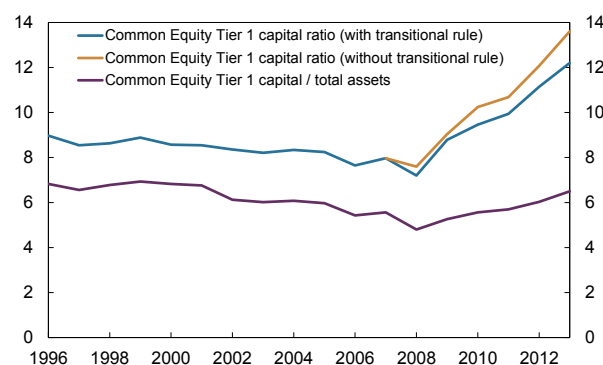
In the seafood industry and oil industry supplier sector, credit risk has probably increased somewhat recently. Russia's ban on fish imports from Norway may put pressure on profitability in the seafood industry. A decline in petroleum investment in 2015, as indicated by the most recent investment surveys, may pose challenges to firms in the supplier sector. However, although banks' loans to the oil service, manufacturing and seafood sectors are relatively small, any losses on individual exposures may be enough to impact banks' earnings. Any adverse ripple effects may also result in losses on loans to other sectors.

Chart 3.5 Banking groups¹ Common Equity Tier 1 capital ratios and future capital requirements. Percent. Total assets². In billions of NOK. As at 30 June 2014³



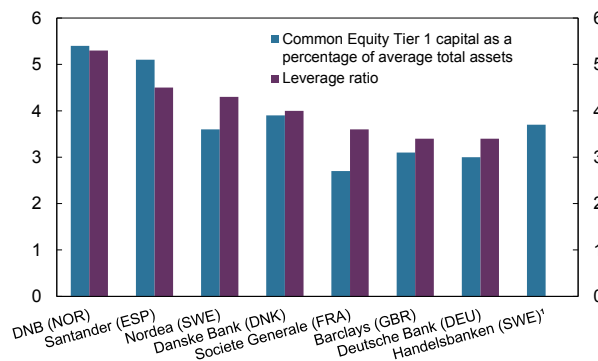
1) Norwegian banking groups with total assets in excess of NOK 20bn.
 2) Logarithmic scale.
 3) Assuming that profits for 2014 H1 are added in full to Common Equity Tier 1 capital.
 Sources: Banking groups' quarterly reports and Norges Bank

Chart 3.6 Common Equity Tier 1 capital ratio and Common Equity Tier 1 capital as a percentage of total assets.¹ Percent. Annual figures. 1996 – 2013



1) Consolidated figures are used for banks that are banking groups. For the other banks, parent bank figures are used.
 Source: Finanstilsynet (Financial Supervisory Authority of Norway)

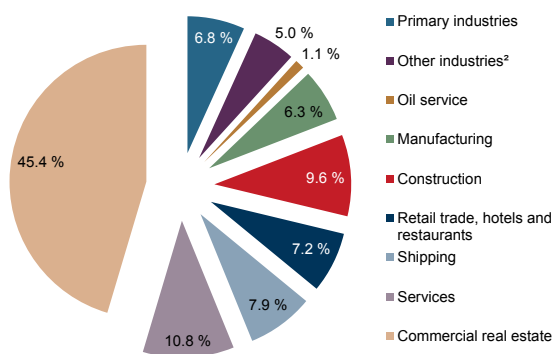
Chart 3.7 Leverage ratio and Common Equity Tier 1 capital as a percentage of average total assets for selected European banking groups. Percent. As at 30 June 2014



1) Handelsbanken did not publish its leverage ratio in its quarterly report for 2014 Q2.
 Sources: Banking groups' quarterly reports and Norges Bank

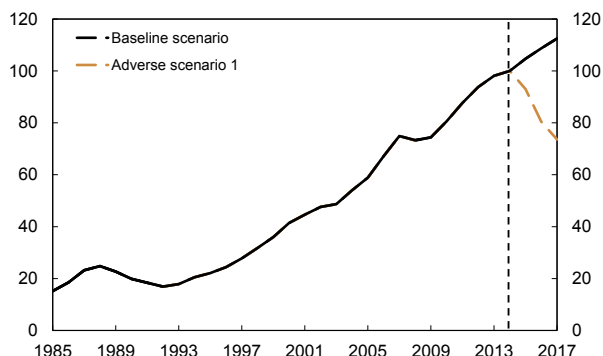
3 Average risk weight = Total risk-weighted assets / Total assets.
 4 See "What do banks lose money on during crises"? Staff Memo 3/2014, K. Kragh-Sørensen and H. Solheim, Norges Bank.

Chart 3.8 Distribution of banks¹⁾ loans to the corporate market. Share in percent. As at 30 June 2014



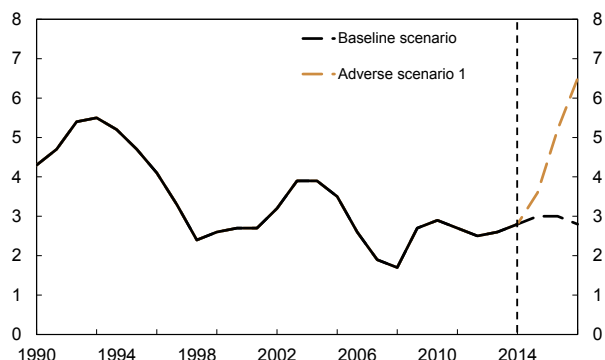
1) From all banks and mortgage companies in Norway.
 2) Other industries comprises "Other transportation", "Electricity and water supply" and "Extraction of natural resources".
 Source: Norges Bank

Chart 3.9 House prices in baseline and adverse scenario 1. Nominal prices. Indexed. 2014 = 100. 1985 – 2017¹⁾



1) Projections for 2014 – 2017.
 Sources: Eiendom Norge, Finn.no, Eiendomsverdi and Norges Bank

Chart 3.10 Registered unemployment in baseline and adverse scenario 1. Percentage of labour force. 1990 – 2017¹⁾



1) Projections for 2014 – 2017.
 Sources: Norwegian Labour and Welfare Administration (NAV), Statistics Norway and Norges Bank

BANK SOLVENCY AND BANKS' ADJUSTMENT PROCESS IN THE EVENT OF A DOWNTURN

The stress test shows that the largest Norwegian banks will experience large losses in the event of a sharp downturn in the Norwegian economy. How much banks tighten lending affects both capital adequacy and the severity of the downturn. It may be efficient for each bank to sustain profitability by tightening lending, but if banks all act in the same manner, the result may be an even weaker economy and additional rounds of losses. Capital buffers may reduce the need to tighten lending, with the result that bank behaviour will not amplify a downturn to the same extent.

In a number of countries, the authorities use stress testing to assess whether banks have sufficient capital to withstand a sharp downturn in the real economy. In both the EU and the US, stress tests of the largest banks have been conducted several times in recent years. In Norway, both Norges Bank and Finanstilsynet (Financial Supervisory Authority of Norway) have published stress tests of Norwegian banks. A characteristic of stress tests is that the probability that the outlined developments in the real economy will occur is low, but not negligible.

The main purpose here is to illustrate the interaction between banks' capital adequacy and developments in the real economy in the event of a downturn.⁵ A rapid rise in loan losses may lead to a substantial reduction in bank lending, which in turn may amplify the downturn. Higher capital ratios before the downturn occurs may reduce banks' need to tighten lending. We examine three adverse scenarios in which we distinguish between banks' adjustment process and capital levels.

MACROECONOMIC DEVELOPMENTS

We begin with the risk scenarios discussed in Section 1, "Risk outlook". In the stress test, an abrupt and sharp decline in China's real estate sector reduces economic growth in China by almost half. This has substantial ripple effects in the form of financial turbulence and downturns in many countries. A decline in energy

⁵ This year, the EBA is conducting a stress test of European banks in which the DNB group is participating. The main difference between Norges Bank's stress test and the EBA test is that we examine a macro bank, while the EBA tests at the level of the individual bank. The scenarios also differ, for example with regard to oil price assumptions.

demand leads to a substantial fall in oil and gas prices. The shocks impact the Norwegian economy with full force, and the vulnerabilities associated with high house price and debt levels are assumed to amplify the downturn considerably.

Important assumptions regarding external developments:

- Growth among Norway's trading partners declines markedly.
- The oil price falls to USD 50 per barrel, followed by a gradual rise towards USD 65 per barrel.
- All financial market risk premiums increase markedly.
- Money market premiums also increase as a result of a renewed lack of interbank confidence.

Important assumptions regarding impacts on the Norwegian economy:

- Petroleum investment declines sharply, with severe adverse effects on the supplier industry.
- Optimism among households turns to concern and pessimism, resulting in an abrupt decline in house prices of 30% in total over three years (see Chart 3.9). This in turn leads to a decline in private consumption and housing investment.
- Financial turbulence results in persistently high premiums in the Norwegian money market and a marked increase in risk premiums on banks' wholesale funding.

The consequence is a pronounced downturn in the Norwegian economy, with a decline in GDP in both 2016 and 2017.⁶ Unemployment rises to over 6% (see Chart 3.10). This is somewhat higher than the level observed during the deep downturn in the early 1990s.

Financial turbulence and weak prospects for the Norwegian economy lead to a slight depreciation of the krone. This cushions the negative impact on the traditional export industry.

⁶ The baseline scenario is based on the projection in the September 2014 Monetary Policy Report.

As a result of lower demand from households, petroleum-related activities and Norway's trading partners, business profitability deteriorates. Investment and credit demand decline. A number of firms experience debt-servicing problems and the share of problem loans⁷ to the enterprise sector rises markedly to as much as 17% at the end of the stress period (see Chart 3.11).

Owing to the sharp decline in house prices, many households are left with weak collateral. Combined with higher unemployment, this also results in an increase in the share of problem loans to the household sector, albeit at a clearly lower level than during the banking crisis in the 1990s. Households have solid financial margins and the direct credit risk is assessed as moderate (see Section 4, "High household debt"). The impact of unemployment on households' problem loans may be more severe than assumed (see discussion in the box "Losses on loans to households"). However, the shocks in the stress test have a sizeable adverse impact on private consumption, which has substantial indirect effects on problem loans to enterprises.⁸ Developments in the key macroeconomic variables in adverse scenario 1 are summarised in Table 3.1.

⁷ Problem loans are delinquent loans and other loans with a particularly high probability of default.
⁸ See also "Transmission channels from high household debt to bank losses", Staff Memo 9/2014, K. Kragh-Sørensen and H. Solheim, Norges Bank.

Chart 3.11 Banks'¹ problem loans in adverse scenario 1. Percentage of lending to sector. 1991 – 2017²

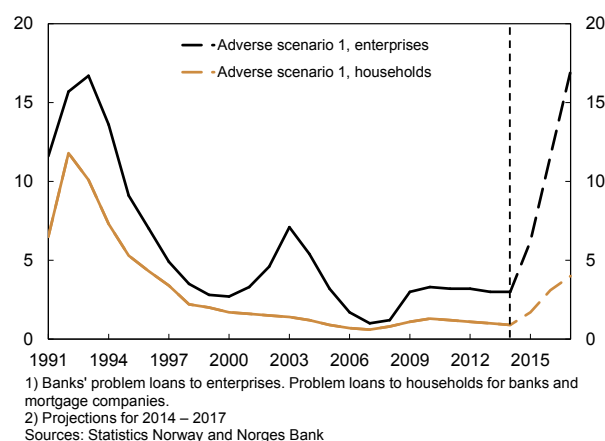


TABLE 3.1 MACROECONOMIC AGGREGATES. PERCENTAGE CHANGE FROM PREVIOUS YEAR (UNLESS OTHERWISE STATED)

	Adverse scenario 1			
	2014 ¹	2015	2016	2017
GDP, mainland Norway	2 ¼	¼	-2 ¼	-1 ½
CPI-ATE	2 ½	2 ½	2 ¼	2
Registered unemployment (rate, level)	2 ¾	3 ½	5 ¼	6 ½
Exchange rate (level, I-44)	92 ¼	95 ½	96 ¼	96 ¾
Oil price, USD per barrel (level)	105	53	58	63
3-month NIBOR (level)	1 ¾	2 ½	1 ½	1 ½
Weighted risk premium for covered bonds and senior bank bonds ²	0.7	0.8	0.9	1.0
House prices	2.0	-7.0	-13.6	-8.4
Credit (C2), households ³	6.4	3.2	-2.8	1.6
Credit (C2), non-financial enterprises ³	3.1	-1.0	-4.1	-3.9
Share of problem loans ⁴ , households	0.9	1.7	3.1	4.0
Share of problem loans ⁴ , non-financial enterprises	3.0	6.2	11.6	17.0

1 Baseline scenario for mainland GDP, CPI-ATE (CPI adjusted for tax changes and excluding energy products), unemployment, exchange rate and oil price is from *Monetary Policy Report 3/2014*.

