



**FINANSTILSYNET**

THE FINANCIAL SUPERVISORY  
AUTHORITY OF NORWAY

# RISK OUTLOOK

JUNE 2017



## Risk Outlook

Since 1994 Finanstilsynet has systematically analysed and assessed potential stability problems in the Norwegian financial market against the background of developments in the Norwegian and international real economy and markets. Much of the assessment of individual institutions' profitability, financial strength and risk needs to be carried out in light of the general state of the economy and markets. As from 2003 Finanstilsynet has given its view of the state of the financial market in a separate report which also covers financial institutions' earnings, financial strength and liquidity. The report assesses potential sources of future stability problems in the Norwegian financial system. Finanstilsynet publishes the report *Risk Outlook* in June and in November.

# RISK OUTLOOK 2017

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Cut-off date 6 June 2017.

## SUMMARY

After several years of weak economic growth in the industrialised countries and declining growth rates in emerging economies, there are now signs that growth overall is picking up. The International Monetary Fund (IMF) considers the risk of financial instability in the short term to be somewhat lower than it did in autumn 2016. However, risk in the somewhat longer term appears to have grown. Political uncertainty and signals of protectionism could put a brake on the development of international trade and economic growth ahead. Expansionary monetary policies have encouraged heavy debt incurrence and contributed to high asset prices in many countries. In most industrialised countries other than the US, the central banks have signalled continued expansionary monetary policies. This will help to maintain activity levels but could at the same time increase the risk of future financial instability by stimulating borrowing and contributing to higher property prices.

In Norway reduced activity in oil-related industries after the oil price fall in 2014 has impacted on other parts of the economy, although the contagion effects have thus far been limited. Growth in the mainland (non-oil) economy in 2016 was at its lowest point since the financial crisis. There are now signs that activity levels in the mainland economy are picking up. Unemployment rates have fallen in recent months.

House prices and household debt have risen rapidly for many years. House prices and the household debt burden are at unprecedented levels, and household debt is growing significantly faster than household incomes. The vulnerability of the financial system has risen.

A turnaround in the form of a hefty interest rate hike or increase in unemployment will very likely bring lower private consumption and falling house prices. The younger age groups in particular, with small financial buffers and high housing debt, are vulnerable. The record high indebtedness in the household sector

will compound the negative effect of an interest rate hike and income lapse.

The growth in house prices has slowed somewhat in recent months, but from a very high level. Activity in the housing market remains intense. Stronger growth in the Norwegian economy and continued low interest rates could encourage further growth in house prices, but will increase systemic risk at the same time.

The Ministry of Finance tightened the residential mortgage lending regulations somewhat as from 1 January 2017. This has brought a slight tightening of lending practices and may in isolation have dampened pressures in the housing market, yet growth in household debt has remained high in recent months. Finanstilsynet is monitoring households' debt incurrence, the housing market and banks' credit practices, and will throughout consider the merits of recommending a further tightening of the regulations to the Ministry of Finance.

Banks are heavily exposed to commercial property, a segment accounting for about 40 per cent of overall lending to the corporate market. Prices in parts of the commercial property market have risen sharply. In the event of a setback in the housing market and financial consolidation in the household sector, the contagion effects to commercial property could be substantial and inflict heavy losses on the banks, as witnessed in Norway and elsewhere during previous crises. Finanstilsynet monitors banks' exposures to commercial property as part of its on-site inspections.

Household borrowing in the form of unsecured loans carrying high interest has risen considerably in recent years. Consumer loans now make up a mere 3 per cent of household debt but accounted for close to 8 per cent of the overall increase in household debt in the twelve months to the end of this year's first quarter. The strong increase in consumer lending gives grounds for concern. For many households consumer borrowing comes in addition to other debt, and can impose a heavy burden on individuals and households. Higher consumer debt will compound the effects of households' financial consolidation in the event of an

## SUMMARY

economic setback. Finanstilsynet has expanded its supervision of consumer lending, and has raised capital charges for current and new providers of consumer loans. Finanstilsynet has now issued guidelines for financial institutions' consumer lending in order to encourage healthier lending practices.

Profit levels among Norwegian banks are good and considerably higher than the average of European banks. Banks' earnings fell somewhat in 2016 owing to higher losses on loans to the offshore industry, the large banks being those primarily affected. A considerable proportion of the banks' offshore clients has been or will be subject to restructuring. It is uncertain how large the losses will ultimately prove to be, and Finanstilsynet keeps track of the banks' impairment provisioning through its on-site inspections and analyses.

Banks' risk-weighted CET1 capital ratio has doubled since the financial crisis. Stricter regulatory requirements are in general met by profit retention. The larger banks use internal models (IRB models) to compute capital charges for various types of risk. Average risk weights for these banks have on the whole fallen. Finanstilsynet reviews the models at regular inspections and has instructed several banks to revise their calibration of risk models to render them more robust. Transitional rules in the form of a floor for risk weighted assets have effect for Norwegian IRB banks and counter the likelihood of risk weights leading to an inappropriate fall in capital charges.

Despite strengthened capital ratios, the banks' equity ratio is not significantly higher now than in the mid-1990s. Financial institutions are required to meet the leverage ratio requirement as from 30 June 2017. This capital target ratio is not affected by changes in banks' risk models and risk weighted assets. Norwegian banks had a leverage ratio of 7.3 per cent at the end of the first quarter this year, which is significantly higher than the anticipated minimum requirement in the EU.

Finanstilsynet conducts stress tests of Norwegian banks' results and capital ratios. The stress tests

support assessments of financial stability, and are a tool supporting discretionary assessments of individual banks' future capital needs. As in previous years, the stress scenario in 2017 is based on a serious shock to the Norwegian economy and Norwegian banks. The likelihood of this scenario taking place is low, but it is not unrealistic. The calculations illustrate that a high debt ratio among households and banks makes a number of banks vulnerable to a protracted shock. For several banks, capital adequacy falls below the regulatory requirements. The stress tests underline how important it is for banks' capital planning to make allowance for an unfavourable outturn in the Norwegian and international economies. Finanstilsynet will follow up on these matters under the Pillar 2 process.

Norwegian banks obtain a large share of their funding in the wholesale market, much of it raised abroad. Norwegian banks are thus dependent on confidence in the international money and capital markets and on an absence of general turbulence in these markets. The regulatory requirements on liquidity reserves and stable funding have risen in recent years. The banks hold liquidity reserves guaranteeing their ability to honour their commitments during a brief period of market stress, and a relatively high proportion of stable funding which helps to reduce liquidity risk in a longer-term perspective. However, market conditions can change rapidly, and refinancing is likely to be costly and difficult to obtain in turbulent markets. Liquidity risk in the banking system is an important aspect of the supervisory follow-up of the banks.

A large proportion of the banks' market funding is in the form of covered bonds. This source of funding has benefited Norwegian banks and has contributed to longer funding maturities, but ties Norwegian banks' funding risk to a greater degree than previously to developments in the housing market. Sharp growth in house prices over a long period has heightened the potential fall. Covered bonds also account for a large proportion of Norwegian banks' liquidity reserve. These factors contribute to intensifying the mutual effects between banks' credit, liquidity and funding

risk and make for increased systemic risk.

The rise in long-term interest rates from the record-low level in autumn 2016 helped to improve prospects somewhat for life insurers and pension funds internationally, but the low long-term interest rate level remains a challenge to institutions' earnings and financial position. Pension providers are also exposed to risk related to a combination of low risk-free interest rates and falling values on the asset side of the balance sheet. Higher risk premiums on fixed-income securities will reduce the value of bond portfolios, and share and property values could plunge. The European Insurance and Occupational Pensions Authority (EIOPA) also stressed this point in its summary of the results from the stress test of European insurers in 2016.

The introduction of a fair-value-based solvency regime has been demanding for life insurers in a period of historically low interest rates and a substantial proportion of commitments carrying guaranteed interest. Transitional arrangements have been made available to ease the switch to a new body of rules. Institutions have at the same time cut costs and made adjustments on the asset side. In addition, they are converting insurance schemes from a defined benefit to a defined contribution footing, bringing a reduction in insurers' market risk and, by the same token, in their capital requirements. Norwegian life insurers, with one exception, meet the requirements by a relatively ample margin both with and without transitional rules. In addition to fulfilling the regulatory requirements at any and all times, institutions must also assess their own capital needs and the capital targets with which to meet future capital needs. Finanstilsynet has made it clear to some institutions that their capital targets appear to be low. This has prompted some institutions to raise their internal targets with a view to achieving a satisfactory solvency coverage ratio.

Silver Pensjonsforsikring AS was placed, as the first Norwegian life insurer, into public administration in February 2017. This was necessary in order to assure

equal treatment of policyholders' insurance claims and to protect policyholders' best interests. Silver's portfolio represents a relatively small proportion of the overall paid-up policy portfolio in Norway. The substantial undercoverage at Silver is detrimental to the company's policyholders. The insolvency has however not led to general unease in the Norwegian insurance market.

## PART I ECONOMIC BACKGROUND AND RISK AREAS

After several years of low growth in the world economy and in Norway, there are now signs of higher growth. The IMF has for the first time in a long time revised its growth forecasts upwards. In its latest report, the IMF considers the risk of financial instability to be reduced in the short term and that growth may surprise on the upside in the immediate future. The IMF states at the same time that vulnerabilities in the form of financial imbalances and political uncertainty are high in the somewhat longer term. Chapter 1 provides an overview over the international and Norwegian real economies and financial markets.

Chapter 2 deals with some factors that could pose a threat to financial stability. The vulnerabilities in the Norwegian financial system relate to a high degree to the household debt burden and house prices, which have risen strongly for a number of years and are at elevated levels. Vulnerabilities are many cases triggered by external events such as higher risk premiums in international financial markets and falling demand for Norwegian goods. Such a scenario is also included in Finanstilsynet's stress test of Norwegian banks (see separate theme chapter).

A robust financial infrastructure is crucial to financial stability. Norway is among the countries with the most efficient and forward-looking technology in the financial industry. The pace of financial innovation is ever quicker. Use of technology can enhance the stability of the financial system, but can also exacerbate the risk present. Supervisory authorities in the international arena are increasingly preoccupied with these issues.



# CHAPTER 1 REAL ECONOMY AND FINANCIAL MARKETS

## INTERNATIONAL ECONOMY

### Expectations of quicker growth ...

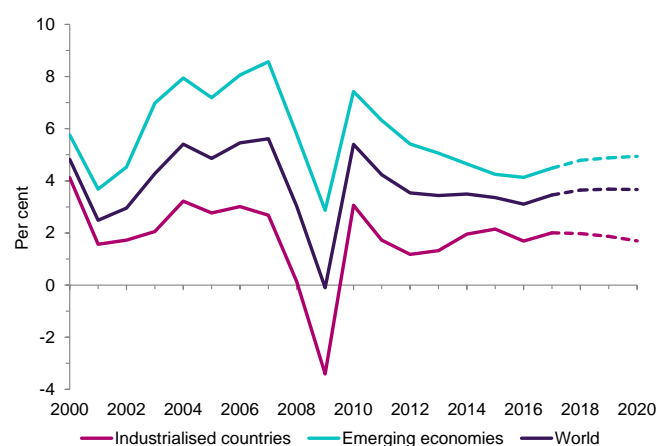
Growth in the world economy has been low in recent years, driven by a weak trend in the industrialised countries and continued high, but receding, growth in emerging economies. Economic key figures towards the end of 2016 and into 2017 suggest that growth is picking up. Various sentiment indicators also suggest that consumers and firms expect somewhat higher growth (chart 1.2). According to the IMF, growth in the world economy is expected to rise from 3.1 per cent in 2016 to about 3.5 per cent in 2017 and 2018 (chart 1.1). The increase is driven mainly by the expectation of stronger growth in emerging economies.

### ... but continued very low interest rates

Weak growth and low inflation have led central banks in a number of industrialised countries to conduct a highly expansionary monetary policy with low base rates and unconventional measures, including sizeable bond purchases, in order to reduce long-term interest rates. While low interest rates have contributed to economic growth, government authorities and analysts point to the detrimental effects lasting low interest rates can have for financial stability. Financial imbalances have accumulated in many countries, with high debt levels among firms and households and high property prices. Credit growth has been strong in China in particular where corporate and household debt as a share of GDP has risen from 120 to 220 per cent over the past ten years. High debt levels among households and firms heighten the risk of financial unrest and economic setback.

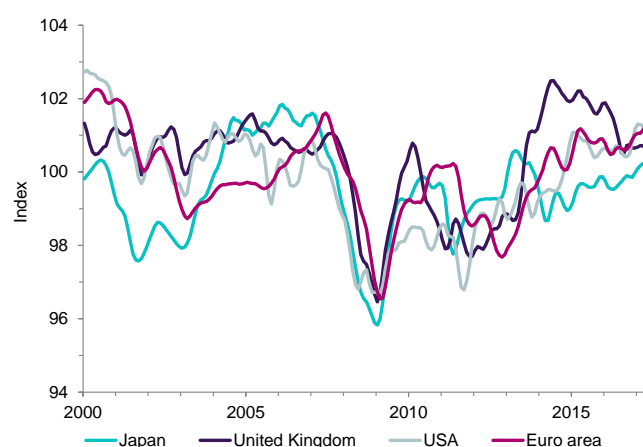
The US is thus far the only major economy whose central bank has started to raise the base rate. The rate increases have largely been expected by market participants and have consequently not triggered

### 1.1 GDP forecasts



Source: IMF

### 1.2 Consumer confidence



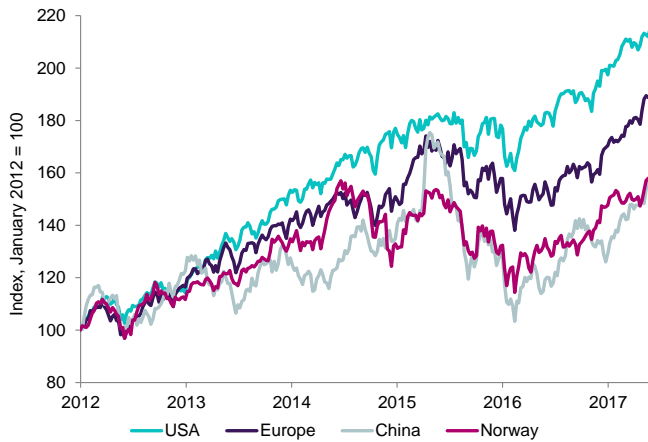
Source: Thomson Reuters

significant market unease. The US central bank has signalled a further increase of the base rate in the current year. The European Central Bank and central banks in other European countries and in Japan have signalled continued expansionary monetary policies.

### Increased political uncertainty, but positive financial markets

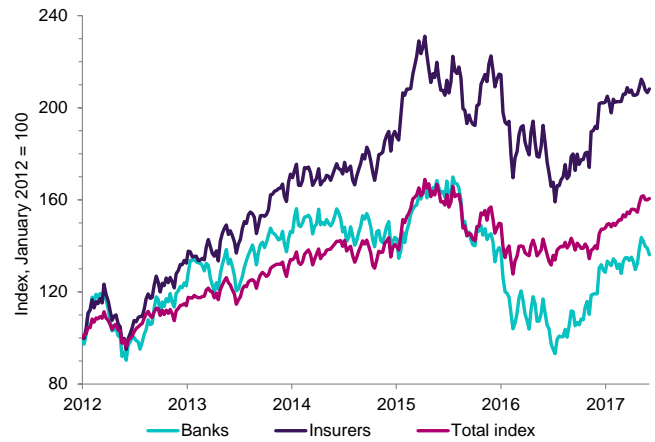
Developments in the US economy and financial markets have had a large bearing on international fixed income and equity markets in recent months. US bond yields and equity prices rose substantially in the wake of the US presidential election (charts 1.3 and 1.4). The rise must be viewed in the context of expectations of a more expansionary US fiscal policy and higher inflation, and positive economic key

## 1.3 Share markets (MSCI, price indices)



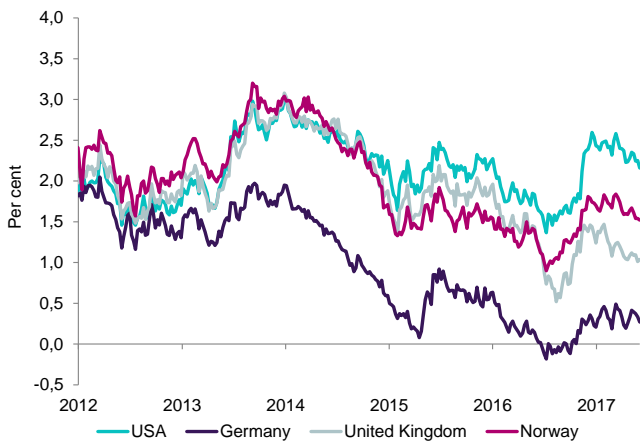
Source: Thomson Reuters

## 1.6 Financial shares, Europe



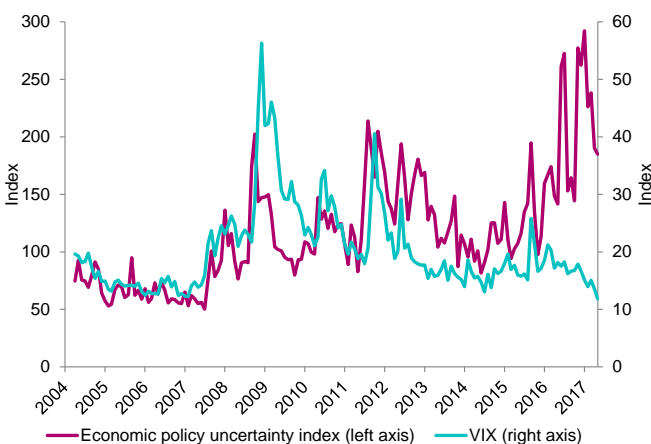
Source: Thomson Reuters

## 1.4 Ten-year government bond yields



Source: Thomson Reuters

## 1.5 Economic policy uncertainty and implicit volatility in the share market



Source: Thomson Reuters, Economic Policy Uncertainty

figures. The broad-based upturn in the equity markets and long-term interest rates also reflects somewhat improved growth prospects and higher inflation expectations in Europe, Japan and a number of other industrialised countries.

On several occasions in recent years, market unrest has led to a transient dip in equity prices and higher risk premiums in the fixed income markets. The US presidential election and signals of protectionist policy from the US administration have heightened the global political uncertainty and, in Europe too, protectionist trends have received much attention.

Thus far in 2017, increased political uncertainty is little reflected in the financial markets (chart 1.5). An index of global economic policy uncertainty published by Economic Policy Uncertainty has risen substantially of late, whereas risk in the equity market, measured by the VIX index (implicit volatility), is low. Risk premiums in the fixed income markets have also fallen further this year. The global economic uncertainty index is based inter alia on newspaper coverage of events with a potential impact on economic growth, and in that sense is also a sentiment indicator. Low risk premiums and low implicit volatility reflect actual trades and decisions in the equity and bond markets. While the two indices have shadowed each other closely historically speaking, they have diverged since the start of 2016. It is possible that securities market participants consider risk in the short term to be low,

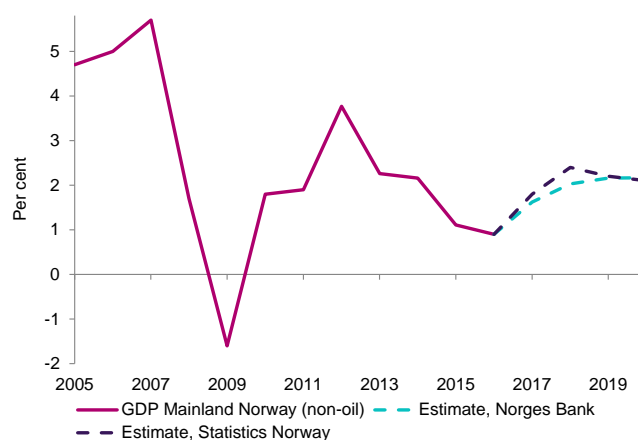
based partly on positive key figures for the US economy, whereas the economic policy index reflects risk in the world economy in the somewhat longer term.

Banks' and insurers' share values were on a weak trend up to summer 2016 (chart 1.6). This should be viewed in light of the challenges that very low interest rates posed to banks' and insurers' earnings and financial positions. Large holdings of non-performing loans burdened a number of European banks. The rise in long-term interest rates from the record low level of summer 2016, together with increased growth expectations and signals of lighter regulation of financial institutions in the US, has helped to raise financial institutions' share values. However, the challenges facing banks and insurers remain substantial. European banks in particular are struggling with low profits, and insurers' profits and capital accumulation are inhibited by interest rates that are exceptionally low even after the upturn in autumn 2016.

### Higher commodity prices

Increased economic activity has raised demand for commodities and contributed to higher commodity prices. The oil price, which dropped below USD 30 per barrel in January 2016, has averaged somewhat above USD 50 per barrel thus far in 2017. The increase in the oil price should also be viewed in light of the agreement between OPEC and a number of other countries to cut production by almost 1.8 million barrels per day as from January 2017. Forward prices in the oil market indicate that the price of oil is expected to remain at about today's level in coming years. The price of other commodities also rose through 2016. Prices (in USD) of aluminium and farmed fish, which are of major significance for Norwegian exporters and their profits, have risen by 30 and 50 per cent respectively since the start of 2016.

### 1.7 GDP Mainland Norway



Source: Statistics Norway and Norges Bank

## NORWEGIAN ECONOMY

### Growth in the Norwegian economy expected to pick up gradually

The Norwegian economy has been in a cyclical downturn since the oil price fall in 2014, and GDP growth for Mainland Norway last year was the lowest seen since the financial crisis (chart 1.7). Reduced activity in petroleum-related industries has contributed to low growth in the Norwegian economy in recent years. Oil investments fell by 15 per cent in both 2015 and 2016, and employment in the petroleum industry has fallen by 24 per cent since 2014. Lower activity levels in the industries that deliver most of their goods and services to the petroleum industry are an additional factor.

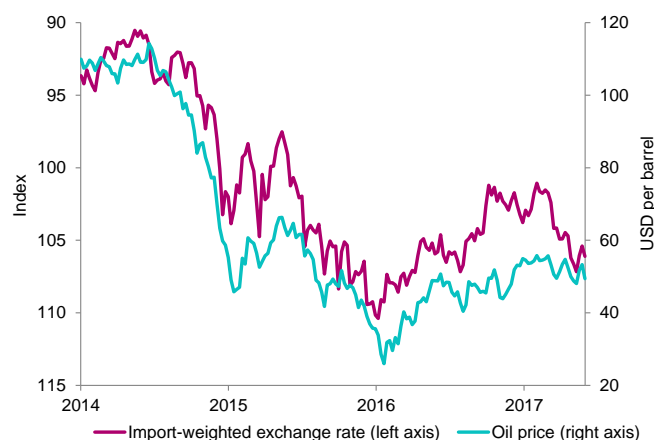
Growth in the Norwegian economy is expected to pick up moderately. The unemployment rate has edged down since summer 2016. Norges Bank (the central bank) and Statistics Norway expect a continued fall in oil investments in 2017 and a moderate increase in the following years.

### Expansionary fiscal and monetary policy

Low interest rates, a weak krone and expansionary fiscal policy have helped to maintain activity levels in the mainland (non-oil) economy.

Norges Bank revised its interest rate path down in March and signalled that the base rate would be kept

## 1.8 Exchange rate and oil price



unchanged at close to half a percent in the coming year and thereafter gradually rise from 2019 onwards. The downward adjustment is due to surprisingly low nominal price and cost growth, while developments in Norway's and her trading partners' real economies pushed the interest rate path up. Continued low interest rates could stimulate the Norwegian economy ahead, even if real interest rates were to increase somewhat in the next few years.

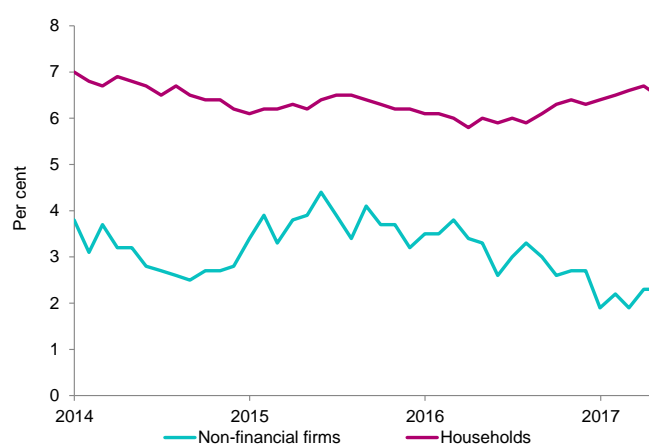
The Government's proposed adjustment to the fiscal rule governing the use of oil revenues will constrain such use to 3 per cent of the value of the Government Pension Fund – Global over time. This suggests that demand impulses from fiscal policy will be lower ahead than in recent years.

Large fluctuations in the oil price have influenced the krone exchange rate in recent years (chart 1.8). The krone, measured by the import-weighted exchange rate index, at the end of May 2017 is about 15 per cent weaker than prior to the oil price fall in 2014. The krone depreciation has substantially improved Norwegian firms' competitive position in recent years and moderated the effects of the oil price fall.

### Weak income growth has limited growth in consumption ...

Household consumption has been on a weak trend in recent years, but growth picked up somewhat towards the end of 2016. The low growth in consumption

## 1.9 Debt growth (12-month growth, C2)



should be viewed in light of declining wage growth and a weak labour market. The low interest rate has at the same time stimulated consumption. Expectation indicators for households indicate that consumer confidence is on the way up.

### ... at the same time as low interest rates are stimulating the credit and housing market

High house price growth and low interest rates have stimulated housing investments, which increased sharply through 2015 and 2016. Statistics Norway's building statistics show an increased rate of housing starts in 2016 and thus far in 2017. Information from the Norwegian Home Builders' Association confirms the strong trend. High activity in the housing market is an important driver in the Norwegian economy.

Growth in overall credit has slowed in the past year but remains stronger than value creation in the mainland (non-oil) economy. Household debt, consisting mainly of residential mortgages, has grown faster than household incomes for a number of years, and debt growth has quickened since summer 2016 (chart 1.9).

### Moderate business investments

Corporate debt growth has been moderate. This should be viewed in light of falling investments in industries that deliver to the petroleum industry, but also the fact that other business investments in Mainland Norway have been lower than prior to the

financial crisis. As in many other countries, idle capacity has been noted in much of business and industry. Information culled from businesses throughout the country by Norges Bank's regional network shows that businesses expect investments in retail trade to remain approximately unchanged and investments in other services to decline somewhat in the next twelve months.

### **Increased activity in the Norwegian bond market**

After several years of low issue activity in the Norwegian bond market, issue volumes have picked up. Risk premiums and default rates for corporate bonds have fallen. Issue activity has picked up both for high yield bonds and investment grade bonds. Firms in the areas of property management and shipping have alone accounted for more than half of the industrial bonds issued thus far in 2017. In the seismic, rig and oil service sectors the market is still marked by high default rates after the oil price fall in 2014.

## CHAPTER 2 RISK AREAS

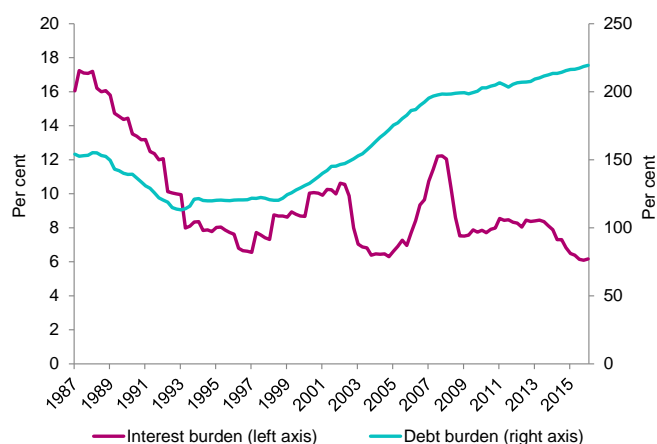
### HOUSEHOLD DEBT

#### Continuing build-up of vulnerability among households

Norwegian households' overall debt in per cent of disposable income (debt burden) has risen markedly since the 1990s, and stood at 219 per cent at the end of 2016 (chart 2.1). This is historically high, and high compared with other OECD countries (chart 2.2). Whereas the debt burden has fallen somewhat in many OECD countries over recent years, it has continued to rise for Norwegian households. This should be viewed in light of a favourable economic climate and extremely low interest rates which have contributed to a strong upswing in house prices and housing investments. Rising house prices enable owners to take out larger residential mortgages. Between the fourth quarter of 1993 and the same quarter of 2016, overall household debt from domestic sources (C2) rose by 534 per cent, while disposable income rose by 326 per cent. In 2016 households' domestic debt (C2) rose by 6.4 per cent while disposable income corrected for share dividends rose by 4.3 per cent, so that the debt burden continues to increase.

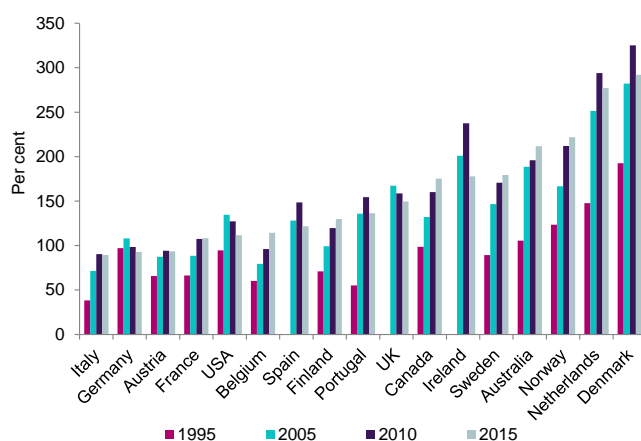
Interest rate increases ahead of the financial crisis in 2008 contributed to a marked increase in households' debt burden (interest expenses in per cent of disposable income before payment of interest expenses). The rate reductions that followed in the wake of the crisis brought a decline in the interest burden. At the end 2016 households' interest burden was 6.2 per cent. The unprecedentedly large debt burden means that households' interest burden is now highly sensitive to any interest rate increase. The liquidity burden resulting from higher interest rates will be substantial, and the need for financial consolidation correspondingly large.

#### 2.1 Households' debt and interest burden



Sources: Statistics Norway and Finanstilsynet

#### 2.2 Households' debt burden in selected countries



Source: OECD

Loans to Norwegian households are largely residential mortgages. However, in recent years households' debt incurrence in the form of unsecured loans carrying high interest (consumer loans) has risen substantially, and exceeds the growth in households' overall debt. At the end of the first quarter of 2017, twelve-month growth was 17 per cent. Consumer loans accounted for about 3 per cent of overall lending to households at the same point in time. The growth in consumer lending measured almost 8 per cent of overall growth in household debt in the past year.

The increase in consumer lending gives cause for concern. For many households consumer borrowing comes in addition to other debt, and can impose a heavy burden on individuals and households. Relative



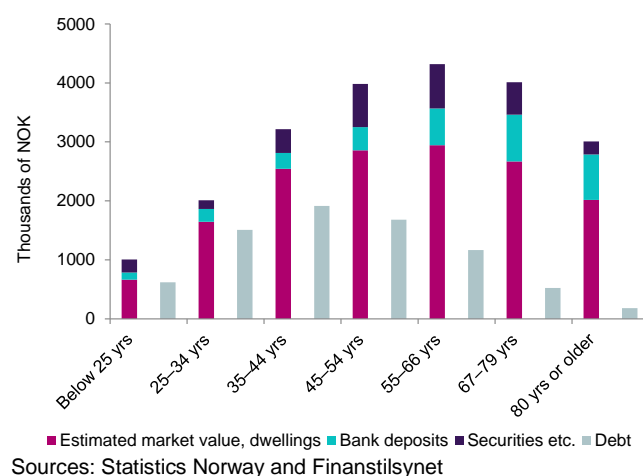
to size of debt, households' interest expenses on consumer loans are significantly higher than interest expenses on their overall debt. An interest rate hike or unemployment will lead to a considerably higher interest burden for many households. Heavy consumer borrowing will intensify households' financial consolidation in the event of an economic setback.

### Lower house prices and higher interest rates will cause problems for vulnerable groups of households

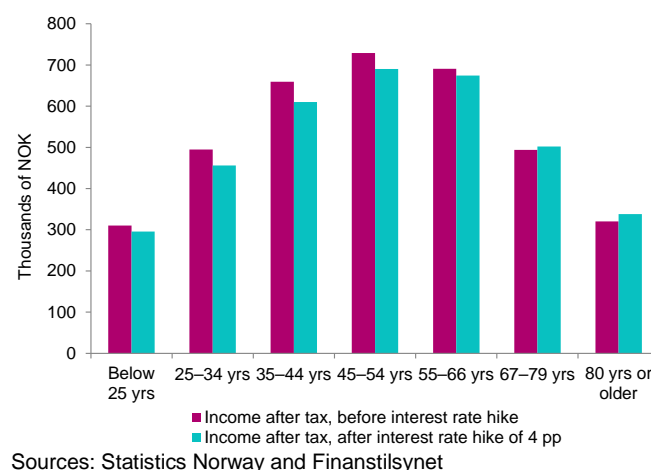
Both the size, and composition, of households' wealth have a bearing on households' vulnerability. If households have small or illiquid buffers, debt-servicing problems may arise even in the event of a temporary income lapse. According to figures from Statistics Norway's income and wealth statistics for households, households' average gross debt was almost NOK 1.3 million at the end of 2015, while bank deposits and mutual fund units, which are households' most important liquid buffers, averaged NOK 0.5 million. Debt and liquid assets are unevenly distributed across household groups, and heavily indebted households in general have minimal buffers available to service debt in hard times. This was discussed in the report Risk Outlook autumn 2014 (English summary).

Risk Outlook autumn 2016 discussed the impact on households of a 30 per cent fall in house prices and a 40 per cent fall in securities prices with a basis in data for the year 2014. The analyses grouped households by age of the main income earner and income. Parts of the analyses have been updated with data for 2015. The analyses show that in the event of a marked fall in house prices and securities prices, the value of assets will fall below the value of debt (negative equity) for large groups of households. This will in particular be the case for younger age groups who have debt-financed their house purchases and education and have minimal savings (chart 2.3). Lower collateral security increases the risk of loan losses among banks. Of households' gross domestic debt (C2) at the end of 2016, 85 per cent comprised residential mortgages. Finanstilsynet's calculations using data for 2015 show that a house price fall of 31 per cent will cause property value to fall below the mortgage value for

### 2.3 Households' assets and debt by age of main income earner, average per household



### 2.4 Impact of a 4 pp interest rate hike on households' after-tax income, by age group, 2015

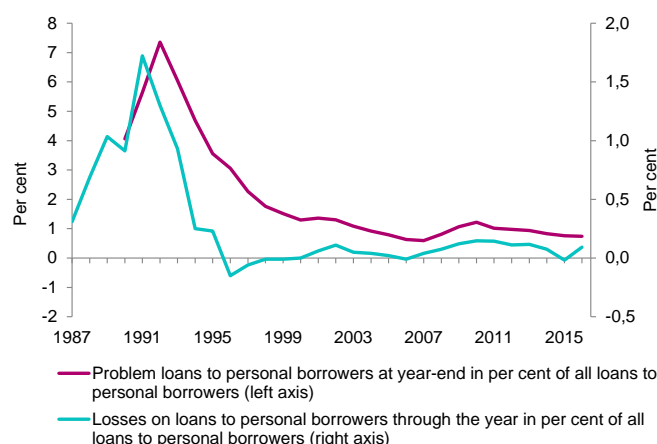


households where the main income earner is aged between 25 and 44. This calculation is done on the assumption that 85 per cent of the gross debt of households comprises mortgages on owner-occupied properties. These averages conceal wide differences between various subgroups of households. Many households carry significantly higher debt than the average: their asset values will fall below their indebtedness at far smaller house price falls than 30 per cent.

