FINANSTILSYNET
THE FINANCIAL SUPERVISORY AUTHORITY OF NORWAY

# RISK OUTLOOK
JUNE 2023

# Risk Outlook

The Risk Outlook report summarises Finanstilsynet's analyses and assessments of the stability of the Norwegian financial system. The report is published twice a year, in June and December.

Developments in financial institutions and financial markets are discussed in more detail in the following reports from Finanstilsynet:

- Residential mortgage lending survey (in Norwegian only)
- Risk and vulnerability analysis for ICT security in the financial sector (in Norwegian only)
- Report on financial institutions' performance (in Norwegian only)
- Solvency reports for financial institutions (in Norwegian only)
- Report on bank' losses and non-performing loans (in Norwegian only)
- Report on developments in consumer loans (in Norwegian only)
- Report on alternative investment funds (in Norwegian only)
- Financial institutions' use of flexibility quotas in the lending regulations (in Norwegian only)

# RISK OUTLOOK JUNE 2023



Cut-off date: 7 June 2023
Data in the charts updated as of 6 June 2023

# SUMMARY

Considerable uncertainty attends future developments in the real economy and the financial markets, both in Norway and internationally. Underlying inflation has remained high and interest rates have risen considerably over a short period of time. Central banks have announced further rate hikes if this is necessary to bring inflation back to set targets. The uncertainty is reinforced by the war in Ukraine and the geopolitical level of tension. Activity remains high in the Norwegian and global economy, but there is a considerable risk of an economic downturn combined with persistently high inflation, so-called stagflation. Such international developments may result in substantial losses and financial market turbulence. This will also affect the Norwegian economy and the Norwegian financial system.

The turbulence in the banking sector in spring 2023, with the collapse of several regional banks in the US and Credit Suisse in Switzerland, shows that crises may occur abruptly and trigger market turmoil. Underlying vulnerabilities could rapidly lead to an outflow of customer deposits and solvency problems in banks, which in turn could affect the financial system, both nationally and internationally. The banking turbulence in the US and Switzerland has had limited consequences for Norwegian financial institutions.

Improved banking supervision and stricter capital requirements in the wake of the financial crisis have contributed to more resilient banks. At the same time, several years of very low interest rates and easy access to credit have resulted in vulnerabilities in the form of debt accumulation and high prices of real estate and other capital assets. This has heightened the risk of financial instability.

There is a close correlation between credit, market and liquidity risk in the financial system. Stricter capital requirements increase the resilience of the banking system and thereby also help reduce the risk of massive withdrawals of customer deposits (bank runs). The scale and speed of the events in the US demonstrate the importance of a well-capitalised banking system.

High debt in Norwegian households and elevated residential and commercial property prices represent the key vulnerabilities in the Norwegian financial system. Since the banking crisis in the early 1990s, house and commercial property prices and household debt have risen sharply. Even though higher collateral values, low interest rates and favourable economic developments have contributed to low loan losses in the years following the banking crisis, Norwegian banks are particularly vulnerable in a scenario characterised by an economic downturn, a sharp rise in interest rates and a property market crash.

The debt burden of Norwegian households is high, both in historical terms and compared with households in other countries. There has been an increase in the proportion of households with a high debt burden in recent years. Over the past year, the twelve-month increase in household debt has edged down. Combined with higher nominal income growth, this has contributed to reducing the debt-to-income ratio, although the ratio remains high. Parallel to this, the interest burden has increased significantly. Only a small proportion of overall household debt carries fixed interest rates. Many households are particularly vulnerable to a further rise in interest rates, loss of income or declining house prices.

Commercial property prices have risen markedly over several years as a result of increasing rental prices and low required rates of return. The banks have a significant loan exposure to commercial real estate companies. In the past, both Norwegian and international banks have suffered substantial losses on commercial property exposures during crises in the financial and property markets. A strong rise in interest rates and higher risk premiums may lead to a substantial fall in commercial property prices and increased credit risk for the banks. Commercial real estate companies have large volumes of debt falling due over the next few years and are thus subject to considerable refinancing risk. Finanstilsynet's analyses in connection with a thematic review of  selected banks' lending activities in the commercial property market show that many commercial real estate companies will be severely affected by interest rate increases, lower rental income and reduced property values.

Supervisory authorities in many countries are particularly concerned about the high risk in the commercial property market. The European Systemic Risk Board (ESRB) has issued a recommendation to the competent

authorities in the EEA on the implementation of measures to prevent systemic risk associated with the commercial real estate sector.

On average, Norwegian banks have a high level of profitability and meet regulatory capital and liquidity requirements. The IMF and the European Systemic Risk Board emphasise that there is a high risk of an international economic downturn. In Finanstilsynet's stress test, it is assumed that inflation and policy and market rates will increase further internationally, that global trade and the production of goods and services will decline, and that unemployment will rise. This will have a severe impact on the Norwegian economy and Norwegian banks. Norwegian banking groups' CET1 capital is estimated to decrease from approximately 18 to 12 per cent, primarily as a result of higher loan losses. The capital adequacy ratios of a number of banks will decline substantially. If the countercyclical capital buffer is assumed to be reduced to zero, eleven of the 18 banking groups will not meet the minimum requirement and the buffer requirement for CET1 capital in the stress scenario.

If large losses were to occur and it becomes necessary to draw on capital buffers, experience shows that banks can rapidly lose market confidence and experience liquidity problems. In light of the considerable economic and financial uncertainty, Norwegian banks should seek to meet regulatory requirements by an ample margin, which will help bolster market confidence even in a stressed situation. Finanstilsynet expects Norwegian banks to apply caution with respect to dividend payments and share buybacks. The European Supervisory Authorities have expressed a similar expectation.

Life insurers and pension funds enjoy a strong solvency position. Pension institutions manage extensive capital and may therefore be adversely affected by market turbulence. They may also contribute to market turbulence or fluctuations if they, as a result of investment losses and reduced risk-bearing capacity, have to change their investment profile considerably in a short space of time. The institutions have sizeable investments in the property sector in the form of directly owned property, equities in real estate companies, bonds issued by real estate companies and real estate funds. A sharp fall in commercial property prices, as assumed in Finanstilsynet's stress test of banks, will result in substantial losses and a pronounced weakening of Norwegian life insurers’ capital buffers. Finanstilsynet expects the pension institutions’ capital planning to factor in the considerable downside risk.

# ECONOMIC DEVELOPMENTS AND RISK AREAS

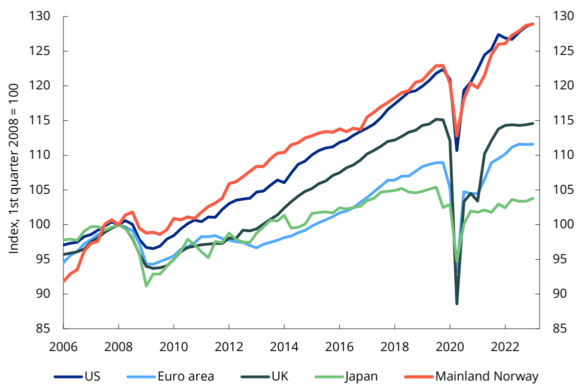
## WEAKER ECONOMIC GROWTH AND LOWER GROWTH EXPECTATIONS

Economic growth has slowed in a number of countries (chart 1). However, there is a high level of activity, with low unemployment and labour shortages in several sectors. Annual consumer price inflation has declined, but inflation is still far above the central banks' inflation targets (chart 2), and underlying inflation (core inflation) has remained high.

The IMF's latest forecasts show that global GDP growth will slow from 3.4 per cent in 2022 to 2.8 per cent in 2023, which is consistent with a gradual dampening of activity. Global inflation is expected to fall from 8.7 per cent in 2022 to 7.0 per cent in 2023 and further to 4.9 per cent in 2024.

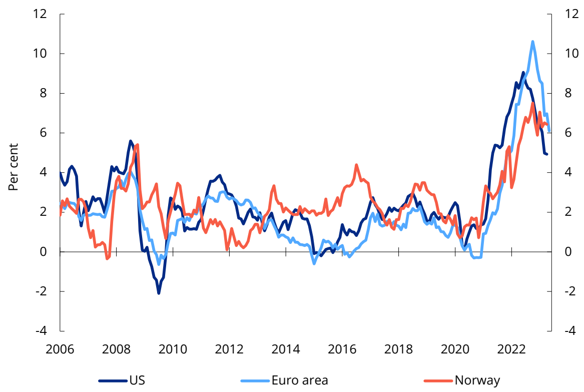
According to the IMF, the uncertainty surrounding global economic developments is unusually high, and there is a heightened risk of a hard landing. The IMF points out that a rise in banks’ funding costs could result in a tightening of credit conditions and higher interest rates on loans to households and non-financial corporations. This could contribute to financial turmoil and more sluggish economic growth.

**Chart 1 Gross domestic product**




Indices. Last observation: first quarter 2023. Source: Refinitiv

**Chart 2 Inflation**



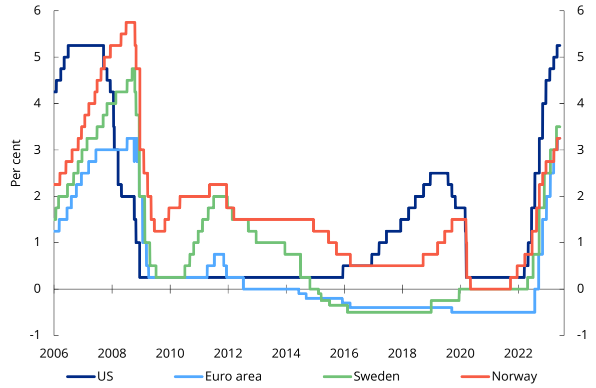

Last observation: March 2023. Source: Refinitiv

There is a high level of activity in the Norwegian economy, but key forecasters expect the growth rate to decline somewhat in 2023. Growth projections for Mainland GDP from Norges Bank, Statistics Norway (in Norwegian only) and the Ministry of Finance range between 1.0 and 1.3 per cent in 2023, compared with 3.8 per cent in 2022. Consumer prices are expected to rise by between 4.9 and 5.4 per cent in 2023, which is slightly less than the 5.8 per cent increase in 2022. The falling energy prices are expected to contribute to an overall reduction in consumer price inflation. However, a tight labour market and the weak krone exchange rate may dampen the decline.

## FINANCIAL MARKETS ARE AFFECTED BY WEAKER GROWTH EXPECTATIONS

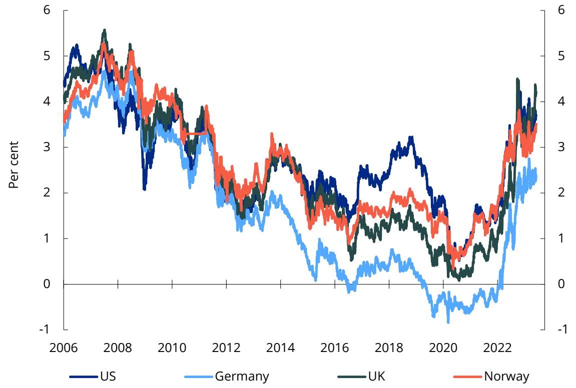
In many countries, accelerating inflation has prompted central banks to raise their policy rates considerably (chart 3). Long-term interest rates have risen markedly since their lowest level, although developments since autumn 2022 have been more mixed (chart 4).