2 Percentage points at year-end.

3 Change in stock measured at year-end.

4 Delinquent loans and other loans with a particularly high probability of default. All banks excluding branches of foreign banks in Norway. Problem loans to households include problem loans from mortgage companies. Percentage share of lending to the sector.

Sources: Statistics Norway, Thomson Reuters, Eiendom Norge, FINN, Eiendomsverdi and Norges Bank

As described above, it is assumed that banks will have access to wholesale funding, but that premiums remain persistently high in the stress period. If investors have home market preferences, the probability is high that access to funding abroad in particular may dry up completely. The likelihood of such an outcome also increases in the event of a sharp downgrade of banks' credit ratings. This represents a considerable risk that could severely impact banks.

NO EXTRAORDINARY MEASURES BY THE AUTHORITIES

The stress test is based on the following assumptions regarding how the authorities will react:

- The key policy rate is reduced to zero in the course of 2015.
- The countercyclical capital buffer is turned off.
- No extraordinary liquidity measures are implemented.
- No extraordinary measures are introduced over the central government budget. Fiscal policy is assumed to remain slightly expansive through the period, in line with the projections in the September 2014 *Monetary Policy Report*.

BANK SOLVENCY IN THE ADVERSE SCENARIOS

The stress test is conducted for a macro bank comprising six large Norwegian banking groups: DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge. For the three SpareBank 1 banks, residential mortgages transferred to SpareBank 1 Boligkreditt are also included.

The macro bank is regarded as systemically important and its CET1 capital requirement will, in principle, increase gradually to 13% as from 1 July 2016 (Chart 3.4). As mentioned above, it is assumed that the countercyclical capital buffer is switched off, so that the CET1 capital requirement is 12% at the end of the stress period.

The macro bank's CET1 capital ratio is projected using the macroeconomic developments outlined above.⁹ For estimating loan losses on problem loans, an LGD¹⁰ rate of 25% is assumed for loans to households and 40% for loans to enterprises. Moreover, it is assumed that, owing to market turbulence, banks will have to recognise impairment losses on their equity and bond holdings at the beginning of the stress period and will post no net income from securities or other financial instruments in the remainder of the stress period. This last assumption is severe as experience from the

⁹ Income and balance sheet items for each of the six banking groups are projected and aggregated to the macro bank.

¹⁰ Loss given default.

financial crisis showed that higher market volatility provided a boost to bank earnings from the sale of financial instruments to customers wishing to hedge against this volatility.

Capital adequacy is important for banks' lending capacity. We assume that banks will first use available funds to meet household credit demand. Any available funds remaining will be used for lending to enterprises. We assume that banks aim for a 12% return on equity in normal times. Banks do not pay dividends in stress periods.

Banks' ability to determine lending rates varies across the three adverse scenarios. Banks' borrowing costs are assumed to remain persistently high in the stress period, despite reductions in the key policy rate. This is due to high premiums in the money market and on banks' wholesale funding, resulting in a floor for bank lending rates of just over 4%.

ADVERSE SCENARIO 1: BANKS TIGHTEN LENDING SOMEWHAT

The consequences for banks will depend on capital adequacy levels, lending portfolio composition and the adjustments banks choose to apply. Banks can seek to counteract the effect of higher loan losses and higher risk by changing their adjustment behaviour.

In adverse scenario 1, it is assumed that banks tighten lending somewhat, primarily in relation to enterprises. Lending rates are set to enable banks to maintain a constant margin relative to their borrowing costs.

High loan losses as a result of the downturn leads to weak results and the macro bank incurs a loss throughout the stress period (see Table 3.2). The CET1 capital ratio declines and the macro bank breaches the total requirement of 12% in mid-2016, finishing at 9% at the end of the stress period (see Chart 3.12). When a bank breaches the combined capital buffer requirement, a capital plan to restore the buffer must be prepared within five working days. This plan must be approved by Finanstilsynet. In adverse scenario 1, the macro bank would have had to submit a capital plan in mid-2016. One possibility is to raise new equity. Another is to try to increase profitability.

Even though the stress period in our macro scenario only extends to end-2017, the problems in the banking

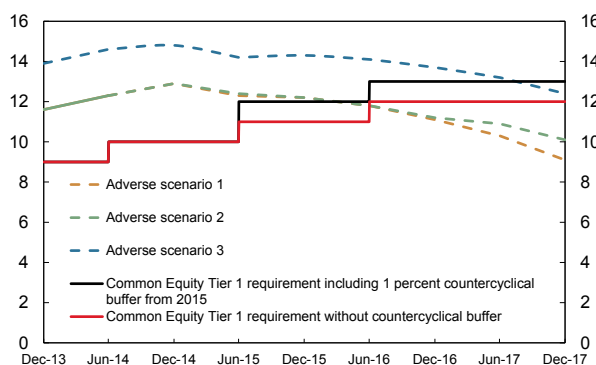
TABLE 3.2 KEY FIGURES FOR THE MACRO BANK (IN BILLIONS OF NOK¹)²

Adverse scenario 1	2014	2015	2016	2017
Total assets	3 253	3 145	3 043	3 006
Net lending to customers	2 257	2 284	2 206	2 184
Net interest income	51	51	52	50
Loan losses	4	41	62	69
Profit	31	-7	-18	-25
CET1 capital	219	208	184	150
Risk-weighted assets (with the transitional rule)	1 690	1 701	1 662	1 646
CET1 capital ratio (with the transitional rule)	12.9 %	12.2 %	11.1 %	9.1 %

- 1 Unless otherwise stated.
- 2 Balance sheet figures and CET1 figures at year-end. Profit and loss figures for the whole year.

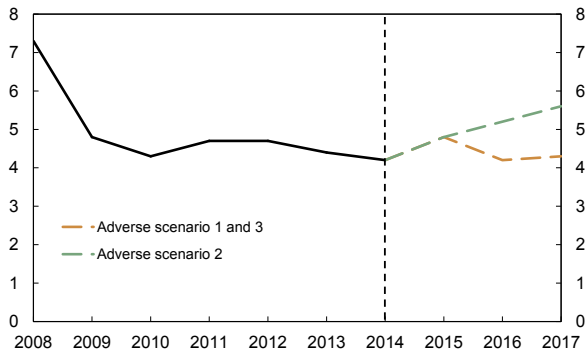
Source: Norges Bank

Chart 3.12 Common Equity Tier 1 capital ratio with the transitional rule in three adverse scenarios for the macro bank¹. Percent. December 2013 – December 2017



1) Aggregate of the banking groups DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge. Sources: SNL Financial and Norges Bank

Chart 3.13 Lending rates in adverse scenarios. Percent. 2008 – 2017¹



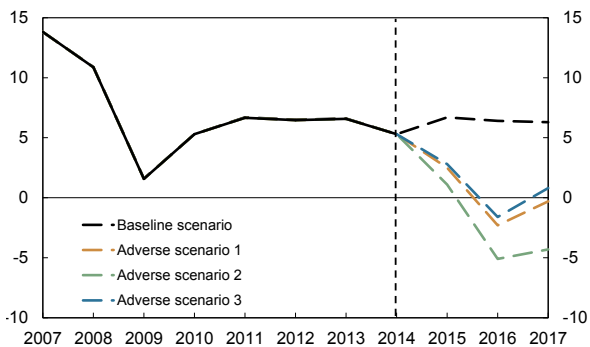
1) Projections for 2014 – 2017. Projections in the adverse scenarios are for the macro bank.
Sources: Statistics Norway and Norges Bank

sector would not automatically be eliminated if banks satisfy the capital requirements at the end of 2017. Experience from other banking crises shows that crises often last more than three years, like the Norwegian banking crisis in the years 1988 to 1993.

ADVERSE SCENARIO 2: BANKS TIGHTEN LENDING SUBSTANTIALLY

In this scenario, banks tighten lending substantially. In addition, it is assumed that banks are able to set lending rates at a level they find optimal, and the lending rate increases to above 5% (see Chart 3.13). Higher lending rates will boost bank earnings on healthy loans, but also result in higher loan losses. Total credit to enterprises and households declines sharply in this scenario (see Chart 3.14).

Chart 3.14 Growth¹ in credit to customers in baseline and adverse scenarios. Percent. 2007 – 2017²



1) Change in stock of gross loans at year-end
2) Projections for 2014 – 2017. Projections in the adverse scenarios are for the macro bank.
Sources: Statistics Norway and Norges Bank

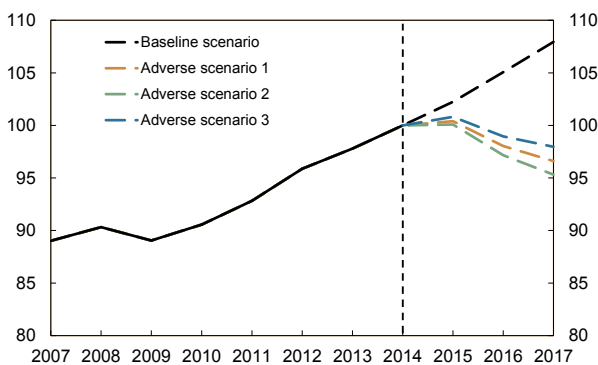
Despite higher loan losses, the macro bank's profitability improves compared with adverse scenario 1. The CET1 capital ratio does not decline to the same extent. This is due to a combination of higher lending rates and a reduction in risk-weighted assets owing to a falling volume of corporate loans.

Higher lending rates lead to an even more pronounced decline in private consumption, and the reduction in lending to enterprises contributes to a further decline in investment. The result is a deeper downturn than in adverse scenario 1 (see Chart 3.15).

ADVERSE SCENARIO 3: HIGHER CAPITAL RATIOS AND LENDING TIGHTENED TO A LESSER EXTENT

A substantial reduction in lending such as in adverse scenario 2 may occur if banks' capital buffers are small relative to the higher future requirements. Higher CET1 capital ratios at the outset would probably have reduced banks' need to raise lending rates and tighten lending.

Chart 3.15 GDP for mainland Norway in baseline and adverse scenarios Constant prices. Indexed. 2014 = 100. 2007 – 2017¹



1) Projections for 2014 – 2017
Sources: Statistics Norway and Norges Bank

To illustrate this, we assume in adverse scenario 3 that the macro bank has a CET1 capital ratio of over 14% at the end of June 2014. In this scenario, banks tighten lending to a lesser extent and lending rates are the same as in adverse scenario 1. At the end of the stress period, the macro bank satisfies the CET1 capital requirement, given that the countercyclical capital buffer has been turned off (Chart 3.12). Banks' adjustment behaviour may help to reduce the depth of the downturn in the Norwegian economy in this scenario (Chart 3.15).

LOSSES ON LOANS TO HOUSEHOLDS

Losses on loans to households have historically been low, and the probability of a substantial increase is moderate. On the other hand, should the share of problem loans to households increase considerably from today's low level, the consequences for Norwegian banks could be dramatic.

With the exception of the banking crisis in the early 1990s, the share of problem loans¹ in this sector has remained stable at around 1%, while the share of problem loans to enterprises has tended to follow economic cycles (see Chart 3.11). This is largely because the incentives to avoid bankruptcy are substantially stronger for households than for enterprises.² Both national and international experience shows that, as a rule, banks' losses are higher on loans to enterprises than on loans to households. The most prominent exception is US bank losses during the financial crisis in 2008–2009, where losses on household loans were considerable.³

The basis of the stress test is estimated household defaults based on a projection of banks' holdings of problem loans. A decline in house prices, higher unemployment and unchanged lending rates result in a quadrupling of the share of problem loans to households. This is from a low level, and the share of problem loans reaches no more than 4% at the end of the stress period. During the banking crisis, the share was almost 12% at its highest.