A marked interest hike will confront many households with significantly higher debt-servicing challenges, and must be expected to lead to reduced consumer demand. The youngest age groups, who have high debt

## CHAPTER 2 RISK AREAS

### 2.5 Banks' problem loans\* and losses on loans to personal borrowers



\* Problem loans are defined as non-performing loans plus loans that are loss provisioned but performing. Source: Finanstilsynet

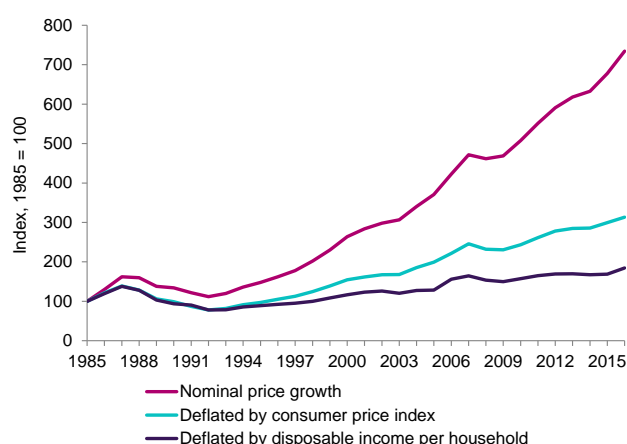
and low incomes, will be hardest hit. Mortgage defaults will increase, as will the risk of loan losses among the banks.

The interest rate level in the early 2000s and for a period after the financial crisis in 2008 was about 4 percentage points higher than at the start of June 2017. The updated analyses show that a 4 percentage point increase in debt and deposit rates will reduce income after tax and interest payments by between 7 and 8 per cent for households whose main income earner is aged between 25 and 44 (chart 2.4). This corresponds to about one month's salary. Households with higher than average debt will be worse off.

#### Risk of a large increase in banks' loan losses

Norwegian banks have traditionally had low losses on loans to households. The banks' overall losses on loans to personal borrowers from 2000 to 2015 averaged 0.07 per cent of gross lending to the personal market per year (chart 2.5). Ahead of and during the banking crisis early in the 1990s, loan losses were considerably higher. From 1987 to 1993 bank losses on loans to the personal market averaged 0.99 per cent per year. The Debt Settlement Act, introduced in the wake of the banking crisis, could lead to somewhat larger losses now than at the start of the 1990s, especially on unsecured credits.

### 2.6 Trend in house prices, various deflators



Sources: Eiendomsverdi, Eiendom Norge, Finn.no and Statistics Norway

An experience gained from the banking crisis is that financial consolidation among households, which brought a 3.3 per cent decline in consumer demand from 1986 to 1989, contributed to a weak trend for parts of Norwegian business and industry and heavy losses on banks' loans to firms. Banks' losses on loans to firms from 1987 to 1993 averaged 4.4 per cent of gross loans to that market per year.

Both higher debt interest rates and increased unemployment could lead to a marked decline in income among households. The theme chapter analyses the outturn for banks' loan losses in two different scenarios for the Norwegian economy. The stress scenario posits inter alia an increase in the interest rate level and unemployment.

#### Action by government authorities

Expectations of protracted low interest rates may contribute to continued high growth in house prices and household debt in the next few years, thereby further adding to the debt burden. The Ministry of Finance, Norges Bank and Finanstilsynet keep a continuous eye on households' debt buildup, and regularly consider the need for action both to mitigate the risk of financial instability and to maintain sound consumer protection.

Finanstilsynet's residential mortgage lending survey in autumn 2016 showed a strong rise in borrowers' total



debt relative to gross income compared with previous years. The survey also indicated that banks had eased the requirements on debt servicing capacity. Compared with the previous year, a larger proportion of repayment loans were granted where the borrower lacked sufficient income to service debt after an interest rate increase of 5 percentage points while at the same time meeting normal living expenses. For credit lines the proportion was unchanged. However, the share of repayment loans granted with a loan-to-value ratio above 85 per cent was somewhat lower than in previous years. Banks' practice as regards interest-only lending was also tightened. The findings of the residential mortgage lending survey suggest that households that took out new mortgages in 2016 were more vulnerable than corresponding groups of households in previous surveys and that this was particularly the case for younger borrowers.

In December 2016 the Ministry of Finance issued new residential mortgage lending regulations. The regulations entered into force on 1 January 2017 and will apply until June 2018. The regulations entail a tightening in several respects compared to the previous regulations of 15 June 2015; see the description of the regulations in chapter 5. Among the new regulations' tightening actions is an explicit restriction on the borrower's overall debt relative to gross income (a maximum of five times annual income), and a requirement of instalment payments on all repayment loans with a loan-to-value ratio above 60 per cent, compared with 70 per cent under the previous regulations.

Statistics Norway's statistics on banks and mortgage companies show that the growth in banks' and mortgage companies' residential mortgages to households in the first quarter of 2017 was virtually identical to the average for the same quarter in the period 2013-2016. The growth in households' overall debt has also remained high in recent months. Many factors affect the trend in financial institutions' residential mortgage lending, and it is too early to draw a conclusion about the impact of the new residential mortgage lending regulations.

According to Norges Bank's loan survey, households' demands for bank loans remained unchanged from the fourth quarter of 2016 to the first quarter of 2017. The survey reports that banks in the same period tightened their lending to households mainly as a result of the amendment to the residential mortgage lending regulations. The regulatory requirement limiting borrowers' overall debt to five times their gross income is cited by the banks as the chief factor behind their tightening action.

The largest financial institutions report quarterly to Finanstilsynet on their compliance with the residential mortgage lending regulations. The regulations permit financial institutions to grant up to 10 per cent<sup>1</sup> of their overall loans per quarter to borrowers who do not meet one or more of the principal regulatory requirements. Reports submitted for the first quarter of 2017 show that the cap on overall debt of five times gross income is the requirement where banks' non-conformance is highest. This applies in particular to residential repayment mortgages in Oslo.

## PROPERTY MARKETS

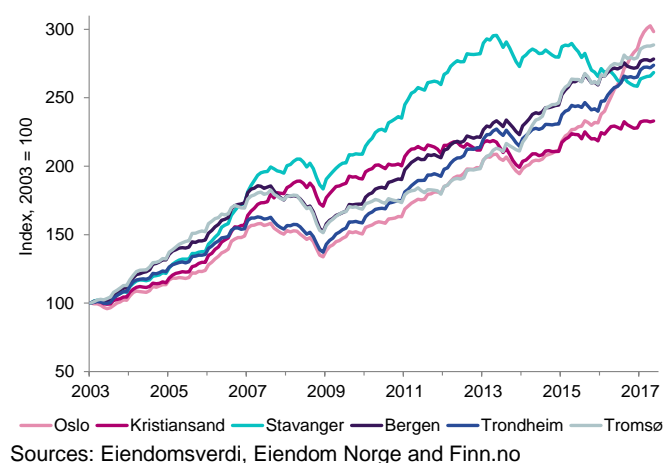
### HOUSING MARKET

Residential assets account for more than two-thirds of Norwegian households' overall wealth. Residential mortgages account for a good 50 per cent of banks' total lending.

Banks' funding risk is to a greater degree than previously linked to the trend in the housing market. Covered bonds (obligasjoner med fortrinnsrett: OMF) make up a substantial proportion of banks' market funding and also a large proportion of banks' liquidity reserves. A house price fall will reduce the value of the residential mortgage portfolio and the cover pool backing the issued bonds. This could reduce the availability, and increase the cost, of covered-bond funding, and weaken banks' liquidity reserves. See chapter 3 for an account of banks' liquidity position.

<sup>1</sup> For Oslo the 'flexibility quota' is 8%, in the event NOK 10 million.

## 2.7 Trend in prices of existing homes



### Lasting rise in house prices

House prices are unprecedentedly high in both nominal and real terms (chart 2.6). Much of the growth is explained by low unemployment, strong wage growth and low mortgage interest rates and expectations of continued growth in incomes, low unemployment and low interest rates in the future. This is illustrated in the chart by house prices deflated by disposable income per household. This house price indicator captures both households' strong income growth and the reduction in the interest rate level, and shows a development significantly more moderate than that of nominal house prices and house prices deflated by the consumer price index.

Low property taxation and expectations of continued price growth have contributed to making property an advantageous investment object for professional and non-professional actors alike. This has most likely added to the pressure on house prices.

Nominal house prices have risen steeply since the start of the 2000s in all the largest towns in Norway (chart 2.7). Over the past three to four years the growth has been particularly strong in the Oslo area. In the Stavanger area house prices rose strongly up to summer 2014, but have fallen somewhat after the oil price fall and the decline in activity levels in oil-related industries.

### Signs of a lower rate of growth

House prices rose substantially in 2016 and prices have continued to grow in 2017. However, there are signs of somewhat lower pace of growth, and twelve-month growth on a national basis has fallen. At the end of May it stood at 8.3 per cent. In 2016 price growth was particularly strong in Oslo and south-eastern Norway, whereas it was weaker in Stavanger and elsewhere in south-western Norway. In the last few months house price growth in the Oslo area has abated. Thus far in 2017 prices of existing homes have risen in all large towns.

According to the Norwegian Home Builders' Association, sales of new homes rose by 3 per cent in the first quarter of 2017 compared with the same period of 2016. This development in the market for new homes is reflected in housing starts. Figures from Statistics Norway show that housing starts have increased in the first few months of 2017 compared with the same period of 2016. Housing investments are now approaching the same level as firms' overall investments in Mainland Norway. Population growth has fallen substantially in the past few years due to lower net immigration. Housing completions now exceed the influx of new households at the national level. According to many forecasters, the increased housing supply combined with government measures to curb the growth in residential mortgages will dampen house price growth ahead. This could mean that a continued increase in imbalances will also be dampened.

### Increased risk of correction in the housing market

Recent years' steep growth in house prices combined with unusually low lending rates creates great uncertainty about what can be considered a sustainable price level in the housing market. An unexpected interest rate hike, a deteriorating economic climate accompanied by rising unemployment and income lapse among households, or a change in sentiment in the housing market could lead to a sharp fall in prices.

How strong a correction in the housing market might prove to be is highly uncertain. It will inter alia depend

on what triggers the fall and on the strength of the impulses. In recent years households' purchases of secondary dwellings and businesses' purchases of dwellings for buy-to-let and investment purposes have been at a high level, in particular in the large towns. Figures for 2015 from the Tax Administration showed that about one-third of dwellings in several districts of Oslo were rental dwellings. In other large towns the proportion was in some areas in excess of 20 per cent. A high proportion of rental dwellings could intensify a correction in the housing market since such investors may wish to put up for sale more rapidly than owner-occupiers.

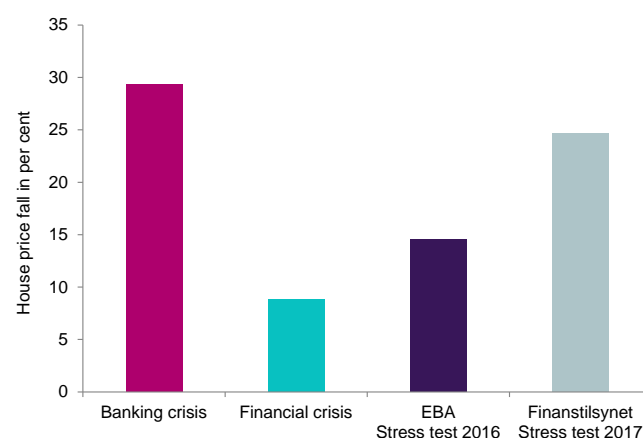
Finanstilsynet conducts annual stress tests of the Norwegian economy; see the theme chapter. In this year's stress test house prices fall by about 25 per cent, cumulatively, up to 2021. At the end of the stress period the price level in the baseline scenario is 50 per cent higher than in the stress scenario. The interest rate level is highly important for house prices. The house price fall in Finanstilsynet's stress tests is somewhat smaller than the cumulative fall in house prices during the banking crisis (30 per cent) and somewhat higher than the house price fall for Norway in the EBA's stress test from 2016 (chart 2.8).

### A house price fall could have major consequences

A house price fall will affect several important macroeconomic variables. It leads to reduced housing investments, which in turn leads to lower demand in Mainland Norway, reduced activity levels among firms and increased unemployment. There is also reason to believe that lower house prices contribute to reduced household consumption since households' wealth is reduced, which also pushes down activity levels.

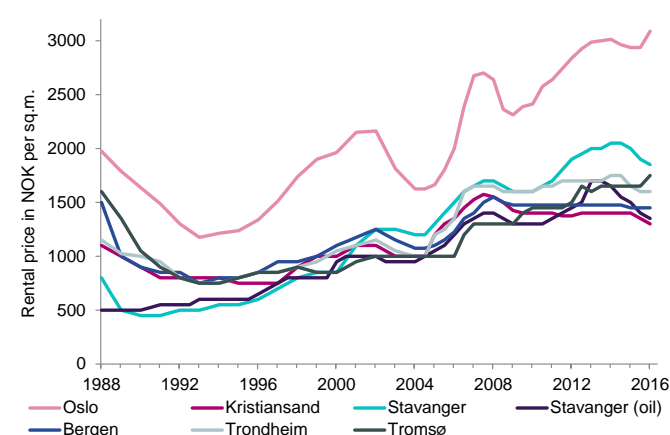
There is a close connection between growth in household debt and growth in house prices. House prices and credit most likely have a mutually reinforcing effect both in an upturn and in a downturn. Higher house prices enable the banks to increase their lending and households to increase their borrowing. Over time, higher house prices and credit have shadowed one another closely. However, it could take a relatively long time from the onset of stress for households to

## 2.8 Accumulated fall in house prices (nominal)



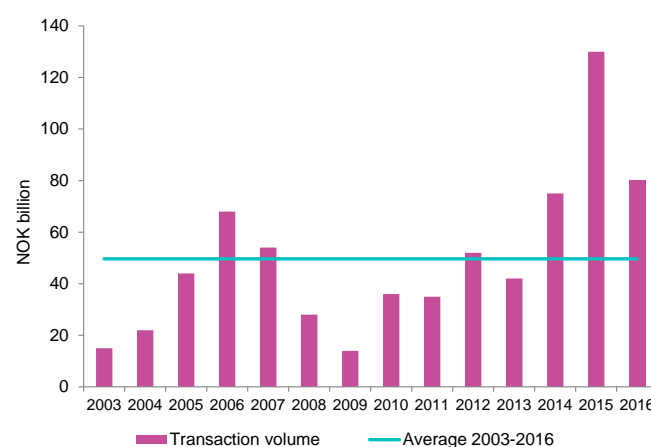
Sources: Finanstilsynet and EBA

## 2.9 Office rental prices in the largest towns



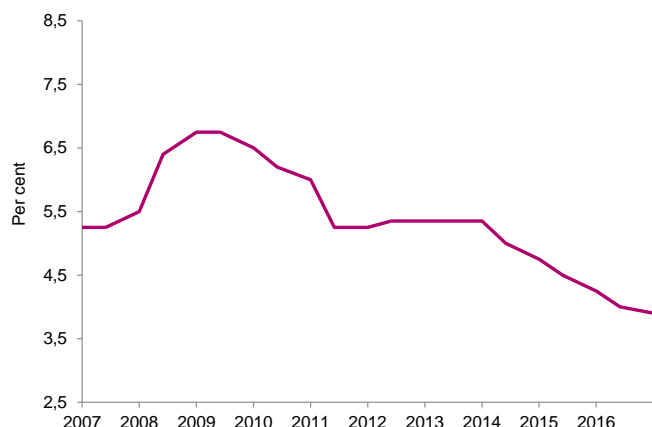
Sources: OPAK and Dagens Næringsliv

## 2.10 Property transactions above NOK 50 million



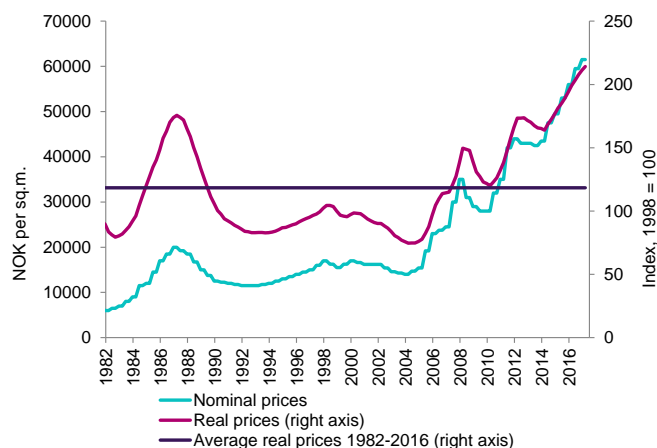
Source: DNB Næringsmegling

### 2.11 Yield on office property in Oslo, central location, high standard



Sources: OPAK and Dagens Næringsliv

### 2.12 Real price (GDP deflator) and nominal price of commercial property in Oslo, central location, high standard



Sources: OPAK, Dagens Næringsliv, Statistics Norway and Finanstilsynet

generate sufficient liquidity to repay debt. Higher interest rates entail higher interest payments that limit the opportunity for debt repayment.

## COMMERCIAL PROPERTY

Loans to commercial property account for more than 40 per cent of banks' loans to the business market. Life insurers and pension funds are major investors in commercial property. Experience from Norway and elsewhere shows that banks lose heavily on loans to commercial property in times of crisis. A high price level in parts of the commercial property segment increases the vulnerability of this sector.

### Conversion of commercial buildings reduces the vacancy rate

The value of commercial property depends inter alia on rental prices and expectations of future rental incomes. Rental prices for office premises in the largest towns have risen substantially in recent years. In Oslo, rental prices remained unchanged for most areas in the first half of 2016, but the second half-year saw a rising tendency in rental prices (chart 2.9). In Stavanger, rental prices fell further, particularly in areas dominated by oil-related activity, whereas no change was seen in Trondheim and Bergen.

According to DNB Næringsmegling (a commercial property broker), the office vacancy rate in Oslo, Asker and Bærum fell from 9 per cent in the autumn of 2015 to 8.2 per cent in spring 2017. A relatively low volume of new office space is expected in 2017. Together with continued high conversion of commercial property to dwellings, DNB Næringsmegling expects limited vacancy rates to help to hold up rental prices ahead. In the other large towns, some increase in vacancy rates and unchanged rental prices are expected. A negative trend in the housing market could curb profitability and demand for commercial property for conversion to dwellings. This will in isolation contribute to increased vacancy rates and to reduced rental incomes and prices on commercial property.

### High turnover of commercial property

The turnover of commercial properties rose substantially through 2015. A low interest rate level made it more attractive to invest in commercial property carrying low risk (reliable rental incomes). In addition, foreign investors were more active than previously in the Norwegian market. According to figures from DNB Næringsmegling, foreign investors accounted for about 35 per cent of the value of transactions in 2015. In 2016 property transactions in excess of NOK 50 million were worth about NOK 80 billion (chart 2.10). This was also high in a historical perspective. Although turnover measured in Norwegian kroner in 2016 was somewhat lower than the previous year, the number of transactions was higher. Developers, facilitators and international investors were the largest buyer groups.

### Commercial property vulnerable in a cyclical downturn

Low financing costs and heavy demand for upmarket property have raised prices of commercial properties and pushed down the yield on office buildings in central locations with long rental contracts in the Oslo area by a substantial margin in recent years (chart 2.11). At the start of 2017 the yield on this type of property was below 4 per cent. OPAK's price estimates for upmarket office property in central locations in Oslo rose markedly in 2016, both nominally and deflated by GDP (chart 2.12). The interest shown by foreign investors has impacted on the demand for presumptively safe investment objects, pushing up prices.

Because prices of commercial property depend on expected future rental incomes and investors' required rate of return, the price level will fall if expected rental incomes are reduced and/or the required rate of return increases. The level of rental incomes depends on the level of activity in the economy, and the required rate of return depends on the interest rate level and the risk premium on this type of investment. At base, commercial property prices are driven by many of the same factors that drive house prices. Much of the investments in commercial property are debt-financed, giving reason to believe that a financial accelerator is at work in this market as well. Higher prices give banks better security for their loans and investors a basis for increased borrowing, which in turn makes for higher prices in a self-augmenting spiral.

In periods of falling property prices, prices of commercial property have proven to fall more sharply than house prices. Debt servicing capacity among firms in the property management business has improved somewhat in recent years, but is on average weaker than the average for all firms. History shows that these firms are particularly vulnerable to cyclical fluctuations. Reduced activity levels and increased interest rates could therefore subject banks to heavy losses on loans to such firms, as witnessed during the banking crisis.

### INTERNATIONAL CONDITIONS

#### Despite quickening growth in the international economy, uncertainty is unusually high

The IMF has revised up its forecast for global economic growth in 2017, but at the same time points out that there is a greater risk of lower growth than of higher growth. This is especially true in the medium term, where a number of factors contribute to the uncertainty. Since the 1990s globalisation has contributed to both higher production and increased productivity in the world economy, at the same time as large numbers have been lifted out of poverty through labour migration and relocation of production from industrialised countries to emerging markets. Many workplaces have disappeared in the industrialised countries, well assisted by technological changes. These developments have not benefited everyone, and inequalities have increased.

Weak economic development in the wake of the financial crisis has intensified the growing income disparities in many countries. This has resulted in growing scepticism as regards globalisation, in particular in the US and in parts of Europe, accompanied by demands for measures to protect domestic manufacturing and reduce immigration. This could, in the worst case, trigger a trade war where one country raises its customs tariffs on imports, drawing a like response from other countries.

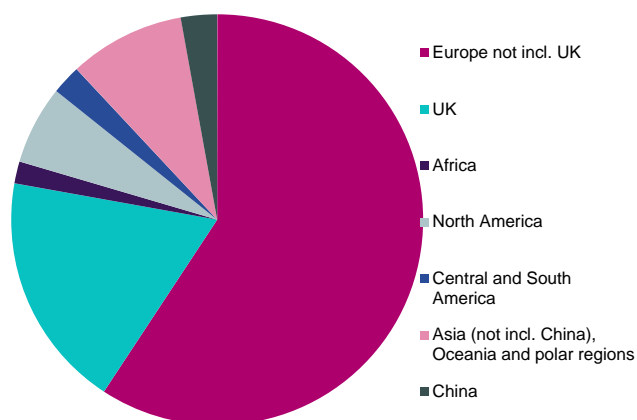
#### Lower international trade contributes to lower growth

All analyses show that a decline in international trade contributes to lower growth in the international economy. In autumn 2016 the OECD modelled the consequences of potential trade barriers. The model calculations show that all countries and regions lose out in the form of lower GDP. The US loses more than the EU and China, and US exports in particular are hard hit.

The Peterson Institute for International Economics (PIIE) in Washington DC has carried out various model calculations of reduced trade. It defines one of the scenarios as a trade war between the US and China. In the model, higher customs tariffs are reflected in



### 2.13 Norwegian exports by region and country in 2015



Source: Statistics Norway

higher inflation, prompting the US Federal Reserve to raise base rates. Uncertainty about the future increases, and equity markets fall. This, together with a rise in fixed-income risk premiums, results in higher borrowing costs for firms and households and slower GDP growth.

The effects of such a shock could spread to the rest of the world through two channels:

*The trade channel* – the effects may differ, but lower growth in the US and China will impact negatively on other parts of the world economy

*The financial channel* – higher credit risk premiums and falling equity markets in the US spread to other countries' markets

The possibility cannot be ruled out that the Federal Reserve would omit to raise its base rate since higher customs tariffs are considered to cause temporary price effects therefore do not need to be counteracted with aggressive monetary policy. The negative effects on production may also be larger than expected. A significant uncertainty that the model probably fails to fully capture is the significance of international value chains where a steadily growing share of international trade is in the form of intra-company contracts.

### Barriers to international trade may trigger vulnerabilities

It would be natural to assume that a situation in which the US introduces customs tariffs on imports from China would be responded to with similar tariffs from China. As shown in the model calculations, higher customs tariffs contribute to lower GDP growth. The decline would spread to other countries through the trade channel.

As mentioned, the outcome for interest rates in such a situation is uncertain. Weaker growth would probably entail continued low interest rates which might intensify the already existing negative effects of high credit growth and risk of imbalances in property markets. Lower activity levels pull in the opposite direction. Protracted low interest rates pose a challenge to the banks, both by bringing profits under pressure and by increasing credit risk through excessive indebtedness among firms and households. For insurers, protracted low interest rates are difficult to handle due to the guaranteed return accompanying large parts of their commitments.

As pointed out by the PIIE, a situation in which the US raises customs tariffs could also prompt the Federal Reserve to raise its base rate in order to counteract inflation. Experience shows that when interest rates rise in the US, capital often flows out of emerging economies. This causes considerable unrest in financial markets accompanied by exchange rate changes and interest rate hikes in emerging countries. Growing turbulence also contributes to increased uncertainty and higher risk premiums, as witnessed most recently in winter 2016. Doubts were then cast over the sustainability of China's economy, triggering a decline in equity markets and a rise in interest rates.

A new international setback may result in substantial problems in countries with a banking sector featuring high default rates and low profitability. Particular difficulties may arise if fixed-interest risk premiums rise concurrently by a significant margin, as seen on earlier occasions in the context of growing uncertainty about the economy and financial stability. In that case

the upshot would be an increase in banks' credit risk and liquidity risk.

### The legacy from the financial crisis remains a heavy burden in several countries

The world economy appears to be emerging from the slump, but this may reverse if higher customs tariffs bring a decline in international trade.

There are substantial vulnerabilities in the international economy, with several countries still marked by the aftermath of the international financial crisis in 2008. Public and private debt remains high in many countries, both in the EU and among emerging economies. Low GDP growth and high unemployment in the majority of these debt-burdened countries have so far made it difficult to repay debt. At the same time, large portions of the banking sector in the EU are struggling with high default rates and low profits. Despite a decline in the past two years, a good 5 per cent of loans from banks in the euro area were in default at the end of the third quarter of 2016. Defaults were particularly high for loans to commercial property and to small and medium-sized businesses: 19 and 18 per cent respectively. Any damping of the upswing that now appears to be in development will prolong the period of debt repayment by households and firms, and structural changes needed in the banking sector in the euro area will be delayed.

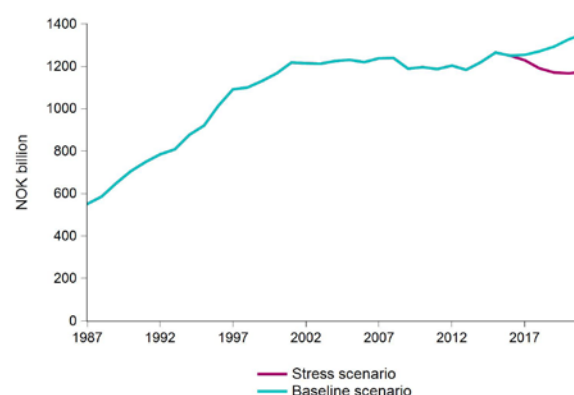
Greater political uncertainty also represents a financial vulnerability through the unpredictability that accompanies it.

### International downturn will affect the Norwegian economy

An international setback could hit the Norwegian economy both through the trade channel and the financial channel.

Low international growth dampens Norwegian exports. Exports accounted for 34 per cent of GDP in 2016, a decline of 5 percentage points from 2014. This is due to the oil price fall in summer 2014 and protracted low oil prices since then. Given the export sector's knock-on potential in the Norwegian economy,

### 2.14 Exports, baseline and stress scenario in stress test



Sources: Statistics Norway and Finanstilsynet

lower international trade and lower prices on important commodities will affect a large portion of the country's production.

As shown in chart 2.13, about 80 per cent of Norwegian exports go to Europe. The UK is our largest trading partner and received 18 per cent of our exports in 2015. Brexit will affect Norwegian exports even in the absence of other trade barriers. It could take time to put a new trade agreement between Norway and the UK in place. However, since Norway mainly exports oil and gas to the UK, a number of these products can probably be sold on the world market.

The chart also shows that China received less than 3 per cent of Norwegian exports in 2015. Nonetheless developments in that country are of much significance since the large imports of raw materials to China affect the price of important Norwegian exports, including oil and metals.

A decline in trade and ensuing lower growth in the international economy will hit parts of Norway's business sector. Export firms will be directly affected by declining demand. Lower activity will likely contribute to higher unemployment, which reduces demand from households. This could spread to consumer industries via lower consumption. The negative effects will probably diminish corporate earnings, and vulnerable firms may face debt-servicing problems and subject Norwegian banks to losses.

#### Higher risk premiums may trigger vulnerabilities in the Norwegian economy

Higher risk premiums internationally will likely feed through to Norwegian interest rates, making it more difficult for households and firms to service debt. Contagion from the international economy through the financial channel could therefore contribute to increased credit risk among Norwegian banks. At the same time, liquidity risk could increase through more costly and impaired access to funding on international capital markets.

Norwegian banks overall have a high proportion of market funding. A large share of this is in the form of covered bonds backed by residential mortgages. Norwegian banks' funding risk is therefore to a larger degree than previously tied to developments in the housing market. About 60 per cent of Norwegian banks' market funding is raised abroad, rendering them vulnerable to turbulence in international financial markets. However, Norwegian banks maintain liquidity reserves enabling them to honour their commitments during a brief period of market stress. A relatively high share of stable funding also helps to reduce liquidity risk in a longer-term perspective. See chapter 3 for a description of banks' liquidity risk.

The stress test of Norwegian banks analyses a scenario of contagion through both the trade channel and financial channel; see the theme chapter. Finanstilsynet's model calculations show that a decline in international market growth could lead to a substantial fall in Norwegian exports (chart 2.14). The calculations also show that a combination of lower market growth internationally and higher fixed-income risk premiums will increase the proportion of problem loans in both the personal and corporate market for Norwegian banks.

#### FINANCIAL TECHNOLOGY (FINTECH)

FinTech (Financial Technology) is a generic term used in the sphere of technical innovation in the financial sector and applied to institutions that employ modern technology in their provision of financial services.

FinTech's potentials are numerous and are as a rule described with greater clarity than the risk picture, which is not equally visible and definable until the new products and services have been in use for a certain period.

Technological innovation in the financial sector is strictly speaking not a new phenomenon. The Norwegian financial industry has "practised" FinTech since the industry took IT technology into use in its operating solutions.<sup>2</sup> Norway's financial industry, like that of a number of other countries, features modern and efficient technology. However, the number of new initiatives taken in the field of financial innovation is increasing apace. That itself could entail a potential risk. By analysing potential risks, financial institutions and government authorities would be better prepared if financial innovation brought a rapid change in financial market structure.

#### Opportunities

Use of technology can enhance the stability of the financial system by contributing to increased efficiency, diversification, risk spreading and greater transparency. Technological innovation reduces costs associated with data gathering, storage and processing, and increases the efficiency of financial services provision. Use of new technological solutions can contribute to higher productivity growth than in sectors where the will and ability to engage in digitalisation is less marked.

Digitalisation of the financial sector could change the core areas of institutions' operations and provide new income potentials. New available technology provides more modern services and improved user friendliness, and may enable cheaper services to consumers. At the same time, increased use of technology brings a change in the demand for labour and skills. New market participants and new business models may yield a more diversified and robust market for financial services, which may in its turn contribute to better risk diversification.

<sup>2</sup> [Finanstilsynet's Risk and Vulnerability Analysis 2016 on financial institutions' use of ICT.](#)



### Potential risk areas

Technological innovation can provide advantages to the market participant who is first on the market with new financial services. There may be a winner-takes-all effect and increased concentration risk. If the adjustments are rapid, market participants will have little time to analyse and manage associated risks. Rapid introduction of new technology also increases the risk of errors and deficiencies.

Digitalisation can heighten operational risk. Integrating new applications in an older, complex, IT system can be complicated and resource demanding for institutions. Faults in IT systems are to some extent inevitable, but service disruptions may have detrimental consequences for consumers and the economy as a whole. Institutions' use of cloud solutions (outsourcing) offered by major service providers such as Amazon, Google and Microsoft is on the increase. This may create new, unfamiliar risks that are challenging to assess and control. Institutions must nonetheless possess sufficient competence in the outsourced services since the institution itself is responsible for its own infrastructure.

Technological risk in the form of cyber crime or breakdown of infrastructure was defined by the World Economic Forum as one of the ten largest risk factors in the global economy in 2015.<sup>3</sup> Cyber risk is mainly related to malicious, criminal attacks in which the attackers attempt to destroy or damage the service concerned, or exploit vulnerabilities to other ends. Artificial intelligence can be used by criminals to obtain information on how customers perform their transactions and thereafter used in targeted attacks.

The use of large volumes of data, so-called "big data", has increased in scope in the financial sector. Such data have substantial economic value, and processing such enormous volumes of data on consumers, products and transactions is one of the building blocks of many FinTech initiatives. The use of large volumes of data sets high requirements for consumer protection. Faults in applications or in operations may

lead to involuntary exposure of customer data and increase the opportunities for misuse. Finanstilsynet underscores how important it is for institutions to take their customers' safety seriously and to protect customer data from unauthorised sharing or wrongfully coming into the hands of third parties.<sup>4</sup>

### Regulatory work

Rules should not impede technological innovation in financial services, but at the same time importance must be attached to safeguarding the consumer and financial stability. A number of countries have taken steps to make it simpler for innovative institutions to establish new operations. Regulatory sandpits are a concept enabling institutions to test out new business ideas before proceeding to meet the regulatory requirements that the institution concerned would otherwise have faced in the open market. No regulatory sandpits has been established in Norway, but Finanstilsynet provides FinTech entities with guidance both as regards the rules and regulations and as regards the planned service solutions. Finanstilsynet intends to establish a dedicated information page with regard to FinTech activities in autumn 2017. Regulation of new institutions, products and services in the field of financial technology is also discussed in international forums such as the EU and the OECD. In March 2017 the EU Commission circulated for comment a consultative paper on technology and its impact on the European financial sector with a view to obtaining input for the further work on FinTech.<sup>5</sup>

<sup>3</sup> [WEF: Global Risks 2015](#).

<sup>4</sup> [Finanstilsynet's Risk and Vulnerability Analysis 2016 on financial institutions' use of ICT](#)

<sup>5</sup> [European Commission: Public consultation on FinTech](#).

## PART II FINANCIAL INSTITUTIONS

## CHAPTER 3 BANKS

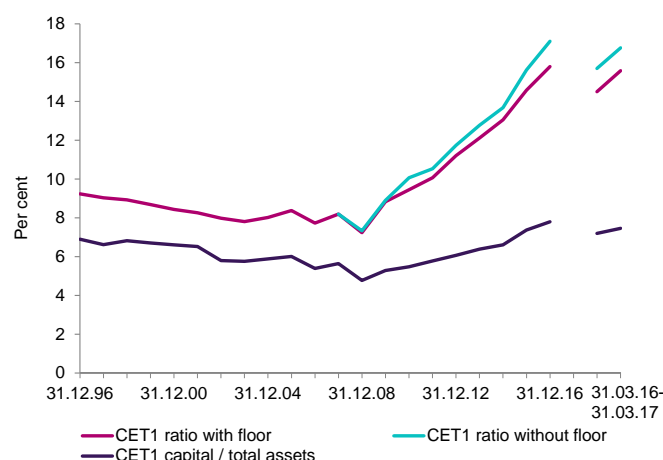
The banks have improved their financial position in the years since the international financial crisis. The challenges facing oil-related sectors have so far not led to increased losses on exposures to other industries. However, should the uncertainty in oil-related segments prove long lasting, it could lead to higher credit risk for other customer segments as well, with negative consequences for profits and capital positions. Banks' liquidity reserves and the long-term share of their overall funding have both increased in recent years. Banks are nonetheless vulnerable to turbulence in international financial markets. Prolonged rapid growth in house prices in Norway has heightened banks' vulnerability to housing market developments, also because much of their funding is through covered bonds.