**Chart 3 Policy rates**




For the US, the upper limit in the target interval is shown. For the euro area, the deposit rate is shown, which is the lowest of the three official policy rates. Source: Refinitiv

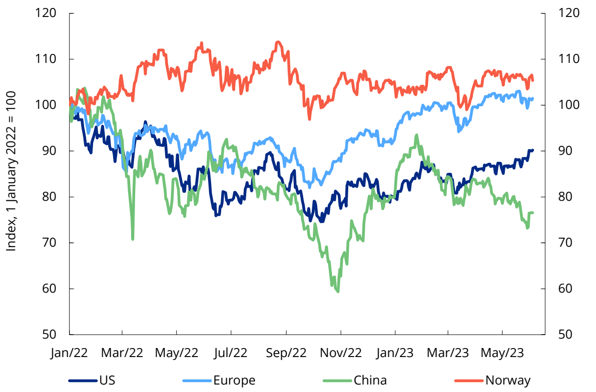
**Chart 4 10-year government bond yields**




Source: Refinitiv

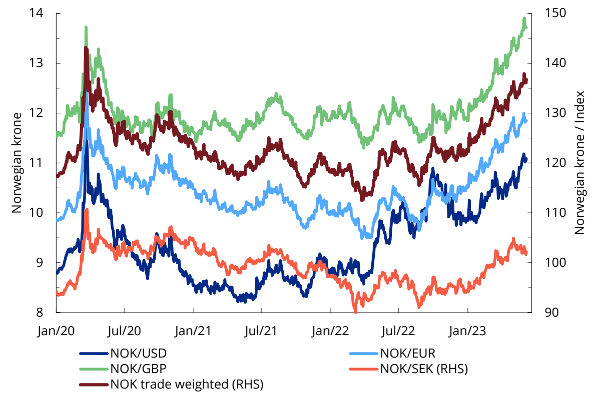
Stock market developments reflect weaker growth expectations and rising interest rates, which contribute to reducing both firms' expected future earnings and the present value of their earnings. 2022 was the weakest year for equities since the global financial crisis. The rapid rise in interest rates was also reflected in a historically weak trend in government bond prices. Thus far this year, there has been a positive trend in most stock markets, in spite of the decline during the banking turbulence in March.

**Chart 5 Equities, total return**




MSCI indices. Source: Refinitiv

**Chart 6 Krone exchange rate relative to selected trading partners**




Source: Refinitiv

Energy prices have been on the decline since autumn 2022, partly owing to the warm winter in Europe and ample access to liquefied natural gas (LNG). During the same period, the Norwegian krone has depreciated considerably against the currencies of several of our trading partners (chart 6). The depreciation may reflect the heightened uncertainty in the financial markets and lower oil and gas prices, as well as a wider interest rate differential against other countries. The weak krone value influences inflation expectations in Norway, as prices of imported goods and services increase. At the same time, it has a positive impact on the competitive conditions for the Norwegian export industry.

## NATIONAL AND INTERNATIONAL RISK AREAS

The turbulence in the banking sector in spring 2023, with the collapse of several regional banks in the US and Credit Suisse in Switzerland, shows that crises may occur abruptly and trigger significant market turmoil. Underlying vulnerabilities could rapidly lead to an outflow of customer deposits and solvency problems in banks, which in turn could affect the financial system, both nationally and internationally.

Improved banking supervision and stricter capital requirements in the wake of the financial crisis have contributed to more resilient banks. At the same time, several years of very low interest rates and easy access to credit have resulted in vulnerabilities in the form of debt accumulation and high prices of real estate and other capital assets. This has heightened the risk of financial instability.

The amount of debt in households and non-financial corporations has increased strongly in many countries over several years. As a consequence of the rise in interest rates, the financial position of many households and firms with high debt burdens will gradually be impaired. This may have repercussions for economic activity and the financial markets.

Significant uncertainty attends future economic developments, both in Norway and internationally. If inflation remains high, it may be necessary to raise interest rates more than is currently expected. For example, an escalation of the war in Ukraine could lead to new increases in food and energy prices, while greater geopolitical unrest could result in global capacity constraints and lower underlying growth capacity. Prospects of weaker economic growth combined with persistently high inflation have raised fears of stagflation, which will heighten the risk of financial instability.

Property prices have levelled off or fallen in a number of countries over the past year. Additional interest rate hikes could lead to a further fall in prices of both residential and commercial property, and refinancing problems for commercial real estate companies may accelerate downward price spirals. In January 2023, the European Systemic Risk Board (ESRB) recommended that the EU and national authorities improve their monitoring of risks in the financial system originating from the commercial real estate sector and implement both microprudential and macroprudential measures to address identified vulnerabilities.

In many countries, sovereign debt has also increased considerably in recent years, partly as a result of support measures implemented during the pandemic and the high energy prices in Europe in the wake of Russia's invasion of Ukraine. In these countries, fiscal space has been reduced, and the economies are more vulnerable than previously to rising interest rates on sovereign debt.

## Norwegian households are vulnerable to higher interest rates

High debt in Norwegian households represents a significant financial vulnerability. Households' debt burden is high both in historical terms and compared with other countries, and the share of households with a particularly heavy debt burden has increased in recent years.

Households' debt burden[1] has risen considerably since the late 1990s. The debt burden declined somewhat through 2022 and was approximately 240 per cent at end-December 2022 (chart 7). Over the past year, the increase in credit to households has slowed, and twelve-month growth in household debt was 4.1 per cent in April 2023. Figures obtained by Finanstilsynet (in Norwegian only) show that financial institutions' total volume of new residential mortgages granted remained high in the first quarter of 2023. However, the volume of new loans granted was approximately 8 per cent lower than in the first quarter of 2022.[2]

Although credit growth has slowed and the debt burden has stabilised, households' interest burden has increased considerably. After remaining historically low for a protracted period, households' average interest burden[3] has risen markedly since mid-2021. In the fourth quarter of 2022, the interest burden was

[1] Measured as debt in per cent of disposable income.
[2] Figures for new residential mortgages have been obtained in connection with the banks' reporting on the use of flexibility quotas in the lending regulations.
[3] Measured as interest expenses in per cent of disposable income before deducting interest expenses.

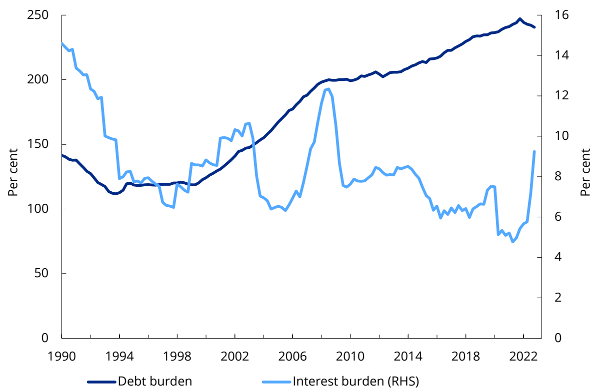
9.2 per cent. By comparison, it was 4.8 per cent in the second quarter of 2021. Additional interest rate hikes will contribute to a further increase in the interest burden.

Only a small proportion of Norwegian households' debt carries fixed interest rates, and this proportion has been low for several years. At end-March 2023, the share of instalment loans secured on residential property with fixed interest rates was 5.8 per cent. A mere 2.7 per cent had a fixed-rate period of more than three years.[4] Rising interest rates thus quickly leads to higher interest expenses for households. In a situation with a historically high debt burden, higher interest rates will also have a greater impact on households' interest burden than in previous periods of rising interest rates.

The share of households with a high debt burden has increased markedly in recent years, and the share of total household debt held by households with high debt-to-income ratios has also risen over time (chart 8). Finanstilsynet's residential mortgage lending survey (in Norwegian only) from autumn 2022 shows that a large proportion of new loans secured on residential property is taken out by borrowers with high total debt relative to gross annual income (debt-to-income/DTI ratio).

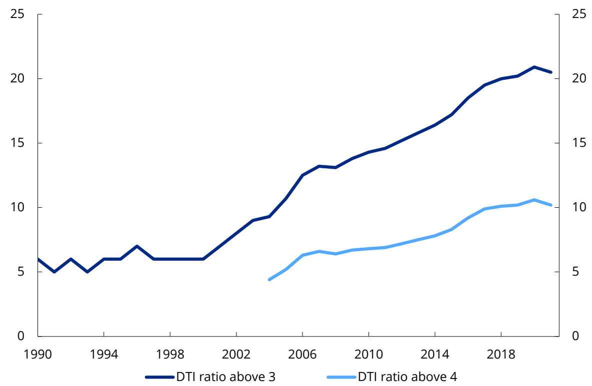
Many households have a very high debt burden. These households will be particularly vulnerable to declining incomes, rising lending rates and falling house prices. The very high share of floating-rate loans means that a large number of households are highly vulnerable and at risk when their debt burden is also high. Debt problems in the household sector will have major economic and financial repercussions.

**Chart 7 Household debt burden and interest burden**




Last observation: fourth quarter 2022. Sources: Statistics Norway and Finanstilsynet

**Chart 8 Share of households with a high DTI ratio**




Last observation: 2021. Source: Statistics Norway

### Household debt and interest burden under stress test assumptions

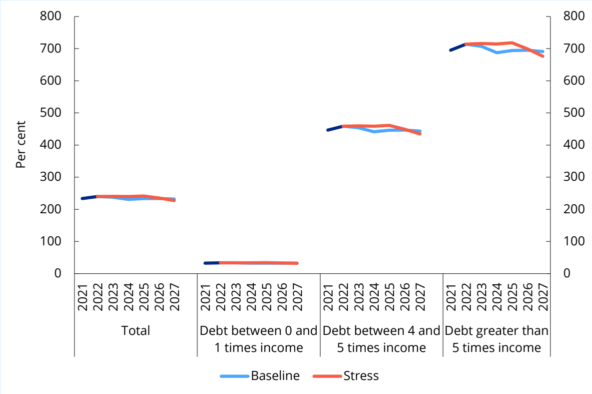
The high debt burden and the large proportion of floating-rate loans make Norwegian households particularly vulnerable to a sharp rise in interest rates. The effect of higher interest rates on households' interest burden (interest expenses as a share of income before deducting interest expenses) can be illustrated by an example based on average income, wealth and debt for various household groups. The calculations are based on the assumption that developments in total household income and debt are the same as in the stress test of banks' capital adequacy.

[4] Based on the remaining fixed-rate period.

All household groups are assumed to experience the same relative increase in income and debt and the same absolute change in interest rates (measured in percentage points). It is also assumed that there is no migration in or out of household groups during the projection period.

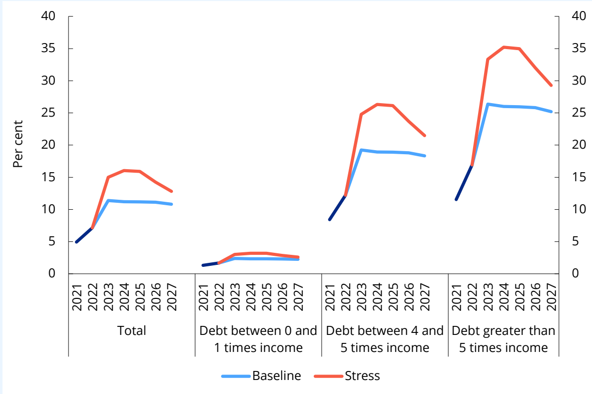
The average debt burden (debt in per cent of after-tax income) for households combined is estimated to have increased from 233 per cent in 2021 to 240 per cent in 2022.[5] If developments in the Norwegian economy are in line with the baseline scenario, the overall household debt burden will decline to 232 per cent at the end of the projection period in 2027 (chart 9). In the stress scenario, the overall household debt burden is estimated to be reduced to 227 per cent in 2027. For households with debt greater than five times after-tax income, the average debt burden increased from 695 per cent in 2021 to 714 per cent in 2022 and declines to 691 per cent in 2027 in the baseline scenario. In the stress scenario, the debt burden for this household group falls to 677 per cent in 2027. This group represented 12 per cent of Norwegian households in 2021 and accounted for 33 per cent of total household debt.

**Chart 9 Developments in the debt burden, selected household groups**




Sources: Statistics Norway and Finanstilsynet

**Chart 10 Developments in the interest burden, selected household groups**




Sources: Statistics Norway and Finanstilsynet

If interest rates follow the path outlined in this year's stress test, the average interest burden for households combined increases from 5 per cent in 2021 to 11 per cent in 2024 in the baseline scenario and thereafter remain approximately unchanged throughout the projection period. In the stress scenario, the interest burden increases to 16 per cent in 2024 and thereafter declines to 13 per cent in 2027.

For households with debt greater than five times after-tax income, the average interest burden is estimated to have increased from 12 per cent in 2021 to 17 per cent in 2022. In the baseline scenario, the interest burden increases further to 26 per cent in 2023 and thereafter declines to 25 per cent in 2027. In the stress scenario, the interest burden of households whose debt exceeds five times after-tax income increases to 35 per cent (chart 8) – i.e. 9 percentage points higher than in the baseline scenario – and declines to 29 per cent in 2027 (chart 10).