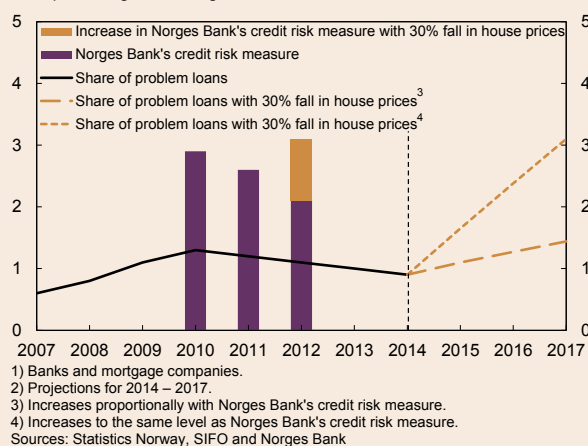
The relatively minor effect on the share of problem loans to households has a sizeable impact on the macro bank's earnings and capital adequacy in the stress test. As over half of bank and mortgage company loans are to households, any more substantial increase in problem loans to this sector may result in very large loan losses and a sharp decline in banks' capital adequacy.

NORGES BANK'S MEASURE OF HOUSEHOLD CREDIT RISK

The analyses in Section 4, "High household debt" indicate that the direct credit risk associated with loans to households is moderate. Here, debt at high risk is associated with households that combine three categories of debt at risk: a high debt level, low debt-servicing capacity and inadequate collateral. At end-2012, the share of debt at risk was around 2% of total debt. This is consistent with banks' low share of problem loans to households.

A sensitivity analysis of the credit risk measure shows that in the event of a 30% decline in house prices, the share of debt at high risk will rise to just above 3% (see Chart 4.19). If the share of problem loans is allowed to increase in the same proportion as the credit risk measure in the course of the stress period, the effect is marginal (see Chart 3.16). If it is assumed instead that banks' assessment of the level of debt at risk coincides with Norges Bank's assessment of debt at risk, the share of problem loans will exceed 3%, which is somewhat lower than in adverse scenario 1.

Chart 3.16 Banks'¹ problem loans to households and Norges Bank's credit risk measure for high risk debt. As a percentage of lending to households. 2007 – 2017²



1 Problem loans are delinquent loans and other loans with a particularly high probability of default.

2 See "Transmission channels from high household debt to bank losses", Staff Memo 9/2014, K. Kragh-Sørensen and H. Solheim, Norges Bank.

3 See "What do banks lose money on during crises?" Staff Memo 3/2014, K. Kragh-Sørensen and H. Solheim, Norges Bank.

The sensitivity analysis above does not take into account the loss of income affecting households that become unemployed in the stress test. The analyses in Section 4 show that many households will experience a sizeable decline in income in the event of unemployment. Since it is not known which households will be affected in a downturn and how long they will remain unemployed, the effects on debt at risk and problem loans cannot be estimated. Households that would not initially be regarded as high-risk may end up defaulting on their debt if unemployed for longer than nine months. Households with relatively high incomes will pose a particularly high risk unless they hold large liquidity buffers. High-income groups also hold a large share of total debt.

BANK EARNINGS AND CAPITAL ADEQUACY IN THE EVENT OF A CONSIDERABLE INCREASE IN PROBLEM LOANS TO HOUSEHOLDS

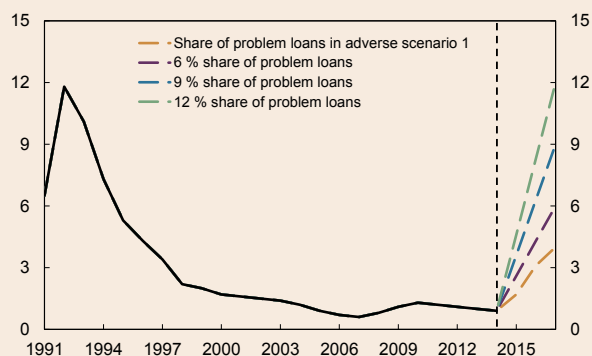
To shed light on banks' vulnerability to an increase in the share of problem loans to households, a simple sensitivity analysis has been performed. On the basis of adverse scenario 1, the share of problem loans to

households is raised to 6%, 9% and 12%, respectively, in the course of the stress period (see Chart 3.17). The macro bank's CET1 capital ratio is then projected for each problem loan path to illustrate the isolated effect of a higher share of problem loans to households.

The higher the share of problem loans to households, the weaker the macro bank's CET1 capital ratio will be (see Chart 3.18). With a 12% share of problem loans at the end of the stress period, the macro bank's CET1 capital ratio falls below 6%, over 3 percentage points lower than with the problem loan path in adverse scenario 1. This would necessitate drastic measures by banks and their owners to bolster solvency.

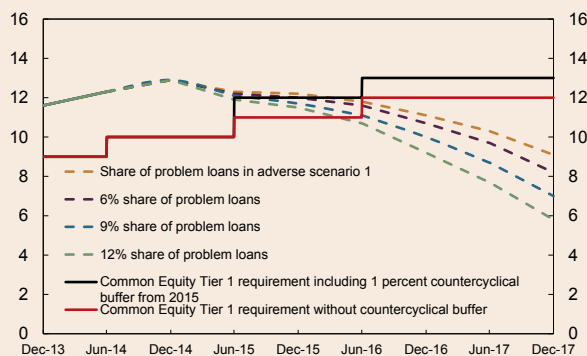
While the probability that the share of problem loans will increase to 12% is small, the analysis above illustrates that higher shares of problem loans to households than the current level may have dramatic consequences for Norwegian banks.

Chart 3.17 Banks' problem loans to households in adverse scenario 1 and with an increase to 6, 9 and 12%. As a percentage of lending to households. 1991 – 2017²



1) Problem loans to households in banks and mortgage companies.
2) Projections for 2014 – 2017.
Sources: Statistics Norway and Norges Bank

Chart 3.18 Common Equity Tier 1 capital ratio with the transitional rule for the macro bank¹ in adverse scenario 1 and with three alternative paths for the share of problem loans to households. Percent. December 2013 – December 2017



1) Aggregate of the banking groups DNB Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge.
Sources: SNL Financial and Norges Bank

NEW EQUITY ISSUES BY BANKS

Banks in Sweden, Norway and Denmark have raised new equity capital in recent years, prompted by regulatory requirements and stress testing by the authorities. However, equity issues are not banks' preferred alternative for strengthening capital adequacy.

ISSUE ACTIVITY IN RECENT YEARS

Since 2008, the largest banks in Norway, Sweden and Denmark have issued new ordinary equity through public offerings totalling NOK 100bn (see Table 3.3). Of this amount, NOK 19.8bn was issued by Norwegian banks, NOK 47.5bn by Swedish banks and NOK 32.7bn by Danish banks. Issues by the large Nordic banks (DNB, Nordea, Swedbank, SEB and Danske Bank) accounted for approximately 90% of the total. Excluding DNB, 10 Norwegian banks undertook public offerings totalling NOK 5.8bn.

In Norway and Sweden, most of the equity was issued in 2009, while 2011 was the peak year in Denmark. For European banks, 2008 was the peak year, but for these banks, issuance activity was also at a high level in the years 2009–2013 (see Chart 3.19). In the US, equity issuance was highest in 2009.

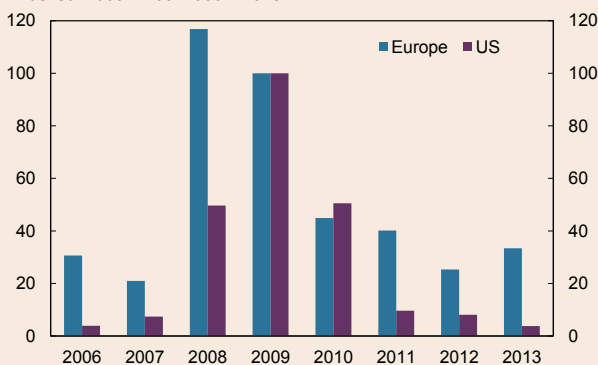
HIGHER CAPITAL REQUIREMENTS AND STRESS TESTING

New equity issues by banks reflect the increase in capital adequacy requirements and the need for banks to "pass" the authorities' stress tests. In the US, the stress test conducted in 2009 showed that 10 out of 19 large banks needed to increase their capital base. In the EU, stress tests were conducted in 2009/2010 and 2011.¹ A new stress test is now under way in the EU, and the European Central Bank is conducting a comprehensive assessment of the largest banks in the euro area.

The issuance of new equity immediately strengthens banks' capital adequacy and is thus well suited to providing a quick response to the authorities' or the market's recapitalisation requirements. Increasing equity capital by retaining profits from ordinary operations takes longer, but is usually a more important funding source than issuing new equity. Retained profits increase when bank earnings rise and when dividend payments are reduced.

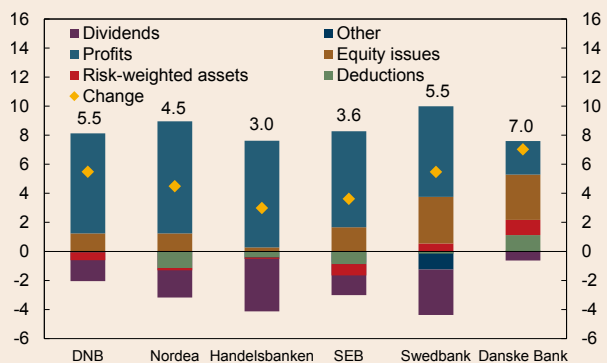
¹ A discussion of the stress tests in the US in 2009 and in the EU in 2009/2010 is provided in Box 1 in G. B. Havro, R. M. Johansen, J. Ruud and C. B. Træe, "Norges Bank's stress test in *Financial Stability 2/10* compared with banks' projections" *Economic Bulletin* 2011.

Chart 3.19 Public equity issues in European and US banks.¹ Indexed. 2009 = 100. 2006 – 2013



¹ Offered and completed public equity issues, ordinary equity. Private placements and hybrid capital are not included. The sample consists of banks covered by SNL Financial.
Source: SNL Financial

Chart 3.20 Decomposition of change in Common Equity Tier 1 capital ratio. Large Scandinavian banking groups. Percentage points. 2007 – 2013.



Sources: Banking groups' financial statements and Norges Bank

New equity issues by Swedbank and Danske Bank have raised CET1 capital ratios by 3.2 percentage points since 2007 (see Chart 3.20). The new equity issue by DNB in 2009 raised its CET1 capital ratio by 1.2 percentage points, approximately the same increase as that achieved by Nordea.

NOT BANKS' PREFERRED ALTERNATIVE

Profit retention is banks' preferred method of improving capital adequacy and is the method often chosen by banks and enterprises to finance their investments.² New equity issues are viewed as the least attractive funding source.

A possible reason for this is fear on the part of banks that the market will perceive an announcement of an equity issue as a negative signal regarding the quality of banks' assets and future earnings. Bank balance sheets are opaque and the market may be less well

informed than management and key groups of owners, particularly in times of considerable financial market turbulence. If the authorities impose requirements on a number of banks to quickly strengthen equity capital, as was the case in the US in 2009, banks may be more willing to issue equity because individual banks then avoid being "stigmatised".

Existing shareholders may also regard equity issues as undesirable because the direct costs (facilitation fees etc.) are high, or because the dilution of equity stakes may be substantial in the face of considerable uncertainty regarding the share price.

The implementation period for the new capital requirements will run over several years, enabling banks to meet the requirements by increasing earnings, reducing dividend payments and adjusting risk-weighted assets. If this is insufficient, the remaining need for capital must be met by issuing equity.

² A theory explaining the choice of funding sources is "The Pecking Order Theory"; see S.C. Myers, 1984, "The Capital Structure Puzzle", *Journal of Finance*, July, pp. 575-592.

TABLE 3.3 PUBLIC EQUITY ISSUES IN NORWAY, SWEDEN AND DENMARK.¹ 2008-2013. IN BILLIONS OF NOK

Bank	Amount	Year
DNB	14.0	2009
Danske Bank	28.1	2011/12
Nordea	22.8	2009
Swedbank	12.4	2009/11
SEB	12.3	2009
Other banks	10.4	
- of which Norwegian	5.8	
- of which Danish	4.6	
Total	100.0	

¹ Offered and completed public equity issues, ordinary equity. Private placements and hybrid capital are not included. The sample consists of banks covered by SNL Financial.

Source: SNL Financial

4 HIGH HOUSEHOLD DEBT

HOUSEHOLD BALANCE SHEET AND DEBT	39	SENSITIVITY ANALYSES: HIGHER INTEREST RATES AND LOWER HOUSE PRICES	45
• Considerable wealth but limited diversification	39	• Credit risk	45
• More debt in all age groups	40	• Demand risk	45
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Norwegian households have high debt and their debt is poorly diversified. The risk of a pronounced increase in defaults is moderate even after major shocks such as a sharp decline in house prices or a sudden rise in interest rates. On the other hand, the high level of debt could lead to substantial cutbacks in consumption following such shocks and thereby poses a risk to the Norwegian economy.