### FINANCIAL POSITION

#### CAPITALISATION IMPROVED SINCE THE FINANCIAL CRISIS

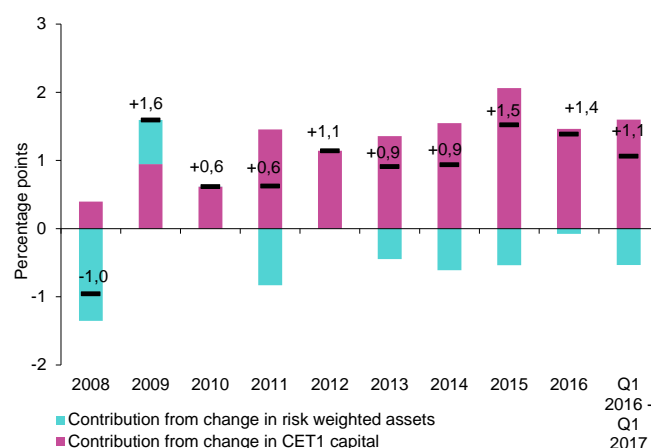
Norwegian banks have improved their capitalisation in the years since the financial crisis. For Norwegian banks overall, the CET1 capital ratio (the highest quality capital) was just under 16 per cent as at 31 March 2017. At the end of 2008 the CET1 ratio was just over 7 per cent. Banks have strengthened their financial position mainly through profit retention (chart 3.2). Their aggregate balance sheet has expanded considerably in the same period, but without bringing a corresponding increase in risk weighted assets (chart 3.3). This is due mainly to two factors: the larger banks are now using internal models (IRB models) to compute capital charges for various types of risk, thereby lowering average risk weights for these banks; see the account of IRB models. At the same time the composition of banks' balance sheets has changed, and banks now hold a higher proportion of assets with lower risk weights. This primarily involves residential mortgages, where banks have shown very high growth in the past few years.

#### 3.1 CET1 capital adequacy at Norwegian banks / banking groups



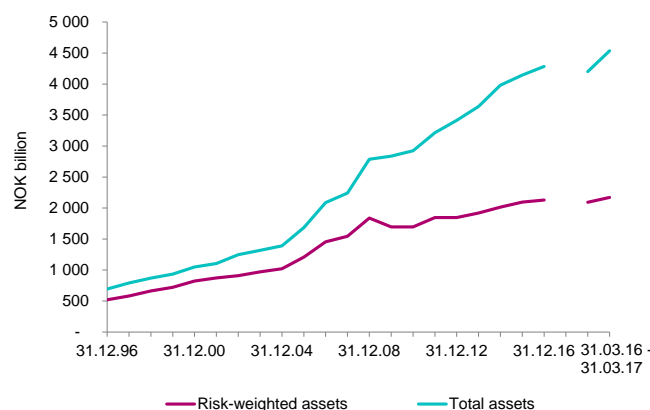
Source: Finanstilsynet

#### 3.2 Changes in capital adequacy, all banks / banking groups



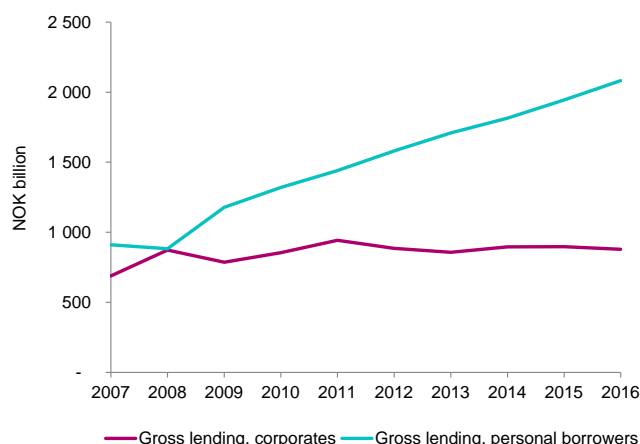
Source: Finanstilsynet

#### 3.3 Trend in total assets and risk-weighted assets, all Norwegian banks / banking groups



Source: Finanstilsynet

### 3.4 Trend in loans to corporate and personal borrowers at Norwegian banks



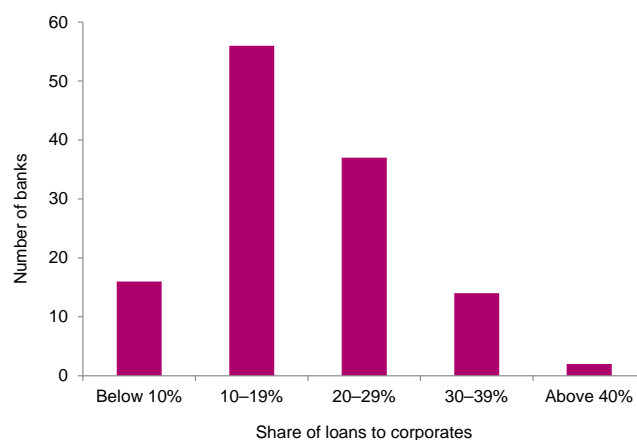
Figures for parent banks including residential mortgages transferred to or mediated by covered-bond-issuing entities and loans to foreign borrowers. Source: Finanstilsynet

A leverage ratio requirement was introduced from 30 June 2017 to help ensure that low risk weights do not impair credit institutions' financial position. Risk weights will not be applied to balance sheet items in the calculation of this indicator, and off-balance sheet exposures are to be included subject to further rules. The numerator in the fraction consists of CET1 capital plus hybrid capital. The minimum leverage ratio requirement for credit institutions is 3 per cent, with an additional buffer requirement for banks of 2 per cent and a buffer for systemically important banks of 1 per cent. As at 31 March 2017 the leverage ratio for Norwegian banks overall was 7.3 per cent. CET1 capital relative to aggregate total assets for Norwegian banks was 7.5 per cent. As shown in chart 3.1, Norwegian banks have also strengthened their financial position in terms of CET1 capital as a share of total assets. This increase is substantially weaker than the increase in the CET1 capital ratio.

### INCREASING EXPOSURE TO THE PERSONAL MARKET

Banks have increased their exposure to the personal market in recent years, whereas growth in the corporate market has been weaker (chart 3.4). Continued strong growth in the personal market will bring increased exposure to the housing market. Moreover, increasing reliance on covered bond

### 3.5 Loans to corporates relative to all loans from Norwegian banks at 31 December 2016



Figures for parent banks including residential mortgages transferred to or mediated by covered-bond-issuing entities and loans to foreign borrowers. Source: Finanstilsynet

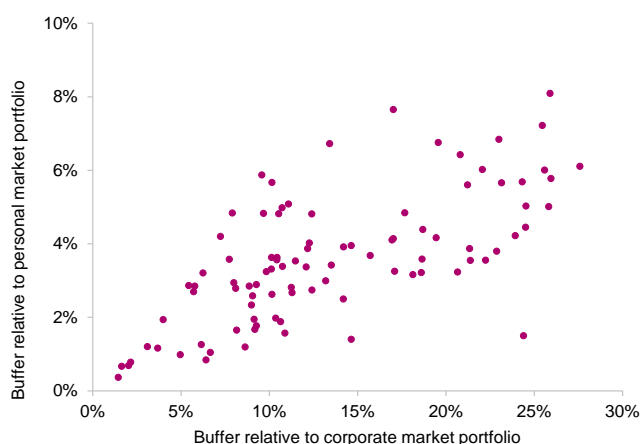
funding will tie banks' funding risk even more closely to the housing market; see the account of banks' liquidity risk. The banking crisis in the 1990s showed that a setback in the economy resulted in a considerable rise in direct credit losses on personal borrowers.<sup>6</sup> Moreover, consolidation by households brought a reduction in corporate profits, contributing to very high losses to the corporate market. If these mechanisms repeat themselves in the next setback in the economy, the largest credit risk will be faced by banks with a high proportion of loans to corporate borrowers.

Most Norwegian banks have a preponderance of loans to personal borrowers (chart 3.5). It is primarily the smaller banks that have a very high proportion of loans to that market. Large banks' lending to firms relative to their overall lending is between 30 and 40 per cent. As at 31 December 2016, only two Norwegian banks' lending to corporate borrowers exceeded 40 per cent relative to total lending.

Banks' vulnerability to a setback in the economy is illustrated in chart 3.6. The chart shows the volume of

<sup>6</sup> The Act relating to voluntary and compulsory debt settlement for private individuals (Debt Settlement Act) was only passed in 1992. All else equal, the Act could result in somewhat heavier losses on personal borrowers.

### 3.6 CET1 capital buffer to regulatory requirement\* relative to loan portfolios at 31 December 2016



\* Including Pillar 2 add-on for banks informed of Pillar 2 add-on decision as at 31 December 2016. Source: Finanstilsynet

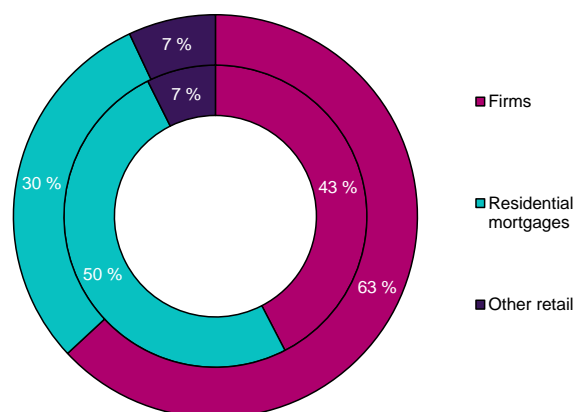
losses the banks can absorb on personal and corporate loan portfolios in each segment before falling below regulatory capital requirements.<sup>7</sup> In other words the chart does not show what combinations of losses on the personal and corporate market portfolios the banks are able to absorb. There are wide differences in banks' ability to absorb rising loan losses in the respective segments, but in general banks are equipped to withstand a considerable increase in losses without falling below regulatory CET1 capital adequacy requirements. This accords with the results from the stress test presented in the theme chapter, which show that the majority of banks fulfil the CET1 capital requirement over the initial years of the stressed period.

### IRB-MODELS

Ten Norwegian banks have received permission from Finanstilsynet to use internal models (IRB) to compute capital charges for credit risk for the bulk of their loan portfolios. The banks use their own models to estimate risk parameters such as probability of default (PD) and loss given default (LGD). The models calculate risk weights using a risk formula set out in the capital adequacy legislation. For corporate loans a distinction

<sup>7</sup> The chart shows the banks' CET1 buffer to the regulatory requirements compared with total lending to personal and corporate borrowers respectively. Other factors affecting banks' ability to absorb losses, such as current earnings, are not taken into account.

### 3.7 Distribution of exposure amounts (EAD, inner circle) and risk weighted assets (outer circle) by category – IRB portfolios



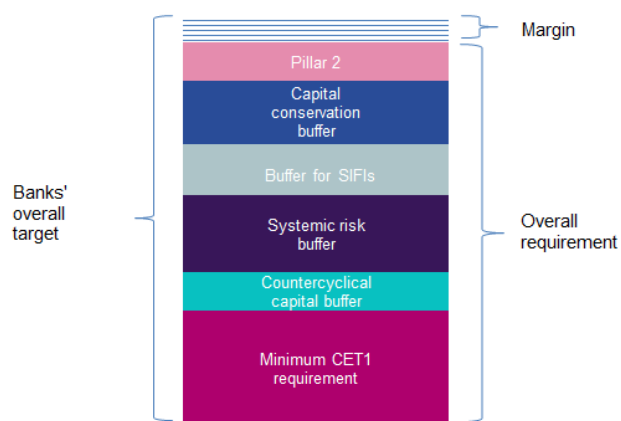
Source: Finanstilsynet

is drawn between (a) the foundation IRB approach under which banks apply their own PD estimates, with LGD prescribed in the legislation and (b) the advanced IRB approach where the banks also use their own LGD estimates.

Chart 3.7 shows the distribution of exposure types (measured by exposure at default, EAD) and appurtenant risk weighted assets for the banks' IRB portfolios. The chart shows that although corporate loans account for a smaller portion of banks' lending than residential mortgages, they account for a far larger portion of risk weighted assets. The difference is down to the fact that firms consistently carry higher risk weights than residential mortgages – both under the IRB and the standardised approach. The IRB models' effect on risk weighted assets is limited by the fact that the IRB banks' risk weighted assets cannot be lower than 80 per cent of risk weighted assets under Basel I (the "Basel I floor").

Assessments of the level of risk parameters and weights are an important aspect of Finanstilsynet's consideration of IRB applications. Finanstilsynet has on several occasions instructed banks to recalibrate their models. This is particularly true of LGD models, where poor underlying data make it difficult to determine and validate estimates, in part because the estimates need to reflect the duration of a downturn.

### 3.8 Overall CET1 capital requirement and target



Source: Finanstilsynet

Finanstilsynet also follows up on IRB permissions through ongoing monitoring of the parameter values shown in the banks' reports to Finanstilsynet, annual on-site inspections and other dialogue with the banks.

Finanstilsynet has noted substantial falls in several banks' risk weights relative to the level on which the processing of their applications was based. The banks justify these reductions mainly on the basis that reduced portfolio risk and improved risk measurement entail lower LGD estimates.

Finanstilsynet does not find the reduction in risk weights to be justified by a corresponding fall in risk. To promote adequate models and risk measurement, Finanstilsynet has accordingly instructed several banks to recalibrate their LGD models. Since the Basel I floor mentioned above is binding on the banks concerned, their capital adequacy reporting is unaffected.

#### SREP

A financial institution shall at all times have an overview over, and at regular intervals assess, the risks attending its activity. The institution shall at all times have own funds appropriate to the risk attending its activity and the scope of that activity. The CRD IV Directive sets requirements for institutions' own assessment of risk and capital needs (the Internal Capital Adequacy Assessment Process, ICAAP). The

Directive also requires the supervisory authorities to regularly review institutions' own assessment (SREP – Supervisory Review And Evaluation Process).

According to the Directive the supervisory authorities may, after the SREP review, set requirements for adjustments to operations or capital over and above the minimum and buffer requirements under Pillar 1 in the form of Pillar 2 requirements.

Finanstilsynet's assessment takes a basis in the banks' ICAAP and ordinary periodical reporting of data, along with assessments made in connection with on-site inspections. Based on an assessment of the institution's business model and strategy and its overarching governance and management and control systems, an assessment is made of credit risk, concentration risk, market risk, operational risk, liquidity and funding risk and other risks of significance for the particular institution, including reputational risk. The Pillar 1 requirement, including effects of floor (transitional) rules, is a minimum capital charge for credit risk, market risk and operational risk. Finanstilsynet's assessment of the institution's overall capital need does not take account of any diversification effects between various risk types (including credit risk, market risk and operational risk).

The overall capital requirement consists of minimum requirements and buffer requirements under Pillar 1, and the Pillar 2 requirement (chart 3.8). The banks are required to adjust their capitalisation to ensure a sound margin to the overall capital requirements.

Finanstilsynet has since 2008 conducted an annual review of banks' risk and capital needs and has in this connection expressed its expectation of the level of capital that should be maintained by institutions over and above Pillar 1 requirements. Hence Pillar 2 assessments are not a new departure.

By letter of 17 March 2016 to Finanstilsynet, the Ministry of Finance stated that Pillar 2 requirements should be imposed in the form of individual administrative decisions and that these decisions should be made public. Finanstilsynet communicates



its SREP review to the institution concerned for comment before a final decision is made. The institution is entitled to appeal against Finanstilsynet's decision under the Public Administration Act. Any appeal is considered by the Ministry of Finance should Finanstilsynet uphold its decision.

### Size of the Pillar 2 requirements

After the Pillar 2 requirements were determined by individual decision, Finanstilsynet conducted SREP reviews for 42 banks. Banks are divided into groups based on size and complexity. Group 1 comprises systemically important institutions in Norway, i.e. DNB and Kommunalbanken<sup>8</sup>. Both institutions in this group were reviewed in 2016. Group 2 comprises large regional banks, of which 19 have been reviewed. Groups 3 and 4 are small banks, including local savings banks, of which 21 have been reviewed.

The two systemically important institutions received a Pillar 2 requirement of 1.5 per cent of risk weighted assets under Pillar 1 (chart 3.9). The Pillar 2 requirement for banks in group 2 are on average (unweighted) 2 per cent of risk weighted assets. The requirement varies in the range 1.2 per cent to 3.0 per cent (chart 3.10).

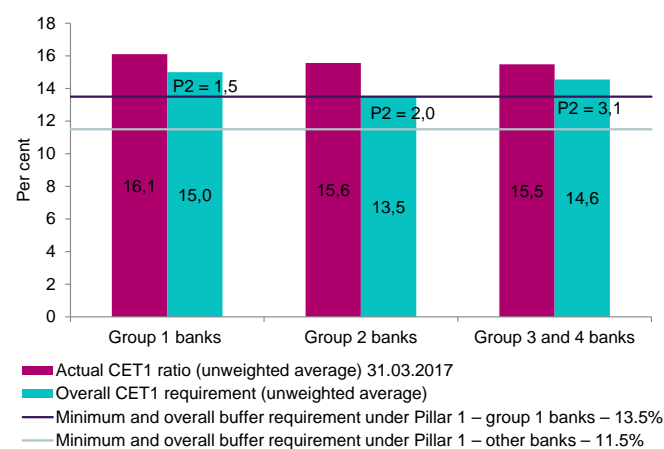
For the banks in group 3 and 4 the average requirement (unweighted) is 2.9 per cent. Pillar 2 requirements set these banks range from 2.4 per cent to 4.5 per cent.

### Individual risks' significance for the Pillar 2 requirement

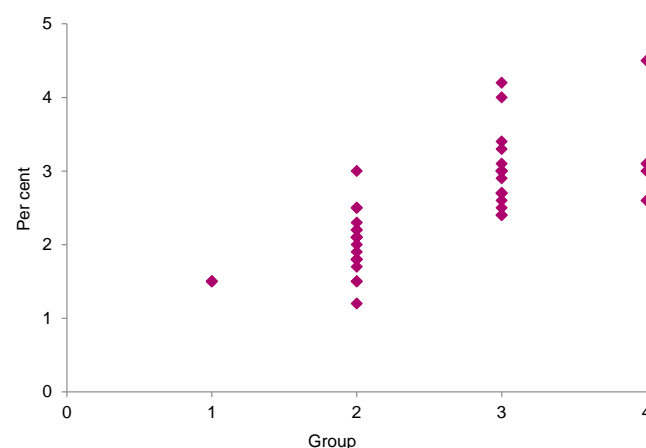
Determination of the overall Pillar 2 requirement is based on supervisory judgement against the background of risks that are not covered by Pillar 1. Risk assessments and analyses carried out during both off-site and on-site inspections play their part here. Thematic inspections are frequently conducted in various risk areas where Finanstilsynet compares specific risk factors across a number of institutions. Finanstilsynet also applies specific techniques to quantify capital needs for certain risk types; see

<sup>8</sup> Kommunalbanken is a mortgage institution.

### 3.9 Overall requirement and actual CET1 ratio as at 31 March 2017



### 3.10 Banks' Pillar 2 requirement, banks grouped by size



Circular 12/2016 (see below). These serve as support in the determination of Pillar 2 requirements.<sup>9</sup>

In all the above groups, but in somewhat larger measure for banks in groups 3 and 4, the Pillar 2 requirement includes capital charges for credit risk. To assess credit risk that is not fully covered by Pillar 1, Finanstilsynet has devised methods for calculating capital needs related to anomalous high lending growth, anomalous high risk in the corporate portfolio (applies to banks using the standardised approach)

<sup>9</sup> For a closer description of Finanstilsynet's approach to assessing risk and capital needs, see Circular 12/2016.

and risk related to unutilised credit lines not included in risk weighted assets.

Calibration of capital requirements under Pillar 1 presupposes that the loan portfolios are broadly diversified. Concentration risk is accordingly not captured in Pillar 1 and must be assessed under Pillar 2. Calculating concentration in individual sectors is designed to capture increased capital needs related to concentration risk in individual sectors, at the same time as allowance is made for other risk drivers and mechanisms which Finanstilsynet considers to be relevant to assessing sectoral concentration in the portfolios.

In its assessment of capital needs not fully covered by Pillar 1, Finanstilsynet has devised methods in respect of equity price risk, interest rate risk, spread risk, property risk and exchange rate risk. Various types of market risk account on average for more than 50 per cent of the Pillar 2 requirement for the systemically important institutions, 35 per cent of the requirement for group 2 and 25 per cent of the requirement for group 3 and 4 institutions. Finanstilsynet assesses market risk both in the bank book and the trading book. The assessments are as far as possible based on the institution's adopted limits. Sensitivity tests are used as a basis for assessing capital need for market risk. The tests are considered against Pillar 1 capital and the institution's own ICAAP calculations. Finanstilsynet takes no account of any diversification effects between various types of market risk when determining capital need. Based on experience from previous financial crises, there is a risk of concentration effects where unexpected losses on equity portfolios and fixed income portfolios arise simultaneously with mutually reinforcing effects.

Spread risk related to institutions' bond portfolios generally accounts for the largest portion of the capital need generated by market risk, for all groups of institutions. Spread risk is defined as the risk of changes in the market value of bonds, commercial paper and credit derivatives as a result of general changes in credit spreads. The methodology for risk

and capital need assessment is based on a somewhat simplified version of the Solvency II rules for insurers.

For institutions in group 2, the capital need for other risks averages almost 20 per cent of the overall Pillar 2 requirement. A substantial portion of this requirement relates to risk present in jointly owned entities in bank alliances.

Some banks have received a capital charge for operational risk and/or inadequate management and control in other specific risk areas. Determining factors in this context include risk related to poor IT solutions and non-compliance with regulations on measures against money laundering and terrorist financing.

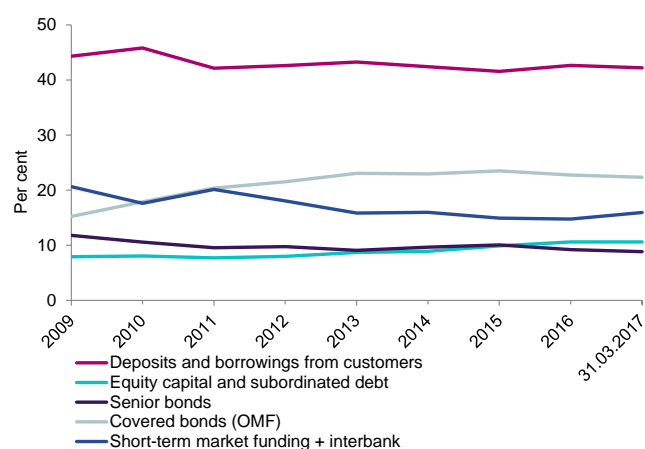
### Capital needs in a forward looking perspective and assessment of capital targets

A financial institution is required to assess its capital need in the short and long term, and to consider how this need can be met. The institution must accordingly draw up a capital plan. Finanstilsynet assumes and expects institutions to adapt both their capital target and its actual level of capital to ensure an ample margin to the overall capital requirement (Pillar 1 requirements, including buffer requirements, and the individually determined Pillar 2 requirement). When setting the bank's capital target, the board of directors should give weight to the bank's latitude in a forward looking perspective to enable the bank to maintain normal growth in lending during a downturn and ensure that the bank's capitalisation supports access to capital markets during difficult market conditions.

If Finanstilsynet finds in its risk and capital assessment that the institution's capital target and its actual adjustment of CET1 capital fails to take sufficient account of the factors mentioned in the preceding paragraph, Finanstilsynet will communicate its expectation of a higher target for CET1 capital. Expectations of a higher capital target will also be made clear if the capital target and the actual capital ratio are not seen to reflect the results of Finanstilsynet's stress tests.



### 3.11 Funding sources, banks and covered-bond-issuing entities. Per cent of total funding



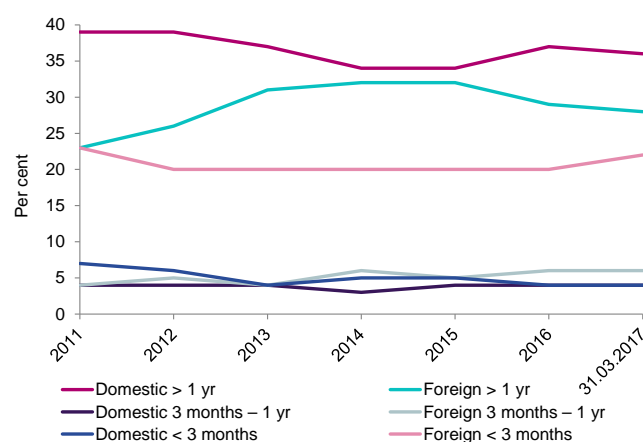
Source: Finanstilsynet

In connection with decisions on Pillar 2 requirements, Finanstilsynet also assesses the size of the margin in the form of CET1 capital which the institution should maintain over and above the overall CET1 requirement. For the DNB Group a margin was set of about 1.0 per cent of risk weighted assets under Pillar 1. For Kommunalbanken the margin was set at 0.5 per cent. For the large banks in the Sparebank 1 alliance (Sparebank 1 SR-Bank, Sparebank 1 Midt-Norge, Sparebank 1 Nord-Norge and Sparebank 1 Østlandet) along with Sparebanken Vest and Sparebanken Sør, Finanstilsynet's SREP feedback set a CET1 capital target of 14.5 per cent. Some of these banks have revised their capital targets up to 15 per cent.

### LIQUIDITY RISK

Norwegian banks overall have a high proportion of market funding. About 60 per cent of this funding is raised abroad, much of it short term. The banks' assets are denominated mainly in Norwegian kroner. This makes the banks dependent on a well-functioning market for currency swaps and vulnerable to turbulence in international financial markets. In times of turbulence banks also need to provide extra collateral to back up ongoing currency swaps. A large portion of Norwegian banks' market funding consists of covered bonds, secured on residential mortgages. Banks' funding risk is thus to a larger degree than previously connected to developments in the housing market. Norwegian banks hold liquidity reserves

### 3.12 Market funding, banks and covered-bond-issuing entities by maturity and domestic/foreign source



Source: Finanstilsynet

ensuring their ability to honour their commitments for a brief period of market stress, and a fairly high proportion of stable funding which helps to reduce liquidity risk in a longer-term perspective.

### NORWEGIAN BANKS' FUNDING STRUCTURE

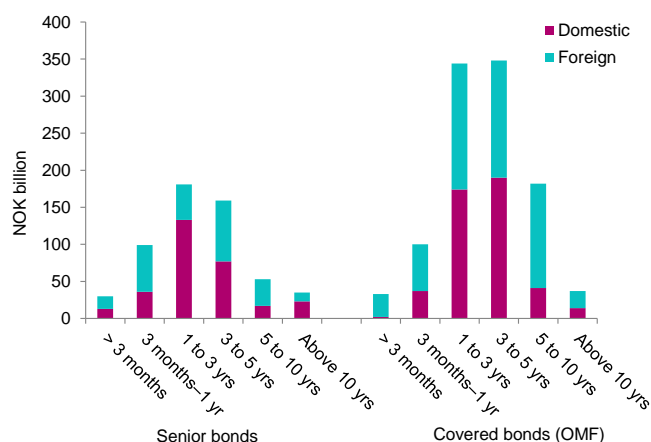
Banks' funding consists mainly of customer deposits and market funding in the form of borrowings on money and bond markets. Customer deposits' share of Norwegian banks' overall funding has been stable at just over 40 per cent in recent years (chart 3.11). Deposits have proven to be a stable source of funding for Norwegian banks also in periods of market turbulence. This has partly to do with the Norwegian deposit guarantee scheme, which guarantees deposits up to NOK 2 million per customer per bank.

Banks' market funding consists of senior bonds, covered bonds and short-term market funding including interbank debt. Market funding's share of total funding in recent years has been stable at just under 50 per cent.

### HEAVY DEPENDENCE ON COVERED BONDS

Covered bonds account for the largest share of the banks' market funding at about 50 per cent. Covered bonds are regarded as a reliable, stable source of funding, and the emergence of this product has been of benefit to Norwegian banks, inter alia by helping to lengthen the maturity of their market funding.

### 3.13 Residual maturity, bonds, as at 31 December 2016



Source: Finanstilsynet

However, covered bonds' importance as a funding source also poses a risk.

Increased issuance of covered bonds reduces the average quality of the banks' remaining assets since a large proportion of the safest residential mortgages is transferred to captive mortgage companies for inclusion in the cover pool of covered bonds. This brings increased risk for banks' unsecured creditors, and reduces the potential for new transfers and issuance in a situation where new transfers and issues are needed. Since covered bond issues are secured on residential mortgages, developments in the housing market are an important risk factor. A fall in house prices will reduce the value of the cover pool of covered bonds, and the banks may, depending on the degree of over encumbrance and the size of the house price fall, have to replenish the cover pool in order to remain compliant with the asset coverage requirement for the outstanding covered bonds. A house price fall may increase investors' scepticism towards covered bonds as an investment object, which could make it costlier and more difficult for banks to use covered bonds as a funding source.

Covered bonds make up a large proportion of Norwegian banks' liquidity reserve. A large holding of covered bonds could entail increased concentration risk and systemic risk. The interconnectedness arising between market participants via cross-holdings of covered bonds increases the risk of problems at one

entity spreading to others. The fact that many banks maintain a large holding of covered bonds could also create problems in a situation in which all are in need of liquidity and wish to dispose of covered bonds.

### HIGH PROPORTION OF LONG-TERM FUNDING, BUT HEAVY EXPOSURE TO OTHER COUNTRIES

Funding with a term above one year accounts for more than 60 per cent of Norwegian banks' market funding (chart 3.12). The high proportion of covered bonds is an important reason for the relatively long maturity of Norwegian banks' market funding. At the end of 2016 the bulk of outstanding senior bonds and covered bonds had a residual term between one and five years (chart 3.13).

Funding with a term below one year accounted for 36 per cent of Norwegian banks' market funding at the end of the first quarter of 2017. Much of this is debt to foreign lenders, and the share rose both in 2016 and at the start of 2017 (chart 3.12). This heightens Norwegian banks' refinancing risk and increases their vulnerability in the event of turbulence in the international economy. Risk related to short-term foreign market funding is partially offset by the fact that the banks hold liquidity reserves in foreign currencies. A large portion of Norwegian banks' long-term market funding, including covered bonds, is also denominated in foreign currencies. While long maturities reduce refinancing risk, this exposure to international funding markets also contributes to increased risk, the main reason being that this funding is intended to cover assets in Norwegian kroner. The banks are therefore dependent on a well-functioning market for currency swaps. See "Risk related to Norwegian banks' foreign currency funding" for further details of the risk attending Norwegian banks' exposures to international funding markets.

### AMPLE SUPPLY OF FUNDING, BUT INTERNATIONAL UNCERTAINTY REMAINS A RISK FACTOR

Geopolitical uncertainty marked 2016, but financial markets were not affected to an appreciable extent,

### 3.14 Covered bond (OMF) issues per year

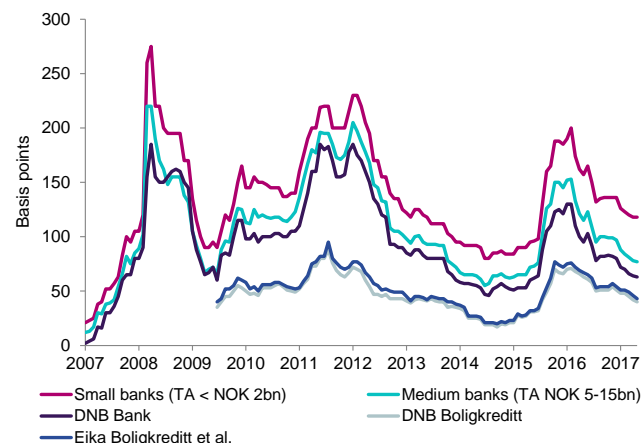


Source: Finance Norway

with the exception of some short-lived turbulence surrounding the Brexit referendum and the US presidential election.

Norwegian banks had ample access to funding both internationally and domestically in 2016. Covered bond issues were higher in 2016 than in 2015, and greater volume of covered bonds was issued in Norwegian kroner than in foreign currencies in 2016 compared with the previous year (chart 3.14). Issues denominated in foreign currency, in particular the euro, nonetheless account for a substantial portion Norwegian banks' covered bond issues. Hence Norwegian banks are directly affected by turbulence in the international markets due to the potential increase in risk premiums on foreign funding. The Norwegian covered bond market is also affected by general market sentiment towards covered bonds abroad. Risk premiums on Norwegian covered bonds and senior bonds rose fairly vigorously in autumn 2015, but fell back again through 2016 and were lower at end-2016 than at end-2015. However, on average over the year risk premiums were higher in 2016 than in 2015. Risk premiums have continued to fall in 2017 (chart 3.15). Although increased political uncertainty only limitedly affected financial markets in 2016 and thus far in 2017, it remains a risk factor with a potentially large impact on financial markets and hence on banks' funding.

### 3.15 DNB Markets' indicative premiums for senior bonds and covered bonds (OMF) against three-month NIBOR, 5-year. Weekly observations. Up to and incl. week 18/2017



Source: DNB Markets

### Risk related to Norwegian banks' foreign currency funding

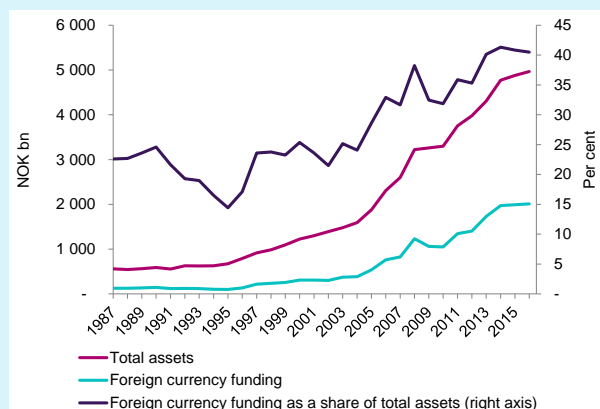
#### Assets denominated in NOK are funded by foreign currency funding

At the end of 2016, NOK 2,011bn of Norwegian banks'\* overall funding was denominated in foreign currency (chart 3.16, left axis). The volume of foreign currency funding rose from 23 per cent of overall funding in 1987 to 40 per cent in 2016 (chart 3.16, right axis). Foreign currency funding consists mainly of market funding and foreign customer deposits. Intra-group funding from foreign credit institutions that own Norwegian banks also accounts for a significant portion. The euro and US dollar are the two most important currencies in banks' foreign currency funding.

There are several reasons why Norwegian banks fund parts of their business in foreign currencies. Banks also have assets denominated in foreign currencies, and when they fund those assets in the same currencies, they assume no exchange rate risk and have no need to convert foreign

\* Norwegian banks including their foreign branches and Norwegian covered-bond-issuing entities.

### 3.16 Total assets and foreign currency funding. Norwegian banks. Billions of NOK

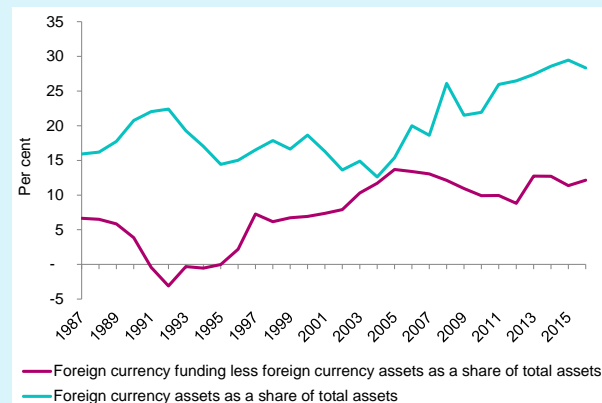


Source: Finanstilsynet

currencies to Norwegian kroner. From the mid-2000s, banks' foreign currency assets as a share of total assets rose from about 15 per cent to just under 30 per cent in 2016 (chart 3.17). Apart from at the start of the 1990s, foreign currency funding has exceeded banks' foreign currency assets. Thus banks have also funded krone-denominated assets in foreign currencies. Foreign currency funding of krone-denominated assets has accounted for between 10 and 12 per cent of total assets since the start of the 2000s. There are several possible reasons why banks choose to fund Norwegian assets in foreign currencies. Foreign markets are normally deeper and can absorb large issues without significantly affecting the price. It may in periods be cheaper to raise a loan in a foreign currency and convert it to Norwegian kroner than to borrow directly in the domestic market. Moreover, banks find it worthwhile to diversify their sources of funding, both across countries and currencies. \*\*

\*\* See also the theme chapter on banks' market funding in Risk Outlook autumn 2014.