For the group whose debt is between four and five times after-tax income, the average interest burden is estimated to have increased from 8 per cent in 2021 to 12 per cent in 2022. In the baseline scenario, the average interest burden for this group increases to 19 per cent in 2023 and declines to 18 per cent at the end of the projection period. In the stress scenario, the interest burden increases to 26 per cent in 2024 –

[5] The figures presented here do not include non-profit organisations, and dividends received are not deducted. This is in contrast to the figures presented in chart 7. Chart 7 also uses disposable income (as defined in the national accounts) and domestic loan debt (C2). These calculations use 'after-tax income' (which means that interest expenses are used as a proxy for housing services) and household debt, as reported in the income tax return. The estimated values for the debt and interest burden in this box will therefore deviate somewhat from those found in chart 7.

i.e. 7 percentage points higher than in the baseline scenario – and declines to 21 per cent in 2027. In 2021, this group represented 8 per cent of Norwegian households and accounted for 17 per cent of total household debt.

A large share of the households have low or no debt and will therefore be little affected by higher lending rates. In 2021, 28 per cent of Norwegian households had a level of debt below after-tax income. These households' debt accounted for 4 per cent of total household debt in 2021.

There are wide differences between households in the various main groups with respect to the distribution of income, wealth and debt. These differences are not evident from the above calculations. Many households have considerably more debt than the average in the relevant group and will be more sensitive to interest rate increases than illustrated in chart 10.

## High house prices

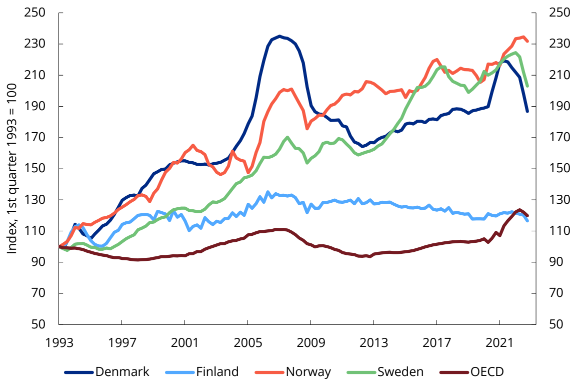
House prices in Norway have risen considerably over a long period of time and significantly more than disposable income per capita. Price inflation has been much higher than in several other countries (chart 11). Sweden and Denmark also have high house prices relative to disposable income, but the ratio fell significantly in both countries in 2022.

In Norway, house prices declined throughout autumn 2022. Towards the end of last year and during the first five months of 2023, prices picked up anew. In May, twelve-month growth in house prices was 0.1 per cent on a national basis (chart 12). So far in 2023, house prices have risen by 7.7 per cent in nominal terms in spite of increasing interest rates.

The future path of house prices is uncertain. Statistics Norway expects a fall in nominal house prices in both 2023 and 2024 in response to rising living expenses and higher interest rates. Norges Bank also expects house prices to drop in 2023 as a consequence of higher lending rates. In 2024, the bank expects zero growth in house prices.

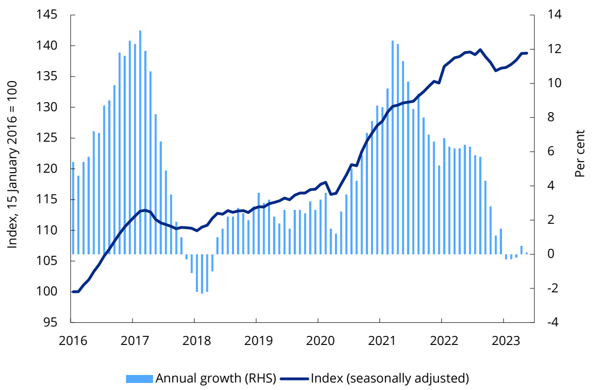
Interest rate increases and economic uncertainty entail a heightened risk of falling house prices. On the other hand, there has been a significant reduction in sales of new dwellings since the beginning of the year, and a substantial decline in housing starts and construction activity appears likely. Over time, low residential

**Chart 11 House prices as a share of disposable income per capita**




Last observation: fourth quarter 2022. Source: OECD

**Chart 12 House prices (domestic)**




Last observation: March 2023. Sources: Eiendom Norge, Eiendomsverdi, Finn.no and Refinitiv construction activity may help bolster sales of existing homes, as the increase in the overall supply of dwellings will slow. Furthermore, population growth has picked up, primarily as a result of immigration from Ukraine, which in isolation increases housing demand and house prices.

## Non-financial corporations

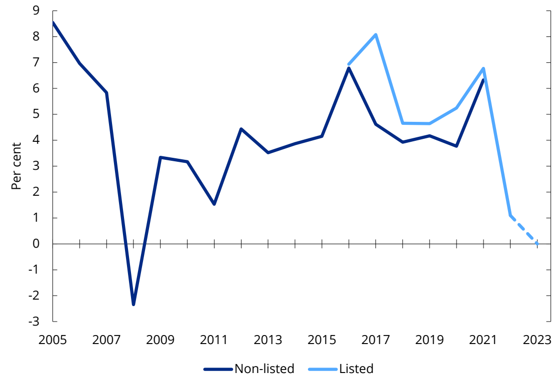
The Norwegian business sector generally fared well during the pandemic and beyond. However, some business sectors are now starting to feel the negative impact of higher operating and interest expenses and lower demand, etc. The number of debt collection cases and bankruptcies has increased sharply since the beginning of 2022, especially in the construction industry, retail trade and accommodation and food services. In the construction industry, the number of bankruptcies was 23 per cent higher in the first quarter of 2023 than in the corresponding period a year earlier. The number of bankruptcies rose by 72 per cent within retail trade and by as much as 103 per cent within accommodation and food services. The numbers rose from unusually low levels as a result of support measures and deferrals introduced during the pandemic and are now virtually back at pre-pandemic levels. Within commercial real estate, there were still no signs of an increase in the number of bankruptcies in the first quarter of 2023.

The financial performance of some of the largest Norwegian manufacturing groups was significantly weaker in the first quarter of 2023 than in the year-earlier period, mainly due to reduced demand and higher expenses. Export companies have been positively affected by the depreciation of the Norwegian krone.

# COMMERCIAL REAL ESTATE

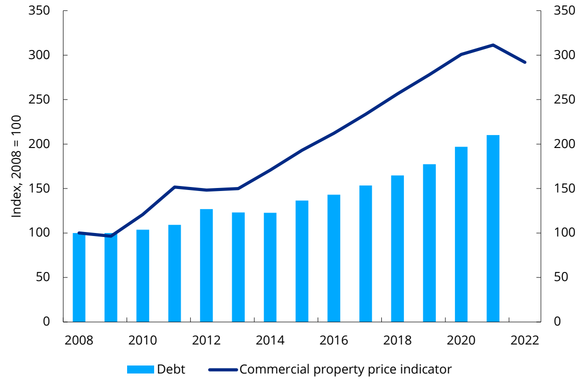
After several years of increasing rental prices and property values, very low lending rates and generally ample access to credit, commercial real estate (CRE) companies are now facing greater challenges.[6] In the fourth quarter of 2022 and the first quarter of 2023, listed CRE companies posted significant write-downs on properties. Combined with higher interest expenses, this contributed to a sharp decline in profits (chart 13). Financial statements for 2022 are not yet available for all non-listed companies, but developments in previous years indicate that the performance of listed and non-listed CRE companies is largely compatible.

**Chart 13 Annual profits after tax in per cent of total book assets.[7] Norwegian listed and non-listed CRE companies**




Sources: Finanstilsynet and listed CRE companies' annual and interim financial reports

**Chart 14 Commercial property price indicator and debt**




Based on prime office space in central Oslo at end-December. Sources: OPAK, Bisnode, Dagens Næringsliv, Entra and Finanstilsynet

Commercial property prices have risen markedly over the past decade as a result of increasing rental prices and low required rates of return (chart 14). During the banking crisis in the late 1980s and early 1990s, Norwegian banks recorded large losses on loans to CRE companies. Banks' lending to commercial real estate exceeds their total lending to all other sectors. Their total exposure to this sector is now about twice as high relative to the banks' total lending to non-financial corporations than before and during the banking crisis. Insurers and pension funds are also heavily exposed to commercial property, while investment funds have sizeable investments in commercial property.

## COMMERCIAL REAL ESTATE COMPANIES' SENSITIVITY TO INTEREST RATE INCREASES AND FALLING PROPERTY VALUES

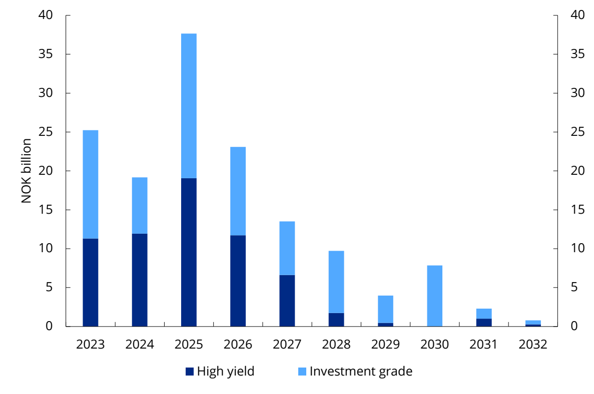
A number of factors affect the debt servicing capacity of CRE companies and lenders' risk of losses, including the interest rate level, the proportion of fixed-rate loans, the maturity and repayment structure and the size of the debt, developments in rental prices and property values, and the tenants' ability to pay. CRE companies' sensitivity to interest rate increases and falling property values is discussed below. The maturity structure of the companies' bond debt is discussed in a separate box.

[6] See Risk Outlook December 2022 for a further description of historical price developments, etc.
[7] Profits for the first quarter of 2023 are annualised (multiplied by four), while total book assets are assumed to be unchanged from end-April to end-December 2023.

## Maturity structure, refinancing risk and credit risk premiums

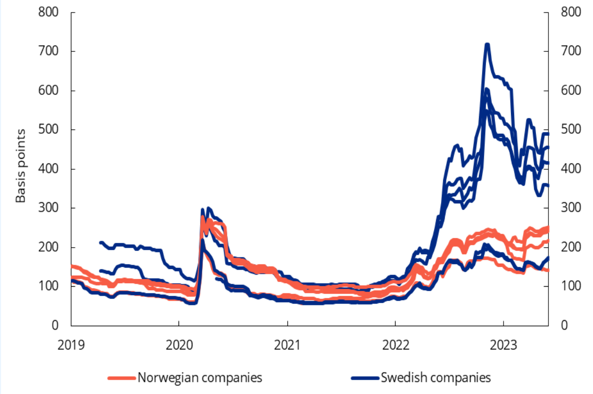
Norwegian CRE companies have just under NOK 140 billion in outstanding bond debt.[8] This represents approximately 20 per cent of Norwegian CRE companies' total interest-bearing debt. Just below 60 per cent (just over NOK 80 billion) of the bond debt will reach maturity by the end of 2024 (chart 15). About half of all outstanding commercial real estate bonds are so-called high-yield (or non-investment-grade) bonds. These bonds have a lower credit rating (BB+ or lower) and involve a higher risk than investment grade bonds.

**Chart 15 Outstanding commercial real estate bonds in Norway. Maturity structure**




Source: Stamdata

**Chart 16 Risk premiums for selected CRE companies**




Source: Nordic Bond Pricing

CRE companies may be hit particularly hard by higher interest rates, since interest expenses usually account for a far larger share of these companies' income before interest expenses than in other industries. In the short term, this effect is mitigated by the fact that some CRE companies have entered into fixed-rate agreements for parts or the whole of the loan. Furthermore, rental income will often be inflation-adjusted which results in higher rental income in a higher inflation scenario.

Risk premiums on commercial real estate bonds have risen since the beginning of 2022 (chart 16). This results in higher borrowing costs in connection with refinancing. According to market participants, the companies can now expect to pay interest of between 5 and 10 per cent on new bond debt. Risk premiums have increased far more for Swedish CRE companies than for Norwegian ones.