HOUSEHOLD BALANCE SHEET AND DEBT

Debt grew rapidly in all age groups in the 2000s, but households as a whole still have substantial equity. Since their assets are dominated by housing, a drop in house prices will erode much of their equity.

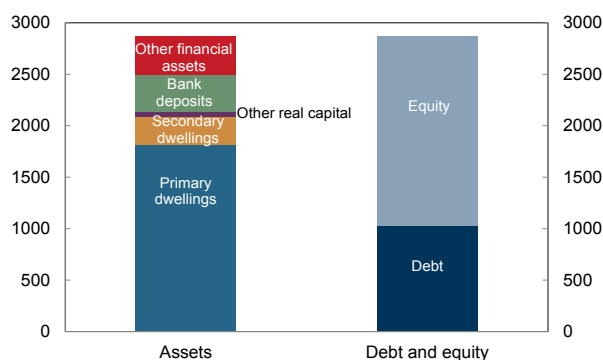
CONSIDERABLE WEALTH BUT LIMITED DIVERSIFICATION

Housing wealth accounts for around 70% of total household wealth (see Chart 4.1). Bank deposits are the most liquid asset category and account for just over 10% of the total.

Levels of debt are closely related to positions in the housing market, and housing wealth accounts for virtually all the wealth of young households with large amounts of debt (see Chart 4.2). The value of these households' wealth is especially sensitive to movements in house prices, and much of their equity will be eroded by a fall in house prices.

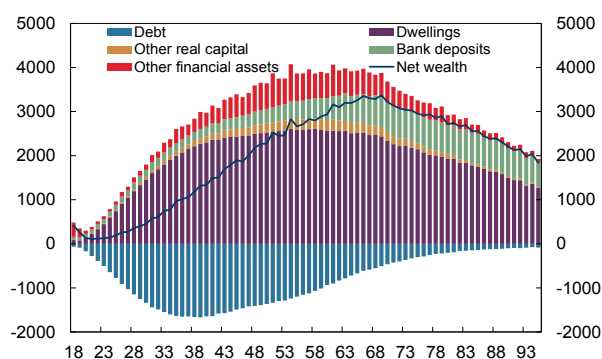
Middle-aged households have more financial wealth in the form of bank deposits, shares and other securities, and elderly households have substantial bank deposits.

Chart 4.1 Household balance sheet. Tax values. Mean. In 1000s of NOK. 2012



Source: Statistics Norway and Norges Bank

Chart 4.2 Assets, debt and net wealth by age of main income earner. Aged 18 – 95. Mean. In 1000s of NOK. 2012



Sources: Statistics Norway and Norges Bank

THE DATA

In the analyses, tax return data from *Households' income and wealth* from Statistics Norway are used for the years 1987–2012.¹ Wealth data do not include accrued pension rights and actuarial reserves. Estimated market values of dwellings are available as from 2010.² Ordinary consumption expenditure is estimated by the National Institute for Consumer Research (SIFO) and includes ordinary current expenditure on food, clothing, toiletries, etc. and expenses on less frequent purchases of consumer

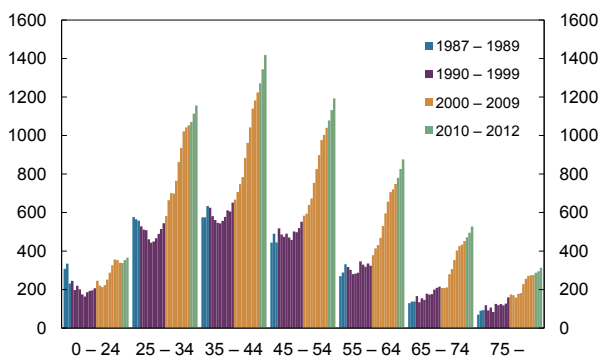
- 1 See also, "Ten years of household micro data. What have we learned?" Staff Memo 8/2014, K.-G. Lindquist, M. Riiser, H. Solheim and B.H. Vatne, Norges Bank.
- 2 See Modell for beregning av boligformue oppdatert med tall for 2010 [Model for estimating household wealth updated with data for 2010], Notater 9/2011, S.E. Holiløkk and L. Solheim (2011), Statistics Norway (in Norwegian).

durables such as furniture and electrical appliances. Self-employed persons have been excluded. The data set covers 94% of all households in 2012. The results are largely presented by age and income decile.

Table 4.1 Household after-tax income by decile. In thousands of NOK. 2012

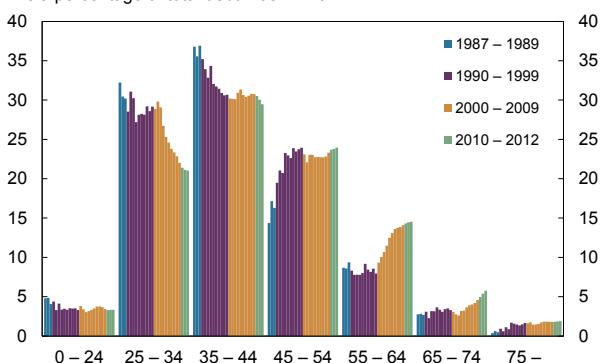
Income decile	Average	Minimum	Maximum
1-3	172	..	279
4-7	428	279	609
8-9	728	609	883
10	1205	884	..

Chart 4.3 Average debt by age of main income earner. At 2000 prices. In 1000s of NOK. 1987 – 2012



Sources: Statistics Norway and Norges Bank

Chart 4.4 Distribution of debt by age of main income earner. As a percentage of total debt. 1987 – 2012



Sources: Statistics Norway and Norges Bank

MORE DEBT IN ALL AGE GROUPS

Household debt is unevenly distributed by age, the highest levels concentrated among the youngest households through to middle age.

Debt grew rapidly across all age groups in the 2000s (see Chart 4.3). This should be seen in the light of rapidly rising house prices, the associated increase in collateral values and new loan products such as the home equity line of credit. These products have made it easier to take out loans secured against dwellings. A study of households that increased their debt in 2005 and 2012 shows that around 40% of the increase was for households that did *not* move residence.

Overall debt has shifted away from younger households towards older households (see Chart 4.4). The 55–64 age group in particular holds a greater share than previously. This is largely because average debt for these households has increased significantly, but strong growth in the number of households in this group has also played a role.

Households with relatively high incomes account for a much larger share of total debt than those with low incomes. Around 60% of debt is held by households in the top three income deciles (see Chart 4.5). The picture is different among the youngest households, where much of the debt is held by those with

relatively low incomes (see Chart 4.6). This accounts for only a small share of total debt, however.

MEASURES OF RISK

Young households especially have high debt relative to income. Although this debt is largely secured against dwellings, the loan-to-value ratio is above 85% for almost half of it. Changes in interest rates will have a much greater impact today than 15 years ago.

Credit enables households to make large investments such as home purchases and to consume earlier in the life cycle than current income would allow. Households borrow with the expectation that they will receive future income that will put them in a position to service the debt. The same rationale underlies banks' lending, but banks will generally also require collateral in the form of a mortgage.

Unforeseen events may prevent households from servicing their debt. High debt-to-income ratios increase the likelihood of debt-servicing problems among households following a decline in income or a rise in interest rates. Should house prices also fall, banks could face loan losses.

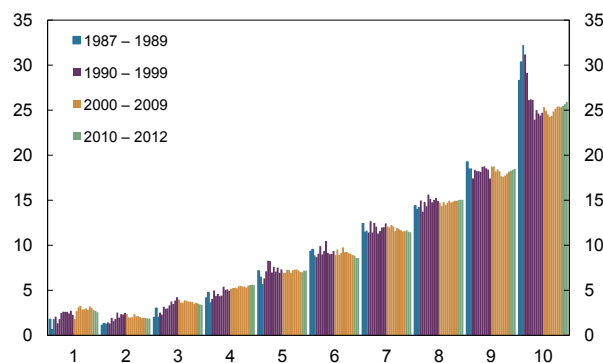
DEBT-SERVICING CAPACITY

The ratio of debt to after-tax income is one measure of households' capacity to service debt. After-tax income is the income available for consumption, saving and interest payments. Payments of principal constitute saving.

Debt grew sharply relative to income in the 2000s (see Chart 4.7). This applies particularly to young cohorts, who tend to take out large loans to finance home purchases. For some age groups, debt was approaching three times after-tax income in 2012. This may mean that young households are currently more sensitive to a drop in income and higher interest payments than their predecessors at the same stage of life.

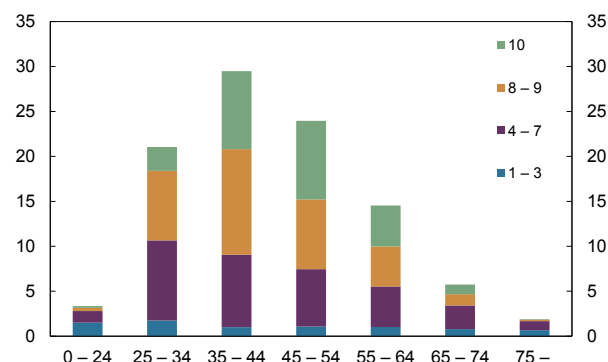
Although debt has grown more quickly than income, households' capacity to service bank loans has improved over the past 20 years. The default rate has been very low, reflecting favourable developments in income, interest rates and consumer prices.

Chart 4.5 Distribution of debt by after-tax income. Deciles. As a percentage of total debt. 1987 – 2012



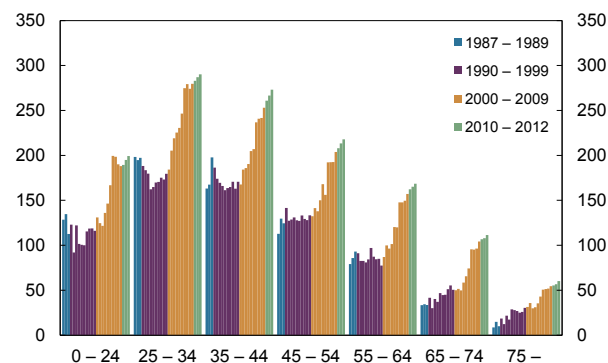
Sources: Statistics Norway and Norges Bank

Chart 4.6 Distribution of debt by after-tax income decile and age of main income earner. As a percentage of total debt. 2012



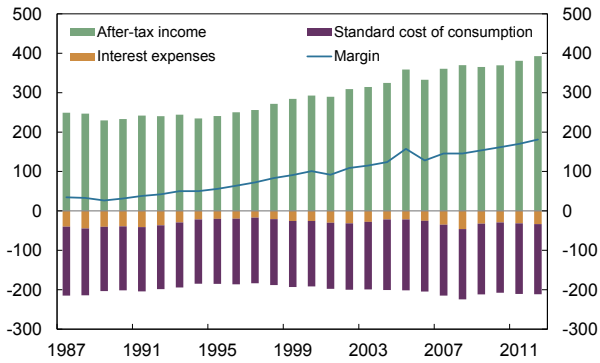
Sources: Statistics Norway and Norges Bank

Chart 4.7 Debt to after-tax income ratio by age of main income earner. Percent. 1987 – 2012



Sources: Statistics Norway and Norges Bank

Chart 4.8 Margin¹. Mean. At 2000 prices. In 1000s of NOK. 1987 – 2012



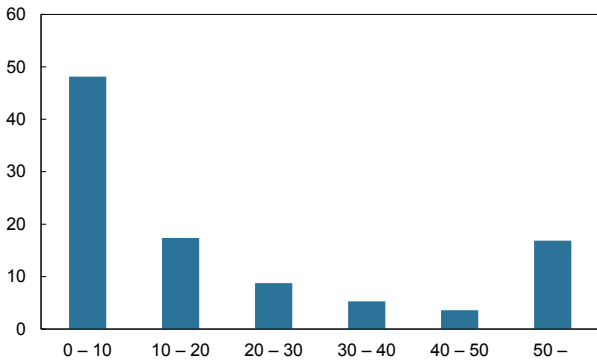
1) After-tax income minus interest expenses and standard consumption expenditure. Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

Households' income margin, which we define as income after taxes, interest payments and ordinary living expenses, has increased substantially (see Chart 4.8). Higher debt nevertheless makes households more sensitive to interest rate changes. At constant prices, a 1 percentage point increase in lending and deposit rates today will reduce households' overall income margin by three to four times more than in the early 2000s.