### 3.17 Foreign currency assets and foreign currency funding of assets in Norwegian kroner\*. Norwegian banks



\* Foreign currency funding of Norwegian assets is defined as foreign currency debt less foreign currency assets. Source: Finanstilsynet

#### Norwegian banks are dependent on well-functioning currency swap markets

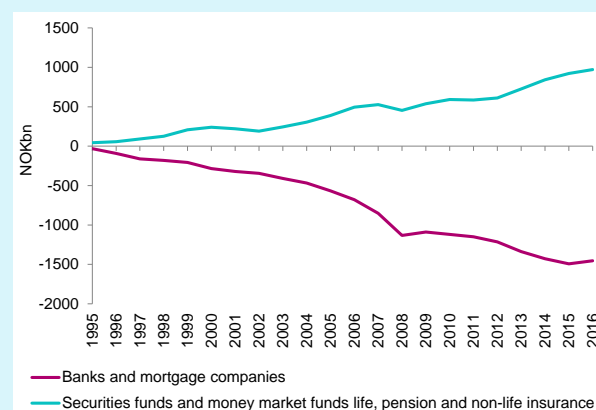
However, when banks and covered-bond-issuing entities fund their krone-denominated assets in foreign currencies an exchange rate risk arises along with a need to convert foreign currency to Norwegian kroner. This is handled by entering various forms of currency swaps with other Norwegian banks and foreign financial institutions. In a currency swap the Norwegian bank exchanges the currency obtained abroad for the same amount in Norwegian kroner. The exchange is done at the spot price in effect at the entry into the contract. Upon expiry of the contract the contract is reversed at the forward price in effect upon entry into the contract. The currency swap market is normally active for maturities up to one year. For longer-term contracts, basis swaps are the norm. In a basis swap the principal is exchanged upon contract entry as in a foreign currency swap but the contract is reversed at the same price. During the covered-bond-issuing entity pays krone-denominated interest while receiving interest in the foreign currency.

The banks and the covered-bond-issuing entities are dependent on well-functioning currency swap markets. Covered-bond-issuing entities have very limited opportunity to incur risk and therefore make use of basis swaps with a term identical to that of the underlying foreign currency funding. The counterparties in covered-bond-issuing entities' basis swaps are normally the owner bank or other large Norwegian and Nordic banks that are active in the foreign currency market. The market for basis swaps is normally less liquid than the market for currency swaps. This may in part be due to a limited supply of counterparties with natural access to and willingness to lend Norwegian kroner on a long-term basis. Banks, more so than covered-bond-issuing entities, are exposed to roll-over risk since they roll over currency swaps with shorter maturity than that of the underlying foreign currency funding.

The liabilities and deposits of insurers, securities funds and money market funds are mainly denominated in Norwegian kroner while parts of their investment portfolios are placed in foreign currencies. At the end of 2016 these sectors had a net claim of about NOK 970 billion on foreign countries (chart 3.18).

This adjustment creates a need for hedging and conversion from Norwegian kroner to foreign currencies and means that insurers and other managers of capital are also natural counterparties in currency swaps with the banks. These sectors can also enter currency swaps with foreign banks with access to foreign currency. Foreign banks that receive krone amounts from Norwegian insurers and mutual funds in need of foreign currency can exchange those amounts back with Norwegian banks or foreign actors such as foreign insurers or mutual funds with assets in kroner and funding in foreign currencies. Hence the market for currency swaps involving Norwegian kroner consists both of Norwegian and foreign banks and Norwegian and

**3.18 Claims on other countries. Billions of NOK**



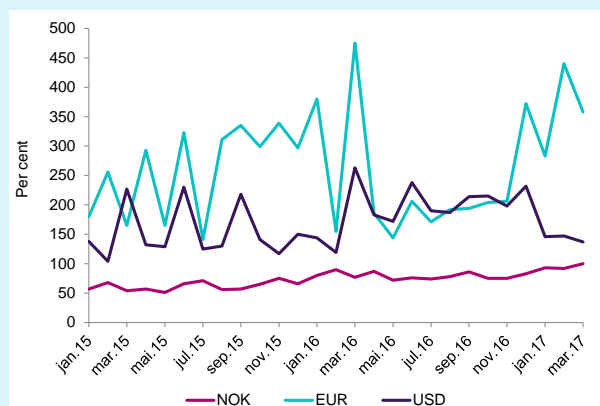
Source: Statistisk sentralbyrå

foreign insurers and mutual funds. In keeping with the increasing need for currency swaps (chart 3.18), the interconnectedness among these actors has likely also increased. This could cause problems to spread more rapidly across the financial system. Norwegian banks experiencing a dearth of foreign currency funding would find their ability to offer foreign currency in exchange for Norwegian kroner impaired. If other Norwegian sectors with a need for foreign currency in exchange for kroner are unable to roll over their currency swaps, they will likely have to reduce their foreign currency positions.

Large Norwegian banks hold much of their liquidity reserves in foreign currencies both in order to meet their foreign currency liquidity needs and on cost grounds. In order to avoid banks' ability to withstand Norwegian krone liquidity stress from becoming overly dependent on a well-functioning swap market, they also need to maintain liquidity reserves in Norwegian kroner in recent years, and are better able now than previously to tackle liquidity stress in Norwegian kroner.



### 3.19 LCR in selected currencies. Large banks



Source: Finanstilsynet

#### Requirements for extra hedging during market turbulence entails liquidity risk

Although banks and covered-bond-issuing entities eliminate the risk of inability to service currency swaps, both roll-over risk and liquidity risk arise in connection with roll-overs and hedging in the event of changes in the market value of currency swaps. When market conditions change, the market value of currency swaps and the parties' exposure to one another change. The risk of changing counterparty exposure is regulated through separate hedging agreements that regulate how often the new market value is to be determined and how payment of collateral is to be effected. Collateral is normally paid in the form of cash or liquid securities. Because covered-bond-issuing entities are not permitted to post collateral for currency swaps, they enter into unilateral agreements with their counterparties. This means that a covered-bond-issuing entity is not itself required to post collateral in the event of a negative change in the market value of its currency swaps. Banks enter into agreements on bilateral posting of collateral, and in the event of major changes in exchange rates they risk having to post substantial sums as collateral for the counterparty's increased exposure. The market for Norwegian kroner is relatively small and history shows that liquidity is

low and price fluctuations wide in periods of financial turbulence. In the months after Lehman Brothers' failure the krone weakened by almost 25 per cent against the euro. Hence it is important for the banks to maintain adequate liquidity buffers and carry out stress tests of potential liquidity needs in connection with derivatives contracts. The LCR regulations require banks that are active in the foreign currency market to hold liquid assets corresponding to the largest historical net outflow of collaterals noted in a period of 30 days over the preceding two years.

### NORWEGIAN BANKS' ROBUSTNESS TO MARKET TURBULENCE

#### LIQUIDITY RESERVES REDUCE ROLL-OVER RISK IN THE SHORT TERM

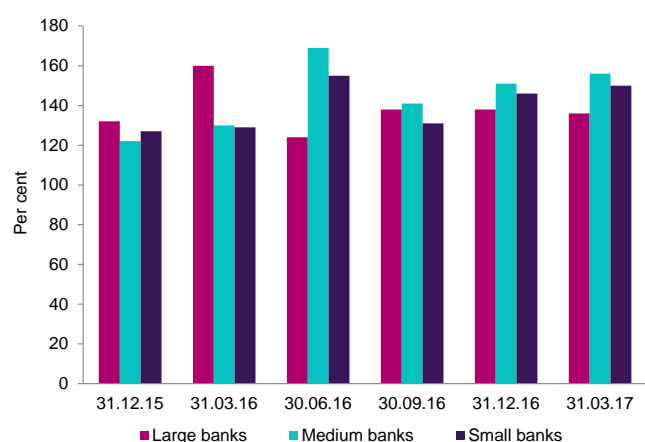
It is important that the banks see to maintaining liquidity reserves sufficient to enable them to honour their commitments in a brief period of limited access to fresh funding. The liquidity reserve requirement under CRD IV, the LCR (liquidity coverage ratio) has been an important tool in the effort to ensure this. The LCR entails a requirement on the size of the banks' liquid assets relative to outflow (payments less receipts) 30 days ahead in time under given stress assumptions).

Norwegian banks (banking groups) had an LCR (total liquid assets over total net payments) overall of NOK 137 per cent at the end of the first quarter of 2017 (chart 3.20). Of a total of 125 banks, 17 had an LCR below 100 per cent.

#### STABLE FUNDING REDUCES ROLL-OVER RISK IN THE LONGER TERM

A high share of stable funding is important in reducing roll-over risk in the longer term. Finanstilsynet uses several indicators in its assessment and follow up of banks' funding structure, including liquidity indicator 1 and the NSFR (Net Stable Funding Ratio). Liquidity indicator 1 shows the banks' funding with a residual

### 3.20 Total LCR, weighted average



Source: Finanstilsynet

term above 1 year as a share of illiquid assets with a residual maturity above one year. The NSFR is a reporting requirement under CRD IV and measures the banks' available stable funding as a share of necessary stable funding. The NSFR reflects the institution's entire balance sheet along with certain off-balance sheet items. Necessary and available funding are determined based on weights that reflect the degree of stability over a period of one year.

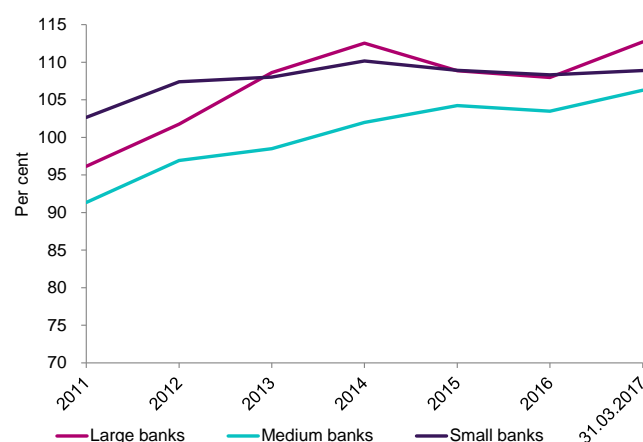
Liquidity indicator 1 has risen for all groups of banks over the past seven years (chart 3.21). The main reason for this development is that banks have increased their own funds as a share of balance sheet assets. The NSFR was 114 per cent for the banks as a whole at the end of the first quarter of 2017. Medium and small banks consistently have a higher NSFR than the large banks (chart 3.22). The reason is partly that the largest banks have a larger proportion of market funding than the medium and small banks, and partly that a portion of this is short-term market funding.

## EARNINGS

### GOOD FINANCIAL RESULTS OVER SEVERAL YEARS

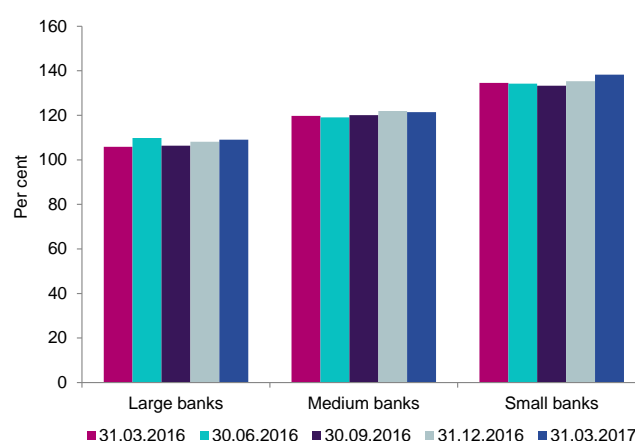
Profit retention has for several years been the main contributor to the improved financial position of Norwegian banks (chart 3.2). The banks have shown good financial results over the past 15 years, with brief exceptions in 2002 and the years surrounding the

### 3.21 Liquidity indicator 1, Norwegian banks



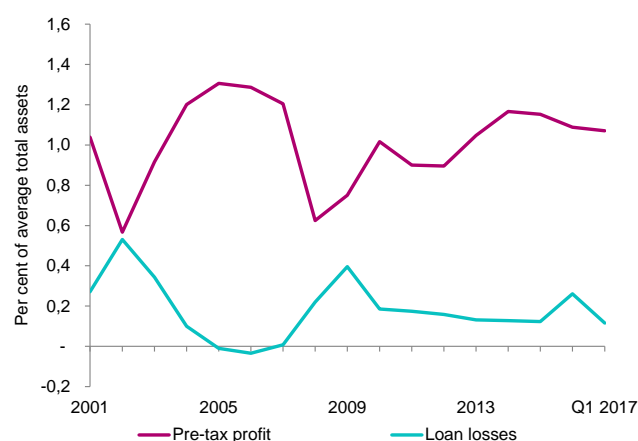
Source: Finanstilsynet

### 3.22 Total NSFR, weighted average



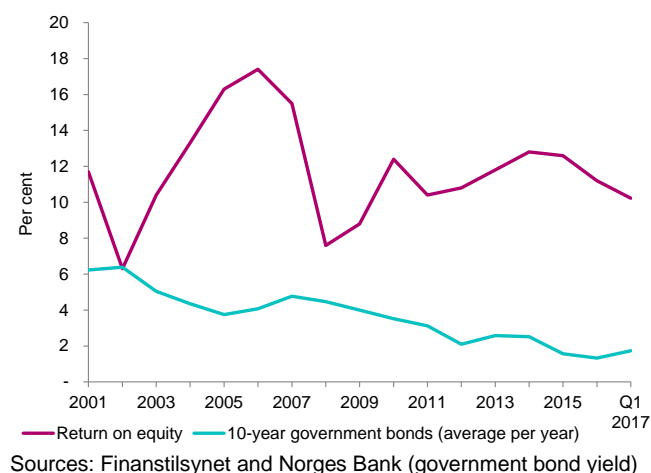
Source: Finanstilsynet

### 3.23 Pre-tax profit and loan losses

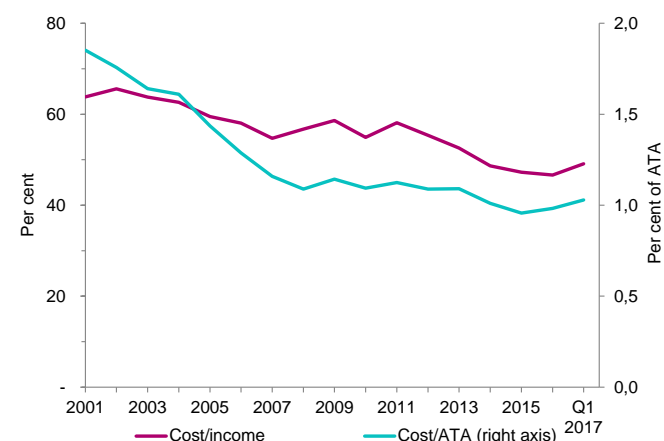


Source: Finanstilsynet

## 3.24 Return on equity



## 3.25 Cost level



Source: Finanstilsynet

results also brought high return on equity in the period, despite a substantial increase in banks' equity capital in recent years (chart 3.24). Return at Norwegian banks has also been considerably higher than the average for European banks. Increased loss write-downs, mainly on oil-related exposures, impaired results in 2016.

For most Norwegian banks, traditional lending and deposits are their most important activities. Hence the banks' main source of income is net interest revenues, i.e. the difference between interest revenues and interest expenses. Net interest revenues represent about three quarters of banks' total operating revenues, excluding price movements on financial instruments. Other ordinary operating revenues

mainly comprise commissions and fees and charges on sales of various services. Banks' revenue structure has shown a high degree of stability over many years. The largest fluctuations have been in the case of price changes on financial instruments. The banks' operating expenses have shown a favourable development for several years, and have helped to maintain good earnings. Efficiency gains, not least as a result of digitalisation, have led to a declining cost/income ratio for many years. However, as shown by chart 3.25, some increase in the cost level was noted in the first quarter of 2017 compared with the year 2016. A contributory factor was the introduction of a new tax on financial institutions as from 2017, calculated at 5 per cent of wage costs.

### REDUCED FUNDING COSTS HAVE CONTRIBUTED TO BANKS' NET PROFITS

An important explanation for the creditable results over the past three or four years is the declining cost of banks' funding. Net interest revenues reached a historical low in 2012, viewed in relation to total assets. In the period 2013 to 2015 net interest revenues rose, mainly due to lower costs of funding via the securities market. During the financial crisis, higher risk premiums substantially increased the cost of new securities funding. Subsequent roll-over of this funding was done at a lower cost, both because risk premiums were reduced and because of a decline in the general interest rate level. The favourable roll-over effect of securities debt was largely exhausted towards the end of 2015, but overall interest expenses relative to total assets continued to fall through 2016. This time the explanation was above all a substantial reduction in deposit rates, after a period of three years in which average rates on deposits exceeded the short-term money market rate (chart 3.26). The decline in deposit rates was also stronger than the reduction in lending rates. Interest expenses on deposits accounted for about one-third of total interest expenses at the end of 2015, but this share had fallen to about one-quarter just one year later.

The decline in deposit rates appears to have come to a halt after the first half of 2016. Towards the end of

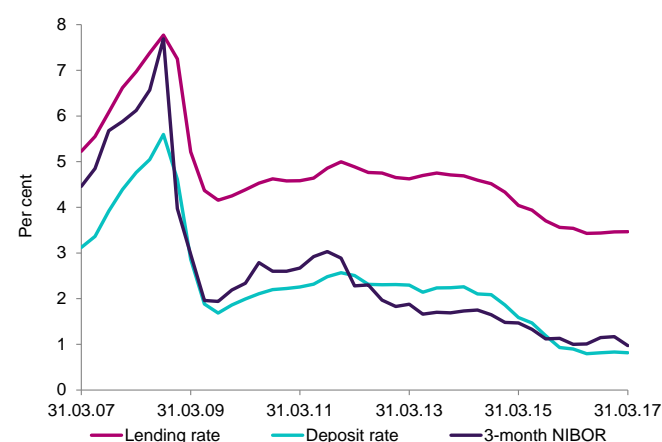


2016 there was a slight tendency for increased interest rates on loans to corporate borrowers, but this has not continued in the first quarter of 2017. Lending rates for personal borrowers were stable through 2016, but rose weakly in the first quarter of 2017. If the price competition on loans is maintained, without the banks seeing the same positive effect of cheaper funding as in the period 2013 to 2016, banks' profitability could be impaired in the period ahead. Banks with consumer lending as their main business fund their operations by offering high interest rates on customer deposits. Although these banks account for a modest proportion of the total market, they have intensified the competition for customer deposits. If banks continue their higher lending growth to low margin segments, such as residential mortgage borrowers, than to segments with traditionally higher lending rates and risk, it could bring their main revenue source (net interest revenues) under further pressure.

### LOW LOAN LOSSES OVER A LONG PERIOD, BUT SIGNIFICANT LOSSES ON OIL EXPOSURES IN THE PAST YEAR

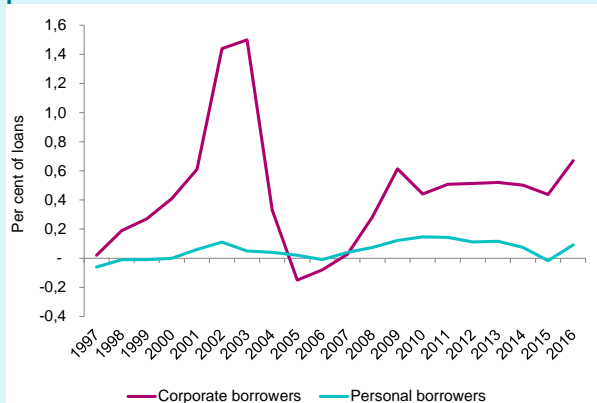
As shown in chart 3.23, it is above all variations in the level of loan losses that lead to the most significant short-term variations in banks' profits. Norwegian banks have recorded very low loan losses in recent years, which has been an important explanation of their creditable results. An increase in the loss level in 2016 was essentially ascribable to substantial write-downs on exposures to clients in oil-related industries, limited to a minority of the larger banks. For other banks combined, the loss level remained low in 2016. Losses in the first quarter of 2017 were somewhat lower than in the previous year. Much uncertainty remains about how large the losses on banks' lending to oil-related industries will prove to be. If the problems faced in the oil sector persist or are intensified, the problems may in time also entail substantial negative consequences for other industries. This may be exacerbated should house prices fall, and households consolidate. A general increase in loan losses, beyond oil-related exposures, will have a sizeable negative impact on banks' earnings.

### 3.26 Lending and deposit rates



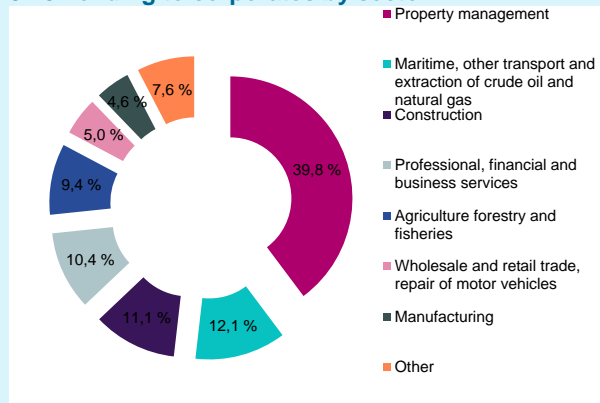
Sources: Finanstilsynet and Oslo Børs (NIBOR)

### 3.27 Losses on loans to Norwegian corporate and personal borrowers



Source: Finanstilsynet

### 3.28 Lending to corporates by sector



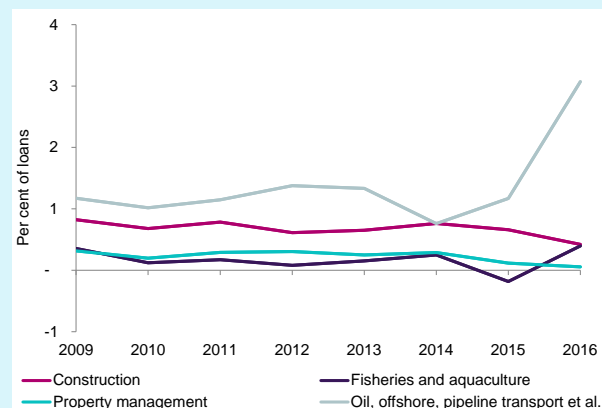
Source: Finanstilsynet

#### Loan losses by sector

Banks' overall loan losses rose from 0.2 per cent of overall loans in 2015 to 0.4 per cent in 2016, mainly due to an increase in losses on loans to corporate borrowers. Losses on loans to domestic firms rose to 0.7 per cent and were in 2016 at the highest level since 2003 (chart 3.27). Losses on loans to domestic personal borrowers were still low. The increase from the previous year is largely explained by earlier losses being reversed in 2015 in connection with portfolio sales.

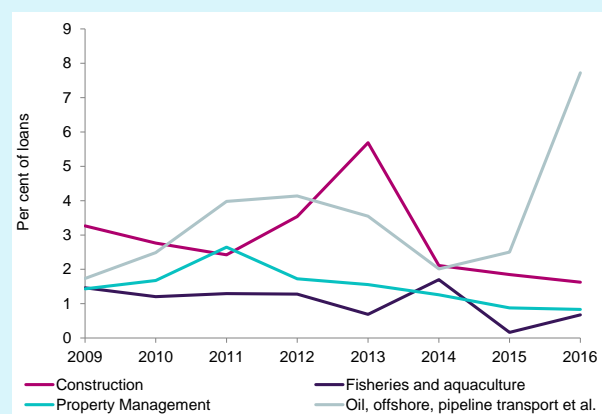
The main reason for increased losses on loans to domestic firms in 2016 was an increase in losses to oil-related industries: shipping, other transport and extraction of crude oil and natural

### 3.29 Losses on loans to individual sectors



Source: Finanstilsynet

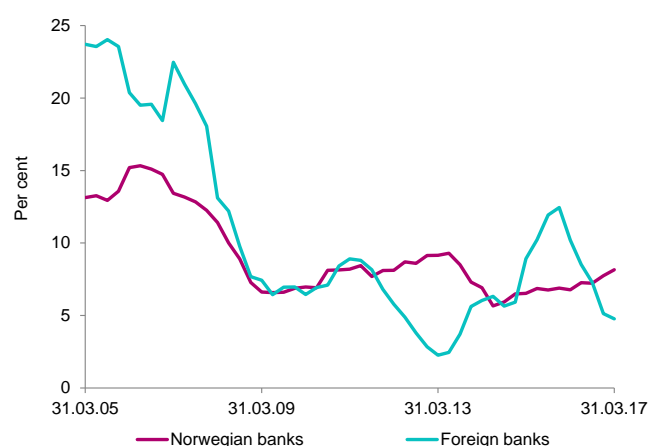
### 3.30 Non-performing loans to individual sectors



Source: Finanstilsynet

gas (chart 3.29). The losses are largely attributable to a few larger banks, mainly on offshore-related exposures. The same industries contributed to the largest increase in non-performing loans (chart 3.30). Loans to property management account for about 40 per cent of domestic business loans (chart 3.28). Losses on loans to this segment have been low in recent years and fell marginally in 2016. Losses on loans to foreign corporate borrowers amounted to 0.85 per cent. Losses on loans to shipping, other transport and extraction of crude oil and gas, accounting for just under half of the loan volume to this customer group, accounted for three-quarters of the losses.

### 3.31 Growth in lending, personal market



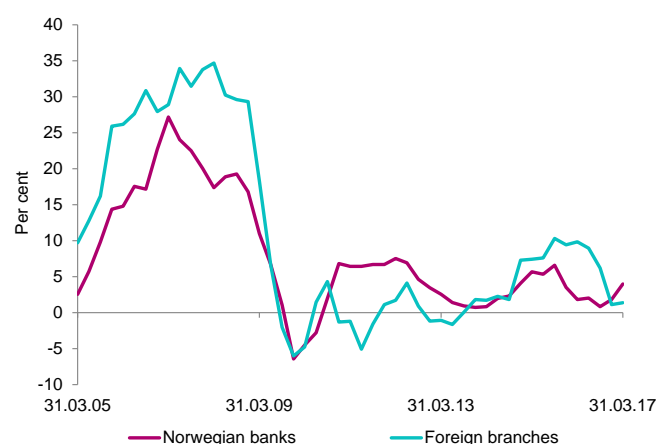
Source: Finanstilsynet

## BALANCE SHEET DEVELOPMENT AND PORTFOLIO QUALITY

### HIGH LENDING GROWTH TO PERSONAL BORROWERS – FOLLOWS GROWTH IN HOUSE PRICES

As described in chapter 2, households' debt growth has remained high for many years. The banks are the main source of the debt, and their annual growth in lending to personal borrowers exceeds 7 per cent in recent years (chart 3.31). The growth should be viewed in light of the growth in house prices. Recent years' very strong growth in house prices is expected to continue to contribute to sustaining growth in lending ahead, even if house price growth were to abate. This time lag must in part be seen in light of the fact that only a limited portion of homes actually change hands each year. However, the new, higher price level enables increased borrowing also for those who do not change homes, but increase the mortgage on their existing home to finance other purposes. After very strong growth was posted by some foreign banks' branches in 2015, the latter's growth slowed considerably through 2016, and at the end of the first quarter of 2017 was lower than that of Norwegian banks.

### 3.32 Growth in lending, domestic firms



Source: Finanstilsynet

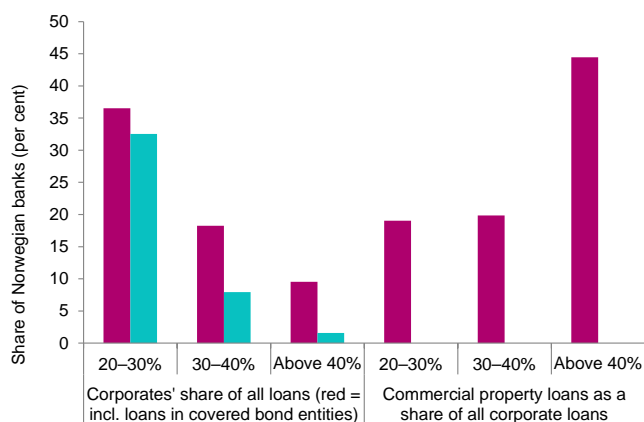
### Nordea's conversion to branch status

Nordea Bank Norway was the second largest bank in the Norwegian banking market and designated by the Ministry of Finance as a systemically important institution in Norway. In January 2017 Nordea Bank AB converted its Norwegian arm from its status as a Norwegian legal entity, wholly owned by the Swedish Nordea Bank AB, into a branch of the Swedish bank. The total foreign-owned share of the Norwegian banking market accordingly remained unchanged, but the branches' overall share of the market rose markedly. Foreign banks' branches now account for 36 per cent of overall bank lending to Norwegian firms. For personal borrowers the share is about 15 per cent. When Nordea Eiendoms kreditt, which is a Norwegian institution, is included, the share is 19 per cent. See also the account of Nordea's conversion to branch status in Risk Outlook spring 2016.

### MODERATE LOAN DEMAND FROM FIRMS

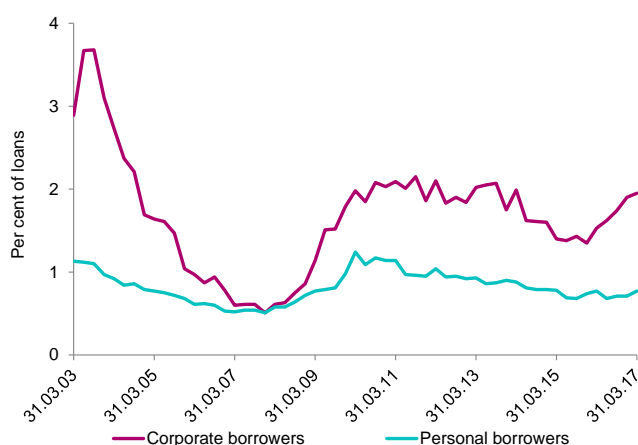
Several years of relatively low growth in the Norwegian economy have contributed to low credit demand from businesses. Growth in bank lending to this segment has thus been moderate. Some foreign branches in Norway recorded very high growth to this customer category too in 2015, which slowed markedly through 2016 (chart 3.32).

### 3.33 Share of loans to commercial property



Source: Finanstilsynet

### 3.34 Non-performing loans



Source: Finanstilsynet

Where lending to firms is concerned, Norwegian banks are particularly heavily exposed to the property management segment. This segment accounts for close to 40 per cent of banks' overall lending to domestic firms, although growth in lending to property management has been low in the past two years or so. Loans to commercial property make up more than 20 per cent of loans to firms for more than 80 per cent of Norwegian banks (chart 3.33). A negative trend in the real economy accompanied by reduced demand for property (and falling property prices) could thus have considerable consequences for the credit quality of a large number of Norwegian banks' corporate portfolios. See chapter 2 for an account of the commercial property markets.

### STRONG INCREASE IN THE LEVEL OF NON-PERFORMANCE ON OIL-RELATED EXPOSURES

As shown in chart 3.34, banks saw a strong increase in the volume of non-performing exposures to firms after 2015. This was essentially ascribable to direct exposures to oil-related industry in as much as most other borrower groups still show low levels of non-performance. This applies in particular to lending to personal borrowers, although that group too showed a slight increase in non-performance over the past year. The past year has also seen a considerable increase in the volume of loans granted forbearance due to financial problems of the borrower, in all essentials firms. Postponed instalment repayments, longer mortgage terms or other types of forbearance are being applied to help borrowers temporarily under pressure, but there is a risk that such measures will merely postpone banks' loss recognition. Should the financial challenges facing borrowers who have been granted forbearance persist, loan losses could prove substantial once banks no longer see signs of exposures possibly regaining performing status. See also the account of the larger banks' offshore exposures.

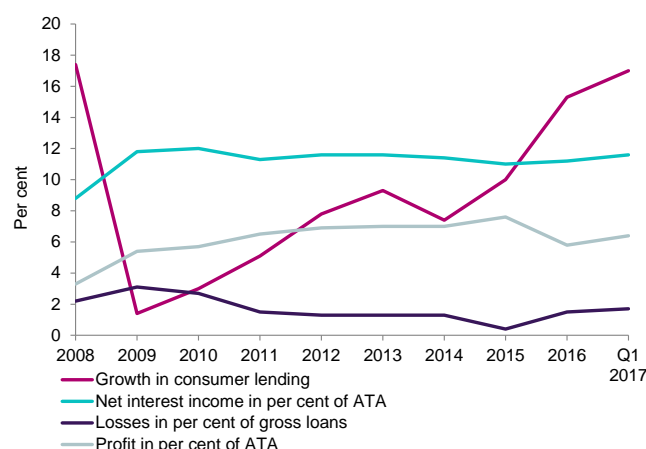
### Larger banks exposure to offshore companies

Finanstilsynet conducted in the second quarter of 2016 a thematic survey of the offshore sector at five Norwegian banks with a basis in the banks' exposures as at 31 March 2016; see the account in Risk Outlook autumn 2016. Overall exposure to the offshore sector as at 31 March 2016 came to NOK 90 billion (in terms of EAD, exposure at default), corresponding to 6 per cent of banks' overall exposure to the corporate market. This exposure broke down to NOK 25 billion on rigs and NOK 65 billion on the supply segment. Overall write-downs to the offshore sector measured 2.3 per cent of the portfolio at the end of the first quarter of 2016.

Finanstilsynet keeps continuous track of banks' exposures and loss write-downs. At the end of the first quarter of 2017, overall exposure stands at NOK 84.5 billion, a reduction of 6 per cent in one year. Overall write-downs including confirmed losses come to NOK 7.2 billion, an increase of NOK 5.1 billion from the previous year, breaking down to NOK 4.6 billion in individually assessed write-downs including confirmed losses, and NOK 2.6 billion in collectively assessed write-downs. At the end of the first quarter of 2017, overall write-downs including confirmed losses measured 8.6 per cent of the portfolio.

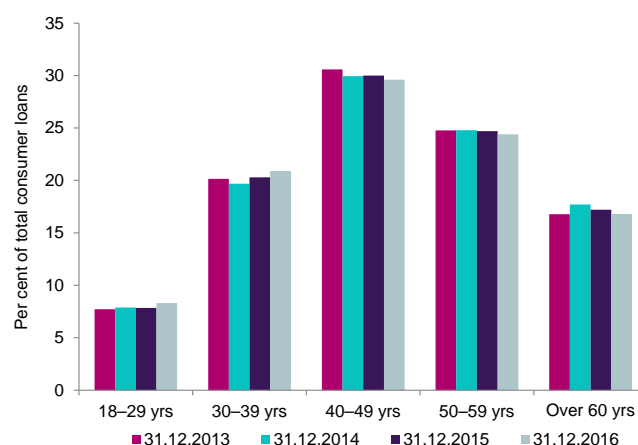
A substantial proportion of offshore borrowers have undergone restructuring. Restructuring entails granting the borrower new repayment terms, including longer mortgage periods and postponement or reduction of instalment payments in the years immediately following. Restructuring is usually based on overall debt and includes numerous parties. At the end of the first quarter of 2017 the banks report that almost three-quarters of the portfolio has been or will be subject to restructuring. Moreover, forbore loans have increased substantially over the past 12 months and account for close to 60 per cent of the offshore portfolio at the end of the first quarter of 2017.

### 3.35 Trend in consumer lending at a selection of entities



Source: Finanstilsynet

### 3.36 Consumer loans by age group



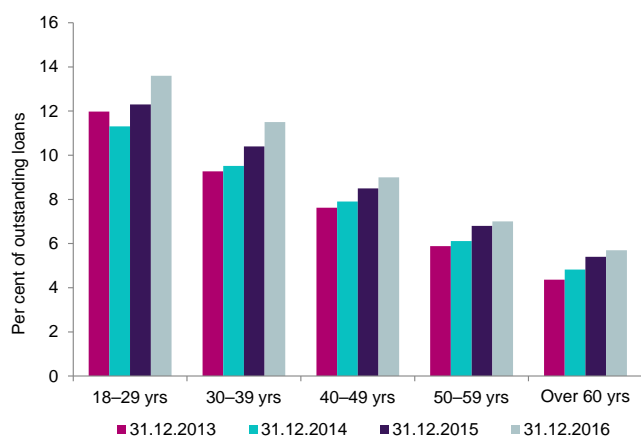
Source: Finanstilsynet

## CONSUMER LENDING

### STRONG GROWTH IN CONSUMER LENDING

Consumer loans make up a small portion of households' overall debt, but are growing at a far quicker rate than general growth in credit to households. The high interest margin on consumer loans compared with secured loans enables banks and financial institutions to absorb relatively high losses on consumer loans but nevertheless achieve sound profits. Although profitability in the consumer lending business has been very high for several years, there is a risk of consumer lenders underestimating the loss risk. Large numbers of new borrowers coupled with existing borrowers' expansion or refinancing of consumer loans entails a risk that inadequate servicing capacity will not come to light for a long period, in

## 3.37 Non-performance (30 days) in each age group



Source: Finanstilsynet

particular where new consumer loans are taken out to service old debt. As more and more borrowers fail to have their loans expanded or refinanced, losses may rise substantially. This is particularly true if an economic setback and increase in unemployment were to materialise.