Figures from Union's banking survey in the first quarter of 2023 show that for a real estate investor, the interest rate on new loans with a five-year maturity rose from about 3.8 per cent in the fourth quarter of 2021 to about 5.9 per cent in the third quarter of 2023.[9] This corresponds well with Finanstilsynet's figures for banks' lending exposures, where the average interest rate on banks' loans to CRE companies was between 5.0 and 6.5 per cent at year-end 2022. At the beginning of 2022, some CRE companies were able to raise loans at an interest rate below 2 per cent, and the average interest rate was approximately 3 per cent.

Higher interest rates and risk premiums make it more challenging for companies to refinance debt in the bond market. In the period ahead, the companies may have to seek alternative refinancing, usually bank loans, to refinance maturing bond debt.

[8] Source: Stamdata.
[9] In Union's banking survey, (in Norwegian only) the largest banks in Norway are interviewed about recent developments in commercial property financing.

## About samples and projections

The projections are based on the consolidated financial statements of the ultimate parent company registered in Norway. For the sake of simplicity, the term ‘company’ is used in the text, even though it is the consolidated financial statements that have been used. A distinction is made between *listed* and *non-listed* companies. Key accounting figures are projected on the basis of the most recent observation and the baseline scenario in Finanstilsynet's stress test, see table 1 and the chapter on Finanstilsynet's stress test. For the listed companies, preliminary financial statements for 2022 and interim financial statements for the first quarter of 2023 are available. For the non-listed companies, financial statements for 2021 are used as a basis. For both listed and non-listed CRE companies, it is assumed that the *volume* of assets and liabilities is unchanged from the last available observation. Interest expenses, operating income and the book value of assets are projected as discussed below. All other income and expense items remain unchanged.

**Table 1 Key variables in the projections, cf. the baseline scenario in Finanstilsynet's stress test**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|---|
| Banks' average lending rate (level) | 3.8 | 5.8 | 5.7 | 5.6 | 5.5 | 5.4 |
| - Change in non-listed companies' interest rate (percentage points) | 1.5 | 1.5 | 0.0 | -0.1 | -0.1 | -0.1 |
| - Change in listed companies' interest rate (percentage points) | 0.8 | 1.5 | 0.5 | -0.1 | -0.1 | -0.1 |
| Consumer prices (annual increase in per cent) | 5.8 | 4.9 | 2.3 | 2.1 | 2.3 | 2.0 |
| - Change in operating income (annual increase in per cent) | 5.1 | 6.5 | 4.9 | 2.3 | 2.1 | 2.3 |
| Commercial property prices (annual increase in per cent) | -2.8 | -5.4 | -7.2 | 0.1 | 2.0 | 2.8 |

Sources: Statistics Norway and Finanstilsynet

*Operating income*

Leases on commercial property usually include inflation adjustment clauses. The adjustments are normally based on twelve-month consumer price growth in November the previous year and have a one-month notification period. Against this background, the companies' operating income has been revised upwards by the annual rise in consumer prices for the previous year. In order to take into consideration that a certain share of CRE companies' operating income is not related to leasing activity and that not all leases are inflation-adjusted, it is assumed that operating income is adjusted upwards by 80 per cent of consumer price inflation.

*Interest expenses*

See table 1.

*Book value of assets*

The book value of investment properties and other assets is assumed to change in step with changes in commercial property prices. This implies an accumulated decline in asset values of approximately 11 per cent from year-end 2021 to year-end 2027. For listed companies, actual book values are used for 2022.

In the analysis, three main indicators are used:

- *The interest coverage ratio (ICR)* is defined as income from ordinary operations (‘operating income’) divided by interest expenses, and is a measure of the company's ability to pay interest expenses using operating income.
- *The debt coverage ratio (DCR)* is defined as operating income divided by interest expenses and estimated instalment payments / necessary investments, and is a measure of a company's ability to pay interest expenses and instalments / necessary investments using operating income.
- *The debt ratio indicator* is defined as total liabilities divided by total book assets, and is a measure of a company's solvency.

## Listed CRE companies

Developments in rental prices largely determine CRE companies' operating income. According to Entra's consensus report, rental prices for prime office space in central Oslo and at Helsfyr and Lysaker were up between 7 and 11 per cent in 2022, while an increase of around 3.8 per cent is expected in 2023. In 2024 and 2025, annual growth in rental prices is expected to be 1.8 and 1.5 per cent, respectively. In 2022, the listed companies’ portfolios of rental properties also increased. Overall, the companies' rental income was up 15 per cent from 2021 to 2022.[10] During the same period, the companies' operating expenses rose by 14 per cent and interest expenses by 50 per cent. Interest expenses rose sharply despite the fact that the increase in interest rates in the first part of 2022 was relatively modest and that a large proportion of listed companies' debt carried very low fixed lending rates. An important reason was that interest-bearing debt rose by just over 20 per cent in 2022.

At the start of 2023, a smaller share of the debt was linked to fixed-rate agreements, while lending rates were far higher than at the start of 2022. The policy rate has been raised by 0.5 percentage points thus far in 2023, and Norges Bank has signalled further interest rate hikes. In the fixed income markets, long-term interest rates (5–10 years) are not expected to decline appreciably from today's level. Finanstilsynet's calculations show that a 4 per cent increase in rental income in 2023, which is in line with the estimated rise in rental prices in Entra's consensus report, corresponds to an increase in listed CRE companies' average lending rate of approximately 0.45 percentage points. This indicates that net rental income must increase more than the inflation adjustment to compensate for the expected rise in interest expenses.

*The interest coverage ratio (ICR)* for listed CRE companies improved significantly in 2021 (chart 17). This indicates that 2021 was a good year for Norwegian commercial real estate, with a high level of activity in the rental and transaction markets and an increase in the value of property portfolios. In 2022, however, there was a sharp drop in the ICR. If lending rates follow the path described in the baseline scenario (table 1), the ratio will contract further and be merely 1.8 at year-end 2024. According to the baseline scenario, lending rates will decline marginally in 2025–2027. However, inflation will also decrease, which means that the inflation adjustment of leases will have a limited effect. Overall, the ICR will increase to 2.0 by the end of 2027.

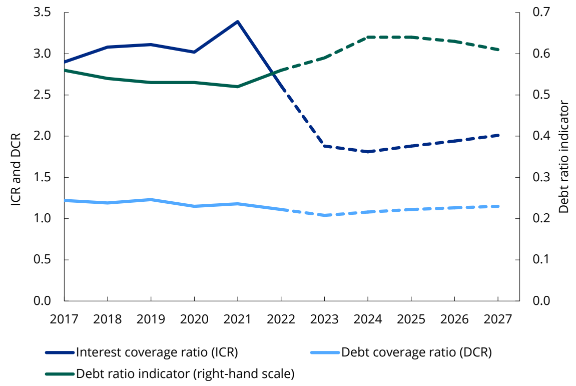
*The debt coverage ratio (DCR),* which takes into consideration that operating income must also cover instalments and self-financing of maintenance investments, fell from 1.18 in 2021 to 1.11 in 2022. In the projections for 2023, it declines further to 1.04, which means that total operating income only marginally exceeds the sum of projected interest expenses, instalments and maintenance investments.[11]

If a company has a DCR below 1, it does not necessarily mean that it does not meet its payment obligations. Estimated instalment payments may be higher than actual instalment payments, and companies may defer maintenance investments. There can be many years between major investments. There will always be companies that are experiencing financial challenges, are in liquidation or are start-ups that need a few years to become profitable. For a newly established company, a DCR below 1 may be acceptable during the first years of operation. The DCR does not specify that the company is in default or that it will shortly default on its loans. However, if the ratio remains below 1 over time, there is a high risk that it will be challenging for the company to meet its payment obligations.

[10] The situation of listed companies and price developments in central Oslo and at Helsfyr and Lysaker are not necessarily representative of commercial property in the rest of Norway, offices of lower standard or other types of commercial properties (warehouses/logistics, shopping centres, hotels, etc.).
[11] Please note that the debt coverage ratio does not factor in taxes and dividend payments to owners.

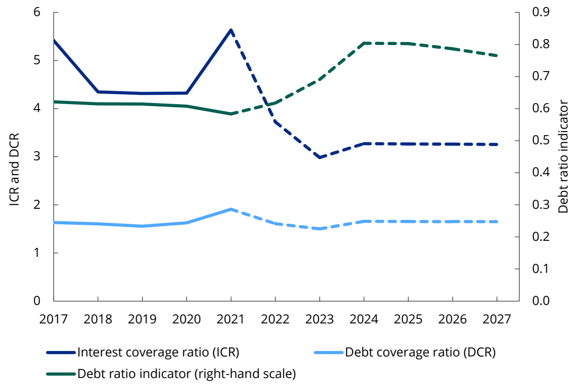
*The debt ratio indicator* of listed CRE companies rose from 0.52 in 2021 to 0.56 in 2022 (chart 17). The indicator increases sharply in the projections up to year-end 2024. The increase is driven by the projected fall in commercial property prices in the baseline scenario (see box). Even though the debt ratio indicator for listed companies declines marginally in 2025-2027, it will be far higher at year-end 2027 than it was at the beginning of the projection period. The debt ratio indicator is a simplified estimate of the actual loan-to-value (LTV) ratio, i.e. loans as a share of the estimated value of pledged collateral. The actual LTV ratio is normally somewhat lower than the debt ratio indicator, as defined here. In the past, however, changes in actual LTV ratios and in the debt ratio indicator have largely moved in tandem.

**Chart 17 Interest coverage ratio, debt coverage ratio and debt ratio indicator. Listed CRE companies**




Annualised first quarter figures for 2023 and projected figures for 2024–2027. Sources: Finanstilsynet and the listed companies' published annual financial statements

**Chart 18 Interest coverage ratio, debt coverage ratio and debt ratio indicator. Non-listed CRE companies**




Projections for 2022–2027. Source: Finanstilsynet

## Non-listed CRE companies[12]

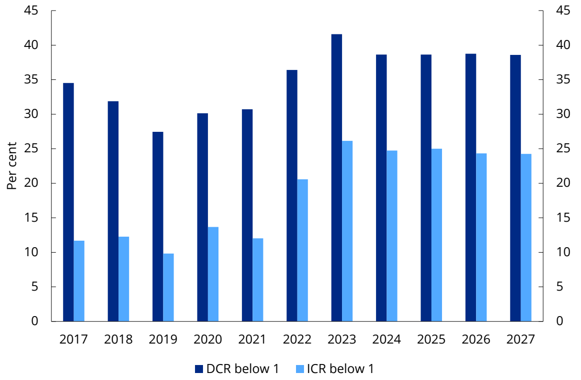
There is a sharp drop in th*e ICR* and the *DCR* of non-listed CRE companies fin the first two years of the projection period (chart 18). At year-end 2023, the DCR is 1.5. This indicates that non-listed CRE companies *combined* will still have an earnings buffer. However, as discussed in more detail below, there are major differences between the companies. The situation of the *weakest* companies is of major significance when assessing the lenders' credit risk. *The debt ratio indicator* for non-listed companies increases from approximately 0.6 at year-end 2021 to approximately 0.8 at year-end 2024. The increase reflects the fall in commercial property prices in the baseline scenario. The increase in property values in the baseline scenario in 2025–2027 contributes to a decline in the debt ratio indicator to just under 0.8. That is high in a historical perspective.

## Interest-bearing debt in the weakest CRE companies

The interest-bearing debt of non-listed CRE companies with an ICR and a DCR below 1 increases considerably in the projections for 2022 and 2023 (chart 19). At year-end 2023, 26 per cent of the debt is held by companies with an ICR below 1, while 42 per cent is held by companies with a DCR below 1. The percentages remain at approximately these levels throughout the projection period. One of the listed CRE companies has an ICR below 1 in the projections, while half of the listed companies have a DCR indicator below 1.

[12] Non-listed CRE companies account for approximately 88 per cent of the total interest-bearing debt of the non-listed and listed CRE companies in the sample.