BUFFERS AND SECURITY

In a period with stressed finances, households can draw on financial wealth to service their debt. However, the bulk of debt is held by households with relatively little financial wealth relative to the size of their debt (see Chart 4.9). Most households nevertheless have some flexibility in the form of liquid financial assets that can be used for interest and principal payments.

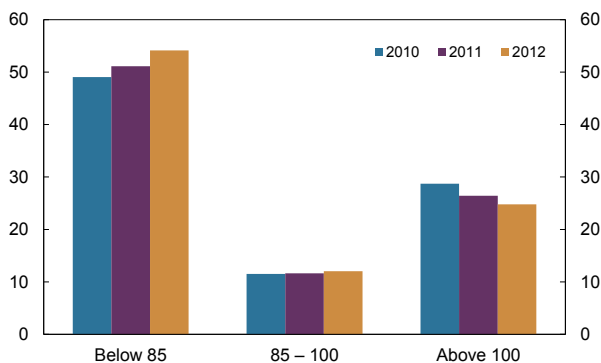
Chart 4.9 Distribution of debt by financial assets-to-debt ratio. Percent. 2012



Sources: Statistics Norway and Norges Bank

Most lending to households by banks and other financial institutions is secured against dwellings, i.e. around 85%. If a household is not in a position to service its debt under the terms of the loan, either the household or the institution can sell the property to realise its collateral value. Whether a sale is sufficient to settle the outstanding loan will depend on the loan-to-value ratio (LTV). The higher the LTV, the more likely it is that the property's real market value will be less than the amount outstanding. This applies in particular in the case of a decline in house prices.

Chart 4.10 Distribution of debt by loan-to-value ratio.¹ Percent. 2010 – 2012



1) Non-homeowning households with debt are not included. Hence, the bars do not sum up to 100 for each year. Sources: Statistics Norway and Norges Bank

Approximately half of household debt is held by households with dwellings where the LTV is above 85%.¹ This share fell between 2010 and 2012 (see Chart 4.10).

¹ Holiday homes, which are also used as collateral, have been excluded. Their tax values differ considerably from their market values, and their overall tax value is limited (see Chart 4.1).

VULNERABLE HOUSEHOLDS AND DEBT AT RISK

The proportion of vulnerable households and debt at risk has decreased over time. The youngest households account for a large proportion of debt at risk and have low income.

Norges Bank has defined its own measure of household credit risk. It consists of three categories that identify vulnerable households and debt at risk:²

- 1) High debt
- 2) Low debt-servicing capacity
- 3) Inadequate collateral

Households falling into these categories have less flexibility and limited scope to renegotiate their loans. This applies particularly to households that fall into all three categories at the same time.

CATEGORY 1: HIGH DEBT

Households with high debt relative to disposable income will more easily run into financial difficulties following an increase in interest rates or a decline in income. The first category is defined as households with debt in excess of five times disposable income.³ International studies have shown that economic downturns and crises are deeper when households are highly indebted.

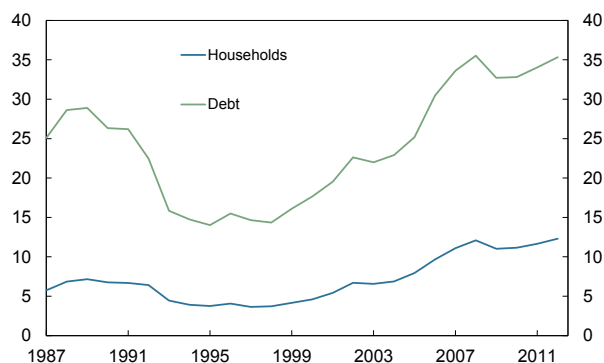
The proportion of households with debt above five times disposable income has increased since the late 1990s (see Chart 4.11). It is now considerably higher than around the onset of the Norwegian banking crisis at the end of the 1980s. These households also hold a growing share of total debt.

A high debt burden is generally easier to cope with for high-income households than low-income households. The same applies to households that can expect solid income growth. Only a small portion of the debt that meets this criterion for debt at risk is held by households with the lowest incomes, namely income deciles 1–3 (see Chart 4.12). Most of it is held by households with medium to high incomes. Compared with the distribution of total debt, this debt at risk is somewhat skewed towards young households.

² See *Economic Commentaries* 8/2013, Norges Bank.

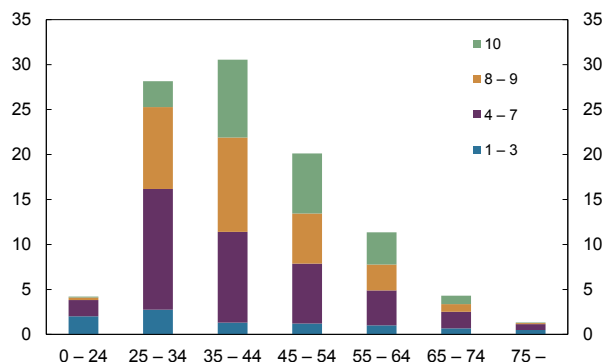
³ A credit limit of three times gross household income is a criterion that many banks use in their credit assessments. This corresponds to around five times disposable income.

Chart 4.11 Households with debt exceeding 5 times disposable income. Share of households and debt. Percent. 1987 – 2012



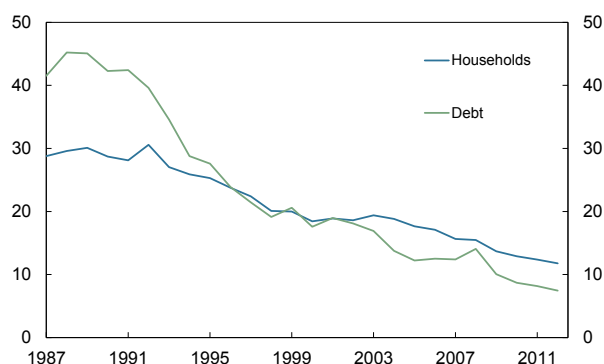
Sources: Statistics Norway and Norges Bank

Chart 4.12 Distribution of debt of households with debt of more than 5 times disposable income by age of main income earner and after-tax income decile group. Percent. 2012



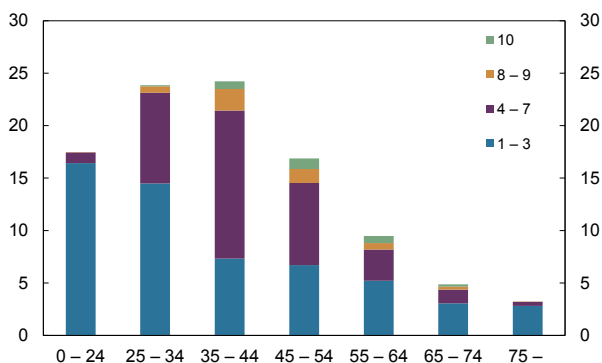
Sources: Statistics Norway and Norges Bank

Chart 4.13 Debt in households with a margin of less than one month's after-tax income. Share of households and debt. Percent. 1987 – 2012



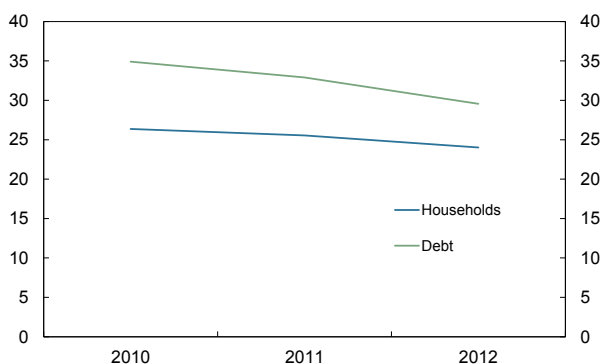
Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

Chart 4.14 Distribution of debt in households with a margin of less than one month's after-tax income by age of main income earner and after-tax income decile. Percent. 2012



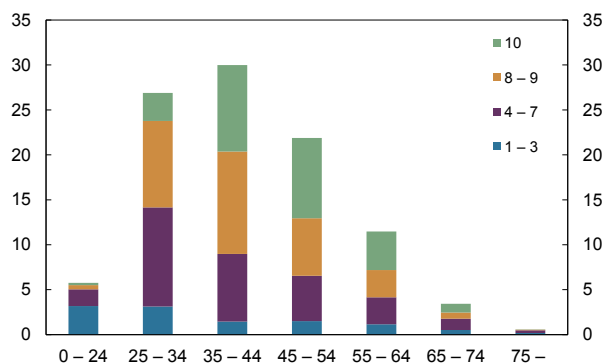
Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

Chart 4.15 Households with net debt¹ larger than the market value of the house. Share of households and debt. Percent. 2010 – 2012



1) Debt less bank deposits.
Sources: Statistics Norway and Norges Bank

Chart 4.16 Distribution of debt in households with net debt¹ exceeding the value of the dwelling by age of main income earner and after-tax income decile. Percent. 2012



1) Debt less bank deposits
Sources: Statistics Norway and Norges Bank

CATEGORY 2: LOW DEBT-SERVICING CAPACITY

This category covers households left with less than one month's wages on an annual basis once taxes, interest expenses and ordinary living expenses have been paid. The proportion of such households has fallen over time, as has the proportion of total debt held by these households (see Chart 4.13).

A large portion of this debt at risk is held by households with the lowest incomes, and this applies particularly to the youngest households (see Chart 4.14). This group includes students with student loans who can normally expect higher levels of income later in life. The debt at risk in this category is clearly skewed towards the youngest households.

CATEGORY 3: INADEQUATE COLLATERAL

The final category is households whose net debt (debt less bank deposits) exceeds the market value of their home. Households' scope to renegotiate their loan terms depends on the size of their debt relative to the value of their home. Because bank deposits can easily be used to repay debt, they have been subtracted.

The proportion of households with inadequate collateral has decreased somewhat since 2010 (see Chart 4.15). These households' share of total debt is clearly falling. About 10% of this debt at risk is held by households with the lowest incomes (see Chart 4.16). Compared with the age distribution of total debt, this debt at risk is somewhat skewed towards young households.

DEBT AT HIGH RISK

Debt held by households that have *high debt*, *low debt-servicing capacity* and *inadequate collateral* at the same time is considered to be at high risk. The proportion of such debt is small and has decreased somewhat since 2010 (see Chart 4.17). The proportion of debt held by households falling into both the *high debt* and the *low debt-servicing capacity* categories has also trended downwards in recent years, owing partly to low interest rates.

More than 80% of debt at high risk is held by households with low and medium incomes (see Chart 4.18). The youngest households account for a substantial portion of this debt. These households have low incomes.

SENSITIVITY ANALYSES: HIGHER INTEREST RATES AND LOWER HOUSE PRICES

Credit risk will remain moderate even after major shocks, but household demand for goods and services may decrease considerably.

CREDIT RISK

The aggregate credit risk measure produces low values for the share of debt at high risk. This is consistent with households normally having a very low default rate.

Should households experience an increase in interest rates, falling house prices or job losses, the default rate will be expected to pick up. The effect on debt at high risk may shed light on how sensitive households are to such shocks. In 2012, almost 30 000 households fell into all three categories at the same time, and these accounted for around 2% of total debt (see Chart 4.19).

A 3 percentage point rise in deposit and lending rates will increase the number of vulnerable households by almost 13 500, and debt at high risk will almost double its share of total debt. Lending rates in this scenario are in line with the previous peak in 2008 of around 7.5%. When interest expenses rise, more households will end up having low debt-servicing capacity.

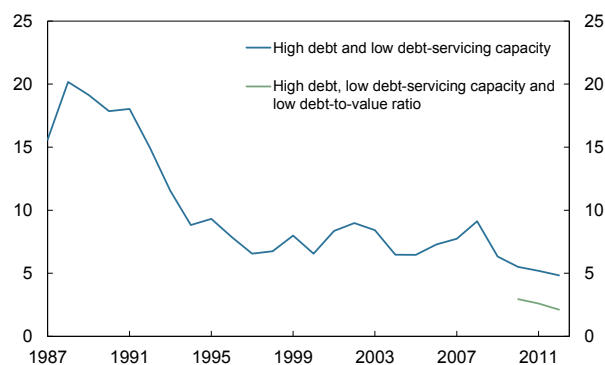
A decline in house prices of 30% from the 2012 level will lead to an increase in the number of households with inadequate collateral, and debt at high risk will rise to just over 3% of total debt.