Residential mortgages dominate household debt. Consumer loans account for no more than 3 per cent of households' overall debt. However, households' interest expenses on consumer loans accounted for a significantly higher proportion of their overall interest expenses.

Borrowers' financial vulnerability may entail a need for consolidation and an associated reduction in demand for goods and services. In addition, reputational risk attending consumer lending may contribute to impaired confidence in the individual institution and the financial industry as a whole.

Consumer loans are offered in the form of various products, and include both credit card loans and other unsecured consumer loans. Finanstilsynet runs a survey of a selection of banks and finance companies engaged in consumer finance. The selection consists of 27 entities (15 banks and 12 finance companies), and covers the bulk of the Norwegian market. Both Norwegian institutions and foreign branches in Norway are included. If Norwegian institutions' activities in other countries are also included, total

outstanding loans came to NOK 128 billion at the end of the first quarter of 2017. Of this, consumer loans to Norwegian households accounted for NOK 95 billion.

Twelve-month growth in the Norwegian market was 17.0 per cent at the end of the first quarter of 2017 (chart 3.35). In comparison, annual growth in households' overall debt was 6.7 per cent in the same period. Credit card loans accounted for some 54 per cent of consumer loans to Norwegian households at the end of the first quarter of 2017 compared with about 59 per cent one year previously. About 70 per cent of the credit card loans carried interest.

Good profits over a long period have made consumer lending an attractive segment for new providers, and the growth in the market is in large measure down to relatively new actors. New providers with consumer lending as their main business have generally shown higher lending growth than the traditional banks. Banks specialising in consumer lending have a high deposit-to-loan ratio, and are funded mainly by deposits guaranteed by the Norwegian Banks' Guarantee Fund.

Net interest revenues have remained stable since 2009 at well over 10 per cent of average total assets (chart 3.35). Variations in the loss trends have been small in recent years. Pre-tax profit has hovered at just over 6 per cent of average total assets.

At the end of 2016 more than one-half of consumer loans went to borrowers between age 40 and 60 (chart 3.36). Borrowers in the age range 40-49 accounted for the largest portion of these loans at almost 30 per cent. The proportion of loans to the 18-29 age group was 8.3 per cent at the end of 2016, which was somewhat higher than the previous year.

Defaults on consumer loans are generally higher than on other loans from banks and finance companies, and the default level has risen in the past year. Defaults are highest among the under-30s, measured relative to outstanding loans for each age group (chart 3.37). Defaults have risen for all age groups, but the increase has been greatest for the youngest group.



Although consumer lending is growing strongly, lenders rejected 61 per cent of consumer loan applications in 2016. In the case of credit card loans, the rejection rate was close to 40 per cent, while for other consumer loans it was 80 per cent. Applications for credit cards are largely from existing customers. The rejection rate for credit card loans is therefore consistently lower because the institutions have greater knowledge of these customers in terms of better data and payment history. Other consumer loans are mediated in large measure via external agents/intermediaries. This entails less available information on applicants, prompting more stringent assessments of creditworthiness on the part of lenders.

### INCREASE IN CONSUMER LOANS REFERRED TO DEBT COLLECTION

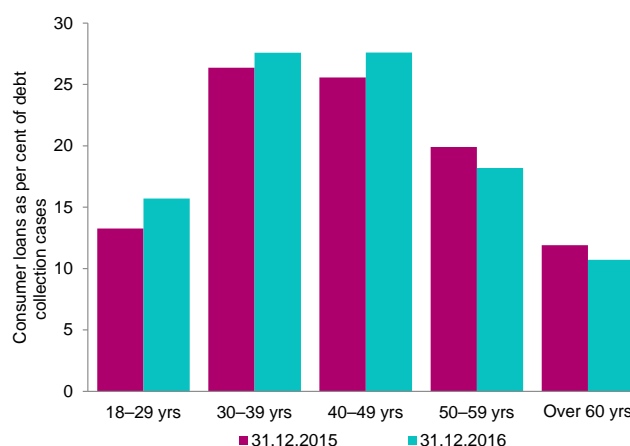
Finanstilsynet has conducted a survey of 13 of the largest debt collection agencies to gain a better overview of the distribution of debt collection cases on claim types and age groups. The agencies in the survey accounted altogether for a market share of just over 80 per cent.

Of debt collection cases in process at the end of 2016, 13.3 per cent related to consumer loans, compared with 9 per cent at the end of 2015. Debt collection cases involving residential mortgages accounted for just 1 per cent, which was marginally higher than at the end of 2015. As in previous years, small claims (including postal order sales and parking fines) made up the bulk of debt collection cases. Cases involving consumer loans saw an increase in the share relating to the age groups 18-29, 30-39 and 40-49 whereas a reduction was noted for the older age groups compared with the previous year (chart 3.38).

### SUPERVISION OF CONSUMER LENDING

Supervision of banks' provision of consumer finance is part of the effort to help prevent loan losses and to protect consumer interests. Finanstilsynet has conducted several on-site inspections at banks that offer consumer loans. At such inspections,

**3.38 Debt collection, consumer loans by age group**



Source: Finanstilsynet

Finanstilsynet assesses both the institution's overall management and control, policies and processes, and its compliance with legislation, including requirements on lenders' assessment of consumers' creditworthiness and their compliance with obligation under the Financial Contracts Act to dissuade borrowers from taking out a loan on grounds of their financial capacity or other circumstances. Finanstilsynet also assesses the structure and quality of institutions' portfolios. Finanstilsynet additionally reviews and assesses the quality of credit cases based on a selection of customer exposures.

Finanstilsynet notes that a number of banks have poor procedures and processes in this area. Banks often apply a portfolio perspective when assessing credit risk, in which consumer protection is given insufficient weight. For example, absences of procedures and processes to check customers' debt servicing capacity have been brought to light. A number of on-site inspections have revealed that some banks failed to make liquidity projections for all customers, which, in Finanstilsynet's assessment, is counter to the Financial Contracts Act's requirement on the lender to assess the consumer's creditworthiness. Several banks perform a simplified creditworthiness assessment in which significance expenses are omitted in whole or in part. The banks may be underestimating general expenses by employing rates that are below

## CHAPTER 3 BANKS

Consumption Research Norway's reference budget<sup>10</sup>, by failing to take into account relevant costs specified by Consumption Research Norway over and above those set out in the reference budget and by failing to take account of all debt or to make sufficient allowance for future interest rate increases.

### More stringent capital requirements on consumer loans

Financial institutions are subject to capital requirements intended to reflect risks attending their business. Consumer loans are assumed to pose a greater risk than for example residential mortgages and are therefore given a larger weighting in the calculation of capital charges. The capital adequacy legislation requires, according to the standardised approach under Pillar 1, that unsecured loans should be risk weighted at 100 per cent. About one-quarter of consumer loans are dealt with under the IRB approach in which the risk weights depend on measured risk. If a portfolio of unsecured loans meets the requirements set for retail exposures, the portfolio can be risk rated at 75 per cent under the standardised approach. In comparison, well-secured residential mortgages carry a risk weight of 35 per cent. Overall minimum and buffer requirements for systemically important institutions are set at a CET1 ratio of 11.5 per cent. In addition, Pillar 2 requirements plus a certain margin are levied by Finanstilsynet. Furthermore, start-up banks whose core business is consumer finance have been subject to an add-on of at least 4 per cent in addition to the general capital requirements.

### Measures to dampen the growth in consumer lending

A number of public authorities are working on measures to regulate consumer lending. The Ministry of Justice has drawn up new regulation of the marketing of consumer loans, and the Ministry of Children and Equality has tabled a draft act on the recording of individuals' debt (Debt Information Act). Finanstilsynet's draft regulations on the invoicing of credit card debt have now been adopted by the Ministry of Finance. In addition, Finanstilsynet has established guidelines for financial institutions'

treatment of consumer loans; see Circular 5/2017 entitled Finanstilsynet's guidelines for adequate consumer lending practices<sup>11</sup>. Government authorities' measures are further described in chapter 5.

<sup>10</sup> Consumption Research Norway's (SIFO's) reference budget shows ordinary consumer expenditures for various types of households.

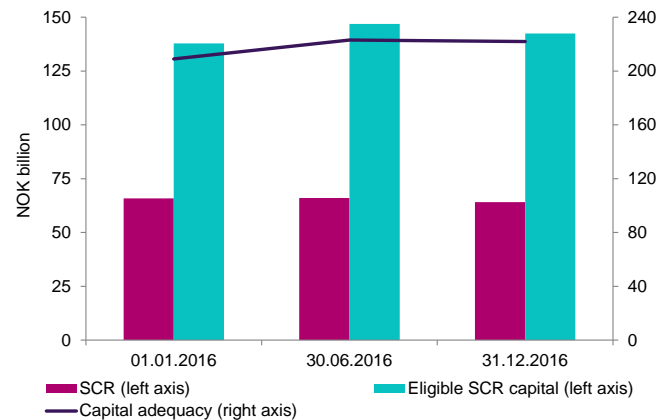
<sup>11</sup> Finanstilsynet's Circular no. 5/2017. [Currently in Norwegian only.](#)

## CHAPTER 4 INSURANCE AND PENSIONS

A low interest rate level and rising longevity have posed a challenge to Norwegian life insurers and pension funds. Over the past six years life insurers have increased their premium reserves by almost NOK 40 billion to meet the requirements of the new mortality tariff, K 2013, which captures increasing longevity. Both surplus return on policyholder assets and insurers' equity capital are employed to increase technical provisions. The introduction of a fair value based solvency framework has been demanding in a period of historically low interest rates and a large proportion of liabilities carrying guaranteed interest. Institutions have met the challenges by cutting costs and making adjustments to the asset side of the balance sheet. They have also scaled back liabilities carrying guaranteed interest to policyholders in recent years, and further reductions are expected in the longer term when the proportion of paid-up policies levels off and in due course diminishes.

The increase in long-term interest rates from the record-low level in summer 2016 contributed to some improvement in prospects for life insurers and pension funds internationally. However, long-term rates remain at historically low levels. A protracted low interest rate level poses a risk to earnings and financial strength in the medium term. However, pension institutions are also exposed to risk posed by a combination of low risk-free interest rates and falling values on the asset side. A hefty increase in risk premiums on fixed income securities will reduce the value of the bond portfolio, and equity and property values could plunge. Such an outturn will have a large negative impact on institutions' solvency coverage ratios. The European Insurance and Occupational Pensions Authority (EIOPA) gave much weight to this risk in its summary of the results of the stress test of European insurers in 2016.

### 4.1 Life insurers' capital adequacy



Source: Finanstilsynet

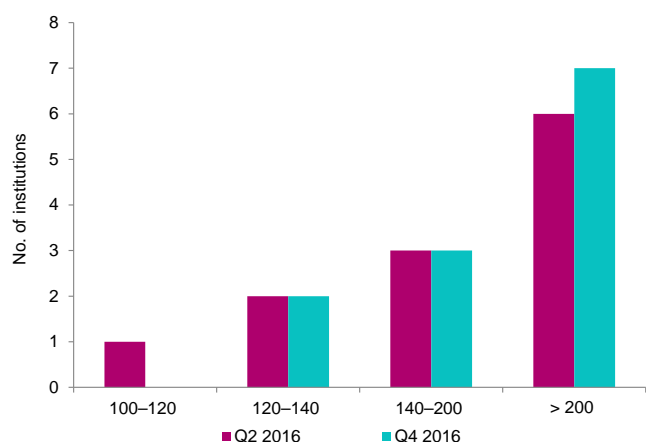
### PENSION INSTITUTIONS' – CAPITAL ADEQUACY SOLVENCY II

Insurers were placed under a new solvency regime, Solvency II, as from 1 January 2016. This is a risk-based framework in which both assets and liabilities are measured at fair value. Hence the interest rate level now has far greater significance for life insurers' capital position than it did under previous solvency rules. The new regime makes particularly clear the challenges posed by the low interest rate level for institutions that have issued long-term interest guarantees to their policyholders.

Insurers' solvency coverage shows the ratio between the solvency capital requirement (SCR) and own funds. The solvency capital requirement covers the risk of loss of an institution's own funds. The requirement is computed to ensure a 99.5 per cent probability that overall losses, including insurance and financial losses, over a period of 12 months will not exceed the requirement. Own funds consist of basic capital and supplementary capital, and are divided into capital groups based on capital quality, in accordance with specific requirements.

Life insurers' solvency coverage ratio was 222 per cent (including transitional rules, see account below) at the end of 2016 (chart 4.1). Solvency capital ratios improved somewhat through 2016. As shown in chart 4.2, there are wide variations from one institution to

#### 4.2 Capital adequacy, variation\*



\* Silver Pensjonsforsikring not included. See further reference to Silver below. Source: Finanstilsynet

the next. The solvency capital requirement is determined on an annual basis, but in the event of major changes a new computation is required in intervening quarters.

#### TRANSITIONAL RULES – EFFECT ON NEW REGIME LIMITED IN INITIAL YEARS

The Omnibus II Directive opens the way for permanent measures and transitional arrangements addressed in particular to life insurers offering long-term guarantees. Of greatest significance for Norwegian life insurers is the transitional measure on long-term guarantees. This permits a reduction of technical provisions corresponding to a share of the difference between technical provisions computed under the Solvency II regulations and technical provisions computed under the solvency margin framework in effect up to the end of 2015 (Solvency I). The transitional measure entails that any increase in the value of insurance liabilities upon the switch to Solvency II will be phased in linearly over a period of 16 years, with the entire difference being deducted in 2016. This transitional measure may have great significance for entities with a high proportion of paid-up policies since the value of insurance liabilities under these policies is far higher under Solvency II than under Solvency I. This difference in value will widen with falling interest rates. The solvency capital ratio of the six life insurers that made use of transitional measures at the end of 2016 was 184 per

cent without use of transitional measures, compared with 229 per cent with use of such measures.

#### DISCOUNT RATE (RISK-FREE INTEREST RATE) REDUCED AS A RESULT OF LOWER EXPECTED FUTURE INTEREST RATES

EIOPA published in April 2017 updated methodology for determining the ultimate forward rate, (UFR). The current UFR is 4.2 per cent. Calculation of the UFR based on expectations of long-term interest rates indicates in EIOPA's assessment a UFR of 3.65 per cent. EIOPA has decided that annual changes in the UFR will not exceed 15 basis points, entailing a reduction in the UFR to 4.05 per cent in 2018. The reduction will, all else equal, lead to a somewhat weaker solvency position at institutions with liabilities carrying an interest guarantee. The exception is entities that offer exclusively public service pensions, which without risk of conversion to defined contribution pensions (and, in addition, issuance of paid-up policies) can factor in a lower expected interest rate in their interest guarantee premium to policyholders.

#### INSURERS OWN ASSESSMENT OF RISK AND SOLVENCY (ORSA)

The Solvency II framework requires insurers, as an integral part of their risk management system, to assess their need for capital at least once a year. Their assessments must be forward-looking. Insurers are also required to assess their ability to comply with the capital requirement on a continuous basis, and to assess whether their risk profile is adequately captured in their calculation of the capital requirement. The process and result must be approved by the entity's board of directors and taken into account in the entity's strategy and decision processes. A report shall be forwarded to the supervisory authority within 14 days of the board of directors' approval of the ORSA assessment.

Insurers have submitted their ORSA assessments to Finanstilsynet annually since 2014. The first year all insurers received feedback in writing. Special emphasis was given to the entities' internal processes in preparing the assessment and the board of directors' role in particular was highlighted in the

feedback to the institutions. With the entry into force of new capital requirements in 2016, much weight is now given to institutions' self-assessed capital needs and to their target as regards the margin to the solvency capital requirements. It is important that capital targets are based on analyses showing the margins to the requirements that are needed to ensure compliance with the capital requirements at all times. Finanstilsynet now provides feedback on institutions' ORSA assessments as and when needed. Some institutions are advised that their capital targets appear to be on the low side. This has prompted several to raise their internal target for an adequate solvency coverage ratio.

### **THEMATIC INSPECTION – TECHNICAL PROVISIONS IN 2016**

Life insurers' calculations of technical provisions are based on a projection of all probability-weighted cash flows ensuing from the contract with policyholders in which account is taken of the time value of guarantees and options, including transfer and transition to paid-up policies. The calculations must reflect Norwegian product regulations, a number of different buffer funds and differing rules for pricing and distribution of surplus, and may for that reason be fairly complicated. The value of technical provisions is of large significance for institutions' own funds, and also impacts on the solvency capital requirement. Finanstilsynet therefore considers it important to continuously monitor the institutions' calculations, and assesses models and assumptions used by the institutions in their calculation. In 2016 on-site inspections were conducted at the three largest life insurers at which the main theme was their calculation and validation of technical provisions and capital requirements under Solvency II. In the period March to May 2017 a further three inspections with the same theme have been conducted at medium-sized life insurers. These inspections appraised the system of risk management and internal control, documentation and validation in general, in addition to detailed issues related to methodology, assumptions and data employed in the solvency calculations. Final comments from the on-site inspections will become available in the course of 2017.

### **SILVER**

Silver Pensjonsforsikring was granted a life insurer's licence on 30 June 2005. Silver's business consists in investment management and administration of insurance contracts emanating from collective pension schemes (paid-up policies and pension rights certificates).

By taking over paid-up policies from other life insurers, Silver has assumed commitments to pay lifelong future benefits. Policyholders' pension capital, i.e. funds saved to cover future disbursements and transferred to Silver as a basis for future disbursements, was however based on assumptions that understated life expectancy and overstated expected return. In 2014 life insurers were instructed to strengthen pension capital (increase their technical provisions) in light of increased longevity. The scale of the need for technical provisioning, combined with the rate of return prospects and the company's potential earnings left Silver in a vulnerable situation for a period. The institution carried out a placing of NOK 118.2 million with the largest owners in April 2012. This improved the situation somewhat in the short term, but not enough to put the company on a sustainable footing. In view of its solvency situation, the institution stopped taking on paid-up policy customers in May 2012. At the end of 2016 the pension capital behind the institution's paid-up policies totalled about NOK 9 billion, corresponding to 3 per cent of the total volume of paid-up policies in Norway.

In July 2015 Silver applied for dispensation from the capital requirements under the Financial Institutions Act 2015, which entered into force on 1 January 2016. Silver's financial position at that point was such that it did not have funds to meet the requirement on technical provisions. Hence the institution also lacked surplus funds to meet



the solvency capital requirement. The Ministry of Finance allowed Silver one year's grace to meet the requirements of the Financial Institutions Act 2015 to give the institution further time to improve its situation or to secure future pension disbursements by other means.

In December 2016 Silver applied to have the period of grace extended to 31 March 2017. The application cited the need to bring to completion a process of transferring its portfolio to an institution in Liechtenstein. The Ministry of Finance granted Silver an extension to 15 February 2017. The decision stated that the dispensation was subject to Silver's provision within a reasonable period prior to 15 February 2017 of documentary evidence of significant progress towards finding a solution.

The Ministry of Finance rejected by letter of 15 February 2017 Silver's application for extended dispensation with reference to the institution's failure to present evidence of significant progress towards finding a solution. When the dispensation expired on 16 February 2017, Silver was not compliant with the capital requirements for insurers. At that point Finanstilsynet recommended the Ministry of Finance to place Silver into public administration.

The Ministry of Finance decided on 17 February 2017 to place Silver into public administration. Finanstilsynet appointed an administration board on the same date. Under the Financial Institutions Act 2015 the administration board was required as rapidly as possible to find arrangements enabling the institution's business to continue with a sufficient financial basis; to merge the institution with, or have its business transferred to, other financial institutions; or to wind up the institution.

### **STRESS TESTS OF PENSION FUNDS – LARGELY WELL CAPITALISED, BUT WIDE DIFFERENCES**

Like life insurers, pension funds are vulnerable to a fall in the interest rate level owing to their long-term rate of return guarantees. A high equity component also makes pension funds vulnerable to a stock market fall, even though most pension funds have ample buffer capital and can absorb heavy losses, at all events in the short term. To permit monitoring of their real risk and vulnerability, pension funds report stress tests to Finanstilsynet. The stress tests are based on the valuation principles of Solvency II. The stress test calculates the loss potential for all relevant risks – such as market risk, insurance risk and counterparty risk – relative to available capital (buffer capital). A buffer capital utilisation above 100 per cent indicates that the entity's overall loss potential exceeds its buffer capital. At the end of 2016, pension funds' overall buffer capital utilisation was 89 per cent compared with 118 per cent at the end of the second quarter of 2016 (chart 4.3). An increase in long-term interest rates in the second half of 2016 contributed to an improvement in solvency capital as a result of a reduction in insurance liabilities. The effect was positive for private and municipal pension funds alike. However there are wide variations between pension funds, and several such funds had a significantly higher buffer capital utilisation (chart 4.4).

Finanstilsynet has proposed that stress test 1 be introduced, with some adjustments, as a binding capital requirement for pension funds. See a further account in chapter 5.

### **EIOPA'S STRESS TESTS FOR PENSION FUNDS– GREATER FOCUS ON PENSION FUNDS' SIGNIFICANCE FOR FINANCIAL STABILITY**

Recent years have seen a greater focus on the vulnerability of the European pensions market. In 2015 EIOPA conducted for the first time a stress test of European pension funds. Its summary of the stress test gives particular weight to vulnerability to a protracted low interest rate level. However there are wide

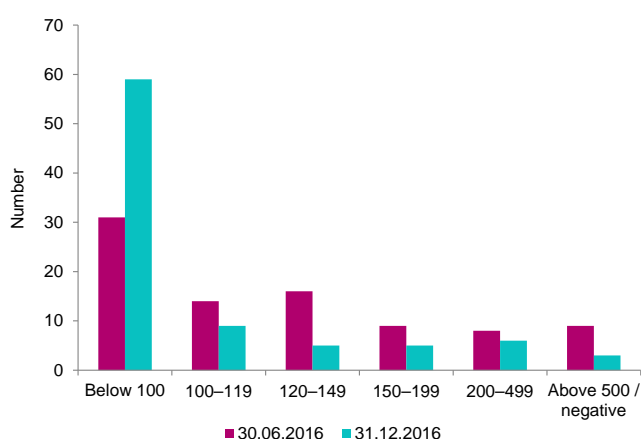


### 4.3 Buffer capital utilisation (BCU) at pension funds



Source: Finanstilsynet

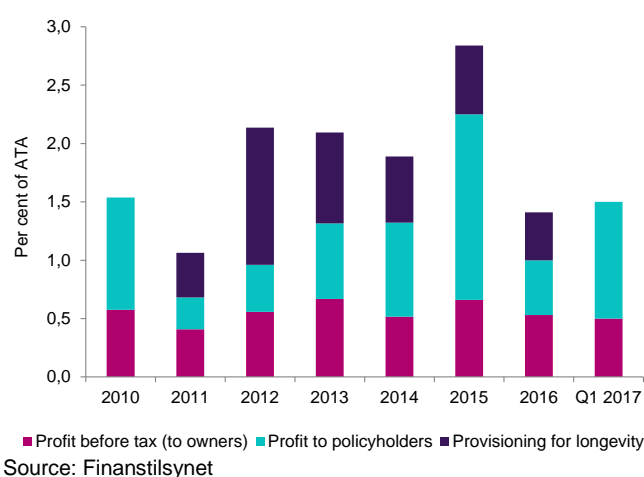
### 4.4 Buffer capital utilisation at pension funds, variation



Source: Finanstilsynet

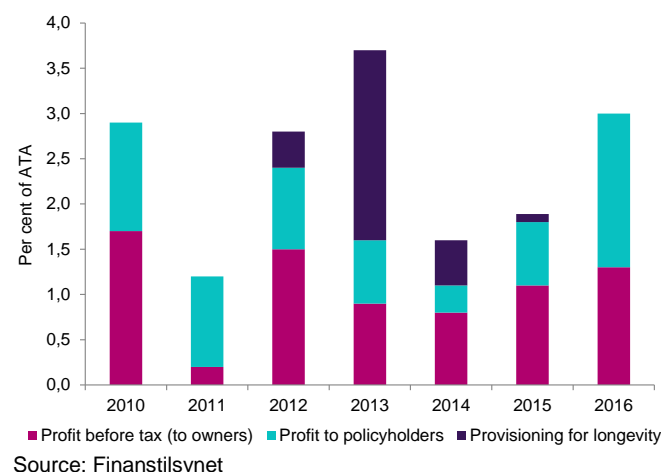
differences between countries, inter alia in terms of the rules governing pension funds, including valuation methods, and the distribution between private and public pension schemes. In 2017 EIOPA is conducting a new stress test of European pension funds. The stress test is designed to measure the effect of a stress scenario on financial stability, the real economy in general and possible consequences for pension customers. A further element of the stress test will be to look into the stress scenario's possible impact on sponsor support (contributions from holding entities) and possible adjustments to pension disbursements. Norway's seven largest pension funds will participate.

### 4.5 Life insurers' pre-tax profits



Source: Finanstilsynet

### 4.6 Pension funds' pre-tax profits



Source: Finanstilsynet

## PENSION INSTITUTIONS' PROFITABILITY AND RETURN

### PROFIT AND RETURN ON CAPITAL AT LIFE INSURERS AND PENSION FUNDS

An upturn in securities markets made a positive contribution to profits of life insurers and pension funds in 2016. Overall, however, results at life insurers were somewhat weaker in 2016 than in 2015 with a pre-tax profit of NOK 7 billion in 2016 (0.5 per cent of average total assets), (chart 4.5). Surplus to policyholders came to NOK 6bn, while NOK 5.5 billion was allocated to provisioning for increased longevity (see further details below). Pension funds recorded a pre-tax profit of NOK 3.8 billion, corresponding to 1.3 per cent of average total assets (chart 4.6). Surplus to policyholders totalled close to NOK 5 billion.

#### 4.7 Adjusted return at life insurers and pension funds



\* Annualised. Source: Finanstilsynet

#### 4.8 Adjusted return at life insurers, variation



\* Annualised. Source: Finanstilsynet

In the first quarter of 2017, life insurers recorded a pre-tax profit at about the same level as in 2016, in terms of average total assets.

### INCREASED PROVISIONING FOR LONGEVITY – PENSION INSTITUTIONS' PROVISIONING ALMOST COMPLETE

Due to higher life expectancy in the population than assumed in previous models, new mortality tariffs, so-called K2013, were drawn up in 2013 as a basis for pension institutions' calculation of premium. It became clear that technical provisions were inadequate relative to expected future pension disbursements, and pension institutions had to increase their premium reserve in order to meet future commitments. The overall need for increased

provisioning was NOK 41 billion for life insurers, and NOK 11.5 billion for pension providers. Pension institutions were permitted to devote policyholder surplus to meeting up to 80 per cent of the increased need for provisioning and to apply for a provisioning period of seven years. At the end of 2016 a shortfall of about NOK 2 billion remained at life insurers and of NOK 0.4 billion at pension funds. The bulk of the shortfall relates to paid-up policy portfolios. Despite the challenges faced in assuring a sound return on investments in a low interest rate regime, institutions have in the main managed to carry out the increased provisioning in a satisfactory manner. This is due inter alia to a favourable stock market trend in the period, and the fact that many institutions have a substantial bond portfolio that has earned interest well above current market rates and falls due some years into the future.

Finanstilsynet has written to life insurers to point out that dividend should not be paid until they have completed the process of provisioning for the required increase in policyholders' premium reserves.

### PENSION INSTITUTIONS' RETURNS STILL GOOD

Life insurers recorded a book return of 4.8 per cent on their collective portfolio in 2016. This was an increase of 0.6 percentage points compared with 2015, and significantly higher than the average guaranteed return of 2.8 per cent. Adjusted return, i.e. the return before unrealised gains are transferred to the fluctuation reserves, rose from 4.2 to 5.2 per cent (chart 4.7). As chart 4.8 shows, return varies between the institutions, ranging from 3.8 to 5.9 per cent. The differences have been considerably higher in previous years. Pension funds recorded an increase in adjusted return from 4 to 5.3 per cent from 2015 to 2016. Fluctuations in pension funds' return are generally wider than in life insurers' return due to a higher equity component.

In the first quarter of 2017 the upturn in equity markets contributed to an adjusted return of 6.5 per cent at life insurers (annualised), and the variation among them was wider than for several years (chart 4.8).

## MARKET RISK AT LIFE INSURERS AND PENSION FUNDS

### HIGHER SHARE OF INVESTMENTS AT AMORTISED COST CONTRIBUTES TO MORE STABLE RETURN

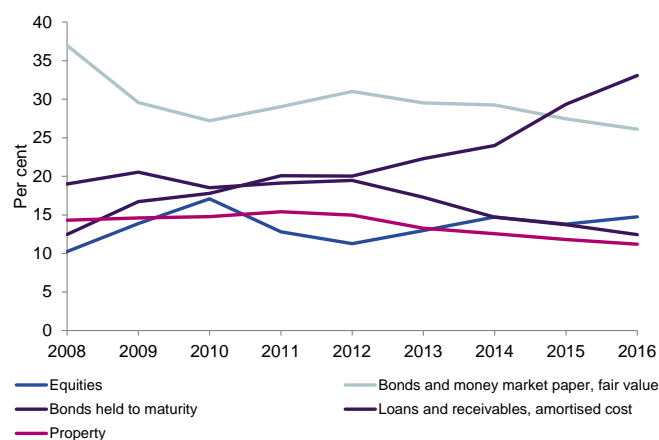
The introduction of Solvency II entailed substantially higher capital requirements than under the previous solvency regime, in particular for institutions with a large proportion of guaranteed benefits, and above all paid-up policies. Market risk is clearly the highest risk for life insurers. Market risk includes inter alia risk of interest rate increases and falls, equity price falls and falling property prices. Increased investment risk may bring higher expected return, but requires at the same time higher capital to support the return risk.

The need for stable return and long range investment is reflected in a significant increase in investments measured at amortised cost. Loans and receivables at amortised cost have risen from NOK 77 billion in 2008 to NOK 335 billion at the end of 2016, accounting for 33 per cent of the collective portfolio (chart 4.9). Together with the hold-to-maturity portfolio, the figure was 45 per cent. An increase in residential mortgages from NOK 7 billion at the end of 2014 to NOK 44 billion at the end of 2016 contributes to this increase. However, bonds at amortised cost have also risen substantially in recent years. Institutions offering private occupational pensions carrying guaranteed benefits have in particular shown an increase in loans and receivables at amortised cost.

The share in this regard has risen from 19 per cent to 35 per cent of the collective portfolio from 2014 to 2016. The equity component is also markedly lower in this group of institutions, at 7 per cent of the collective portfolio compared with 15 per cent for the institutions as a whole.

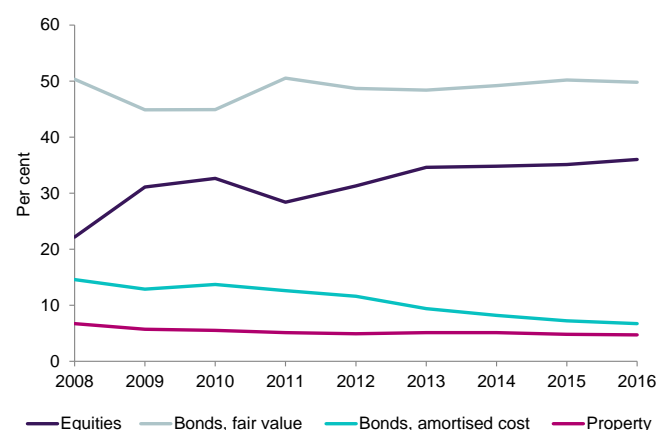
Pension funds have a significantly higher equity component than life insurers at 36 per cent (chart 4.10). In contrast to life insurers, pension funds have in recent years seen a decline in bonds at amortised cost, which accounted for just under 7 per cent of the collective portfolio at the end of 2016. Pension funds

#### 4.9 Investments in the collective portfolio, life insurers



Source: Finanstilsynet

#### 4.10 Investments in the collective portfolio, pension funds



Source: Finanstilsynet

have little in the way of other loans and receivables at amortised cost.

Life insurers' insurance liabilities have an average duration of about 14 years. Finding investment objects that provide a stable return over a long time horizon and that are a better match for the duration of their liabilities poses a challenge to life insurers and pension funds. The average duration of their assets is currently about four years. Infrastructure could be a relevant investment object. However, the Financial Institutions Act 2015 limits life insurers' opportunity to invest in activities unrelated to insurance (they may not own more than 15 per cent of other businesses). Finanstilsynet has on commission from the Ministry of

**4.11 Share of gross premium written, private defined benefit and defined contribution pensions, life insurers**



Source: Finance Norway

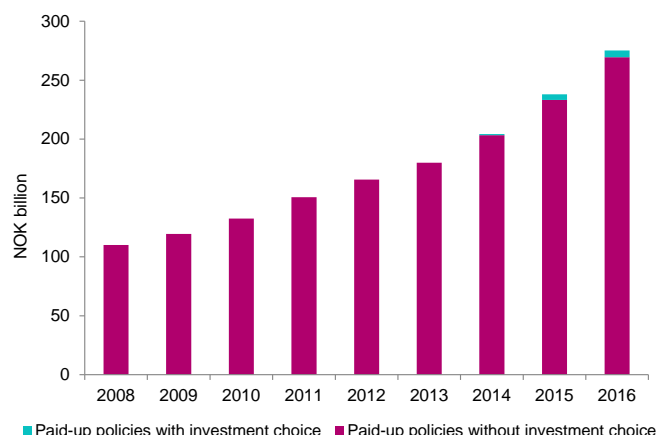
Finance drawn up a consultation document on removal of the provision concerned.

### CHANGES IN THE MARKET FOR OCCUPATIONAL SERVICE PENSIONS PRODUCT DEVELOPMENT – DEFINED CONTRIBUTION PENSIONS, BUT ALSO PAID-UP POLICIES, CONTINUE TO INCREASE

The costs of, and unpredictability attending, defined benefit pension schemes, particularly in periods of low interest rates, have led the majority of firms to opt for defined contribution pension schemes offering an investment choice. Whereas gross premium written in defined benefit schemes accounted for more than 80 per cent of overall premium in private occupational pension schemes in 2006, this share was 34 per cent in 2016 (chart 4.11). New premium written is essentially confined to defined contribution pension schemes. The switch to defined contribution schemes (unit linked) is a trend noted in many European countries. In Norway, overall insurance liabilities will nonetheless be dominated by guaranteed products (guaranteed return and lifelong benefits) for many years ahead.

Existing defined benefit schemes are increasingly being wound down and converted to paid-up policies. At the end of 2016 liabilities related to paid-up policies accounted for NOK 275 billion at life insurers, an increase of almost NOK 100 billion over the past three years (chart 4.12). Paid-up policies have also

**4.12 Insurance obligations on paid-up policies, life insurers**



Source: Finance Norway

increased substantially at pension funds in recent years, amounting to NOK 47 billion at the end of 2016.

### CONSEQUENCES FOR INSTITUTIONS – RISK REDUCED IN THE LONGER TERM

The substantial transition from defined benefit to defined contribution pensions in recent years has led to the issuance of paid-up policies, which are capital intensive products for life insurers. The proportion of paid-up policies is expected to continue to rise in the next few years, then to level off and gradually decline.