**Chart 19 Interest-bearing debt of *non-listed* CRE companies with an *ICR* and a *DCR* below 1 in per cent of the sector's total interest-bearing debt**




Projections for 2022–2027. Source: Finanstilsynet

Finanstilsynet has developed a risk grouping model based on a combination of various thresholds for the DCR and the debt ratio indicator. Interest-bearing debt as a share of the total interest-bearing debt of non-listed CRE companies in the *highest* risk group increases from 6 per cent in 2021 to 23 per cent in 2024 and remains at approximately this level until year-end 2027*.* The highest risk group comprises companies where operating income does not cover interest expenses and instalment payments / necessary maintenance investments (*DCR* below 1.0) and where total liabilities represent more than 85 per cent of the book value of total assets (*debt ratio indicator* above 0.85). If actual developments match the projections, many CRE companies will experience financial challenges for a number of years. During the financial crisis, the share of debt in the highest risk group also increased considerably, but not to the same extent as in the projections. Furthermore, the share of debt in the highest risk group will remain virtually unchanged throughout the 2022–2027 projection period, while this share fell relatively quickly in the wake of the financial crisis.

## Projections based on Finanstilsynet's stress scenario

If the ratios are projected using the stress scenario in Finanstilsynet's stress test, there will be a far steeper decline in the ICR and the DCR for listed and non-listed CRE companies than in the projections in the baseline scenario, even though the calculations are based on the assumption that all tenants are able to honour their leases throughout the projection period. The debt ratio indicator will increase to well above 1 for both non-listed and listed CRE companies as a result of a sharp and prolonged fall in property values. Interest-bearing debt as a share of total debt in the highest risk group will constitute more than 40 per cent throughout the projection period for non-listed companies, while several of the listed companies will be in the highest risk group throughout much of the projection period. Developments corresponding to those in the stress scenario will probably require substantial restructuring and write-downs of debt in the commercial real estate sector.

# NORWEGIAN BANKS

## THE BANKS ARE HIGHLY PROFITABLE

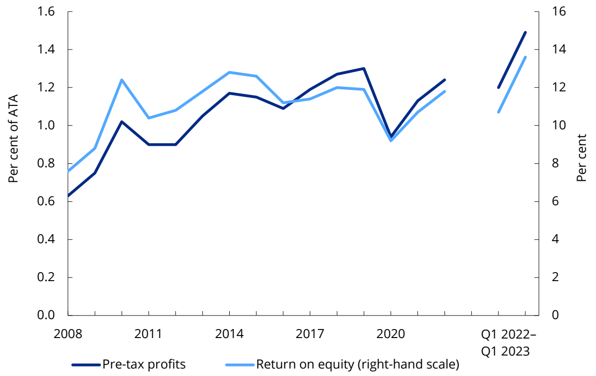
Norwegian banks have generated strong profits for an extended period of time. The outbreak of the pandemic led to an increase in impairment and loan losses and a reduction in net interest income in 2020. This resulted in the lowest return on equity for Norwegian banks combined since 2009. Over the past couple of years, profitability has improved and the level of profits in the first quarter of 2023 was higher than in the years prior to the pandemic (chart 20).

### High net interest income gives a boost to bank profits

High net interest income is a key factor behind the banks' profitability. Net interest income, which is the difference between interest income on assets and interest expenses on funding, has accounted for about three-quarters of banks' total operating income in recent years. Over the past couple of years, the ratio of net interest income to average total assets has increased significantly after plummeting in the wake of the pandemic outbreak, when policy rates were reduced (chart 21). The main reason for the increase is that average lending rates have increased more than the average interest rate banks pay on deposits and wholesale funding.

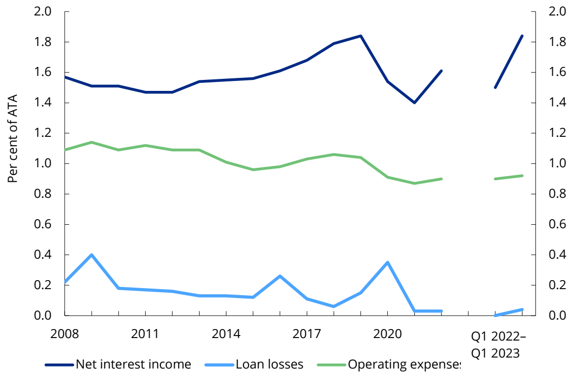
The swift recovery in profitability can mainly be explained by the very low loan losses over the last couple of years. Extensive support measures during the pandemic and a rapid pick-up in activity after the support measures were lifted have contributed to low losses on the banks’ loans to both personal and corporate customers. Reversals of previous impairment losses were another factor behind the low loan losses.

**Chart 20 Profitability of Norwegian banks**



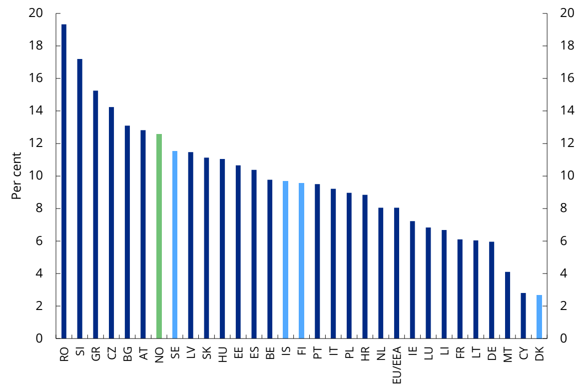

Source: Finanstilsynet

**Chart 21 Net interest income, operating expenses and loan losses**



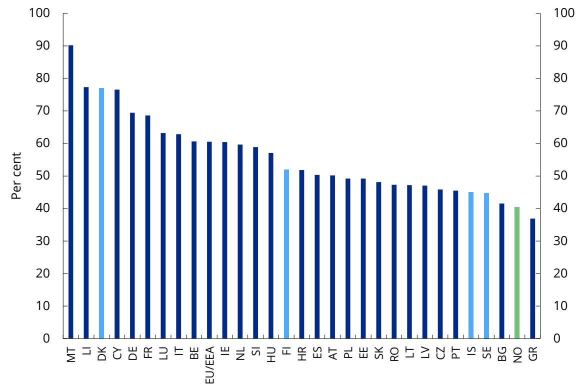

Source: Finanstilsynet

**Chart 22 Return on equity in the EU/EEA, 2022**




Figures for the largest banks in each country. Source: EBA Risk Dashboard

**Chart 23 Cost/income level in the EU/EEA, 2022**




Figures for the largest banks in each country. Source: EBA Risk Dashboard

The level of profitability is also high compared with banks in the other Nordic countries (chart 22). This is largely due to the fact that Norwegian banks' loan losses and cost levels at low compared with banks in other European countries (chart 23).

## NORWEGIAN BANKS ARE FINANCIALLY SOUND

### The banks meet regulatory requirements, albeit by narrower margins

Norwegian banks meet the capital requirements and are financially sound. At-end March 2023, the CET1 capital ratio was 18.3 per cent for the banks combined, compared with 18.1 per cent a year earlier (chart 24). The increase must be viewed in light of the extended SME supporting factor and the introduction of the infrastructure supporting factor as a result of the incorporation of the banking package into Norwegian law as of 1 June 2022. The leverage ratio decreased from 7.5 to 7.3 per cent over the same period. The banks' capital adequacy ratio was 21.6 per cent at end-March 2023.

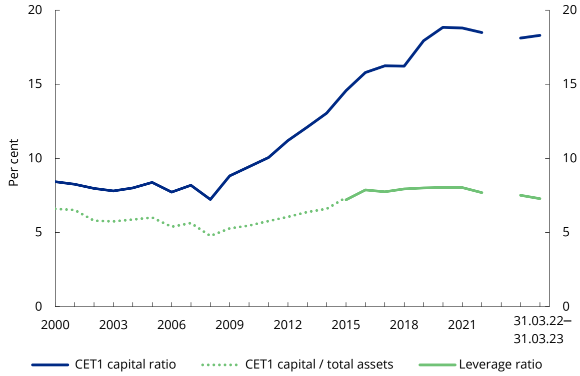
The counter-cyclical capital buffer was raised from 1.5 to 2.0 per cent with effect from 31 December 2022 and further to 2.5 per cent with effect from 31 March 2023. The systemic risk buffer for banks using the standardised approach and institutions using the foundation IRB approach will be raised from 3.0 to 4.5 per cent at year-end 2023.[13]At the same time, the systemic risk buffer for these banks will be restricted to domestic exposures, while it previously applied to all exposures.

At end-March 2023, the banks' median margin to the CET1 capital requirement[14] was 4.5 percentage points (chart 25). The median margin has thus decreased from end-March 2022, when it was 6.2 percentage points. If the adopted increases in the systemic risk buffer had been in effect at end-March 2023, the median margin to the requirement would have been 3.1 percentage points. The median margin to the capital adequacy requirement was 4.4 percentage points as at 31 March 2023.

There are significant differences between the banks. As shown in chart 25, the largest banks have narrower margins to the prevailing requirement than the median bank. Measured as the volume-weighted average for the banks combined, the margin to the CET1 capital requirement was 3.2 percentage points at end-March 2023.

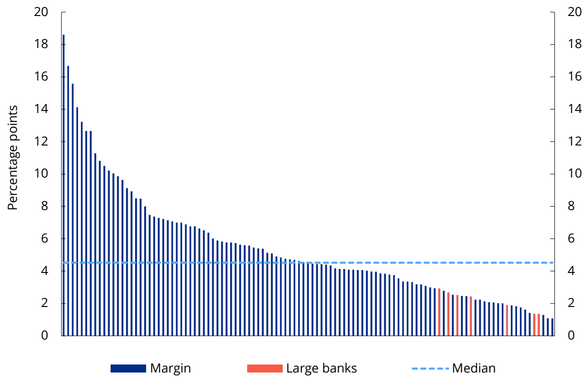
[13] For other IRB banks, the systemic risk buffer was increased to 4.5 per cent for domestic exposures as from 31 December 2020.
[14] Including buffers and Pillar 2 requirements.

**Chart 24 Capital adequacy of Norwegian banks combined**




The chart shows CET1 capital / total assets up to and including 31 December 2015 and the leverage ratio as from 31 December 2015. Both are measures of non-risk-weighted capital adequacy.
Source: Finanstilsynet

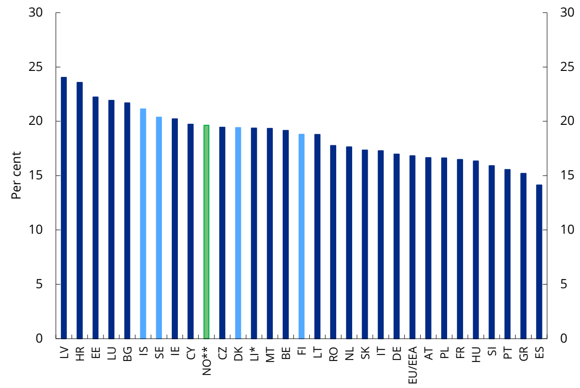
**Chart 25 Banks' margin to the CET1 capital requirement as at 31 December 2023**




The CET1 capital requirement includes Pillar 2 requirements. One extreme value has been omitted from the chart.
Source: Finanstilsynet

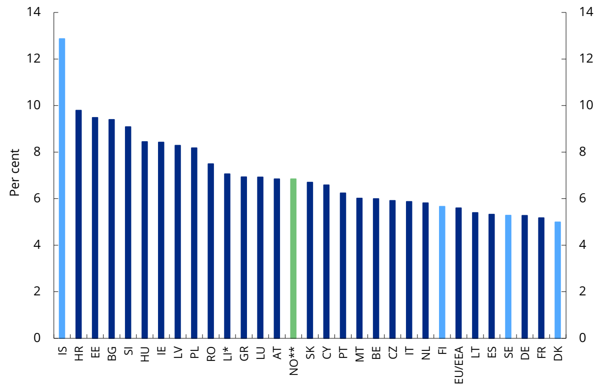
The CET1 capital ratios of the largest Norwegian banks approximate the ratios of banks in the other Nordic countries and are slightly higher than the median ratios in other European countries. The leverage ratios of the largest Norwegian banks approximate the median ratio (charts 26 and 27).