Should both interest rates rise and house prices fall, more than 65 000 households will fall into all three categories at the same time, and the proportion of debt at high risk will climb to 6%. These calculations do not take account of any amplifying effects on the economy or actions by the authorities that could alleviate these effects.

DEMAND RISK

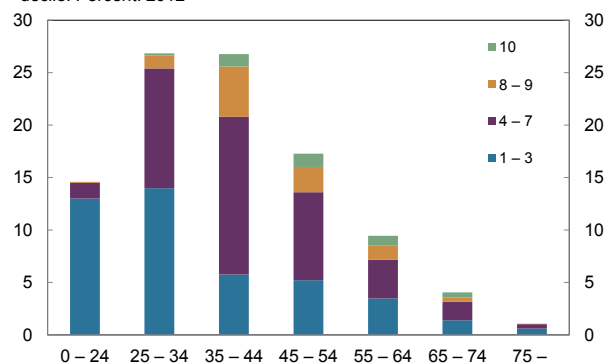
Higher interest rates mean that households with more debt than bank deposits will have to channel a larger share of their income into interest payments. Besides increasing the proportion of debt at risk, this will reduce household consumption and saving. The direct effect on consumption using individual tax

Chart 4.17 Share of debt held by households that meet combinations of criteria for credit risk. Percent. 1987 – 2012



Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

Chart 4.18 Distribution of debt of households that meet the combination criterion for credit risk by age of main income earner and after-tax income decile. Percent. 2012



Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

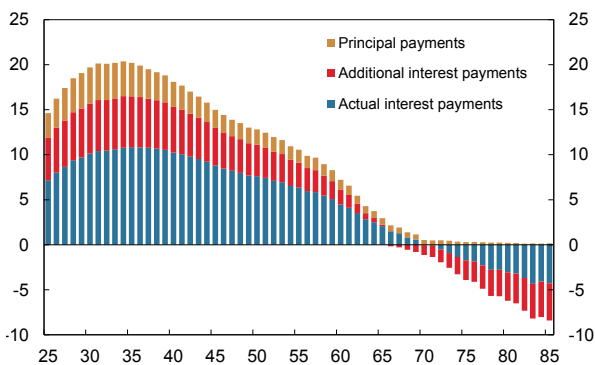
Chart 4.19 Share of households and debt of households that meet the combination criterion for credit risk in 2012 and if interest rates increase and house prices fall¹. Percent. 2012



¹ Loan and deposit interest rates increase by 3 percentage points. House prices fall by 30%.

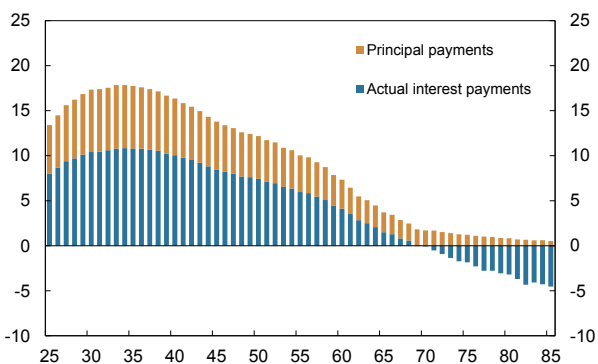
Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

Chart 4.20 Net interest payments and principal payments¹ as share of after-tax income by age of main income earner. Actual and additional net interest payments at 3 percentage point higher interest rates. Percent. 2012



1) Principal payments that reduce the increase in net interest payments as a share of after-tax income by one tenth.
Sources: Statistics Norway and Norges Bank

Chart 4.21 Net interest payments and principal payments¹ as share of after-tax income by age of main income earner in the event of a 30% fall in house prices. Percent. 2012



1) Principal payments on debt that reduce the decline in LTV by one tenth.
Sources: Statistics Norway and Norges Bank

return data cannot be measured, but the ratio of interest payments to after-tax income provides an estimate of the adjustment that may be needed, assuming wealth is constant.

A rise in interest rates of 3 percentage points will increase the interest burden for most age groups (see Chart 4.20). The interest burden is the fraction of after-tax income used to make interest payments. Households in their mid-30s will have a particularly high interest burden. The increase in interest payments corresponds to almost 3% of household consumption in 2012 and shows that the potential drop in consumption is significant. A period of such a pronounced decline in consumption has not been

observed since the Norwegian banking crisis. At constant prices, consumption fell by almost 4% in the period 1987–1989, and by 2.3% in 1988 alone.

If households do not wish to remain in a situation with a high interest burden following a persistent rise in interest rates, they must increase principal payments. This, too, could put a damper on consumption. Interest burdens vary with interest rates, but also have a tendency to revert to stable levels across age groups.⁴ Assuming that households wish to bring this increased interest burden back down over a 10-year period, additional principal payments equivalent to 2% of total after-tax income in 2012 will be required. Expenditure on servicing debt will then lay claim to around 5% of total household after-tax income. Based on this analysis, it is households in their early 30s that will make the highest repayments relative to after-tax income (see Chart 4.20).

A decline in house prices will not impact directly on income, but will push up LTVs. If we assume that households wish to bring their LTV back down over a ten-year period, additional payments of principal equivalent to more than 4.5% of total after-tax income in 2012 will be required. Again, households in their early 30s will make the highest payments relative to after-tax income (see Chart 4.21).

The impact on consumption of increased debt-servicing expenditure will depend on the extent to which households with high consumption relative to income are affected. Young households generally devote a larger share of their income to consumption than middle-aged and elderly households. Both higher interest rates and lower house prices will increase debt-servicing expenditure most among relatively young households. These are households with high debt relative to income and relatively small buffers in the form of financial wealth. These are also the households who will need to make the greatest changes to their repayment schedules if they wish to return to a particular interest burden following a persistent rise in interest rates or a particular LTV following a decline in house prices. This indicates that the overall adjustment to consumption following a rate increase could be considerable. A decline in house prices could also have a substantial impact.

4 See "Sustainable household debt: Towards an operational view and framework", Staff Memo 33/2012, K.-G. Lindquist, Norges Bank.

UNEMPLOYMENT

Unemployment benefit is only a partial replacement for lost earnings. Many indebted households will be particularly vulnerable if unemployed for nine months or more.

During the financial crisis, unemployment increased considerably in many countries. The effect on Norwegian households was very limited. Should unemployment increase in Norway, credit risk and demand risk will depend on the households affected and how long they remain unemployed. Any indirect effects on household demand as a result of increased uncertainty will come in addition and could be considerable¹. Exploring the extent to which unemployment benefit replaces the decrease in income can shed light on the degree of household vulnerability to unemployment.

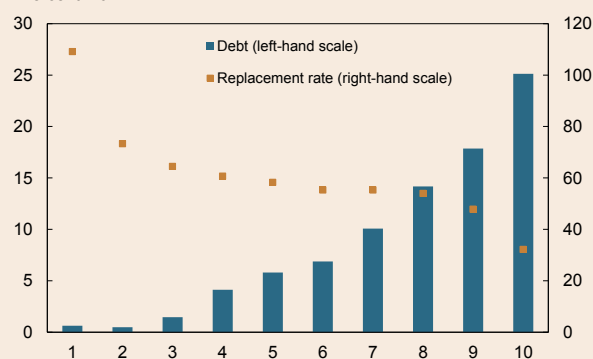
For the majority of households, income replacement² is limited. This means that a household will experience a considerable fall in income if the main income earner becomes unemployed. Over 40% of debt is

held by households in the top two income deciles, where the replacement rate is low (see Chart 4.22). About one third of the debt is held by households with a replacement rate of around 55%. For households in the five lowest deciles, the replacement rate is about 60% or more. The impact on demand for goods and services will probably be strongest if households in the middle-income deciles in particular are affected by unemployment.

Whether debt-servicing capacity will be low for households that fall into unemployment will largely depend on the duration of unemployment. Debt-servicing capacity is considered to be low when a household is left with a margin of less than one month's wages on an annual basis after tax, interest expenses and standard consumption expenditure. About 5% of the debt is held by households whose debt-servicing capacity will be low if the main income earner is unemployed for 6 months (see Chart 4.23). A quarter of the debt is held by households whose margin will be reduced to one month's income if unemployment lasts for one year. According to the 2014 Q2 Labour Force Survey (LFS), a third of unemployed people were long-term unemployed, i.e. unemployed for more than six months.

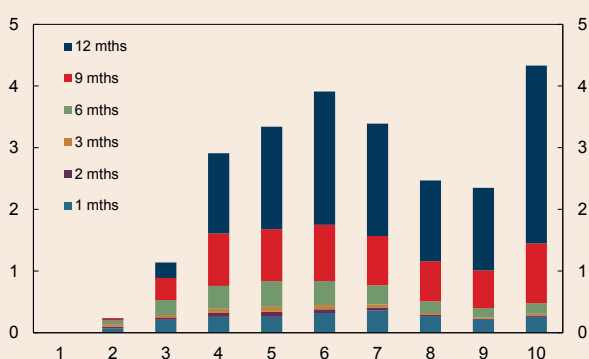
- 1 See "That uncertain feeling - How consumption responds to economic uncertainty in Norway", *Staff Memo 23/2012*, J. Gudmundsson and G.J. Natvik, Norges Bank.
- 2 The replacement rate is calculated based on the current rules for unemployment benefit when the household's main income earner becomes unemployed in 2012, see "Unemployment benefits" published by the Norwegian Labour and Welfare Administration (NAV). About 60% of households would have been entitled to unemployment benefit. These households held 90% of the debt.

Chart 4.22 Share of debt and replacement rate in households that qualify for unemployment benefit by after-tax income deciles. Percent. 2012



Sources: Statistics Norway and Norges Bank

Chart 4.23 Share of debt in households with a margin of less than one month's after-tax income by duration of unemployment of main income earner and after-tax income decile. Percent. 2012



Sources: Statistics Norway, National Institute for Consumer Research and Norges Bank

ANNEX 1

PREVIOUS RECOMMENDATIONS BY NORGES BANK

TABLE 1 PREVIOUS RECOMMENDATIONS OF CURRENT INTEREST

Recommendation:	In <i>Financial Stability Report</i>:
1. Bank solvency should be strengthened	2014, 2013, 2/12, 1/12, 2/11
2. Banks should raise more long-term funding	2/12, 1/12, 2/11, 2/10, 2/09
3. The crisis resolution regime in Norway should be improved	2013, 2/11, 2/10
4. Banks should disclose more information	2014, 2013, 2/12, 2/11, 1/11, 2/10

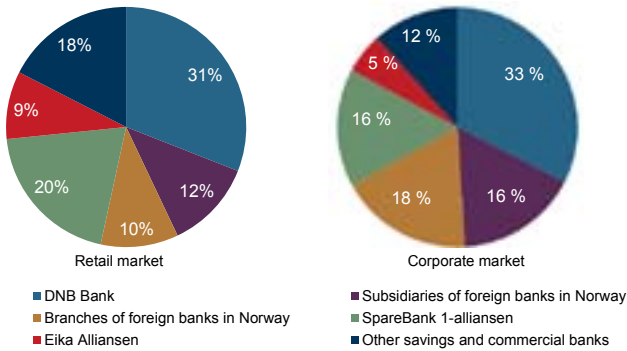
TABLE 2 PREVIOUS RECOMMENDATIONS IMPLEMENTED

Recommendation:	In <i>Financial Stability Report</i>:	Implemented:
1. Early introduction of Basel III/CRD IV	1/12, 2/11, 1/11, 2/10, 1/10	2013
2. Higher risk weights for residential mortgage loans	2/12, 1/12, 2/11, 1/11, 2/10, 1/11	2014
3. Additional capital requirements for systemically important banks	2/12, 1/12, 2/11, 2/09	2014
4. Retain profits to strengthen equity capital	2/12	2014, 2013

ANNEX 2

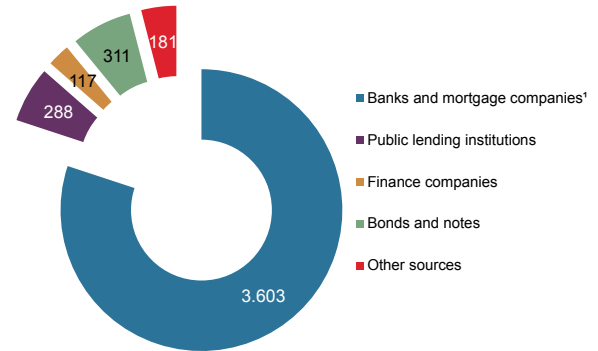
THE NORWEGIAN BANKING SECTOR

Chart 1 Lending market shares in the Norwegian banking sector.¹ Percent. As at 30 June 2014