The life insurance market may undergo considerable change ahead. The pension plans providing guaranteed benefits, entailing high risk for life insurers, will be replaced by defined contribution pensions with a choice of investments where the customer carries the return risk and where information and advice will be central elements of the institutions' business. The requirements on institutions' information and advice will be tightened in the legislation, this being an area assigned increased weight in the supervisory follow-up of the institutions.

### CONSEQUENCES FOR POLICYHOLDERS – RESPONSIBILITY FOR OWN PENSION

The transition from defined benefit pension plans, which guarantee employees a specific proportion of final salary on a full life basis, to defined contribution plans where the pension depends on the return in the period of accumulation, and is disbursed in a limited

period after retirement age, brings major changes for the policyholder's/employee's saving for a pension. It requires the policyholder to be more aware of his/her own saving and own consumption. The policyholder's pension assets will depend on movements in stock market prices and on the risk profile selected. A better overview over overall savings, and the risk of loss of future pension, may encourage greater individual saving. Since 2006 all businesses have been required to offer their employees an occupational pension plan; see the Act on Mandatory Occupational Pensions. However, the minimum annual saving rate is low compared with guaranteed benefits under defined benefit schemes (a minimum annual requirement of 2 per cent of salary between 1 G and 12 G<sup>12</sup>), which in the absence of additional saving is expected to provide far lower pension disbursements than under the guaranteed defined benefit schemes.

## REPORT ON PERSONAL PENSION ACCOUNTS

The trend whereby future pension arrangements are likely to be mainly defined contribution plans offering a choice of investment poses new challenges both to pension providers and in particular to their policyholders. In response to the need for adjustments to a new occupational pension regime, a working group headed by the Ministry of Finance was in 2016 set up to look into the merits of personal pension accounts and of individual additional saving, and to review the rules governing pension agreements in connection with job changes. The working group's mandate was confined to the Act on Defined Contribution Pensions. In its report of December 2016 the working group outlined a number of alternative solutions to the questions in the mandate, but has yet to reach a conclusion or recommend concrete measures.

The object of establishing a personal pension account is to give the individual employee a better overview and management of his/her own pension. This may contribute to more efficient management of pension

assets, lower prices, and a better overview and greater control over pension saving. When policyholders are obliged to make proactive choices in relation to their own pension, it will increase their awareness of the general need to save and the need for additional saving. This may to a greater degree than under earlier pension regimes be of significance for households' consumer behaviour, and the real economy in general. For firms it will impose strict requirements on information and advice given on costs and risk to enable the policyholder to make the best choices for his or her own pension saving.

## NON-LIFE INSURERS

### NON-LIFE INSURERS WELL CAPITALISED

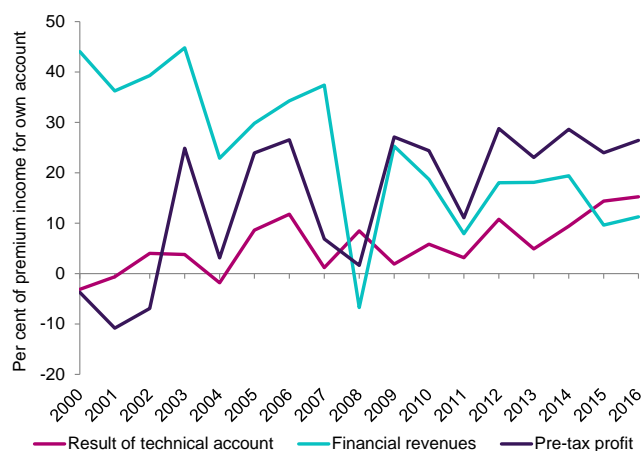
Capital positions among Norwegian non-life insurers overall are good. Overall solvency ratios for non-life insurers were 189 per cent as at 31 December 2016, which is somewhat lower than as at 30 June 2016, but somewhat higher than at 1 January 2016 when the Solvency II framework entered into force. The level of solvency ratios varies widely among institutions, and some face challenges with regard to their capital position.

### POSITIVE PROFIT GROWTH IN RECENT YEARS

Non-life insurers recorded a pre-tax profit, measured as a share of premium income, of 26 per cent in 2016, an increase of 3 percentage points from 2015 (chart 4.13). The increase is due both to higher financial revenues as a result of positive growth in equity values, and improved profit from insurance-related operations. Norwegian non-life insurers have posted good results in recent years. From and including 2003 their pre-tax profit in per cent of premium revenues for own account have been positive. Considerable fluctuations have been seen in profit in per cent of premium revenues for own account over time, mainly caused by volatility in financial markets. The financial crisis brought a steep decline in financial revenues in 2008. Since 2013 the technical result has accounted for a gradually larger share of premium revenues for own account.

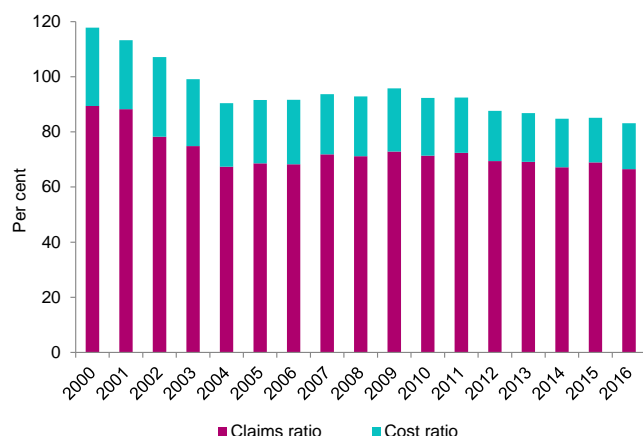
<sup>12</sup> G = basic amount available under the National Insurance Scheme Fund.

### 4.13 Non-life insurers' profits



Source: Finanstilsynet

### 4.14 Combined ratio, claims ratio and cost ratio



Source: Finanstilsynet

### GOOD PROFITS IN INSURANCE-RELATED OPERATIONS

Profitability in insurance-related operations is often described in terms of the combined ratio, i.e. the sum of the claims ratio and cost ratio, here measured for own account. A combined ratio below 100 signifies that the sum of claims payment expenses and operating expenses is lower than premium revenues, and that insurance-related operations have been profitable. In the period 2000-2016 the combined ratio has varied between 118 and 85 per cent, but since 2003 has remained below 100 per cent (chart 4.14). The fluctuations in the combined ratio are mainly attributable to fluctuations in the claims ratio, which in the same period has varied between 89 and 66 per

cent. The cost ratio fell steadily from 28 per cent in 2000 to 16 per cent in 2015. In 2016 claims ratio showed a slight increase.

### DIGITALISATION CONTRIBUTES TO REDUCED EXPENSES

The cost ratio has declined considerably in recent years. Lower insurance-related costs are mainly due to efficiency gains and digitalisation of a number of processes at non-life insurers. Greater use of technology could further increase efficiency in the industry, and reduce the need for labour. Several of the largest insurers report having digitalised and automated core areas of their business. Behavioural data may make it simpler for insurers to charge differing premiums for the same product from policyholders in the same target group.

Financial innovation and digitalisation heighten the risk of cyber crime, prompting a number of actors to offer insurance against cyber attacks and other forms of internet crime. Such insurance products are relatively new, and demand for them is expected to increase.<sup>13</sup> Compared with other insurance products, few historical data are available for pricing these insurances. Computing the costs of a cyber attack can be demanding since the losses are generally intangible.

Such an attack will primarily affect the reputation of the business concerned.

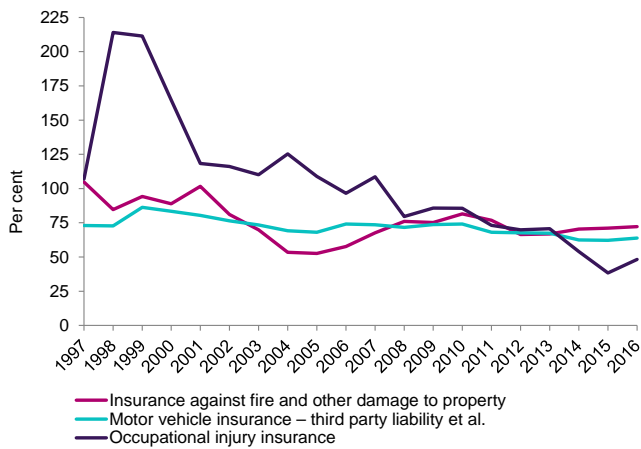
### DEVELOPMENTS IN THE MOST IMPORTANT INDUSTRIES

The claims ratio also varies widely over time between the various non-life insurance segments, but has in general shown a falling tendency in recent years (chart 4.15). Workers' compensation insurance, which covers injuries and illness incurred by employees at their workplace, has grown considerably more profitable in recent years. The Act on Workers' Compensation Insurance entered force in 1990. Foreseeing a trend in the pattern of claims posed a large challenge in the initial phase. Moreover, workers' compensation

<sup>13</sup> [Joint Committee Report on Risks and Vulnerabilities in the EU Financial System. April 2017](#)



#### 4.15 Claims ratio in various segments



Source: Finanstilsynet

insurance is an industry with a long disbursement period in which it is considerably more demanding to carry out a correct premium calculation than in the case of insurance products with a short disbursement period. Up to 20 years may elapse from premium payment to disbursement of compensation. The claims ratio in non-life insurance has been on a falling trend in recent years. Reasons include changes in the composition of the labour force away from risk-exposed to less risk-exposed occupations, improved health, environment and safety regimes and changes in benefit decisions under the National Insurance as a result of law amendments.

Profitability in the motor vehicle insurance segment has also risen in recent years. Motor vehicle insurance is the largest segment as a proportion of total premium revenues, accounting for 30 per cent in 2016. Innovation in this industry, including the introduction of self-driving vehicles, could entail major changes for motor vehicle insurance in coming years. The pace of innovation and digitalisation in motor vehicle insurance is quickening. Some providers of car insurance are now basing insurance premiums, with the policyholder's consent, on driving behaviour. Identifying driving patterns with the aid of sensors (telematics) may contribute to pricing that is better adapted to the individual policyholder and more transparent. Claim settlement is also increasingly on a digitalised footing.

## CHAPTER 5 REGULATION

### INTRODUCTION

The Regulations establishing the European Financial Supervisory Authorities were incorporated into the EEA Agreement in 2016, and the process of integrating a number of EU rules in the financial markets area into the EEA Agreement is under way. Although Norwegian legislation is already aligned with the EU legislation in important areas or is expected to become so in the near future, the incorporation of Directives and Regulations into the EEA Agreement will require a considerable regulatory effort in the coming years.

Amendments to the Securities Funds Act to implement EEA rules corresponding to UCITS V were adopted on 16 December 2016. The Banking Law Commission's proposal for new rules to transpose the Recovery and Resolution Directive and the Deposit Guarantee Directive<sup>14</sup> into Norwegian law has been circulated for comment and is under consideration by the Ministry of Finance. The Securities Law Committee presented in January 2017 its second interim report containing a proposal for transposition of the EU's revised legislation in the securities area (MiFID<sup>15</sup> and MiFIR<sup>16</sup>) into Norwegian law. The proposal was in circulation for comment up to 15 May 2017. The Anti-Money Laundering Committee presented in December 2016 its second interim report containing a proposal for a new Anti-Money Laundering Act to implement the EU's Fourth Anti-Money Laundering Directive. The proposal has been circulated for comment and is under consideration by the Ministry of Finance.

Regulatory development is also ongoing in addition to that directly instigated by EU legislation.

In the past half-year the Ministry of Finance has adopted the following regulations and regulatory amendments:

- New regulations on financial institutions and financial groups to supplement the Financial Institutions Act 2015 and to replace 50 earlier regulations (adopted on 9 December 2016)
- New regulations on pension undertakings (adopted on 9 December 2016)
- New regulations on requirements for new residential mortgages (adopted on 14 December 2016 with effect from 1 January 2017)
- Requirements on banks' and mortgage companies' leverage ratios as from 30 June 27 (adopted on 20 December 2016)
- Regulations on invoicing of credit card debt (adopted on 4 April 2017)
- Regulations on marketing of credit (adopted on 5 April 2017)
- Special excess asset coverage requirements (covered bonds' cover pool) (adopted on 29 March 2017)

Moreover, the Ministry of Finance decided in December 2016 to increase the requirement on countercyclical capital buffers to 2.0 percent with effect from 31 December 2017. See further account below.

### EU Directives and Regulations – transposition into Norwegian law

Norway is obliged to implement EU Directives and Regulations that are incorporated into the EEA Agreement. A Regulation is not given direct effect in Norway but according to Article 7 of the EEA Agreement "shall as such be made part of the internal legal order of the Contracting Parties". The majority of Regulations will be implemented in Norway in the form of domestic regulations, while some will also be implemented in statute form. It will take some time to incorporate all these Directives and Regulations into the Agreement. However, Norwegian legislation is already aligned with EU rules in important areas or is expected to become so in the near future.

<sup>14</sup> Amended in 2014.

<sup>15</sup> Markets in Financial Instruments Directive

<sup>16</sup> Markets in Financial Instruments Regulation

**Table 5.1 Minimum and buffer requirements on CET1 capital, Tier 1 capital and total capital (figures in per cent) for banks, mortgage companies and finance companies**

	30.06.2017		31.12.2017	
	Systemically important institutions	Other institutions	Systemically important institutions	Other institutions
CET1 capital	13.5	11.5	14	12
Tier 1 capital	15	13	15.5	13.5
Total capital	17	15	17.5	15.5

Source: Finanstilsynet

### **Finanstilsynet's participation in the European system of financial supervision**

A new institutional framework for financial supervision in the EU came into effect in January 2011 comprising an overarching macroprudential overseer, the ESRB, and the three sectoral supervisors: EBA (banking), ESMA (securities) and EIOPA (insurance and pensions). Finanstilsynet has since autumn 2016 participated as a member of the EU's three supervisory authorities with the same rights and obligations as the EU member states' national financial supervisors, but without voting rights. Finanstilsynet thus participates on a par with other members in all work of a non-binding nature, including supervisory collaboration and preparation of regulations. The EU's financial supervisors can make recommendations and provide guidance to authorities and private market actors in the EEA/EFTA member states. The EU's financial supervisors cannot however adopt decisions that are binding on authorities or market actors in the EEA/EFTA member states. Any supranational decisions can only be made by the EFTA Surveillance Authority (ESA). The ESA also participates in the EU's financial supervisory authorities.

## **RULES FOR BANKS ETC.**

### **CAPITAL REQUIREMENTS – PILLAR 1**

Norway's capital adequacy framework is aligned with the EU's capital adequacy directive (CRD IV) and Regulation (CRR).

Banks, mortgage companies and finance companies are required under the Financial Institutions Act 2015 to maintain (measured against risk weighted assets) a minimum of 4.5 per cent CET1 capital, 6 per cent Tier 1 capital and 8 per cent own funds. Institutions are also required to maintain a capital conservation buffer of 3 per cent and a countercyclical buffer of between 0 and 2.5 per cent. Systemically important institutions are also required to maintain a buffer of 2 per cent. The buffer requirements must be met by CET1 capital.

The countercyclical capital buffer requirement is set by the Ministry of Finance each quarter. The Ministry set the buffer for the first time in December 2013 at 1 per cent with effect from 30 June 2015. In June 2015 the buffer was set at 1.5 per cent with effect from 30 June 2016. In December 2016 it was set at 2.0 per cent with effect from 31 December 2017.

Each year the Ministry of Finance decides which financial institutions are to be designated as systemically important in Norway. In June 2014 it was decided that DNB ASA, Nordea Bank Norway ASA and Kommunalbanken AS were to be regarded as systemically important institutions required by law to comply with a specific buffer requirement. Nordea Bank Norway ASA was converted into a branch of Nordea Bank AB with effect from 2 January 2017.

Table 5.1 shows the overall capital requirements under Pillar 1 for, respectively, systemically important institutions and other banks, mortgage companies and finance companies. The requirements apply at entity level and at consolidated level.

Institutions can use internal models to compute the capital requirements. At the start of 2017 ten banks, eight mortgage companies and two finance companies had permission to use internal models (IRB) when computing the capital requirement for credit risk. Under Norwegian rules, risk weighted assets when using internal models cannot be below 80 per cent of risk-weighted assets under Basel I.<sup>17</sup> On 21 December 2016 the Ministry of Finance adopted amendments to the Regulations on minimum capital requirements for financial institutions and investment firms ("the Basel I Regulations") which make clear how the Basel I floor is to be calculated for IRB banks with owner interests in insurers.

### Requirement for consolidation of assets in collaborating institutions

According to the Financial Institutions Act 2015, financial institutions participating in a cooperating group shall, when applying rules on capital requirements and other capital adequacy and prudential requirements, as from 1 January 2017 consolidate their assets in jointly owned entities on a pro rata basis independently of the size of the asset. This entails widening the consolidation obligation (compared with the rules up to and including 2016) for institutions with assets of between zero and 20 per cent in jointly owned entities. The rule change affects among others a number of banks with owner interests in mortgage companies.

Transitional rules have been laid down requiring proportional consolidation of assets below 10 per cent as from 1 January 2018.

## CAPITAL REQUIREMENTS – PILLAR 2

The CRD IV Directive sets requirements for

institutions' own assessment of risk and capital needs (ICAAP - Internal Capital Adequacy Assessment Process) and requirements for the supervisory authorities' review (SREP – Supervisory Review and Evaluation Process). The Directive permits supervisory authorities to set requirements (Pillar 2 requirements) for adjustments to the business or capital over and above the minimum requirements and buffer requirements of Pillar 1.

Finanstilsynet has since 2007 conducted SREPs and given feedback to the banks on their assessed need for capital. As from 2016 feedback is given in the form of a formal decision on individual capital requirements for Pillar 2 risks, in other words risks that are not, or are only partially, covered by Pillar 1. Institutions receive a preliminary SREP feedback that includes Finanstilsynet's assessment of their need for Pillar 2 capital over and above the minimum requirement and buffer requirements under Pillar 1. The feedback also includes Finanstilsynet's assessment of institutions' liquidity and funding risk along with an assessment of their capital need in a forward-looking perspective. The institution's board of directors is invited to comment on the assessments before a final decision on the Pillar 2 requirement is taken. The final SREP feedback contains Finanstilsynet's decision on a Pillar 2 requirement, which is a legally binding decision and an assessment of the capital need in a forward-looking perspective. The decisions are published successively on Finanstilsynet's website.

The frequency of Finanstilsynet's assessment of institutions' risk and capital needs is tailored to each institution's size, complexity and area of operation, as well as with the degree of risk posed by the institution to the financial system. Institutions are divided into four groups. For institutions in group 1, which includes the systemically important financial institutions in Norway, the SREP process takes place annually. Institutions in group 2, comprising large regional banks, receive a SREP feedback with an individual capital requirement at least once every two years, while other financial institutions receive feedback at least every third year. For banks with subsidiaries in

<sup>17</sup> See the Capital Requirements Regulations section 2-1 (3)

other EU/EEA states or which are part of a group domiciled in another EU/EEA state, the SREP feedback is anchored in a joint decision taken by the supervisory authorities of the countries in which the banks operate.

Finanstilsynet's Circular 12/2016 describes the main elements in the SREP process. The circular builds on guidelines published by the European Banking Authority (EBA) in December 2014 and on clarifications given by letter dated 17 March 2016 from the Ministry of Finance to Finanstilsynet.

The EBA published in April 2017 a roadmap announcing changes to the SREP recommendation established in 2014. This includes plans to:

- introduce Pillar 2 guidance (P2G) and to give guidance on supervisory authorities' use of stress tests in that connection. P2G indicates the supervisory authorities' expectation of capital to be held over and above the regulatory binding requirements.
- give further recommendations on supervisory assessment of the banks' own stress tests.
- revise the recommendation on supervisory assessment of interest rate risk in the banking book, including assessment of management and control
- prepare parts of the framework for use of scoring
- explain further the interconnectedness between various SREP elements
- improve the way the overall capital requirement is presented

## **CAPITAL REQUIREMENTS – LEVERAGE RATIO REQUIREMENT**

Acting on the EBA's recommendation, the EU Commission has proposed the introduction of a leverage ratio requirement of 3 per cent as from 1 January 2018.

The Ministry of Finance established on 20 December 2016 a leverage ratio requirement for banks, mortgage companies, finance companies and holding companies

in financial groups that are not insurance groups and investment firms that are licensed to provide specified investment services.

The requirements must be met from 30 June 2017 onwards. The minimum leverage ratio requirement is set at 3 per cent. All banks are also required to maintain a buffer of at least 2 per cent. Systemically important banks must in addition to this maintain a leverage ratio of at least 1 per cent.

The numerator in the leverage ratio (capital measure) consists of Tier 1 capital as defined in the regulations on the calculation of own funds. The denominator in the leverage ratio (exposure measure) shall correspond to that set out in Commission Regulation (EU) 2015/62. The Ministry of Finance has announced its intention to establish further rules on the calculation of the exposure measure in the course of the spring. Institutions that fail to comply with the leverage ratio requirement must submit to Finanstilsynet a plan for strengthening that ratio.

## **LIQUIDITY REQUIREMENTS**

EU rules set two quantitative liquidity requirements: for liquidity buffers (liquidity coverage ratio, LCR) and stable funding (Net Stable Funding Ratio, NSFR). The LCR rules came into effect in the EU on 1 October 2015, with a gradual phase-in up to 2018. The NSFR is to be introduced on 1 January 2018. The EU Commission presented its proposal for the design of the NSFR requirement in November 2016.

The liquidity coverage requirement (LCR) was included in the Norwegian CRD IV regulations with effect from 31 December 2015. Systemically important institutions and mortgage companies that are subsidiaries of such institutions must comply with the liquidity coverage requirement at a minimum of 100 per cent. For other institutions, the LCR must be at least 80 per cent as from 31 December 2016 and at least 100 per cent as from 31 December 2017.

The LCR must be met for all currencies combined. Finanstilsynet recommended in September 2016 the introduction of general requirements on a liquidity

reserve in significant currencies corresponding to the level applying to all currencies combined, with the exception of Norwegian kroner in the case of institutions with the euro and/or US dollar as a significant currency. For such institutions Finanstilsynet recommends the introduction of an LCR requirement in Norwegian kroner of 50 per cent. For other institutions whose significant currency is largely the Norwegian krone, a rule is recommended that sets the LCR requirement in Norwegian kroner equal to the requirement on the LCR overall. The proposal is under consideration by the Ministry of Finance.

### **Baselkomitéen**

In recent years the Basel Committee has proposed changes to several aspects of the standards on the measurement of capital adequacy. The changes to the standards are presented as a final version of Basel III that was adopted in 2010 against the background of the financial crisis. Changes to the Basel Committee's standards will be of significance for future capital adequacy regimes in the EU and Norway. The Basel standards were developed for major international banks and are not legally binding. The standards are implemented in Norway through EU rules. The changes that remain to be adopted before completion of Basel III touch on:

- The standardised approach for credit risk (increased risk sensitivity)
- IRB (restrictions on the use of models for certain exposures and adoption of model parameter floors)
- Operational risk (new approach replacing the basic indicator and standardised approach; the AMA\* approach will no longer be permitted)
- A floor on risk-weighted assets and appropriate calibration, based on the revised standardised approach
- Special leverage ratio requirements for systemically important banks

See a further account in Risk Outlook autumn 2016.

\* Advanced measurement approach



**Proposal for amendments to CRR / CRD IV**

The EU Commission published on 23 November 2016 its proposal for amendments to CRR / CRD IV. The proposals are a follow-up to previously announced measures and have been forwarded to the Parliament and the Council for consideration.

The Commission proposes:

- A Pillar 1 leverage ratio requirement of 3 per cent
- A long-term funding requirement (NSFR) of 100 per cent
- New methods for calculating capital requirements for market risk, counterparty risk and exposures to central counterparties (CCPs) that follow the Basel Committee's new standards but permit the use of current methods of calculation
- Changes in the Pillar 2 rules to harmonise practices internationally
- Changing the capital measure for large exposures (from own funds to Tier 1 capital)
- Rules allowing the effect of the transition from IAS 39 to IFRS 9 to be phased in gradually over a five-year period

The Commission also proposes amendments to the Recovery and Resolution Directive (BRRD) to introduce requirements on loss absorbing capital (MREL). A memorandum of 3 April 2017 from the Parliament gives an account of the present position and further process.\*

\* [EU Parliament. Memorandum dated 4 April 2017](#)

**NEW RULES FOR ACCOUNTING TREATMENT OF LOAN LOSSES**

The International Accounting Standards Board (IASB) finalised in July 2014 a new standard, IFRS 9, containing a new model for impairment accounting. The standard will apply from 2018 onwards.<sup>18</sup> For European institutions (including stock exchange listed Norwegian institutions), use of the standard will be mandatory from the same point in time; see Commission Regulation 2016/2067.

Under current accounting rules, loans are written down only when there is objective evidence of a loss event. Significant financial difficulties of the debtor are an example of such a loss event. The new standard also requires new, performing loans to be loss provisioned by making an impairment write down for the expected credit losses associated with the possibility of a default in the next twelve months. For loans where credit risk has risen significantly since their establishment, expected credit losses are written down over the term of the loans. The new accounting standard is expected to entail increased loss provisioning. Finanstilsynet has proposed by letter of 12 December 2016 to the Ministry of Finance that credit institutions and finance companies that have not issued securities on a regulated market (unlisted institutions) should take IFRS into use as from 1 January 2019. For listed institutions the standard comes into effect on 1 January 2018, as mentioned above.

The EBA published on 12 May 2017 guidelines on institutions' credit risk management practices and accounting for expected credit losses (ECL). The guidelines are designed to assure sound credit risk practices associated with the implementation and ongoing application of an ECL accounting model. The guidelines contain eight principles specific to credit institutions and three principles specifically addressed to supervisory authorities. Comments are also provided on some themes in IFRS 9. The guidelines will apply as from 1 January 2018.

<sup>18</sup> Insurers can defer using the standard until 2021

The Basel Committee published in October 2016 two consultative statements on possible adjustments to the capital adequacy standard, including transitional arrangements, as a result of new rules on impairment write-downs. On 29 March 2017 the Committee presented a standard that continues until further notice the current standard with respect to the treatment of impairment write-downs but simultaneously introduces transitional arrangements to ease the impact of changed write-down practices. The Committee states that more time is needed to assess alternative solutions for a new standard in the longer term.

The EU Commission presented on 23 November 2016 a proposal for CRR rules allowing the effect of the transition from IAS 39 to IFRS 9 to be phased in gradually over a five-year period.

### **CRISIS MANAGEMENT AND DEPOSIT GUARANTEE**

The Banking Law Commission presented on 26 October 2016 a proposal for statutory provisions to implement the Recovery and Resolution Directive in Norwegian law. The report also contains a proposal for implementation of the EU's Deposit Guarantee Directive of 2014.

The report states that the Recovery and Resolution Directive's rules on insolvency and administration by public authorities of institutions in the banking sector essentially conform to the principles underlying current regulation under the Financial Institutions Act 2015. The crucial new aspects are the rules governing crisis prevention measures and crisis management measures, rules on the write down or conversion to equity capital of own funds and eligible liabilities (bail-in), and the establishment of a national resolution fund.

The Banking Law Commission's proposal has been circulated for comment and is now under consideration by the Ministry of Finance. In preparation for subsequent drafting of regulations, the Ministry of Finance asked Finanstilsynet by letter of 17

June 2016 for an account of some aspects related to the Resolution and Recovery Directive's rules on minimum requirements for own funds and eligible liabilities (MREL). Finanstilsynet has replied to the approach by letter and memorandum dated 28 February 2017 to the Ministry of Finance.<sup>19</sup>

### **COVERED BONDS - REQUIREMENT OF EXCESS ASSET COVERAGE**

The Ministry of Finance adopted on 29 March 2017 amendments to the regulations to the Financial Institutions Act 2015 that require the value of the cover pool at all times to constitute at least 102 per cent of the value of the covered bonds with a preferential claim over the cover pool.

The European Markets and Infrastructure Regulation (EMIR) permits exemptions from the clearing obligation and exemptions from the risk-mitigation obligations for certain OTC derivatives where the rules governing covered bond issuers require excess asset coverage of at least 2 per cent.

The Ministry of Finance asked Finanstilsynet by letter of 14 February 2017<sup>20</sup> to consider whether the excess asset coverage requirement should be higher than 2 per cent. Finanstilsynet is also asked to consider whether the Norwegian rules on covered bond issuers should be strengthened to promote harmonisation in keeping with recommendations from the EBA in its report on covered bonds published in December 2016<sup>21</sup>, and to consider the merits of strengthening the capital requirements for covered-bond-issuing entities.

### **CONSUMER LENDING – VARIOUS RULE CHANGES**

The Ministry of Finance presented in Financial Markets Report 2016-2017 measures to help prevent debt problems among households. The Ministry adopted in April 2017 regulations requiring financial institutions to enter the overall credit outstanding in the amount

<sup>19</sup> Ministry of Finance, newsletter of 8 March 2017 ([Norwegian only](#))

<sup>20</sup> Ministry of Finance letter dated 14 February 2017 ([Norwegian only](#))

<sup>21</sup> [EBA report dated 20 December 2016](#)

field on the customer's bill when invoicing credit card debt, and new regulations on the marketing of credit. The Government concurrently tabled a draft law on debt information (Proposition 87 L (2016-2017)).

#### Draft act on debt information

If passed, the draft law on debt information will permit private actors – including financial institutions – to obtain a licence to provide debt information services, paving the way for a solution that will provide banks and other financial institutions with information on loan applicants' debt incurrence in real time. A debt register will cover all unsecured consumer debt, and the Government proposes imposing on financial institutions a statutory obligation to surrender debt information. Assuming passage through the Storting (parliament), the act will enter into force on 1 November 2017.

#### Regulations on marketing of credit

The regulations are designed to prevent aggressive and insistent marketing that diverts potential customers' attention away from the negative consequences of credit use. Marketing may not draw attention to quick credit and a simple application process, and additional benefits and credit terms must be given equal space. A draft version of the regulations that was circulated for comment prohibited customer loyalty programmes and bonus arrangements, but this prohibition was omitted from the adopted regulations. The regulations enter into force on 1 July 2017.

#### Regulations on invoicing of credit card debt et al.

The regulations require the total outstanding credit to be entered as the suggested amount for a payment transaction. A financial institution may agree with the consumer that another amount shall be shown in the request for payment. Such an agreement cannot be entered into concurrently with the signing of the credit agreement, but at the first fall-due date at the earliest. A financial institution must each year recommend to the consumer that payment requests should show the full outstanding amount. Financial institutions shall have come into line with the regulations' requirements by 15 June 2017 at the latest.

#### Guidelines for financial institutions' processing of consumer loans

Finanstilsynet has established guidelines that set requirements for institutions' assessment of potential borrowers' creditworthiness and processing of loan applications, including requirements on borrowers' debt servicing capacity, borrowers' ability to withstand an interest rate hike, the assessment of income reported by the borrower against tax assessment data, assessment of debt reported by the borrower against debt registers (once these are established) and checks for any payment defaults registered against the borrower. Further, the loan agreement must contain requirements on repayment and maximum loan period. Financial institutions conducting creditworthiness assessments are obliged to consider and take into account the financial situation of each borrower. This will make the process of granting unsecured consumer loans a longer one than today. The guidelines build on the principles underlying the residential mortgage lending regulations. Finanstilsynet will take a basis in the guidelines when following up on financial institutions as from the fourth quarter of 2017.

#### PAYMENT SERVICES

The Payment Services Directive (Directive 2007/64/EF, from here on referred to as PSD 1) was implemented in Norwegian law in 2010. The revised Payment Services Directive (Directive 2015/2366, from here on PSD 2) supersedes the first Payment Services Directive and enters into force on 13 January 2018 in the EU area. The timing of entry into force in EFTA countries will be decided once the Directive is incorporated in the EEA Agreement.

The overarching object of PSD 2, along with the Regulation on Interchange Fees<sup>22</sup> and the SEPA Regulation<sup>23</sup>, is to assure modern, efficient and

<sup>22</sup> Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment transactions. Implemented in Norwegian law as the Interchange Fees Regulations.

<sup>23</sup> Regulation (EU) No 248/2014 of 26 February 2014 which amends Regulation (EC) No 260/2012 establishing technical and business requirements for credit transfers and direct debits in euro. SEPA (Single Euro Payments Area) lays down common rules for executing

cheaper payment services, and to protect customers. PSD 2 aims to make allowance for technological developments in the payment services area, its object being to promote competition through innovation and access for new actors. This applies in particular to services connected to mobile and internet payments.

The Payment Services Directive regulates providers of payment services, which are mainly credit institutions, e-money institutions and payment institutions. PSD 2 brings two changes of significance for the payments services area: it sets the stage for new payment services and regulates the interaction between service providers, including access to customers' payment accounts.

PSD 2 paves the way for two new payment services: payment initiation services and account information services. These payment services can be provided, in addition to existing providers, by two new types of payment service providers: payment agents and information agents. Payment agents can initiate a payment order commissioned by a user of payment services. Information agents can, through a secure connection to the customer's payment account, provide the customer with an overall digital overview over all his or her payment accounts with payment service providers.

On commission from the Ministry of Finance, Finanstilsynet has drafted rules to implement parts of PSD 2 in Norwegian law. The Ministry of Justice and Public Security is drafting rules to implement other parts of PSD 2. The Ministry of Finance circulated Finanstilsynet's proposal for comment on 28 April 2017 with the deadline for response set at 18 August 2017.

### **RULES FOR INSURANCE AND PENSION CAPITAL REQUIREMENTS ETC.**

Solvency II entered into force in the EU on 1 January 2016. In Norwegian law the relevant provisions are set out in the Financial Institutions Act 2015 and the

payments in euro.

Solvency II regulations of 25 August 2015. A Regulation (2015/35) to the Solvency II Directive has been adopted which amplifies the overarching provisions of the Directive. On 22 December 2015 Finanstilsynet adopted the Regulation as national Norwegian regulations, with an adjustment as regards exposure to municipalities etc.<sup>24</sup>

Finanstilsynet adopted on 21 December 2016 amendments to the above regulations to bring them into line with Regulation 2016/467. The amendments introduce special rules for infrastructure investments when computing capital requirements.

### **Transitional rules**

The Solvency II regulations permit institutions up to and including 31 December 2031, and subject to approval from Finanstilsynet, to reduce the value of technical provisions calculated under Solvency II by a share of the difference between technical provisions under Solvency II and provisions<sup>25</sup> calculated under the rules in force up to 31 December 2015. See further account in Risk Outlook spring 2016.

### **OWNERSHIP RESTRICTION RULES**

The Financial Institutions Act 2015 section 13-1 prohibits insurers and pension undertakings from engaging in business other than insurance and pensions. According to section 13-9, the prohibition against business other than insurance does not apply to "holdings carrying limited liability that represent up to 15 per cent of the capital or the votes of institutions" that are engaged in such business other than insurance. The Ministry of Finance asked Finanstilsynet by letter of 5 April 2017 to consider removing the 15 per cent limit. The Ministry states that Solvency II introduces capital requirements that are more risk-sensitive, thereby calling into question the need for the limit. By letter of 1 June 2017 Finanstilsynet recommends removal of the above

<sup>24</sup> Exposure to regional and local authorities that are not rated by an approved rating agency are to be treated as exposure in one risk class higher than the risk class following from the rating of the central authority in the state in which the authorities are domiciled.

<sup>25</sup> I.e. Premium reserve, supplementary provisions, fluctuation reserves, deposits and retirees' earnings fund.

provision. The Ministry of Finance circulated this recommendation for comment with the deadline for response set at 7 September 2017.

### **INSURANCE DISTRIBUTION DIRECTIVE (IDD)**

The Insurance Distribution Directive (IDD) regulates all distribution of insurance. The Directive entered into force on 23 February 2016 and will apply in the member countries as from 23 February 2018. Compared with the current Insurance Mediation Directive (IMD), the new Directive expands the scope of regulation to include insurers' direct sales – not merely agents' and brokers' distribution. The Directive is designed to enhance consumer protection, strengthen policyholders' confidence, strengthen the single market and ensure a level playing field for distribution channels.