**Chart 26 CET1 capital ratios of European banks as at 31 December 2022**




*Weighted average for a sample of banks per country. **DNB Bank, Sparebank 1 SR-Bank and Sparebank 1 SMN. Source: EBA Risk Dashboard

**Chart 27 Leverage ratios of European banks as at 31 December 2022**



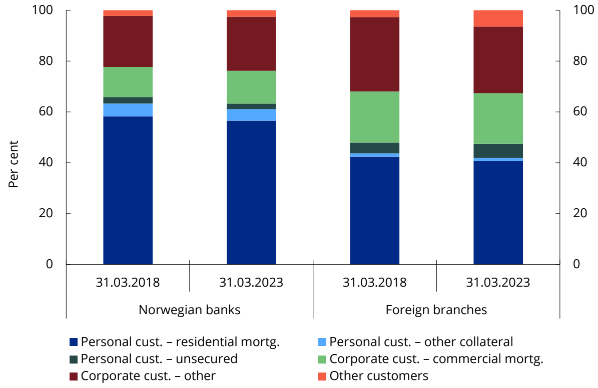

*Weighted average for a sample of banks per country. **DNB Bank, Sparebank 1 SR-Bank and Sparebank 1 SMN. Source: EBA Risk Dashboard

## INCREASING CREDIT RISK IN BANKS' LOAN PORTFOLIOS

### Highest lending volumes to personal customers but strongest growth in corporate lending

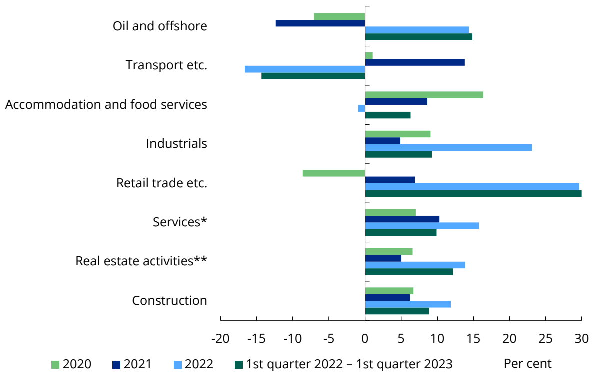
Loans to personal customers constitute the predominant part of Norwegian banks' lending. This segment represents just under two-thirds of the loan portfolio (chart 28). Residential mortgages account for the major part (89 per cent) of loans to personal customers. Over the past five years, Norwegian banks have experienced a slight shift in the composition of the loan portfolio from personal customers to corporate customers. In the personal customer segment, there has been a reduction in both the proportion of loans secured on residential property, loans secured on other assets and unsecured loans (consumer debt). The decline in unsecured lending reflects the banks' sale of portfolios of non-performing loans and the fact that Bank Norwegian became a foreign branch of the Swedish Nordax Bank AB in 2022, see the account in Finanstilsynet's report on developments in consumer loans (in Norwegian only).

**Chart 28 Loans by customer category**




Source: Finanstilsynet

**Chart 29 Growth in lending by industry**




*Professional, financial and business services.
**Sale and operation of real estate. Source: Finanstilsynet

Foreign branches have a higher share of corporate loans than Norwegian banks. Both commercial real estate loans and other corporate loans represent a significantly higher proportion of the loan portfolios of branches than in the Norwegian banks. In foreign banks, the proportion of loans to personal customers has remained relatively stable over the past five years. The proportion of secured loans to personal customers has decreased slightly, while there has been a corresponding increase in unsecured loans.

Banks' corporate lending declined considerably after the outbreak of the pandemic in 2020. The slowdown in growth was most pronounced for foreign banks in Norway, which recorded a marginally negative 12-month growth rate at end-March 2021, see the account in Finanstilsynet's report on financial institutions' performance (in Norwegian only). The increase in firms' total debt was nevertheless fairly stable throughout the period as a result of a significant increase in bond debt. Over the past two years, the growth in banks' corporate lending has picked up steam, reaching the highest level since 2009, while the increase in firms' bond debt has slowed.

## Brisk growth in lending to industries with increasing numbers of bankruptcies

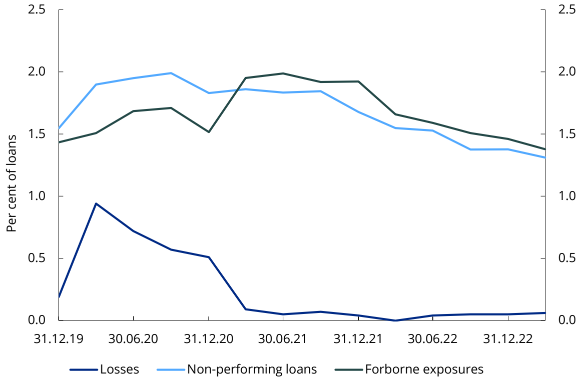
Over the past year, the growth in banks' corporate lending has been particularly strong within retail trade (chart 29). The largest exposures in banks' corporate portfolios are to commercial real estate and construction activities, at 43 and 12 per cent of the corporate portfolio, respectively. Lending growth to these industries has been high for several years and has gained momentum over the past year.

Overall, the number of bankruptcies in the first quarter of 2023 was only marginally lower than in the first quarter of 2019, the year before the pandemic. Weaker economic conditions, combined with an interest rate level that is clearly higher than in 2019, raise the risk of losses in banks' loan portfolios.

## Banks' level of loan losses and non-performing loans is low but on the rise in some industries

Over the past couple of years, Norwegian banks have recorded very low loan losses and a declining proportion of forborne and non-performing exposures (chart 30). In 2021, loan losses were markedly reduced in some of the industries that were hardest hit during the pandemic, such as accommodation and food services, as a result of the gradual reopening of society (chart 31). However, the level of losses rose significantly in this industry in the first quarter of 2023. For the banks combined, there was a general increase in loan losses in several industries in 2022 and the beginning of 2023, albeit from low levels. The rise in oil and gas prices following Russia's invasion of Ukraine mitigated the banks' risk of losses on loans to oil and offshore-related industries. The banks recorded substantial reversals of previous impairment losses on such loans in 2022 and in early 2023.

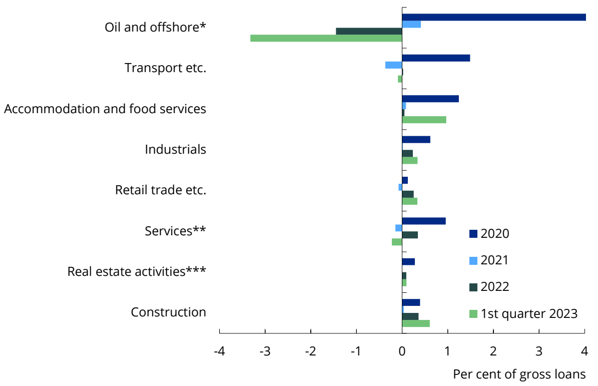
**Chart 30 Losses and non-performing and forborne exposures in Norwegian banks**




Losses in the chart are recognised losses (accumulated and annualised) on loans, unutilised credit lines and guarantees and are shown as a percentage of average loans. Source: Finanstilsynet

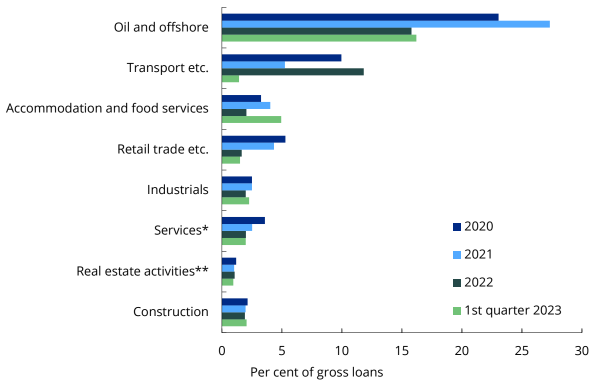
The decline in the share of non-performing loans in banks' portfolios in recent years mainly reflects a reduction in non-performing corporate loans. In 2022 and the first quarter of 2023, the share of non-performing loans to oil and offshore-related industries was significantly lower than in 2021. There has also been a decline in other industries, including industrials, retail trade and services (chart 32). The share of non-performing loans to the transport industry increased markedly in 2022, which may be related to high prices of electricity and fuel. In the first quarter of 2023, there was a sharp drop in the share of non-performing loans in this industry.

**Chart 31 Losses on loans to individual industries**




Lending to the selected industries accounts for 85 per cent of banks' total corporate lending. *Loan losses came to 8.4 per cent in 2020, but the X axis has been scaled down to clearly show changes in loss levels for other industries. **Professional, financial, and business services. ***Real estate activities. Source: Finanstilsynet

**Chart 32 Non-performing loans in individual industries**

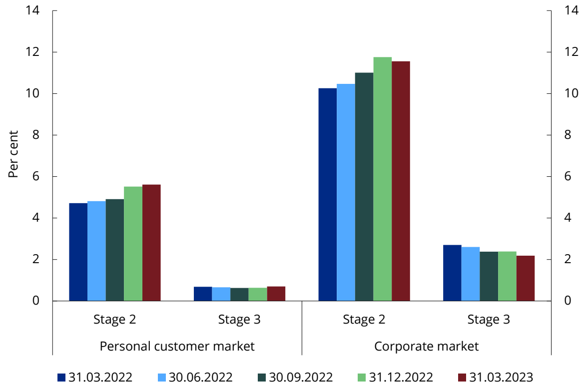



Lending to the selected industries accounts for 85 per cent of banks' total corporate lending. *Professional, financial and business services. **Real estate activities.
Source: Finanstilsynet

## Higher share of loans with a significant increase in credit risk

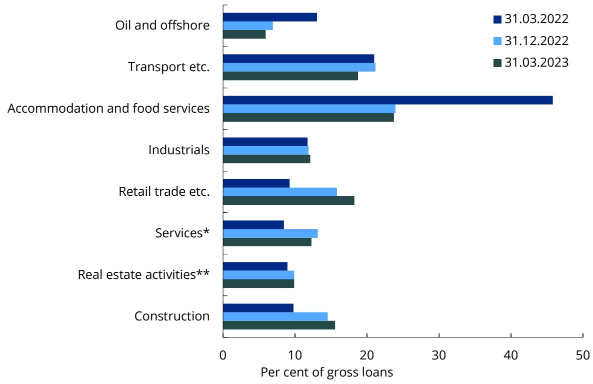
Although the level of non-performing and forborne exposures has decreased over the past couple of years, other indicators show heightened credit risk in the banks' loan portfolios. The share of lending volume with a significant increase in credit risk that is not credit-impaired (stage 2 according to IFRS 9) has risen in both the personal customer and corporate markets over the past year (chart 33). The share of stage 3 loans, i.e. credit-impaired loans, has decreased in the corporate market over the past year due to write-offs, particularly in oil and offshore-related industries.

**Chart 33 Share of loans with a significant increase in credit risk**




Source: Finanstilsynet

**Chart 34 Share of stage 2 loans to individual industries**




Lending to the selected industries accounts for 85 per cent of banks' total corporate lending. *Professional, financial and business services. **Real estate activities. Source: Finanstilsynet

In the corporate market, the retail trade and construction industries account for the most pronounced increase in the share of stage 2 loans. At end-March 2023, 18 per cent of total lending to retail trade represented stage 2 loans, which is a doubling from the previous year (chart 34). This share was 16 per cent for loans to the construction industry, which was also a significant increase from the previous year. Much of the increase took place towards the end of 2022 and at the beginning of 2023. For other industries, such as accommodation and food services and oil and offshore, the proportion of stage 2 loans has decreased over the past year.

## Silicon Valley Bank

In March 2023, Silicon Valley Bank (SVB) experienced a massive outflow of deposits that led to a liquidity crisis for the bank. The Federal Deposit Insurance Corporation had to take over the bank and created a bridge bank to be able to continue operations. Two weeks later, loans and deposits were sold to First Citizens Bank & Trust Company, which also took over the operation of SVB's branches.

SVB's customer deposits far exceeded its lending volume. This funding surplus was largely invested in bonds. At year-end 2022, the bank had USD 117 billion invested in bonds, while customer loans amounted to USD 74 billion. The large share of long-term investments and short-term funding exposed the bank to significant interest rate and liquidity risk.