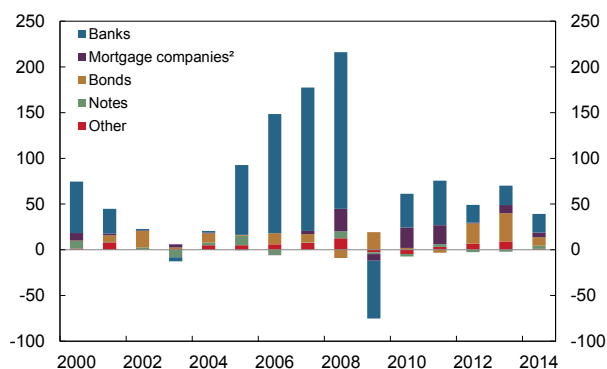
1) All banks and covered bond mortgage companies in Norway.
Source: Norges Bank

Chart 2 Gross domestic lending to the private sector by credit source. In billions of NOK. As at 30 June 2014



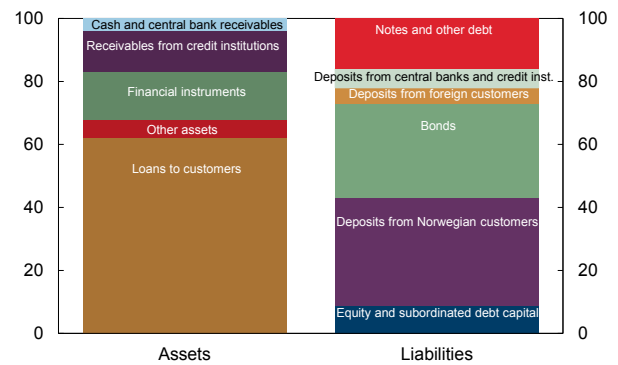
1) All banks and covered bond mortgage companies including Eksportfinans.
Source: Statistics Norway

Chart 3 Changes in non-financial companies' domestic debt. By credit source. In billions of NOK. 2000 – 2014¹



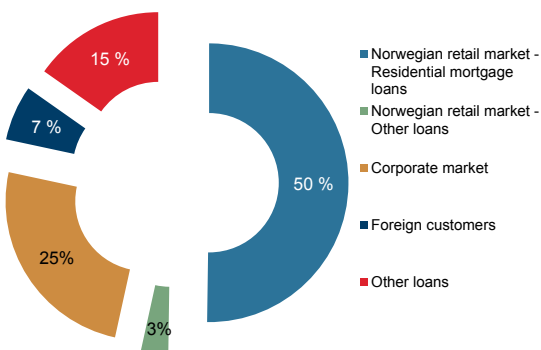
1) To end-June 2014.
2) Mortgage companies, Eksportfinans and Export Credit Norway.
Sources: Statistics Norway and Norges Bank

Chart 4 Assets and liabilities. Banks and covered bond mortgage companies.¹ Percent. As at 30 June 2014



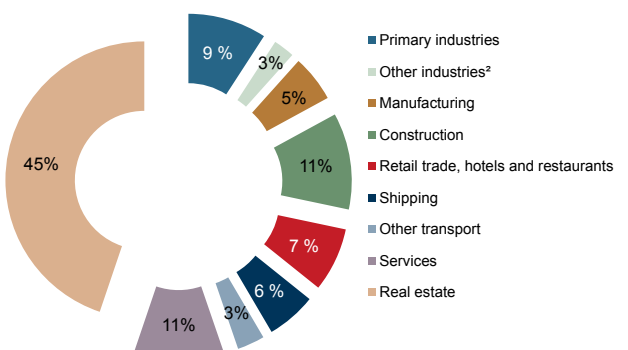
1) All banks and covered bond mortgage companies with the exception of subsidiaries and branches of foreign banks in Norway.
Source: Norges Bank

Chart 5 Lending¹ by Norwegian banks and covered bond mortgage companies. Percent. As at 30 June 2014



1) Total lending of NOK 3.037bn.
Source: Norges Bank

Chart 6 Lending by Norwegian banks and covered bond mortgage companies to the corporate market.¹ Percent. As at 30 June 2014



1) Corporate loans total NOK 757bn.
2) Other industries consists of «Natural Resources», «Oil Services» and «Supply».
Source: Norges Bank

TABLE 1 STRUCTURE OF THE NORWEGIAN FINANCIAL INDUSTRY AS AT 30 JUNE 2014

	Number	Lending (NOK bn)	Total assets (NOK bn)	Tier 1 capital ratio (%)	Capital ratio (%)
Banks (excluding branches of foreign banks)	125	2 375	3 639	14.0	15.7
Branches of foreign banks	12	440	670		
Mortgage companies (including branches of foreign companies)	28	1 450	1 816	14.5	16.3
Finance companies (including branches of foreign companies)	50	134	144	15.7	17.8
State lending institutions	3	293	301		
Life insurance companies (excluding branches of foreign companies)	13	46	1 143		
Non-life insurance companies (excluding branches of foreign companies)	60	3	154		
Memorandum: (NOK bn)					
Market value of equities and equity certificates, Oslo Stock Exchange	2 145				
Outstanding domestic bonds and short-term paper debt	1 857				
Issued by public sector and state-owned companies	516				
Issued by banks	317				
Issued by other financial institutions	505				
Issued by other private enterprises	270				
Issued by non-residents	249				
GDP Norway (2013)	3 011				
GDP mainland Norway (2013)	2 314				

Sources: Oslo Stock Exchange, VPS, Statistics Norway, Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

TABLE 2 MARKET SHARES OF BANKS AND COVERED BOND MORTGAGE COMPANIES¹ IN NORWAY AS AT 30 JUNE 2014. PERCENT

	Gross lending to		Deposits from	
	Retail market	Corporate market	Retail market	Corporate market
DNB Bank ²	31.0	32.5	31.6	35.1
Subsidiaries of foreign banks in Norway ³	12.0	16.5	9.0	16.3
Branches of foreign banks in Norway ⁴	10.5	17.9	9.4	14.7
SpareBank 1 Alliance ⁵	20.0	16.0	18.4	14.4
Eika Alliance ⁶	9.1	5.4	11.4	6.7
Other savings banks ⁷	13.9	9.9	14.4	10.3
Other commercial banks ⁸	3.6	1.8	5.7	2.5
Total	100.0	100.0	100.0	100.0
Total market (NOK bn)	2 093	1 149	973	561

1 The market shares are calculated by summing the balance sheet items for the institutions in the different groups.

2 DNB Bank, DNB Boligkreditt and DNB Næringskreditt.

3 Nordea Bank Norge, Santander Consumer Bank and Nordea Eiendomskreditt.

4 Danske Bank, Handelsbanken, Handelsbanken Eiendomskreditt, Skandiabanken + 9 other branches.

5 SpareBank 1 SR-Bank, SpareBank 1 SMN, SpareBank 1 Nord-Norge, Sparebanken Hedmark + the 11 other savings banks in SpareBank 1 Alliance, SpareBank 1 Boligkreditt, BN Bank and Bank 1 Oslo Akershus + 1 mortgage company.

6 Eika Boligkreditt, Eika Kredittbank, 73 savings banks and 1 commercial bank which are owner banks in Eika Gruppen AS + 1 other residential mortgage company.

7 Sparebanken Vest, Sparebanken Vest Boligkreditt, Sparebanken Møre, Sparebanken Sør and Sparebanken Sogn og Fjordane + 14 other savings banks, 8 other residential mortgage companies and 1 hybrid covered bond mortgage company.

8 Storebrand Bank, Storebrand Boligkreditt, Gjensidige Bank, Landkreditt Bank and Gjensidige Bank Boligkreditt + 7 other commercial banks and 1 other residential mortgage company.

Source: Norges Bank

TABLE 3 RATING BY MOODY'S¹, TOTAL ASSETS, CAPITAL ADEQUACY² AND RETURN ON EQUITY. AS AT 30 JUNE 2014. CONSOLIDATED FIGURES

	Credit rating			Total assets (NOK bn)	Common Equity Tier 1 (CET1) capital ratio (%)			Return on equity		
	Financial strength	Short-term	Long-term		(with transitional floor)	(without transitional floor)	Proportion of interim result in CET1 capital (%)	2012	2013	2014 Q1-Q2
Nordea Bank	C	P-1	Aa3	5 351	10.7	15.2	100	11.6	11.0	10.0
Danske Bank	C-	P-2	Baa1	3 690	N/A	14.4	72	3.6	5.0	9.2
Handelsbanken	C	P-1	Aa3	2 455	9.2	20.1	49	14.9	13.9	14.3
DNB	C-	P-1	A1	2 445	12.1	13.6	50	11.7	13.2	12.7
SEB	C-	P-1	A1	2 430	9.9	16.0	100	11.1	13.1	13.1
Swedbank	C-	P-1	A1	1 879	10.3	20.9	25	14.6	12.5	15.1
Nordea Bank Norge	C-	P-1	Aa3	614	12.0	18.8	0	14.5	12.3	10.3
SpareBank 1 SR-Bank	C-	P-1	A2	167	11.4	11.9	50	12.4	14.0	16.5
Sparebanken Vest	C-	P-1	A2	141	11.5	14.6	50	12.3	11.7	11.6
SpareBank 1 SMN	C-	P-1	A2	119	11.4	11.4	73	11.7	13.3	16.8
Sparebanken Sør	C-	P-1	A2	96	12.3	12.3	0		12.3	12.3
Santander Consumer Bank		P(P-2)	Baa1	85	10.6	N/A	0	14.3	14.6	9.1
SpareBank 1 Nord-Norge	C-	P-1	A2	82	13.0	13.5	65	9.0	13.0	17.2

- 1 Rating at 25 August 2014. 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 proportion of interim results included in the calculation of CET1 capital ratios varies across institutions. The higher the proportion of (positive) interim result included, the higher the CET1 capital ratio. Owing to different national rules, such as consolidation rules for life insurance companies, CET1 capital figures for Norwegian financial conglomerates are not directly comparable with those of other Nordic financial conglomerates.

Sources: Moody's and banks' websites

TABLE 4 BANKS' LOSSES¹ ON LOANS² TO VARIOUS INDUSTRIES AND SECTORS AS A PERCENTAGE OF LENDING TO THE RESPECTIVE INDUSTRIES AND SECTORS

Industries										Lending in billions of NOK
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2013
Agriculture, forestry and fishing	-2.17	-0.55	-0.06	0.19	0.22	0.13	0.15	0.10	0.14	83.2
of this: Fish farming, hatcheries	-12.77	-0.17	-0.11	0.56	0.84	0.23	0.14	-0.03	0.12	14.3
Extraction of crude oil and natural gas	-0.04	-0.05	0.00	0.00	0.13	0.02	0.06	0.39	-0.08	8.5
Manufacturing, mining and quarrying	0.67	-0.28	0.10	0.45	0.86	0.71	0.66	0.71	0.18	59.1
of this: Manufacturing					0.89	0.88	0.42	0.53	0.24	46.8
of this: Ship and boat building					0.84	-0.08	2.67	2.04	-0.03	9.6
Electricity and water supply, construction	0.26	-0.18	0.12	0.42	0.62	0.65	0.59	0.60	0.58	117.9
of this: Construction	0.27	-0.14	0.18	0.66	0.87	1.48	1.49	1.17	1.50	32.1
Retail trade and autorepair, hotels and restaurants	0.20	0.09	0.21	0.52	1.38	0.35	0.76	0.34	0.57	67.7
of this: Retail trade and autorepair	0.15	0.10	0.21	0.49	1.58	0.33	0.78	0.30	0.63	53.9
of this: Hotels and restaurants	0.23	0.03	0.29	0.42	0.43	0.46	0.67	0.48	0.35	13.9
Shipping and pipeline transport	0.06	0.06	-0.05	0.09	1.43	1.37	1.66	2.10	2.08	64.0
Other transport and communications	0.01	0.05	0.06	0.06	1.43	1.43	1.16	0.62	0.55	46.9
Business services and real estate activities	-0.13	-0.06	0.02	0.34	0.37	0.21	0.29	0.32	0.25	426.4
of this: Real estate activities	0.02	-0.12	0.03	0.28	0.32	0.20	0.29	0.31	0.25	354.9
of this: Professional, financial business services					0.60	0.23	0.29	0.42	0.25	71.5
Other service industries	0.29	0.14	0.10	0.22	0.38	0.56	0.14	0.36	0.15	28.1
Total for all industries	-0.15	-0.08	0.03	0.28	0.61	0.44	0.51	0.51	0.44	902
Retail market	0.02	-0.01	0.04	0.07	0.12	0.15	0.14	0.11	0.12	844
Others³	-0.15	0.02	0.01	0.09	0.05	0.02	0.01	0.03	0.14	687
Total	-0.05	-0.03	0.03	0.17	0.29	0.23	0.26	0.25	0.24	2 434