The Ministry of Finance asked Finanstilsynet by letter of 9 January 2017 to draft a consultation document proposing provisions (in the form of a statute or regulations) to implement the IDD, and any other necessary adjustments. A draft consultation document will be forwarded to the Ministry of Finance in June 2017.

### **IFRS 17 - INSURANCE CONTRACTS**

The IASB published on 18 May 2017 a new standard for insurance contracts, IFRS 17. This standard, which supersedes IFRS 4, will apply as from January 2021. Early application is permitted. IFRS 17 brings significant changes in the valuation of insurance contracts and in the presentation of an institution's financial position. Assuming approval by the EU, the standard will be made applicable to consolidated accounts prepared under IFRS.

### **PENSION UNDERTAKINGS**

The Ministry of Finance adopted on 9 December 2016 new framework regulations bringing together previous regulations on pension undertakings. The new regulations represent an alignment with the Financial Institutions Act 2015, including life insurers transition to Solvency II, which entails differing regulation of pension undertakings and life insurers.

The regulations cover requirements on provisioning and capital, requirements on asset management, requirements on management and control along with requirements on actuaries.

The current solvency requirement (Solvency I) is retained for pension undertakings in 2017. Finanstilsynet proposed in January 2016 the introduction of a simplified Solvency II requirement for pension funds as from 1 January 2018, and a consultation document and draft provisions on new capital requirements for pension funds were forwarded in September 2016. The proposal is under consideration by the Ministry of Finance.

Pending new rules, the Ministry of Finance adopted in June 2016, following a proposal from Finanstilsynet, an amendment to the asset management regulations that imposes on pension undertakings an obligation to consider taking measures should risk analyses based on fair value give cause to believe that a pension undertaking's future financial position will be vulnerable.

## **RULES GOVERNING BOTH BANKING AND INSURANCE**

### **NEW REGULATIONS TO THE FINANCIAL INSTITUTIONS ACT 2015**

The Financial Institutions Act 2015 entered into force on 1 January 2016. This Act supersedes the Savings Banks Act, Commercial Banks Act and the earlier Financial Institutions Act as well as parts of the Insurance Act.

The Financial Institutions Act 2015 contains a number of enabling provisions. The Ministry of Finance adopted on 9 December 2016 regulations to the Financial Institutions Act 2015 that replace 50 earlier regulations to earlier Acts.

### **NEW RESIDENTIAL MORTGAGE LENDING REGULATIONS**

The Ministry of Finance adopted on 14 December 2016 new regulations on requirements on new residential mortgages (Residential Mortgage Lending



## CHAPTER 5 REGULATION

Regulations). These regulations supersede the regulations of 15 June 2015.

The new regulations require banks to determine a borrower's ability to service their residential mortgage based on income and all relevant expenses, and to factor in an interest rate increase of 5 percentage points. A mortgage may not be granted if the borrower's overall debt exceeds five times their gross annual income. Repayment mortgages must not exceed 85 per cent of property value while lines of credit must not exceed 60 per cent of property value. Mortgages secured on a secondary dwelling in Oslo must not exceed 60 per cent of property value.

In the case of repayment mortgages that exceed 60 per cent of property value, instalment payments are required. The regulations permit up to 10 per cent of the volume of a bank's mortgages granted per quarter to be mortgages that are not in conformance with one or more of the requirements on servicing ability, debt ratio, loan to value ratio or instalment repayments. In Oslo, banks' opportunity to grant mortgages that are not in conformance with one or more of the requirements is restricted to up to 8 per cent of the value of all mortgages granted in Oslo per quarter, or NOK 10 million per quarter if this is higher. The regulations entered into force on 1 January 2018 and will apply up to 30 June 2018.

Compared with previous regulations, the new regulations impose an explicit restriction on debt ratio (a maximum of five times annual income), a lower limit on the highest permitted loan to value ratio for lines of credit (60 per cent compared with the previous 70 per cent), a lower limit on the instalment repayment obligation (60 per cent compared with the previous 70 per cent), special rules for loan to value ratios for secondary dwellings in Oslo and the introduction of a special flexibility quota for residential mortgages in Oslo.

## SECURITIES AREA

### MARKET FOR FINANCIAL INSTRUMENTS

See the account in Risk Outlook autumn 2016. The Government appointed in 2015 a law committee tasked with proposing provisions to implement the new EU rules in the securities area. The committee presented on 20 January 2017 its second interim report containing a proposal for rules to implement expected EEA rules corresponding to MiFID II and MiFIR. The committee proposes assembling the regulation of investment firms, regulated markets and stock exchanges in the Securities Trading Act, and thus to revoke the Act on regulated markets (Stock Exchange Act).

The main purpose of new regime is to promote more transparent and well-functioning markets and to enhance investor protection. The law proposals include:

- Changed rules on reporting and publishing of trades in financial instruments
- Establishment of a new type of trading venue (organised trading facility)
- Regulation of algorithm trading
- Introduction of an obligation to trade certain types of derivatives at a trading venue
- Stricter disclosure requirements for investment firms and rules on product handling
- Stricter rules for compensation from parties other than the customer
- Rules on position limits for commodity derivatives
- Strengthening of Finanstilsynet's supervisory and sanction instruments

The proposals have been circulated for comment and are now under consideration by the Ministry of Finance.

### UCITS V

The UCITS V Directive (2014/911/ EC) amends European rules on collective investments in transferable securities. The primary aim of the Directive is to adapt the rules to market developments and to harmonise and strengthen the rules on



depositories, remuneration arrangements and sanctions. The new rules will help to strengthen the protection mechanisms that already apply to UCITS funds, and will further set the stage for UCITS funds as a suitable savings medium for consumers.

The Storting (Parliament) adopted on 16 December 2016 amendments to the Securities Funds Act to implement the UCITS V Directive in Norwegian law. The new rules are expected to come into force in the course of the year.

## REFERENCE VALUES IN THE FINANCIAL AREA

See the account in Risk Outlook autumn 2016 on the Reference Interest Rate Act with regulations.

EU Regulation 2016/1011 lays down rules on the determination of reference interest rates and other indices used as benchmarks in financial instruments and contracts, or to measure the results of investment funds. The requirements enter into force in the EU on 1 January 2018. The Regulation is expected to be incorporated into the EEA Agreement in the course of 2017. Finanstilsynet has drafted a proposal for implementation of the Regulation in Norwegian law by widening the scope of the Reference Interest Rate Act. The Regulation lays down rules on the party who sets benchmarks (the administrator), the contributors to a benchmark and the use of benchmarks. The object is to ensure that benchmarks in the financial area are accurate, well-founded and not exposed to undue influence.

## RULES GOVERNING SEVERAL TYPES OF SUPERVISED INSTITUTIONS

### RULES ON OTC DERIVATIVES, CENTRAL COUNTERPARTIES AND TRADE REPOSITORIES (EMIR)

EMIR<sup>26</sup>, adopted by the EU in July 2012, introduces mandatory clearing and other risk-reducing measures for OTC derivatives, mandatory reporting of derivative trades to trade repositories and common European

rules for central counterparties and trade repositories. EMIR was incorporated into the EEA Agreement on 30 September 2016. The date of EMIR's entry into force is yet to be fixed. See the account in Risk Outlook autumn 2016.

## MONEY LAUNDERING

The Ministry of Finance appointed on 6 February 2015 a law committee to consider amendments to the anti-money laundering legislation. The anti-money laundering committee delivered its first interim report on 6 November 2015. This report primarily considered the question of how the supervision of new and existing groups of reporting entities that are not otherwise subject to supervision should be organised and who should be the supervisory authority. The Ministry of Finance presented on 31 March 2017 draft proposals for amendments to the Anti-Money Laundering Act; see Prop. 76 L (2016-2017). The proposals involve the introduction of a maximum cash payment of NOK 40,000 to dealers in goods and the establishment of an authorisation and supervisory arrangement for trust and company service providers.

The Anti-Money Laundering Committee's second interim report was presented on 16 December 2016. The report proposes new anti-money laundering legislation to implement the Fourth Anti-Money Laundering Directive. The law proposal brings changes in a number of areas. The committee also recommends designating new groups of reporting entities. It further recommends rules on the establishment of a register of ultimate beneficial owners of legal persons and foreign trusts and corresponding legal structures, with associated obligations for such legal persons and the managers of the structures.

Finanstilsynet published on 23 December 2016 a circular (Circular 24/2016<sup>27</sup>) giving guidance on how some anti-money laundering rules are to be understood. The circular applies to financial institutions, investment firms and asset management companies. The circular will be adapted to new

<sup>26</sup> Regulation (EU) No. 648/2012 on OTC derivatives, central counterparties and trade repositories.

<sup>27</sup> Finanstilsynet's circular no. 24/2016 ([Norwegian](#))

legislation as and when this enters into force.

### **PRIIPS**

See the account in Risk Outlook autumn 2016. On commission from the Ministry of Finance, Finanstilsynet has drafted a proposal for implementation in Norwegian law of European Parliament and Council Regulation (EU) 1286/2014 on key information documents for packaged retail and insurance-based investment products (PRIIPs). The Regulation, generally termed the PRIIPs Regulation, is expected to be incorporated into the EEA Agreement. The Regulation requires standardised product information to be prepared using a fact sheet, a so-called key information document, which must be made available to non-professional investors before any agreement on the sale of such products is entered into. The requirements on preparation of key information documents apply to the banking, insurance and security sector. The Ministry of Finance has circulated Finanstilsynet's proposal for circulation with the deadline for response set at 20 August 2017.

The Commission adopted on 8 March 2017 a Regulation (2017/653) that provides supplementary and detailed rules on the presentation, review etc., of the key information to be provided. The Regulation is expected to be incorporated into the EEA Agreement.

### **CROWDFUNDING**

The Ministry of Finance asked Finanstilsynet by letter of 26 September 2016 to clarify how crowdfunding is currently regulated and to assess the need for special Norwegian rules. In a letter dated 1 February 2017 Finanstilsynet expressed its view that debt-financed crowdfunding is covered either by the legislation on banks and financial institutions or the legislation on loan intermediaries (in the event in combination with a licence as a payment institution). Finanstilsynet does not consider that there are grounds for establishing special rules on crowdfunding in the Financial Institutions Act 2015. If such offerings were structured in such a way as to come under a licensing requirement as a bank or finance company, they would need to be organised in compliance with that

legislation. Finanstilsynet concurrently recommends the introduction of requirements on the licensing of loan intermediaries, fit and proper assessment of loan intermediaries and provision of indemnity insurance cover by loan intermediaries. Under the current rules, notification is sufficient.

## THEME: STRESS TEST OF THE NORWEGIAN ECONOMY AND THE BANKS

Growth in the world economy looks set to pick up, but according to the IMF there is a greater risk of lower growth than of higher growth ahead; see chapter 2. The consequences for the Norwegian economy of a setback in the world economy could be considerable. In Norway, growth in house prices has been very high in recent years, and households' debt burden is at a historically high level. At the same time the interest rate level is unprecedentedly low.

This chapter discusses two possible scenarios in the period to 2021. The first scenario, the baseline scenario, entails a stable, relatively good development in the Norwegian economy. In the second scenario, the stress scenario, the Norwegian economy undergoes a pronounced cyclical downturn featuring several years of negative GDP growth, a marked increase in unemployment and a fall in private consumption and incomes.

The results from the macro scenarios are used to analyse the banks' results and capital adequacy. The discussion attaches importance to the trend in net interest revenues, losses on securities portfolios and in particular losses on loans to firms and households. Many banks will see a substantial reduction in common equity tier 1 (CET1) capital adequacy in the stress scenario. At the end of the period, several will have a CET1 ratio below the overall capital requirement excluding the countercyclical capital buffer. This outturn is mainly down to increased losses on loans to non-financial firms.

Stress tests of the banks' results and capital adequacy are an important aspect of the supervisory authorities' macroprudential surveillance of systemic risk and financial stability. It is also important for the supervisory authorities' assessment of individual banks' capital needs. Financial institutions are

required under the capital adequacy framework to conduct stress tests of their solvency and liquidity positions. The stress tests are a key element in institutions' internal capital assessment process.<sup>28</sup> Supervisory authorities are required to conduct their own stress tests of the individual financial institution.<sup>29</sup> These stress tests, together with the banks' own stress tests and other risk assessments, form part of the supervisory authorities' overall risk assessment of the institution.<sup>30</sup> Stress tests must also be taken into account in assessments of banks' capital targets.<sup>31</sup>

Stress testing throws light on financial institutions' vulnerability to serious economic shocks and changes in various risk factors. A stress scenario should play out over several years. When designing the scenario it is important to make allowance for the fact that unexpected events *may* arise.

In the event of a serious setback in the Norwegian economy, the authorities will consider fiscal and monetary policy measures, possibly other measures, to dampen the downturn and counteract detrimental effects on the economy and the financial system. It is beyond the scope of a stress test to consider what measures should or could be set in train during a stress scenario.

This theme chapter starts by describing the baseline scenario and the stress scenario for the Norwegian economy that underlie this year's stress test. It then reviews the effects of the macro scenarios on Norwegian banks' results and capital adequacy. For consumer lending banks the results of a simplified sensitivity analysis are shown. The chapter ends by summarising Finanstilsynet's assessments of the stress tests.

<sup>28</sup> Internal capital adequacy assessment process (ICAAP)

<sup>29</sup> See Article 100 of Directive 2013/36/EU

<sup>30</sup> Supervisory review and evaluation process (SREP)

<sup>31</sup> See Circular 12/2016: [Finanstilsynet's methodologies for assessing risk and capital needs](#), chapter 6.

### THE NORWEGIAN ECONOMY

#### INTRODUCTION AND SUMMARY

This section describes how the Norwegian economy might develop up to the fourth quarter of 2021 under two different sets of assumptions. The analyses are based on projections made using the macro model NAM-FT<sup>32</sup>. The model generates estimates for important economic variables such as GDP, investments, consumption, unemployment, wages, debt growth, lending rates, house prices and banks' loan losses.

In order to project model-determined (endogenous) variables, the variables determined outside the model (exogenous variables) need to be extended for the duration of the projection period. The most important exogenous variables are international demand for Norwegian-produced goods and services, international consumer and producer prices, international money market rates, Norwegian oil exports, the oil price, oil investments, public demand for goods and services, implicit volatility<sup>33</sup> of the equities market in the US along with the price of credit default swaps (CDSs) for five-year bonds issued by European banks.

The same assumptions underlie growth in public investments and consumption in the two scenarios. As mentioned, it is beyond the scope of this analysis to consider how any changes in fiscal policy in a stress scenario could affect the real economy and the financial markets. Finanstilsynet does not make forecasts. The baseline scenario corresponds mainly to the forecasts published by Statistics Norway and Norges Bank (Norway's central bank). The scenarios represent two possible outturns for the Norwegian economy.

The baseline scenario assumes that the cyclical trough was reached in 2016. The calculations show moderate growth in GDP ahead, entailing a relatively good path for the Norwegian economy. Unemployment has peaked, and is declining somewhat. The projections indicate slightly weaker, but still clearly positive, growth in house prices. The model indicates a continued increase in households' debt accumulation, bringing some increase in households' interest burden. Problem loans<sup>34</sup> as a share of banks' lending to firms rises marginally, while the proportion of problem loans to personal borrowers remains at a low level. Banks' loan losses are at a stable low level throughout the projection period both in the case of corporate and personal borrowers.

The stress scenario presupposes a fall in world trade as a result of increased protectionism and more trade barriers. Good growth in the US leads to higher US interest rates, which push up European and Norwegian rates. Greater uncertainty among investors leads to increased risk aversion and a strong fall in stock market values. The trade barriers bring impaired growth in China and in the world in general, and a steep fall in the oil price. The weakening of the international economy feeds through to the Norwegian economy, and calculations show several ensuing years of falling GDP. Higher money market rates bring higher lending rates and a higher household debt burden<sup>35</sup>, due to weaker income growth. The trend in private consumption and disposable income weakens, with several years of negative consumption and income growth. This scenario shows a strong increase in banks' share of problem loans to households and firms alike, as well as heavier loan losses for banks, particularly on loans to firms.

<sup>32</sup> The Model NAM-FT2 is based on the Norwegian Aggregate Model (NAM), and was developed mainly for stress testing of banks and for analyses of financial stability. See inter alia Risk Outlook spring 2014, 2015 and 2016 for accounts of NAM-FT2. Documentation of NAM can be found at [normetrics.no](http://normetrics.no) and on Professor Ragnar Nymoen's homepage, <http://folk.uio/nymoen>.

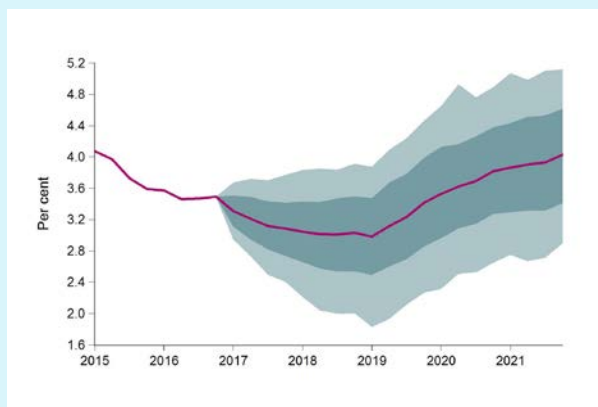
<sup>33</sup> Implicit volatility is a measure of equity risk, derived from options prices.

<sup>34</sup> Problem loans are defined as the sum of banks' non-performing loans and performing loans that have been loss provisioned.

<sup>35</sup> 'Debt burden' is defined as gross debt at the end of the period relative to total disposable income in the past four quarters.

**1: Data and uncertainty in the model**

The model is based on quarterly data. This results in a somewhat more uneven path for volatile variables compared with a model based on annual data.

**1: Banks' lending rate with uncertainty fan**

Source: Finanstilsynet

Great uncertainty attends the model projections. By way of example, chart 1 shows some of this uncertainty attending projection of the banks' average lending rate. The fan represents uncertainty as a result of random shocks in the variable. The upper and lower limits of the fan of uncertainty are interpreted to the effect that historical data in the model are consistent with both a higher and lower level of the variable in the future than indicated by the point estimates in the projections. The intervals do not take account of the fact that the future will differ systematically from history, i.e. the model's structure is no longer relevant to explaining the variable concerned. The fan's outermost field corresponds to a confidence interval of 95 per cent, i.e. the model estimates with 95 per cent certainty that the lending rate will remain within this fan at a given point in time. The fan's innermost field corresponds to a confidence interval of 68 per cent. The same type of uncertainty applies to all endogenous variables in the model.

**BASELINE SCENARIO****Exogenous variables**

The path of international demand for Norwegian-produced goods and services and of international prices up to 2020 is set in keeping with forecasts from Statistics Norway. Growth in international demand and international prices is set at, respectively, 4.1 and 2.1 per cent in 2021. International money market rates correspond to three-month euro rates and are set with a basis in observations in the futures market. The money market rates increases somewhat over the projection period. Estimates for public consumption, public investment, oil exports and oil investment are set in keeping with Statistics Norway's forecast for the Norwegian economy up to 2020. The year 2021 is extended using growth rates corresponding to 2020 for public consumption and public investment, whereas oil investments and oil exports show zero growth in 2021. The oil price is based on futures contracts for delivery of oil in the period 2017-2021. The estimates give a stable oil price of around USD 52 per barrel throughout the projection period. Norges Bank's base rate is set in keeping with the central bank's interest rate forecast to the end of 2020. Thereafter the base rate is kept unchanged to the end of the projection period. The estimates for implicit volatility in the US stock market and credit insurance agreements for bonds are based on historical averages.<sup>36</sup>

**Endogenous (model determined) variables**

The baseline scenario assumes that the cyclical trough has been reached, and the model calculations for the projection period indicate a moderate, but improved activity level in the Norwegian economy. GDP is estimated to grow by just under 2 per cent in the year to 2019, thereafter by 2.1 per cent in 2020. Exports and mainland (non-oil) investments show good growth, and growth in household consumption is about 2 per cent per year. Registered unemployment is stable at just under 3 per cent on an annual basis throughout the projection period. Growth in housing

<sup>36</sup> All exogenous variables are determined on the basis of information available as at 31 May 2017.



investment slows. The high growth seen in previous years levels out, and investments show approximately zero growth from 2018 to the end of the period. Recent years' very high growth in house prices is assumed to diminish. This scenario gives positive price growth in the housing market throughout the projection period. Growth is 7.9 per cent in 2017 and slows gradually to 3.8 per cent in 2021.

Low money market rates hold down banks' average lending rate. The interest rate level is assumed to fall marginally at the start of the projection period to be followed by a small increase to 4 per cent in 2021. Given continued house price growth and low interest rates, households' debt growth will be at a high level. Debt growth slows somewhat towards the end of the projection period, in keeping with some rise in the interest rate level. Households' disposable income increases in real and nominal terms throughout the projection period. Accumulated over the projection period, incomes show a nominal rise of just under 17 per cent. Households' debt burden climbs throughout the period. In 2021 household debt is estimated at 247 per cent of incomes, which is a historically high figure. The low interest rates contribute to an unchanged interest burden in the first part of the projection period, but the burden increases somewhat due to higher interest rates from 2019 onwards. Households' interest burden reaches almost 9 per cent in 2021, which is 3 percentage points higher than at the start of the projection period. Household debt growth exceeds household incomes throughout the period. This renders households even more vulnerable to a setback in the economy.

The proportion of banks' loans to personal borrowers that are defined as problem loans remains low throughout the projection period. The same applies to the proportion of losses on loans to personal borrowers. Problem loans as a share of loans to firms increases from 2.3 per cent at the start of the period to 3.0 per cent in 2021.

## 2: Banks' problem loans and loan losses

NAM-FT2 contains equations for problem loans as a share of banks' loans to both personal borrowers and firms as well as equations for banks' losses on loans to personal borrowers and firms.

The problem loan equations and the equations for banks' losses on loans to firms and households are estimated on data that also cover the Norwegian banking crisis in the early 1990s.

### Problem loans

Banks' problem loans are defined as the sum of non-performing loans and performing loans that are loss impaired. The proportion of problem loans to personal borrowers depends on the real interest rate, interest burden, unemployment and change in Mainland (non-oil) Norway's GDP. In the event of an increase in the interest burden and transition to unemployment, households' liquidity position will tighten, impairing households' debt-servicing capacity. A weak trend in activity levels for the Norwegian economy will lead to poorer debt-servicing capacity among households in subsequent periods. The impact of an increased interest burden and increased unemployment is stronger when the interest burden or unemployment is high than when the interest burden or unemployment is low.

The proportion of problem loans to firms is determined by the real interest rate, interest burden, unemployment and oil price. Non-financial firms' aggregate profits are reduced by higher debt interest rates and a lower oil price. In addition, banks' share of problem loans to firms are sensitive to unemployment levels, since households' income lapse resulting from high unemployment reduces firms' profitability and hence their debt servicing capacity. The impact of an increased interest burden for firms and increased unemployment is, as in the case of households, particularly strong when the interest



burden or unemployment approach and pass certain levels.

### Loan losses

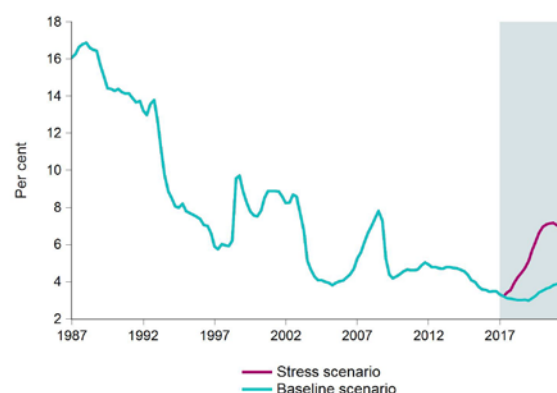
Banks' losses on loans to personal borrowers rise when households' interest burden rises. The effect of the losses is stronger when households' interest burden is higher than when it is low. Banks' losses on loans to firms rise with negative GDP growth, an oil price fall, an increase in firms' interest burden and rise in unemployment. The effect of an increased interest burden and increased unemployment is stronger when firms' interest burden (or unemployment) is higher than when it is low.

## STRESS SCENARIO

### Exogenous variables

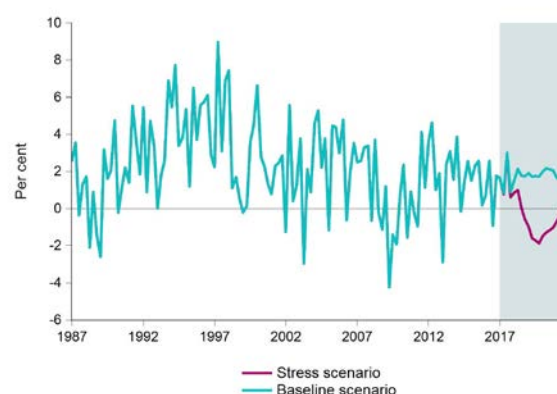
In the stress scenario world trade is assumed to plunge as a result of increased protectionism and increased trade barriers. At the same time, the US sees good growth driven by a very expansionary fiscal policy involving tax reliefs and a stronger focus on domestic infrastructure. This spurs a higher interest rate level in the US market. Higher US interest rates impact on European interest rates, which also rise. This leads to increased vulnerability among European banks, bringing increased losses and impaired capital adequacy. In addition to the interest rate hikes, a strong increase is seen in risk premiums in both the fixed income market and the stock market as a result of increased uncertainty among investors. Stock market volatility and the price of CDS contracts are assumed to rise sharply. Weaker growth internationally due to the increased trade barriers leads to lower inflation and a fall in the oil price. The oil price falls from USD 54 per barrel in the first quarter of the current year to USD 27 per barrel in mid-2018. Thereafter the oil price remains low up to the end of the projection period, when it rises slightly to USD 35 per barrel. Oil investments, which have fallen through 2016, fall further up to 2018 before the decline flattens out.

### 2: Banks' average lending rate



Sources: Statistics Norway and Finanstilsynet

### 3: Growth in gross domestic product (GDP)



Sources: Statistics Norway and Finanstilsynet

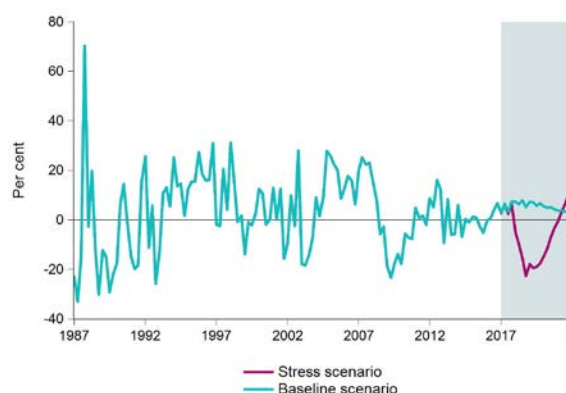
### Endogenous (model determined) variables

The increase in interest rates and the negative growth impulses internationally feed through to the Norwegian economy. The model projections show a strong increase in Norwegian money market rates (Nibor) to about 5 per cent, which exerts upward pressure on the banks' lending rates. The lending rate rises by 3.5 percentage points in the period, and is just under 7 per cent in 2021 in the stress scenario, compared with 4 per cent in the baseline scenario (chart 2).<sup>37</sup> The Norwegian stock market plunges in 2018 and 2019. The overall decline is put at about 40

<sup>37</sup> Norges Bank's base rate turns negative towards the end of the projection period due to the very weak trend in the economy. The increase in lending rates is ascribable to high risk premiums on banks' market funding.

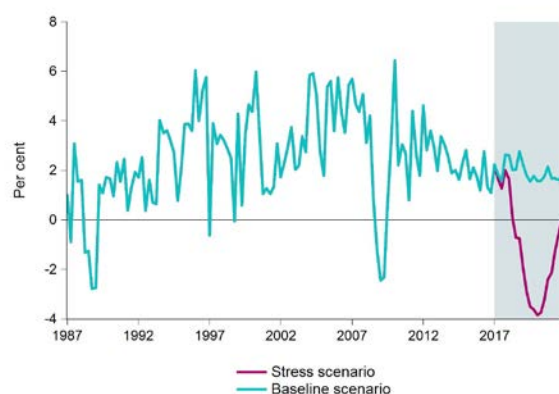
## THEME: STRESS TEST OF THE NORWEGIAN ECONOMY AND THE BANKS

### 4: Growth in investments in Mainland Norway



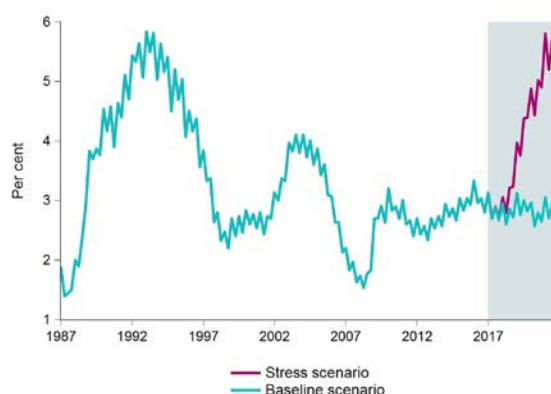
Sources: Statistics Norway and Finanstilsynet

### 5: Growth in private consumption



Sources: Statistics Norway and Finanstilsynet

### 6: Registered unemployment



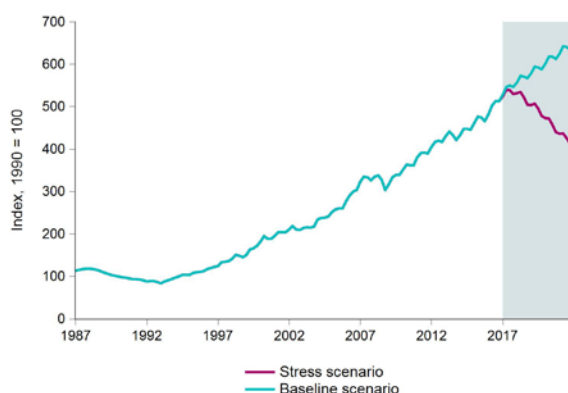
Sources: Statistics Norway and Finanstilsynet

compared with the baseline scenario throughout the projection period, although equity prices pick up somewhat as from 2020.

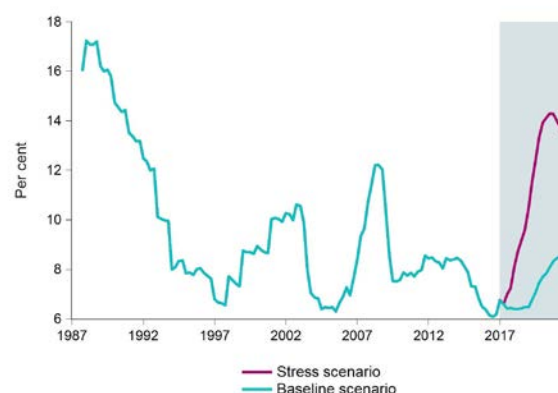
The fall in world trade severely impairs Norwegian exports. Growth in overall Norwegian exports is negative up to 2021, and falls on an accumulated basis by 6.8 per cent in the period. The model calculations show that Norway enters an acute slump with negative GDP growth from 2019 to the end of the projection period (chart 3). At the end of the scenario, GDP is on a par with 2016. Higher interest rates, reduced corporate earnings and increased uncertainty contribute to falling investments. Mainland (non-oil) investments drop by about 40 per cent from 2018 to the end of the period. Private consumption also sees a hefty fall of 5.5 per cent through the period (charts 4 and 5). The decline in private consumption is driven by increased lending rates and falling house prices, along with very weak, and in periods negative, real income growth for households. Unemployment rises strongly in the stress scenario. In 2021, registered unemployed persons account for 5.5 per cent of the labour force. This is 2.6 percentage points higher than in the same period in the baseline scenario (chart 6).

As shown in chart 7, house prices fall by almost 24 per cent through the projection period, and in 2021 are back to their 2012 level. The weak trend in incomes, reduced credit growth, higher interest rates and impaired confidence contribute to the house price fall. Despite the sharp fall of up to 7 per cent per year in house prices, households' debt burden continues to increase up to 2020.

per cent. The stock market is significantly impaired

**7: House prices**

Sources: Statistics Norway and Finanstilsynet

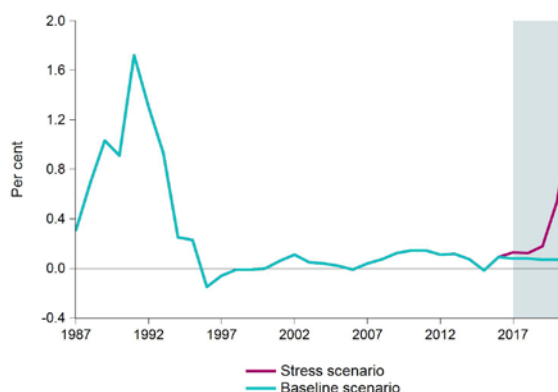
**9: Households' interest burden**

Sources: Statistics Norway and Finanstilsynet

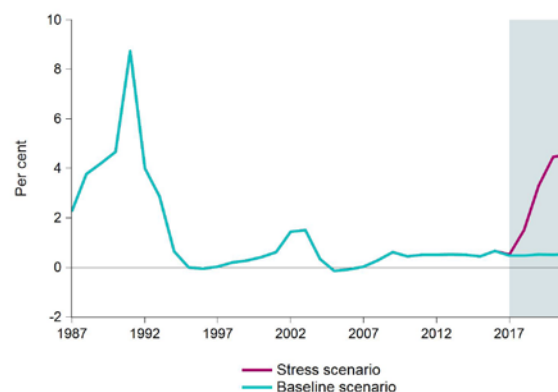
**8: Households' debt burden**

Sources: Statistics Norway and Finanstilsynet

The debt burden rises from 218 per cent in 2016 to 243 per cent in 2020 before abating in 2021 (chart 8). The increase in the debt burden is attributable to a negative trend in disposable incomes concurrent with continued positive debt growth. Households' debt growth (C2) slows during the period to virtually zero growth in 2021. Throughout the projection period viewed as a whole, households' gross debt rises by just under 12 per cent. Households' debt burden shows the same development in the baseline scenario as in the stress scenario up to 2020. This illustrates that scaling back indebtedness can be difficult when the debt level at the outset is at such a high level as it is in Norwegian households.

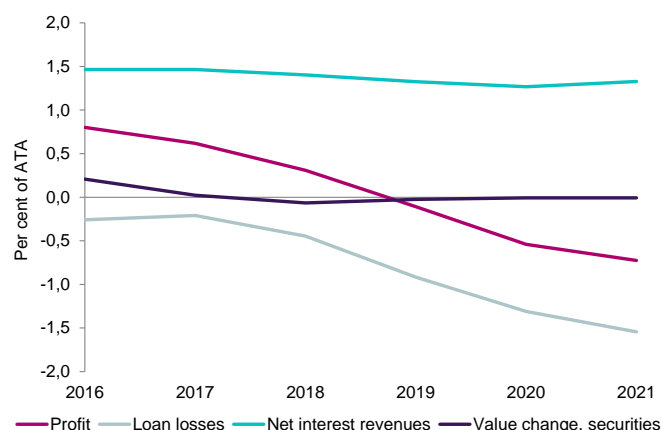
**10: Banks' losses on loans to personal borrowers**

Source: Finanstilsynet

**11: Banks' losses on loans to corporate borrowers**

Source: Finanstilsynet

**12: Profit and main profit components. In per cent of average total assets (ATA). Stress scenario. Norwegian banking groups**



Source: Finanstilsynet

The interest burden rises steeply in the stress scenario as a result of higher lending rates, weak earnings and increased indebtedness. For households, the interest burden rises from 6 per cent at the end of 2016 to 14 per cent in the final two projection years (chart 9). This is a very strong increase.

The interest burden at the end of the period is at a higher level than prior to the financial crisis, but still lower than the levels seen during the banking crisis early in the 1990s.

Firms' interest burden also rises sharply, reaching 15 per cent in 2021. This is 7 percentage points more than at the start of the projection period. The increase in the case of firms is also due to a higher interest rate level combined with weak income growth. Firms' gross debt diminishes somewhat in the period. Debt growth (C2) falls from 2.8 per cent in 2017 to -2.7 per cent in 2021.