Close to 80 per cent of the bonds were classified as held-to-maturity and were recognised at amortised cost rather than fair value. The rapidly rising interest rates through 2022 had lowered the fair value of this part of the portfolio. At year-end 2022, the fair value of held-to-maturity bonds was USD 15 billion below book value. By comparison, the bank's total equity was USD 16 billion at the same time. The difference between the book value and the fair value of bonds at amortised cost could be seen from the bank's public reports.

Moreover, a substantial share of the bank's deposits were not covered by the US deposit guarantee scheme. Uncertainty about the bank's solvency spread quickly and led to a wave of deposit withdrawals. In order to meet these withdrawals, the bank had to sell held-to-maturity bonds and realise the losses.

Customer loans constitute the predominant part of Norwegian banks' assets. Lending volume also far exceeds deposits from customers for most banks. Consequently, they do not have the same need as SVB to invest surplus funding. For large and medium-sized Norwegian banks[15], bond investments represented 12 per cent of total assets at year-end 2022. These investments make up a major part of the banks' liquidity buffers.

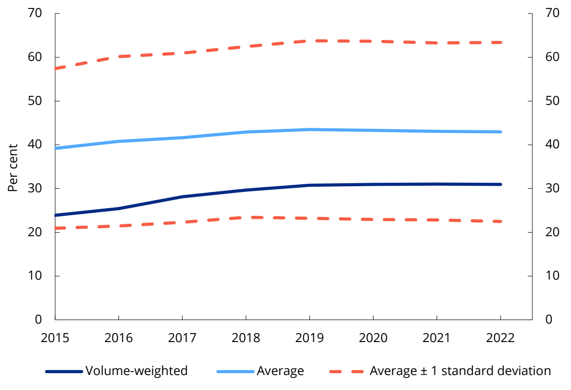
Norwegian accounting rules (IFRS 9) allow measurement at amortised cost for bonds to be held to maturity (‘hold-to-collect’), but few institutions avail themselves of this option. At year-end 2022, close to 5 per cent of the bonds held by the banks in the sample were measured at amortised cost. The fair value of these bonds was 2 per cent, or just under NOK1 billion, lower than book value. There is some variation among the banks in the sample, but most of them carry their entire bond portfolio at fair value. Four banks carried more than 15 per cent of bonds at amortised cost. For this group, the fair value of bonds carried at amortised cost was 6 per cent lower than book value. The difference between fair value and book value was just below 2 per cent of these banks' combined equity.

## NORWEGIAN BANKS' EXPOSURE TO COMMERCIAL REAL ESTATE

The banks’ lending to commercial real estate (CRE) companies[16] both in Norway and abroad constitutes the largest exposures in their corporate portfolios. These exposures increased between 2015 and 2022. There are wide variations between individual banks, but over the past ten years the annual average share for the banks combined has remained stable at around 40 per cent (chart 35). Over the past ten years, companies in Oslo have represented approximately 40 per cent of banks' lending to CRE companies.

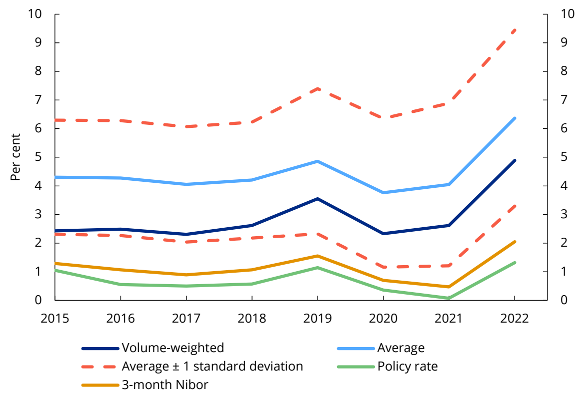
Norwegian banks have raised lending rates to CRE companies in step with the increases in policy and market rates (chart 36). The volume-weighted[17] and the average lending rate have risen to 4.9 and 6.4 per cent, respectively, since 2021, the highest levels since 2015. The standard deviation in the average interest rate has also increased in recent years. This shows that there are wide differences in interest rate terms for the various CRE companies, and that small and medium-sized companies may have somewhat higher interest rates than large companies.

**Chart 35 Bank lending to commercial real estate companies in per cent of the corporate portfolio[18]**




Source: Finanstilsynet

**Chart 36 Banks’ interest rates on loans to commercial real estate**



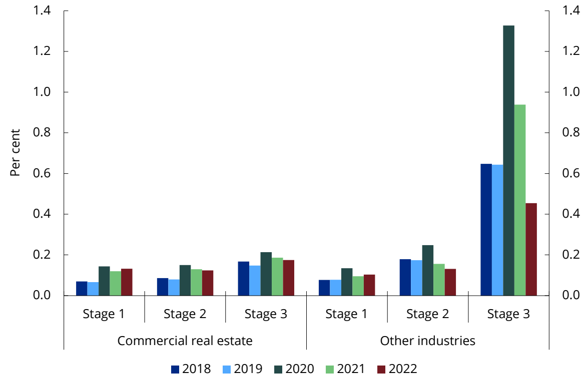

*Annual average of quarterly data. Source: Finanstilsynet

[15] Based on financial reporting in accordance with CRR2 (FINREP). Includes 21 banks accounting for just under 90 per cent of Norwegian banks’ combined total assets.
[16] Here defined as the industry codes (SN07) 41109 — Development and selling of own real estate , 68100 – Buying and selling of own real estate, 68209 – Renting or operating of own or leased real estate and 68320 – Real estate activities.
[17] Lending rate per exposure weighted by the size of the exposure .
[18] The figures are taken from the exposure reporting, where the banks report key data for all corporate customers, such as the size of the exposure, the interest rate, PD, LGD etc. In 2022, information on more than 450,000 exposures, spread over 110 banks, was reported. Read more about the reporting here (in Norwegian only).

### The banks expect limited losses and a low level of non-performance on loans to CRE companies

Thus far, the banks have taken little account of the heightened risk within commercial real estate in their impairment losses (chart 37). Relative to total CRE loans granted, impairment losses declined slightly from 0.44 per cent in 2021 to 0.43 per cent in 2022. There was a reduction in impairment losses on stage 2 and stage 3 loans, while there was an increase for stage 1 loans. Impairment losses are lower on commercial real estate loans than on loans to other industries and more evenly distributed between the various stages. This indicates that, at the beginning of 2023, the banks generally did not expect significant losses on commercial real estate.

**Chart 37 Banks' impairment losses in per cent of total loans granted**




*All other industries in the corporate market portfolio. Source: Finanstilsynet

### Thematic inspection – banks' loans for office rental

In autumn 2022, Finanstilsynet conducted a thematic inspection of banks' lending practices for office rental. The purpose of the thematic inspection was to assess the possible consequences of increased remote working in the aftermath of the pandemic and any shifts in demand towards offices in environmentally certified buildings. Throughout the summer and autumn of 2022, inflation and interest rates increased more than expected, creating heightened uncertainty in the market for office rental and commercial real estate in general.

As part of the thematic inspection, Finanstilsynet collected additional information from the banks about selected individual exposures. In the analyses, CRE companies' earnings are defined as rental income less operating and interest expenses. Finanstilsynet thereafter calculated the potential reduction in the companies' earnings in consequence of the higher lending rates and/or loss of rental income. The calculations included CRE companies engaged in office rental.[19] The rise in interest rates gave a reduction in the earnings of all the CRE companies.

There are differences between the various banks' loan portfolios. Some banks have exposures to CRE companies whose earnings will be significantly reduced even if the rise in interest rates remains fairly moderate. Other banks are more heavily exposed to CRE companies that can withstand far higher interest rates (chart 38). That is due to the fact that the latter companies' interest expenses represent a lower share of rental income and that they make more extensive use of interest rate hedging instruments. Banks' reported figures show that the weighted share of fixed-rate loans in the banks' portfolios ranged from 19 to 38 per cent, while the weighted remaining term of the fixed-rate agreements ranged from about six months

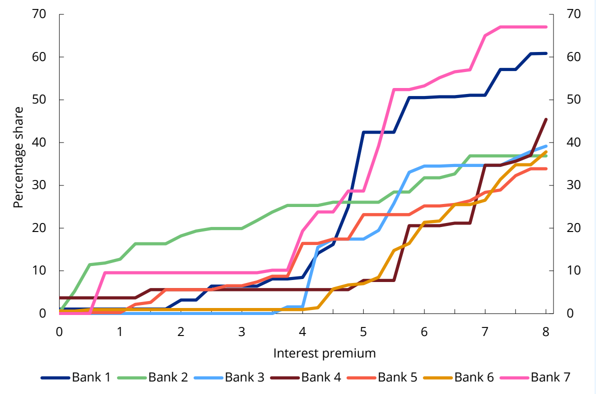
[19] Exposures that the banks have classified as office premises in the exposure reporting.

to five years. This indicates that a large share of loan agreement already have been, or will be, repriced in the relatively near future to lending rates that are far higher than at year-end 2021.

There are not strong indications that CRE companies whose interest expenses account for a large proportion of rental income make more extensive use of fixed-rate agreements than other CRE companies (chart 39). The analyses also show that a number of CRE companies may have difficulty refinancing their debt at current interest rate levels. This is due to high debt levels and relatively weak earnings even at low interest rate levels. When the loans have to be refinanced at a higher rate of interest, inflation adjustment of the rental income on the property will not be sufficient to cover the financing costs.

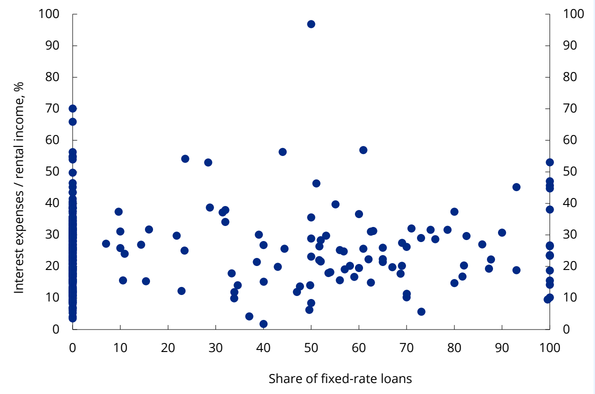
The sensitivity analyses are based on non-financial corporations' financial statements for 2021. Read more in the summary report here (in Norwegian only).

**Chart 38 Share of loans granted to companies with negative earnings at various interest rate increases**[20]




Source: Finanstilsynet

**Chart 39 Individual companies' share of fixed-rate loans and interest expenses in per cent of rental income**




Source: Finanstilsynet

## LIQUIDITY AND FUNDING

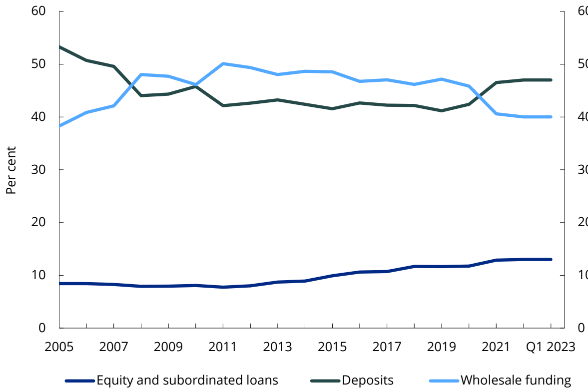
### Banks' funding structure has changed

Norwegian banks experienced a relatively large increase in customer deposits before and during the pandemic. Since December 2019, deposits are up approximately 27 per cent. Non-guaranteed deposits account for 57 per cent of the increase. The rise in customer deposits has reduced banks' need for wholesale funding and thus led to a shift in funding structure. For the first time since 2008, customer deposits now account for a larger share of banks' funding than wholesale funding (chart 40). Owing to the deposit guarantee schemes, deposits have traditionally been considered a more stable funding source than wholesale funding, but the banking turmoil in the US shows that customer deposits can quickly be moved when uncertainty arises in the markets.