1 All banks except branches of foreign banks in Norway.

2 Recognised losses, excluding changes in collective impairment losses/unspecified loss provisions.

3 Financial institutions, central government and social security administration, municipal sector and foreign sector.

Source: Norges Bank

TABLE 5 LOAN DEFAULTS. ALL BANKS AND COVERED BOND MORTGAGE COMPANIES¹. AT YEAR-END

Year	Loan defaults. Percentage of lending to sector			Loan defaults. Percentage of lending to private sector			
	Households	Enterprises	Others	Households	Enterprises	Others	Total
1990	4.87	7.63	3.07	3.08	2.56	0.10	5.74
1991	6.33	10.25	3.13	4.07	3.36	0.09	7.52
1992	8.20	11.50	1.94	5.19	3.92	0.05	9.17
1993	6.54	10.62	0.40	4.26	3.47	0.01	7.73
1994	4.79	6.89	0.68	3.18	2.16	0.02	5.36
1995	3.69	4.61	0.29	2.40	1.47	0.01	3.88
1996	2.82	3.29	0.40	1.85	1.05	0.01	2.91
1997	2.12	2.12	0.22	1.36	0.71	0.01	2.07
1998	1.49	1.33	0.06	0.94	0.45	0.00	1.40
1999	1.34	1.47	0.07	0.86	0.50	0.00	1.36
2000	1.25	1.42	0.08	0.79	0.50	0.00	1.29
2001	1.27	1.72	0.04	0.81	0.60	0.00	1.41
2002	1.27	3.46	0.08	0.84	1.14	0.00	1.98
2003	1.08	3.25	0.14	0.74	0.98	0.00	1.72
2004	0.82	1.79	0.10	0.59	0.49	0.00	1.07
2005	0.72	0.95	0.05	0.52	0.26	0.00	0.78
2006	0.57	0.70	0.07	0.39	0.21	0.00	0.60
2007	0.54	0.50	0.01	0.36	0.16	0.00	0.52
2008	0.77	0.85	0.01	0.49	0.30	0.00	0.79
2009	1.11	1.59	0.13	0.74	0.51	0.00	1.25
2010	1.21	1.84	0.12	0.81	0.57	0.00	1.39
2011	1.02	1.89	0.24	0.68	0.59	0.00	1.27
2012	0.98	1.81	0.72	0.66	0.56	0.02	1.23
2013	0.93	1.77	0.35	0.63	0.53	0.01	1.17
2014 ²	0.83	1.76	0.22	0.56	0.53	0.01	1.10

1 Covered bond mortgage companies included from 2005.

2 As at 30 June 2014.

Source: Norges Bank

TABLE 6 KEY FIGURES FOR NORWEGIAN LIMITED COMPANIES.¹ PERCENT

	Share of debt ²		Operating margin ³		Return on total assets ⁴		Equity ratio ⁵	
	2012	2013	2012	2013	2012	2013	2012	2013
Primary industries	3.3	3.1	8.7	20.6	5.1	9.9	41.1	43.4
Oil services	1.2	0.8	7.7	8.7	3.4	3.5	38.2	39.8
Manufacturing	6.8	6.7	4.7	4.2	4.0	4.0	42.5	44.7
Electricity and water supply	7.8	8.6	26.2	29.9	5.6	5.1	43.0	42.8
Construction	9.4	8.9	6.6	6.4	5.8	5.7	32.6	34.7
Retail trade, hotels and restaurants	6.7	5.7	3.4	3.5	6.9	6.5	40.1	43.2
Shipping	12.3	12.3	7.4	15.5	1.8	3.2	45.9	46.7
Other Transport	4.8	5.5	5.9	6.9	3.3	3.5	32.0	30.6
Business services	8.2	8.7	8.5	8.9	8.8	7.7	41.7	50.4
Commercial property	39.5	39.6	34.4	36.2	4.2	4.1	42.9	47.2
Total	100.0	100.0	6.9	7.9	5.2	5.2	41.4	45.0

1 Excluding extraction of natural resources, banking/insurance and general government sector. All figures are based on corporate annual financial statements.

2 The industry's share of enterprises' total domestic and foreign bank debt.

3 Operating income as a percentage of operating revenue.

4 Pre-tax profit as a percentage of of total capital at year-end.

5 Book equity as a percentage of total capital.

Source: Norges Bank

ANNEX 3

INTERNATIONAL REGULATORY REFORM

Field	Institutions and regulations	Progress
Tools for banking crisis resolution	Financial Stability Board (FSB) – Key attributes of effective resolution regimes for financial institutions	Work on living wills for the largest global systemically important banks (GSIBs) is underway. The list consists of 29 banks today and is updated yearly.
	EU – Bank Recovery and Resolution Directive (BRRD)	The BRRD was approved on 6 May 2014, and published in the Official Journal of the European Union in June. The directive will become EU law on 1 January 2015. Bail-ins as a crisis resolution tool will enter into force on 1 January 2016.
	Ministry of Finance – Bank Guarantee Schemes Act	Letter from the Ministry of Finance sent to the Banking Law Commission in June 2009 assigning it the task of revising the Bank Guarantee Schemes Act. Changes in the EU rules have now been approved that include a deposit guarantee of EUR 100 000 per depositor. The Norwegian deposit guarantee of NOK 2m may be retained in a transitional period until 31 December 2018.
Requirements relating to banks' capital adequacy, risk management and liquidity	EU – Capital Requirements Directive IV and Regulation (CRR and CRD IV)	The CRD IV/CRR package entered into force in the EU on 1 January 2014.
	Implementation of EU rules in Norwegian law	Large portions of CRD IV/CRR have been transposed into Norwegian law from 1 July 2013. The legislation includes a timetable for the gradual phase-in of the buffer for systemically important banks. The legislation is supplemented by regulations. On 22 August 2014, the Ministry of Finance laid down amendments to a number of regulations relating to capital requirements etc. These regulations largely implement detailed technical provisions of EU capital adequacy legislation. The most important changes are: Stricter standards for the quality of regulatory capital and new deduction rules for regulatory capital. Furthermore, the Ministry of Finance decided not to implement the EU provision for reduced capital requirements for small and medium-sized enterprises. Moreover, the Ministry of Finance is planning to leave unchanged the risk-weighted assets for calculating the systemic risk buffer when the buffer for systemically important banks enters into force on 1 July 2015.
	Risk weights for residential mortgages	As from 2014 Q1, the minimum Loss Given Default (LGD) risk model parameter in IRB banks' residential mortgage models is 20%. This was laid down in the capital requirements regulation and also applies to branches of foreign IRB banks in Norway. On 1 July 2014, Finanstilsynet (Financial Supervisory Authority of Norway) issued new requirements for the calibration of IRB banks' residential mortgage models. The recalibration entails an increase in the minimum Probability of Default (PD) for individual loans to 0.2% and an increase in the level of the long-term average PD. Banks must recalibrate during the second half of 2014 and shall report their capital adequacy data in accordance with the recalibrated models from 2015 Q1. Danish and Swedish supervisory authorities have confirmed that they will impose similar requirements for Danish and Swedish branches' residential mortgages in Norway.
	Requirements for systemically important banks	On 12 May 2014, the Ministry of Finance issued the Regulation on the designation of systemically important financial institutions and designated DNB ASA, Nordea Bank Norge ASA and Kommunalbanken AS as systemically important. Finanstilsynet shall by the end of the first quarter each year provide advice to the Ministry of Finance as to which financial institutions should be designated as systemically important. Institutions with total assets of at least 10% of mainland GDP, or a share of the lending market of at least 5%, will, as a main rule, be designated as systemically important.
	Countercyclical capital buffer	On 4 October 2013, the Ministry of Finance issued the Regulation on the Countercyclical Capital Buffer. On 12 December 2013, the Ministry of Finance set the countercyclical capital buffer at 1%, on the basis of advice from Norges Bank. At the same time, the Ministry decided that the level of 1% would not apply until 30 June 2015. Norges Bank shall prepare a decision basis each quarter and provide its assessment and advice on the level of the countercyclical capital buffer.
Quantitative liquidity standards	On 10 October 2014, the European Commission published a delegated regulation on the LCR requirement as a supplement to CRD IV/CRR. The LCR will be progressively implemented as from 1 October 2015 and will apply in full as from 1 January 2018. Finanstilsynet will prepare draft liquidity regulations for Norwegian banks by the end of May 2015. The Basel Committee's proposed revisions to the NSFR were circulated for comment in 2014. The NSFR will be introduced under Basel III on 1 January 2018. The European Commission will submit draft legislation for the NSFR by the end of 2016 in order to introduce the NSFR as a requirement by 2018.	
Supervisory structure	New EU supervisory structure	New supervisory structure for the EU financial sector from 2011. On 14 October 2014, EU and EFTA/EEA states reached agreement on a solution for the incorporation of the EU Regulations establishing the European Supervisory Authorities into the EEA Agreement. The solution must be approved by the Storting.
	EU Banking Union	The Single Supervisory Mechanism (SSM), which transfers much of the supervisory responsibility in the euro area to the ECB, entered into force on 3 November 2013. The SSM will begin to function in practice from November 2014. A Single Resolution Mechanism (SRM) and a Single Resolution Fund were approved in April and May 2014, respectively, and published in the Official Journal of the European Union in July 2014. Crisis resolution under the SRM shall follow principles and rules in the BRRD.

ANNEX 4

GLOSSARY

Corporate market (banks): Primarily non-financial private enterprises and the self-employed (sectors 21000–25000 and 82000–83000).

Covered bonds (OMF): Debt instruments issued by mortgage companies and secured on residential mortgages or commercial property loans. The mortgage companies are owned by banks.

Currency swap: Contract involving the exchange of two currencies and a reverse exchange of the same two currencies at a date further in the future.

Deposit spread: Three-month effective NIBOR minus the deposit rate.

Disposable income (households): All forms of income less taxes, interest expenses and other expenses (other expenses include transfers to other countries and to other domestic sectors). Norges Bank corrects disposable income for estimated reinvested share dividends for 2000–2005 and redemption/reduction of equity capital for 2006–2012 Q3.

Financial stability: Financial stability implies a financial system that is resilient to shocks and is capable of channeling funds, executing payments and distributing risk efficiently.

Interest margin (bank): The difference between the average interest rate on loans to and deposits from a given customer category. The interest margin may be broken down into the deposit spread and the lending spread.

Lending spread: Difference between the lending rate and three-month effective NIBOR.

Mortgage company: Financial institution that funds its lending activities by issuing bonds.

NIBOR (Norwegian Inter Bank Offered Rate): NIBOR or the money market rate is the interest rate on inter-bank loans. NIBOR is a currency swap rate.

Outright forward: A contract to buy or sell a specified currency amount at a rate agreed on the date of the contract for delivery at an agreed time in the future. The forward rate is determined on the basis of the spot rate at the time of the conclusion of the contract and the expected interest rate difference between the two currencies over the term of the contract.

Private and municipal sector (C2): Includes the following institutional sectors: local government, public non-financial enterprises, private non-financial enterprises and households (sectors 11100–25000, 65000–85000 and 08000).

Retail market (banks): Wage earners, pensioners, benefit recipients, students etc. (sector 85000).

Sight deposit rate: The interest rate banks receive on their sight deposit account (current account) with Norges Bank. The sight deposit rate is Norges Bank's key policy rate.

Swap arrangement: Arrangement whereby banks obtain government securities in exchange for covered bonds (OMF) for an agreed period. Phased out in 2014. Norges Bank administered the arrangement on behalf of the Ministry of Finance.

Systemically important bank: A bank that with a high degree of probability will trigger financial instability if it experiences serious financial or operating difficulties. The Ministry of Finance has designated DNB ASA, Nordea Bank Norge AS and Kommunalbanken AS as systemically important institutions in Norway. The list of systemically important institutions shall be updated annually.

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Financial Stability Report 2014