Banks' problem loans as a share of total loans rise markedly in the period in both the personal and corporate market. Loan losses also rise for both customer segments, but substantially more in the case of loans to firms. Losses on loans to firms average 2.9 per cent per year in the projection period, while the corresponding loss share on loans to personal borrowers is 0.4 per cent (chart 10). Banks' losses on

loans to firms as a share of total loans to firms rises from 0.5 per cent in 2017 to 4.6 per cent in 2021 (chart 11).<sup>38</sup> Accumulated losses in the stress scenario are high but nonetheless significantly lower than the losses seen during the banking crisis in the early 1990s.

## NORWEGIAN BANKS

### NORWEGIAN BANKING GROUPS

Finanstilsynet's stress test of Norwegian banking groups covers 20 banking groups that report consolidated data (FINREP) to the supervisory authorities.<sup>39</sup> These groups' total assets account for almost 90 per cent of Norwegian banks' aggregate total assets at the end of 2016. Branches forming part of foreign banking groups, and Norwegian banking groups with activities different from those of the average bank, are not included in the selection.<sup>40</sup> See boxes 3 – 5 for a description of the stress test methodology and the assumptions on which the stress test is based.

### Baseline scenario

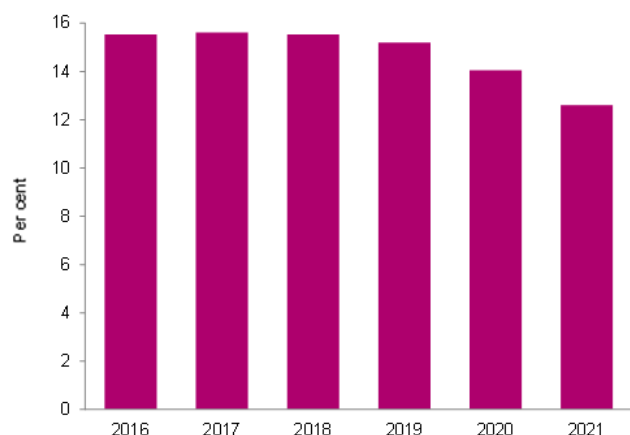
The banking groups' aggregate net interest revenues<sup>41</sup> remain approximately unchanged in the baseline scenario. The positive macroeconomic trend contributes to a slight decline in loan losses. The remaining profit items show little change. The profit in per cent of average total assets falls marginally. If, as a technical assumption, it is assumed that 50 per cent of the profit is disbursed as dividend and that no fresh

<sup>38</sup> Estimated losses on loans to firms and households are based inter alia on hook losses during the Norwegian banking crisis. The Act on voluntary and compulsory debt settlement for private individuals (Debt Settlement Act) from 1992 permits debtors, subject to certain conditions, to have their residual debt cancelled. This is not recognised in NAM-FT2, which may entail that estimated losses on loans to personal borrowers are on the low side.

<sup>39</sup> The selection comprises Aurskog Sparebank, BN Bank, DNB Bankkonsern, Fana Sparebank, Gjensidige Bank, Helgeland Sparebank, Landkreditt Bank, Sandnes Sparebank, Sparebank 1 Nord-Norge, Sparebank 1 SMN, Sparebank 1 SR-Bank, Sparebank 1 Søre Sunnmøre, Sparebank 1 Østlandet, Sparebanken Møre, Sparebanken Sogn og Fjordane, Sparebanken Sør, Sparebanken Vest, Sparebanken Øst, Storebrand Bank and Totens Sparebank.

<sup>40</sup> Banking groups that deliver consolidated data but are not included in the selection are: Santander Consumer Bank, OBOS-banken, KLP Banken and Skandiabanken. Kommunalbanken is also not included in the selection.

<sup>41</sup> Total interest revenues less total interest expenses in per cent of average total assets (ATA).

**13: CET1 capital adequacy. Stress scenario. Norwegian banking groups**

Source: Finanstilsynet

**14: Difference between actual CET1 capital adequacy and minimum and buffer requirements on CET1 capital (exc. countercyclical buffer in 2019-2021). Stress scenario. Norwegian banking groups**

Source: Finanstilsynet

equity capital is injected, the banking groups' CET1 capital ratio rises from 15.5 per cent at the start of the stress period to 16.4 per cent at the end of 2021. The respective paths of the banking groups show minor differences in the baseline scenario. Finanstilsynet does not prepare forecasts, and the baseline scenario reflects a possible outcome. See also the account of the macro scenarios above.

**Stress scenario**

In the stress scenario the path of the macroeconomy is far weaker. However, the severe economic setback

does not arise in earnest until towards the end of 2018. According to the projections, the banking groups' aggregate net interest revenues fall gradually, from 1.47 per cent in 2016 to 1.33 per cent in 2021 (chart 12). The main reason for the weakening is the banks' inability to pass the entire increase in funding costs on to the borrowers due to impaired debt servicing capacity among borrowers whose debt servicing capacity is already weak.<sup>42</sup> The fall in stock markets and increased credit risk spreads turn the profit contribution from value changes on equities and bonds marginally negative through the stressed period. Loan losses rise sharply from the middle of the stressed period.<sup>43</sup> Increased loan losses are the main reason why the banking groups' profit weakens from 0.80 per cent of average total assets in 2016 to -0.73 per cent in 2021. However, the banking groups in aggregate manage to maintain positive profit up to and including 2018.

Banks' CET1 capital ratio is approximately unchanged in the first two years of the stressed period (chart 13). In the three last years it is reduced by 2.9 percentage points. The reduction is due mainly to negative profit. As a technical assumption, disbursed dividend is set at 50 per cent of profit for the year in 2017 and 2018, thereafter at zero. It is assumed that no new equity capital is supplied. At the end of 2021, the banking groups' overall CET1 capital ratio stands at 12.6 per cent.

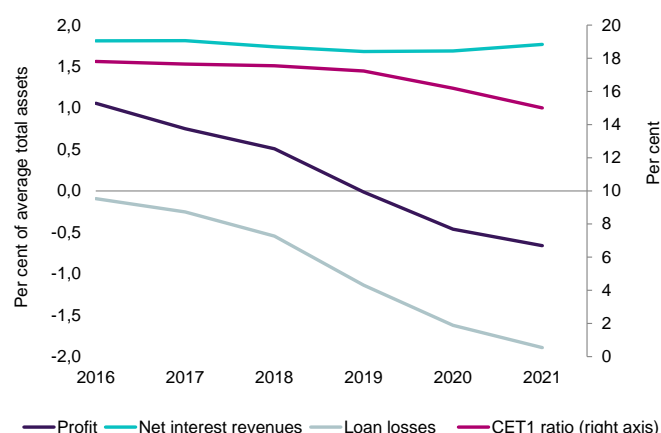
In addition to meeting the ordinary minimum capital and buffer requirements, the banks must meet an individually determined Pillar 2 requirement set by Finanstilsynet.<sup>44</sup> Chart 14 shows the difference

<sup>42</sup> Lending rates rise by about 3.5 percentage points in the stress period.

<sup>43</sup> See Box 4 for a fuller account of the loan losses.

<sup>44</sup> See page 28. For systemically important banks the minimum and buffer requirement on CET1 capital is 14.0 per cent from 30 June 2017, whereas for non-systemically important banks it is 12.0 per cent. Only the DNB Banking Group is defined as systemically important among the banks included in Finanstilsynet's stress test. Kommunalbanken is the other systemically important financial institution in Norway, but is not included in the stress test because Finanstilsynet's stress test model is not suited to stress testing the type of business carried on by this bank. Five of the smaller banking



**15: CET1 capital adequacy, profit, net interest revenues and loan losses. Stress scenario. Small Norwegian banks**

Source: Finanstilsynet

between CET1 capital ratios in the stressed path and the minimum and buffer requirements on CET1 capital for the individual banking group, including the individually determined Pillar 2 requirement. In 2019 the economy enters period of severe stress. The countercyclical capital buffer is accordingly set at zero as from 2019 as a technical assumption. The remaining minimum and buffer requirements and the individually determined Pillar 2 requirement are assumed to remain unchanged throughout the stressed period.

At the end of 2018, three of the 20 banking groups have a CET1 capital ratio that is below the overall CET1 capital requirement (chart 14). In 2019 all banking groups meet the total requirements inasmuch as the countercyclical capital buffer is reduced to 0. In 2020 and 2021 the banking groups' CET1 capital position is severely impaired, and at the end 2021 six of the banking groups are not compliant with the capital requirement. The banking groups' overall leverage ratio falls from about 7.6 to 6.3 per cent in the stressed period.

The banking groups that fare worst in the stress scenario have relatively high estimated credit risk on

groups in the selection had not had individual Pillar 2 add-ons determined when the stress test was conducted. In the stress test these banks are assigned the unweighted average individual Pillar 2 add-on of the other banking groups.

loans to non-financial firms, and a relatively high share of their total lending goes to these entities. See boxes 3-5 for further details.

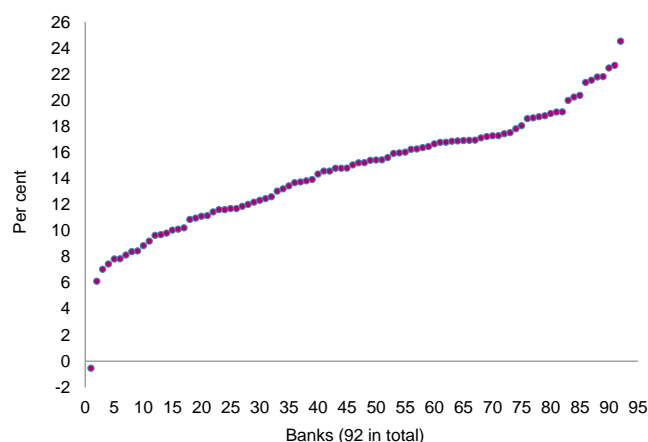
### SMALLER NORWEGIAN BANKS

Almost 100 Norwegian banks do not report consolidated data to Finanstilsynet. These are mainly smaller, local savings banks, hereafter termed "smaller banks". The stress test for these banks is based on unconsolidated parent bank figures. The macro scenarios, stress test methodology and assumptions are the same as for the banking groups, but market risk is stress tested in a simplified manner owing to data limitations.<sup>45</sup> Banks engaged exclusively in consumer lending are not included in the group of smaller banks, but are covered in a separate paragraph on page 81 in the theme analysis.

The overall profit of the smaller Norwegian banks is severely impaired in the second half of the stress scenario (chart 15). The weakening is driven mainly by higher losses on loans to non-financial firms. The smaller banks have higher net interest revenues overall than the banking groups at the start of the stressed period, and net interest revenues fall by a smaller margin over the course of the stressed period. The latter is mainly because smaller banks in general have a smaller share of lending to non-financial firms. They are accordingly hit less hard by corporate clients that fail to service the interest rate hike in the stress scenario. A higher average estimated credit risk on lending to non-financial firms more than makes up for the lower proportion of loans to non-financial firms. As a result the smaller banks' accumulated losses on loans to non-financial firms are relatively speaking higher than the accumulated losses incurred by the banking groups.

<sup>45</sup> For the smaller banks, the net gain/loss on securities activities is set at zero in the stress scenario. This is overall somewhat less stringent than for the banking groups. Market risk is also generally of small importance for the stress test results in the case of the smaller banks.



**16: CET1 capital adequacy at the end of 2021. Stress scenario. Small Norwegian banks**

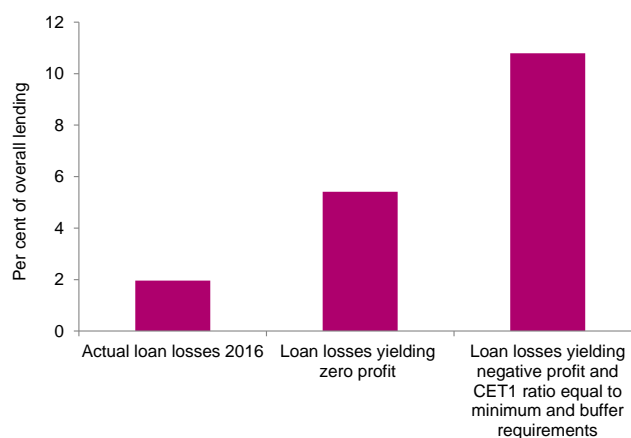
Source: Finanstilsynet

Overall, the smaller banks' CET1 capital adequacy is reduced by about the same margin as in the case of the banking groups. The smaller banks have overall a higher CET1 capital ratio at the start of the stress period. At the end of the stressed period the CET1 capital ratio of the smaller banks is 15.0 per cent, compared with 12.6 per cent among the banking groups. There is wide variation between the smaller banks (chart 16). 15 of the 92 smaller banks fail to comply with the minimum and buffer requirements, excluding the countercyclical buffer and individual Pillar 2 add-on, of 10 per cent at the end of 2021. This number increases if the individual Pillar 2 add-on is included.

## SENSITIVITY ANALYSIS OF CONSUMER LENDING BANKS

Recent years have seen further new establishments of consumer lending banks. At the end of 2016 seven banks were engaged almost exclusively in consumer lending in Norway.<sup>46</sup> Consumer and credit card loans have existed for a long time, but it is only in the past few years that the volume has shown a sizeable increase. Given the limited scale of such lending, little in the way of historical data is available. Loan losses on consumer and credit card loans are not projected

<sup>46</sup> Consumer and credit card loans generally make up a small share of the traditional banks' loan volume. They consequently have little impact on the stress test results for these banks.

**17: Ability to absorb loan losses. Norwegian banks offering consumer loans. As at 31.12.2016**

Source: Finanstilsynet

separately in the macro model NAM-FT2 but are included in total losses on loans to personal customers.

Finanstilsynet's stress test model is not well suited to consumer lending banks. Finanstilsynet has accordingly conducted a sensitivity analysis of consumer lending banks' ability to absorb loan losses. The analysis is based on figures as at 31 December 2016. Only loan losses are assumed to change in the analysis. Loss-absorbing ability indicates (a) what portion of total lending a loan loss can measure before the profit for the year falls to zero, and (b) what portion the losses can measure before the profit for the year falls to zero and the margin to the overall minimum and buffer requirement on CET1 capital is exhausted.<sup>47</sup>

If the consumer lending banks in aggregate had incurred a loan loss of 5.4 per cent of overall lending in 2016, the profit for the year would, all else equal, been zero in that year (chart 17). Moreover, had the loan loss been 10.8 per cent, the margin to the overall minimum and buffer requirement on CET1 capital, excluding an individual Pillar 2 add-on, would also have been exhausted. These loss levels are far higher than the actual loss of 2.0 per cent incurred in 2016.

<sup>47</sup> Overall minimum and buffer requirements including the countercyclical buffer of 2.0 per cent, but excluding an individual Pillar 2 add-on.

The banks, including the consumer lending banks, are however required to be capitalised to withstand a severe, long-lasting stress scenario, for example a scenario corresponding to the stress scenario in the year's stress test. Given that the consumer lending banks' overall loan losses remain unchanged in 2017 and 2018 and thereafter increase at the same pace as overall losses on loans to personal customers in the stress scenario (see above), the consumer lending banks' CET1 capital ratio will fall to about 4 per cent at the end of 2021. The total CET1 capital ratio of the consumer lending banks will in this case be equal to a mere one-third of the overall minimum and buffer requirement on CET1 capital.

The estimate presupposes that net interest revenues of the consumer lending banks are maintained at the same high level as in 2016.<sup>48</sup> It would be unrealistic to assume that the consumer lending banks would succeed in maintaining such high net interest revenues through a severe, long-lasting stress scenario. Many consumer loan borrowers have at the outset weak debt-servicing capacity. Many also hold residential mortgages. In a severe stress scenario such customers would see a steep increase in their overall interest burden. The increase would be far stronger than for "ordinary" residential mortgage borrowers. An already weak debt servicing capacity would prove even weaker.

If the consumer lending banks were to find themselves in an overstretched situation, an alternative might be to seek to sell non-performing loans to debt collection agencies or the like. This would be difficult in a severe stress scenario, and the default portfolios' selling price would probably be low.

The sensitivity analysis indicates that the consumer lending banks are vulnerable to a serious weakening of the economy. Finanstilsynet will give due weight to this in its overall risk assessment of consumer lending banks.

### 3: Projection of banks' net interest revenues

Norwegian banks borrow and lend largely at a floating interest rate. Changes in borrowing rates are usually rapidly followed by a corresponding change in lending rates (the "float-float" principle). The float-float principal is the basis for Finanstilsynet's projection of the banks' net interest revenues. However there are two exceptions:

- (i) It is assumed that performing forbearance customers<sup>49</sup> are able to service the agreed lending rate in effect at the start of the stress period, but unable to service any increase in the lending rate. The background to this assumption is that these customers already have debt servicing problems, and that their debt servicing capacity will be further impaired in the stress scenario. It is therefore realistic to expect them to encounter problems in servicing a hefty increase in the lending rate.<sup>50</sup>
- (ii) In light of the minimum period for announcing a mortgage lending rate increase, a time lag of six weeks is assumed for any mortgage rate increase to come into effect.
- (iii) It is assumed that interest revenues lost as a result of borrowers' failure to service all or parts of their existing outstanding interest liabilities on non-performing and performing written-down loans does not affect the projection of net interest revenues. The lost interest revenues are included in the loan loss.

<sup>48</sup> The consumer lending banks' net interest revenues at the end of 2016 were about 4.5 times higher than those of other banks.

The volume of performing forbearance customers is projected by the change in the share of problem loans from the macromodel NAM-FT. This means that all banks are assigned an identical percentage change in forbearance volume in the projections. The starting point for the share of performing forbearance loans varies, to some extent widely, from one bank to the next. The largest banks with relatively many oil and oil-related loan customers generally have the highest share of performing forbearance customers. The share of performing forbearance customers in the banking groups overall rises from 1.5 to 5.6 per cent of total lending in the stressed period. Hence between 98.5 per cent (2017) and 94.4 per cent (2021) of the banks' performing/written-down borrowers manage to absorb the interest rate increase of 3.5 percentage points in the stress scenario. The smaller banks do not report forbearance data. These banks are assigned the average performing forbearance share of banking groups that do not have oil- and oil-related loan exposures.<sup>51</sup>

<sup>49</sup> By 'performing forbearance customers' is meant customers who are neither in default nor have been written down, but where negative events connected to the customer's debt servicing capacity have occurred. This could for example be the granting of instalment payment deferral or breach of the loan terms due to poor economic performance.

<sup>50</sup> An upper limit of 15 per cent is set for the share of performing forbearance loans where the borrower is unable to service the interest rate hike in the stress scenario.

<sup>51</sup> That is to say a forbearance share of 0.6 per cent on loans to personal borrowers and 2.9 per cent on loans to non-financial firms.

#### **4: Distribution of overall loan loss between the banks**

The annual total losses on loans to, respectively, personal borrowers and non-financial firms are projected in the macro model NAM-FT2; see above. The loan losses are recognised loan losses. Hence loan losses in a given year consist of actual losses in that year plus write-downs in the same year on not previously written-down loans plus increased write-downs in the same year on already written-down loans plus collectively assessed write-downs in the same year minus the year's reversal of previous write-downs. The total loss on loans to, respectively, personal borrowers and non-financial firms breaks down as follows:

##### **Distribution of the total loss on loans to personal borrowers <sup>52</sup>**

The total loss on, respectively, secured and unsecured loans to personal borrowers is distributed on the banks based on the individual bank's share of total loans to these two customer groups. In the projection of the total loss on loans to personal borrowers, it is assumed that 70 per cent comprises losses on unsecured loans (mainly consumer and credit card loans) and 30 per cent comprises losses on secured loans (mainly residential mortgages). The distribution is based on available information on losses on unsecured and secured loans in Norway and abroad. As mentioned above, few historical data are available on losses on unsecured loans, and for that reason considerable uncertainty attends this distribution of losses. Traditional Norwegian banks generally have a small proportion of unsecured loans. Any incorrect measurements will therefore be of little significance for these banks. Banks exclusively engaged in consumer lending are not included in Finanstilsynet's stress test model, but are covered in separate analyses.

<sup>52</sup> Personal business operators are included under non-financial firms.

No distinctions are drawn between degrees of credit risk in the distribution of losses on loans to personal borrowers. Norwegian banks' lending practices as regards residential mortgage customers are in general relatively similar.<sup>53</sup> Hence the assumption of identical credit risk between the banks is on Finanstilsynet's assessment a realistic approach. For consumer loans, credit risk may vary widely from one bank to the next.

#### **Distribution of the total loss on loans to non-financial firms**

About 57 per cent of Norwegian banks' loan volume to non-financial firms is to Norwegian-registered limited companies, while about 28 per cent is to foreign-registered limited companies. The remainder of the loan volume is mainly to Norwegian unincorporated entities and housing cooperatives.

The total loss on loans to non-financial firms is distributed between the banks based on the individual bank's share of total exposure-weighted probability of default (EW-PD) at the end of 2016.<sup>54</sup> The EW-PD share is kept constant throughout the projection period, and is calculated as follows:

- (i) Entity-specific EW-PDs are calculated by multiplying the loan exposure by the entity's probability of default.<sup>55</sup>

<sup>53</sup> The residential mortgage lending regulations limit the individual bank's scope for assessing collaterals and debt servicing capacity. However, possible regional differences in housing markets may lead to differences in actual credit risk attending residential mortgages. For example, one region might be more affected by an increase in unemployment or a fall in house prices than other regions.

<sup>54</sup> The PDs are based on non-financial firms' 2015 accounts since the 2016 accounts have yet to become available.

<sup>55</sup> See Box 5 for an account of the probabilities of default used in the loss distribution.

The exposure amount is drawn credit plus 20 per cent of the granted, undrawn credit and guarantees furnished. Any write downs are deducted from the exposure amount.

- (ii) The sum of entity-specific EW-PDs constitutes the bank-specific EW-PD.
- (iii) The sum of bank-specific EW-PDs constitutes the total EW-PD for Norwegian banks.
- (iv) The bank-specific EW-PD divided by the total EW-PD constitutes the individual bank's EW-PD share.
- (v) The EW-PD share multiplied by the total loan loss from the macro model NAM-FT2 gives the individual bank's loan loss in kroner.

The distribution of losses on loans to non-financial corporate borrowers does not take account of the fact that banks may have differing collaterals. This is due to a lack of information. The collaterals' realisation values may vary widely. In some cases no loan loss arises on a problem exposure, either because the customer is given a clean bill of health with no loss arising or because the assessed value of the collaterals exceeds the loan exposure. In other cases the bank may lose all or large parts of its exposure.

A weaknesses is that the stress test model does not take account of the value of collaterals in distributing loan losses between banks. However the banks generally follow industry norms when it comes to setting requirements for collaterals. This contributes to limiting the differences between banks' exposure-weighted collateral values. The banks' own calculations of loss given default (LGD) appear to confirm this since exposure-weighted LGDs show relatively small differences between main industries.<sup>56</sup>

SEBRA PDs are on average far higher for firms where a write-down has been carried out than for firms where a write-down has not been carried out. For example, the median PD of firms where a write-down has been carried out is 7.5 times higher than in the case of firms where a write-down has not been carried out. This applies to all banking groups, although the size of the difference varies from one bank to the next. This indicates that the SEBRA PD is a good indicator for distinguishing between exposures where a write-down is or is not likely. However, the SEBRA PDs say nothing specific about the size of write-downs.

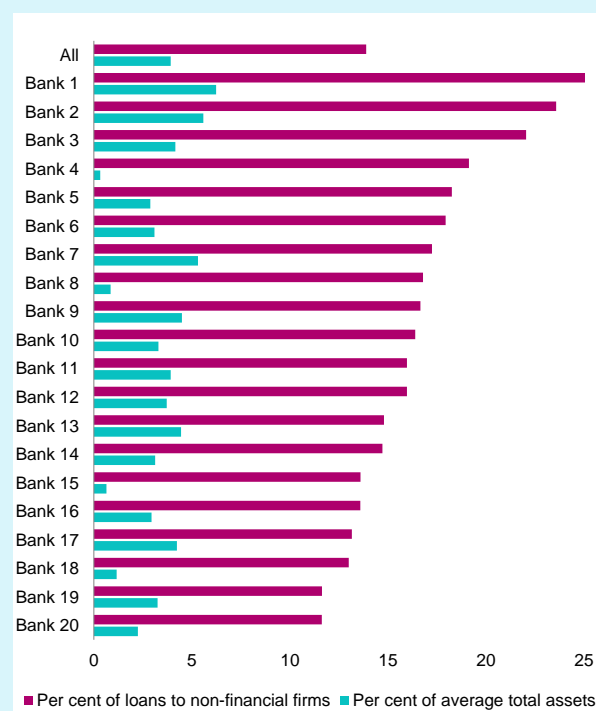
#### More about losses on loans to non-financial firms

In the stress scenario (2017-2021) the accumulated loss on loans to personal borrowers measures 2.2 per cent of total loans to personal borrowers, while the accumulated loss on loans to non-financial firms measures 14.5 per cent of total loans to non-financial firms. During the banking crisis (1988-1992) the accumulated losses on loans to non-financial firms came to an estimated 27 per cent.<sup>57</sup> The underlying macroeconomic development is at least as weak in the stress scenario as during the banking crisis. One reason loan losses are only about half as large in the stress scenario as during the banking crisis is that non-financial firms are probably in a better financial position now than at the start of the banking crisis. Further, property prices do not fall by the same margin in the stress scenario as they did during the banking crisis. This helps to curb loan losses compared with during the banking crisis.

<sup>56</sup> Banks with permission to use an advanced IRB approach to calculate risk weights determine LGD using their own models. Almost 90 per cent of the banks' total loan exposure to non-financial firms in the stress test are assigned an LGD determined by the bank in question.

<sup>57</sup> The distribution of loan losses between personal borrowers and non-financial corporate borrowers during the banking crisis is somewhat uncertain.

**18: Accumulated losses on loans to non-financial firms in per cent of, respectively, average total assets and loans to non-financial firms as at 31.12.2016. Stress scenario. Norwegian banking groups**



Source: Finanstilsynet

Banks with a high estimated credit risk (i.e. a high EW-PD, see above) on loans to non-financial firms, will have a relatively large proportion of their total loan losses assigned to loans to those borrowers. Banks with a large share of loans to non-financial firms will have higher accumulated losses relative to average total assets than banks with a low share of such loans. This is because loan losses on non-financial firms are on average far higher than on personal borrowers.

The accumulated loss on loans to non-financial firms varies widely between banking groups (chart 18). A high accumulated loan loss may be the result of a banking group having a relatively large volume of loans to borrowers in sectors with a high average estimated credit risk, as for example oil-related sectors or lodging and food



the banking group concerned has opted for the least risky customers in the branches. Conversely, a banking group may have opted for the most risky firms in branches with a low average estimated credit risk, and thus acquire a high estimated credit risk.

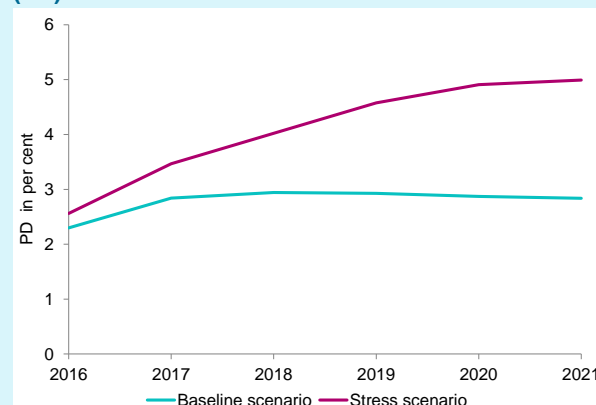
### 5: Projection of banks' risk weights and risk weighted assets for loans to non-financial firms

In its analyses of credit risk in non-financial firms, Finanstilsynet uses inter alia the SEBRA model.<sup>58</sup> The SEBRA model computes probabilities of default (PDs) at Norwegian non-financial firms (private limited and public limited entities) based on information from the firms' annual accounts. The model is also used to project accounting variables and PD based on assumptions regarding the development of the Norwegian economy. The basis for the SEBRA analyses and other analyses of firms is an accounting database containing more than 4 million accounts from Norwegian non-financial limited firms for the period 1981-2015. Since 2008 Finanstilsynet has also obtained detailed data on banks' portfolios of loans to non-financial firms (corporate portfolios). These data include the banks' internal PDs and their exposure to the individual borrower. The data are fed into the SEBRA database.

The PD estimates from the SEBRA model for the latest available financial year (2015) cover about 70 per cent of the entities in the accounting database. Absence of sales revenues is the main

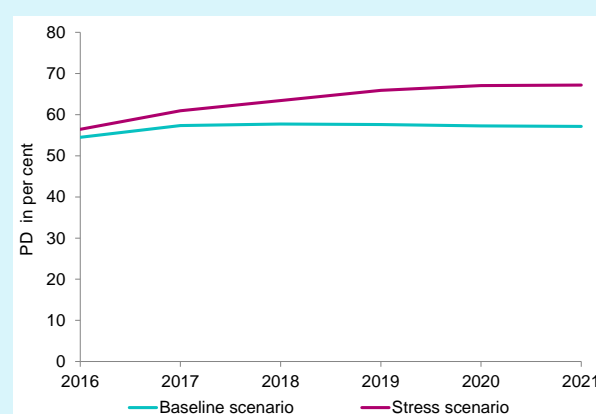
<sup>58</sup> For more information on the SEBRA model, see E. Bernhardsen and K. Larsen, "Modelling credit risk in the enterprise sector – further development of the SEBRA model", Economic Bulletin (Norges Bank) 3/2007, and Bernhardsen, E. and Syversten, B.D., "Stress testing the enterprise sector's bank debt: a micro approach", International Journal of Central Banking, September 2009.

### 19: Banks' exposure-weighted probability of default (PD)



Source: Finanstilsynet

### 20: Banks' average risk weights



Source: Finanstilsynet

reason why some Norwegian firms are not assigned a PD in the SEBRA model. For these firms a PD is assigned ("approximate" PD) based on an average SEBRA PD for various combinations of the key figures debt servicing capacity and equity ratio for the firms that have "real" SEBRA PDs. "Approximate" PDs are also assigned to foreign loan customers. Norwegian firms that lack a SEBRA PD or an approximate SEBRA PD are assigned the debt weighted average PD for Norwegian firms in the same branch. Firms which according to the banks' reports are in default are assigned a SEBRA PD corresponding to the average SEBRA PD calculated for firms that are in default.



The SEBRA model projects accounting variables for each firm based on assumptions regarding developments in income, expenses, debt growth, write-downs and dividend. The projections are done for both the baseline and the stress scenario (chart 19) (see Risk Outlook spring 2016 for a further description of the projection method). For banks that use IRB models to determine risk-weighted assets, the projected SEBRA PDs are used to project the change in risk-weighted assets. In the distribution of total loan losses from the macro model NAM-FT2 (see box 4), projected PDs are not used, but PDs based on non-financial firms' annual accounts for 2015.

With a basis in the banks' exposures to non-financial firms and the projected PDs<sup>59</sup>, risk-weighted assets<sup>60</sup> are computed for each of the exposures in the banks' portfolios per year. Risk-weighted assets and exposure are summated for each year in the stress test for each individual bank. The average risk weight is calculated by dividing each bank's risk-weighted assets by that bank's overall exposure for the period. The projection of the banks' risk-weighted assets starts out from the individual bank's actual risk-weighted assets at the start of the projection period. Only the change in risk-weighted assets is projected using the method described.

In the baseline scenario the average risk weight for the banks' portfolio of loans to non-financial firms rises marginally, whereas the increase is larger in the stress scenario (chart 20).

Risk weights for loans to personal borrowers are kept constant for all banks in all years in the stress period. For these exposures, risk-weighted assets are changed in step with loan volume.

<sup>59</sup> A bank's exposure = drawn-down credit + 0.2 (granted credit + drawn down guarantees - write-downs - drawn-down credit)

<sup>60</sup> Based on the Basel formula for the calculation of risk weights, in which the SEBRA model is used as an IRB PD model.

## OVERALL ASSESSMENT OF THE STRESS TEST RESULTS

Regulatory capital adequacy among Norwegian banks has risen in recent years, essentially as a result of stricter capital requirements, including a set of capital buffers. Requirements on capital quality have risen concurrently. Banks' equity ratio (equity capital relative to total assets), which is a traditional measure of solidity, has risen, but is nonetheless not significantly higher now than in the mid-1990s. Compared with non-financial firms, the banks have a very high debt ratio.

Measuring risk, for example in relation to individual loans, investments in interest rate derivatives or in equities, is complicated and based on a number of assumptions. Thus, the actual size of a risk is uncertain. For some instruments and in some periods the uncertainty is particularly large. Measuring risk is particularly difficult when the system itself generates risk that is not reflected in risk measurements of individual instruments (loans etc.). Systemic risk is high in the banking industry. This is related to a high debt ratio, exposure to the same risk factors and interconnectedness between institutions.

Since risk measurement and risk-sensitive capital requirements are encumbered with much uncertainty and fail to capture all relevant risk factors, the banks themselves and the supervisory authorities must exercise considerable discretion in assessing banks' capital needs. Stress testing of the banks' results and capital adequacy supplements traditional risk measurements and calculation of risk weights. Whereas risk measuring systems are based on assumptions regarding probability distributions of risk factors, an important aspect of stress testing is not to take a basis in assumptions that risk factors follow given probability distributions. The reason is that a significant portion of the uncertainty cannot be modelled in the sense that probabilities cannot be allocated to outcomes. The object of stress testing is to assess the consequence of an assemblage of events that have a low probability of occurring and are not captured by risk measuring systems, but that

## THEME: STRESS TEST OF THE NORWEGIAN ECONOMY AND THE BANKS

nonetheless can often be recognised from history in some or other combination. Crises have occurred in the financial system at irregular intervals despite their probability being considered very low beforehand.

An important and substantial element of discretion informs Finanstilsynet's assessments of banks' capital needs. Reference models have been developed to assist in determining capital requirements for risk that is not fully captured by the Pillar 1 capital requirement system. Finanstilsynet's stress test tool was primarily developed to support assessments of financial stability, but is also a tool to support discretionary assessment of individual banks' capital needs.

The stress scenario in 2017 is, as in previous years, serious for the Norwegian economy and Norwegian banks. The probability of the scenario occurring is low, but the scenario is not unrealistic. A sharp fall in world trade, a sizeable interest rate hike and a plunging oil price have all been witnessed previously. The decline is assumed to last for several years. That too is not improbable; compare for example developments in much of Europe in the years following the international financial crisis.

The accumulated effect on banks' capital adequacy is substantial, but the stress scenario is not exceptionally serious in the first two years. At the end of 2018, three of 20 banking groups will not meet the overall requirements on CET1 capital. In the latter part of the period the stress scenario develops into something far more serious. Even though the countercyclical capital buffer is set at zero as a technical assumption, six of the banking groups will not meet the capital requirements at the end of 2021. This outcome is driven mainly by increased losses on loans to non-financial firms.

The calculations illustrate that a number of banks are vulnerable to protracted shocks. Capital adequacy at several banks could fall below the regulatory minimum requirements. This will create increased uncertainty in the markets which could further exacerbate the situation. The calculations do not reflect this type of dynamics, and are also static in the

sense that there is no assumption of government action.

Finanstilsynet's stress tests are an important tool for assessing systemic risk in the bank sector in a serious, long-lasting stress scenario. Finanstilsynet's detailed information on all Norwegian banks is used to develop stress scenarios and in the stress testing of individual banks and the banking system.

When a bank's board of directors sets a capital target, the object is to ensure the bank's ability to maintain normal lending growth in an economic downturn and that the bank's capitalisation supports access to capital markets under difficult market conditions. Where Finanstilsynet in its risk and capital assessment finds that an institution's capital target and actual adjustment of its level of CET1 capital fail to reflect this sufficiently, Finanstilsynet will communicate its expectation of a higher target for CET1 capital. This expectation could be grounded in the institution's failure to tailor its capital target and actual capital ratio to the institution's business model, or it could be grounded in results of Finanstilsynet's stress tests.



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