Overall, banks have large volumes of debt that matures in one to three years (chart 41). 27 per cent of total wholesale funding reaches maturity by the summer of 2024 while 40 per cent reaches maturity over the next one to three years. This represents a significant proportion of funding. It could be challenging for banks to issue large volumes in the coming years if market conditions deteriorate.

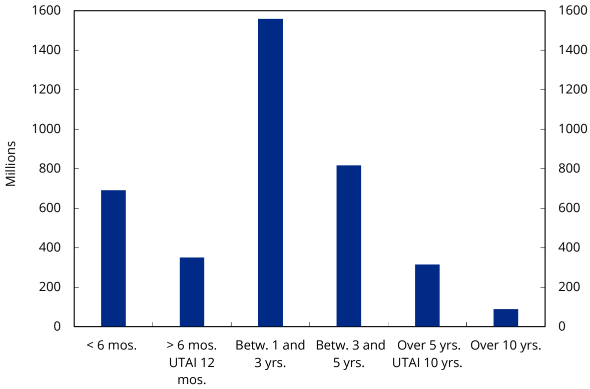
[20] In this connection, the total amount granted includes all individual exposures for which additional information was obtained.

**Chart 40 Funding structure**




Source: Finanstilsynet

**Chart 41 Maturity structure, wholesale funding**




Bond debt incl. subordinated loan capital and other debt from credit institutions. Source: Finanstilsynet

## Higher risk premiums and an increase in short-term funding

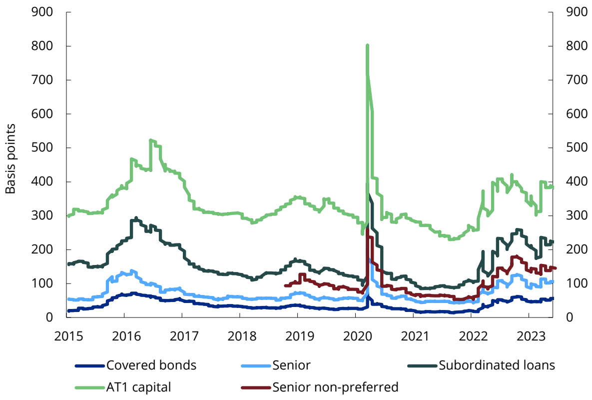
Heightened uncertainty in the financial markets has resulted in higher risk premiums on banks' bond funding since the beginning of 2022. The banking turmoil in March 2023 gave rise to higher risk premiums for all sources of funding (chart 42). As in other European countries, the increase was greatest on additional Tier 1 capital (AT1). Since then, risk premiums have edged down.

Norwegian banks and mortgage companies have historically had ample access to wholesale funding. Such access is affected by international turmoil. Reduced confidence in banks in general, or the Norwegian market in particular, could have a negative impact on the access to foreign funding. Wholesale funding from abroad is more volatile and may 'dry up' if confidence in the Norwegian market drops sharply. Turbulence in international markets and waning confidence in European banks could also spill over to Norwegian banks. This could make it more difficult to obtain money market funding and result in higher funding costs for banks and mortgage companies.

Norwegian banks' main funding sources are customer deposits and money and capital market funding. Wholesale funding consists of covered bonds, senior bonds (unsecured debt), loans in the interbank market, certificates of deposit and commercial paper (chart 43). Subordinated loans and MREL are used for regulatory purposes. Covered bonds have, since their introduction in 2007, become an important source of funding for Norwegian banks and accounts for about half of banks' wholesale funding.

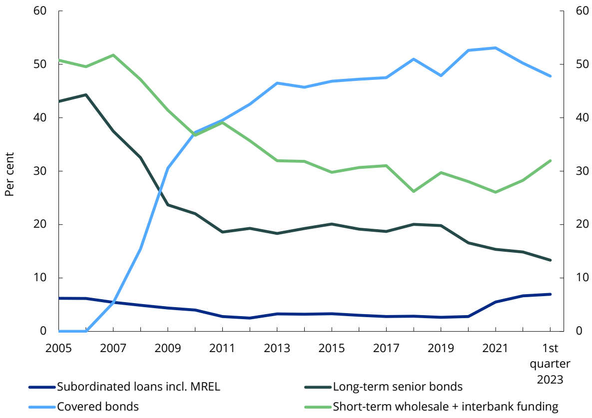
Since 2021, banks have reduced their covered bonds funding somewhat. There has also been a decline in funding in the form of senior bonds. The reduction is partly due to the introduction of Minimum Requirements for Own Funds and Eligible Liabilities (MREL) and the need to issue MREL-eligible debt instruments. The share of short-term funding has generally been declining since 2007 but has increased since 2021.

**Chart 42 Risk premium on 5-year bond funding**




Last observation: 1 June 2023. Source: Nordic Bond Pricing

**Chart 43 Composition of banks' wholesale funding**




Source: Finanstilsynet

## Banks are liquid, but the composition of the liquidity buffer could pose a risk

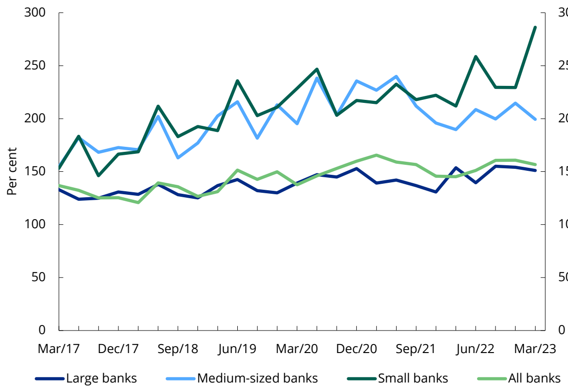
Norwegian banks meet the minimum liquidity buffer (LCR) and stable funding requirements (NSFR) by an ample margin, which will help them meet their obligations for a short period even if they have no access to new funding. The level of the LCR varies considerably between the different banking groups (chart 44). This also applies to the NSFR, see Finanstilsynet's solvency report for financial institutions (in Norwegian only). Compared with banks in the EU, the average liquidity buffer and NSFR of the largest Norwegian banks are lower.

In the LCR calculation, assets are divided into different levels (level 1, level 2A and level 2B) by their degree of liquidity, with level 1 being the most liquid assets. The liquidity regulations provide a framework for how large percentages of the various assets can be included in the liquidity buffer. The liquidity buffers of Norwegian banks and mortgage companies consist primarily of level 1 assets, with the majority being covered bonds issued by other Norwegian mortgage companies (chart 45). The 'other' category, which comprises securities issued by local authorities and public sector entities, as well as claims on multilateral investment banks and international organisations, also represents a significant share of the liquidity buffers. In this category, there are only foreign issuers.

Covered bonds are generally backed by residential mortgages, primarily held by Norwegian customers. Since covered bonds represent a large proportion of both banks' funding and their liquidity buffers, developments in the Norwegian housing market affect banks' liquidity and funding risk, as well as credit risk.

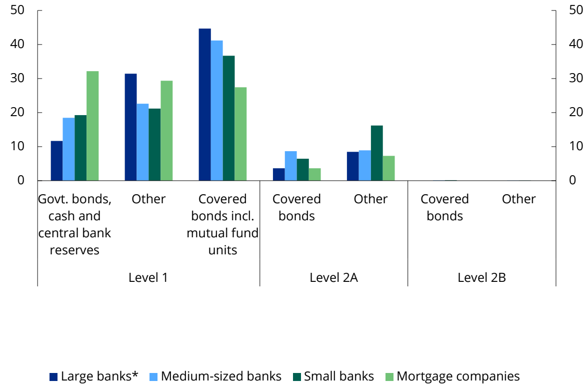
A negative trend in the housing market may therefore affect the banks through multiple channels. It is important that banks make sure to have a diversified funding structure and liquidity buffers in order to reduce liquidity and funding risk, see account in separate box.

**Chart 44 LCR for various banking groups. As at 31 March 2023**




Source: Finanstilsynet

**Chart 45 Composition of institutions' total liquidity buffers, unconsolidated. As at 31 March 2023**



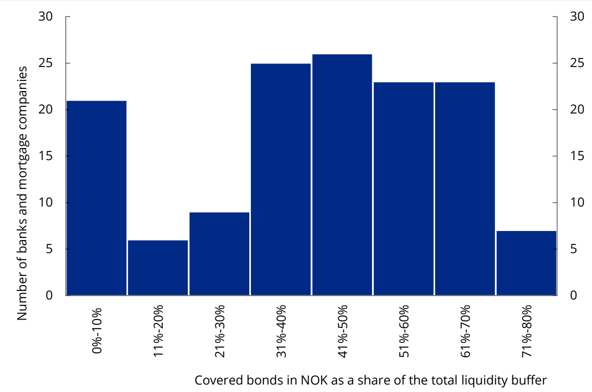

DNB is not included in the chart because the composition of the bank's liquidity buffer deviates from those of the other banks. Due to the size of the bank, the composition of the liquidity buffers of the other banks would not have been visible. Source: Finanstilsynet

## Diversification of the liquidity buffers of Norwegian banks and mortgage companies

Covered bonds represent just under half of the liquidity buffers of Norwegian banks and mortgage companies. For 53 of the institutions, covered bonds account for more than 50 per cent of the liquidity buffers, while this share is more than 60 per cent for 30 of them (chart 46). It is mainly small and medium-sized banks whose liquidity buffers include a high share of covered bonds.

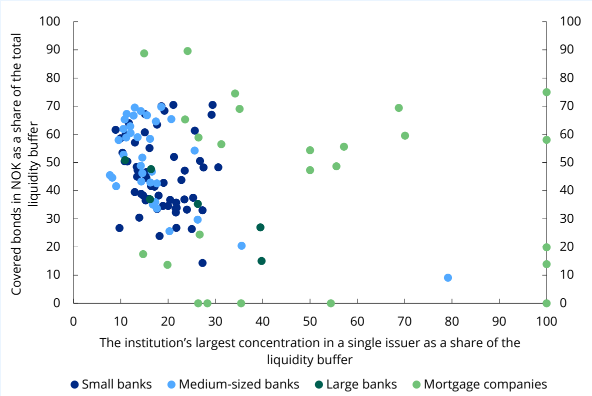
Few issuers and/or high issuer concentration[21] in the liquidity buffer may also pose a risk. Chart 47 shows the share of covered bonds in the buffer combined with issuer concentration. A high proportion of covered

**Chart 46 Covered bonds in NOK as a share of the institutions' total liquidity buffers[22]**




Source: Finanstilsynet

**Chart 47 Covered bonds in NOK in per cent of the total liquidity buffer (unconsolidated) and the largest single issuer concentration in the liquidity buffer**




Sources: Euronext VPS and Finanstilsynet

[21] The institution's largest holding of covered bonds in NOK issued by a single issuer divided by the institution's total holding of covered bonds in NOK issued on Euronext VPS.
[22] The institutions' total holdings of covered bonds before any caps, cf. the restrictions on the composition of the liquidity buffer in Article 17 of the LCR Regulation.

bonds combined with low issuer concentration pose a potentially greater risk than a situation where issuer concentration is high but the proportion of covered bonds low. It is mainly small and medium-sized banks that have few issuers and high issuer concentration.[23]

Several of the covered bond issuing entities have a geographic concentration in their cover pool which entails that more than 50 per cent of residential mortgages stem from one county. Small and medium-sized banks are overrepresented among the institutions with high shares of covered bonds from these issuers. These banks may be particularly vulnerable to falling house prices in specific parts of the Norwegian housing market. In such case, counterparty risk against the individual covered bond issuing entity will increase, but it may also exacerbate liquidity risk in a situation where the bank wants to, or has to, sell covered bonds.

Small and medium-sized banks in particular have a high proportion of covered bonds in their liquidity buffers, often combined with high geographic concentration, few issuers and high issuer concentration. This is partly due to the fact that large banks are more active in the foreign exchange market and can thus diversify their liquidity buffers by including assets in foreign currency. Small and medium-sized banks that only have Norwegian assets in their liquidity buffers will normally be less diversified.

**Requirements for diversification of the liquidity buffer**

In addition to setting a minimum requirement for the overall liquidity buffer of banks and mortgage companies, the LCR Regulation[24] lays down requirements for the composition of the buffer. Credit institutions must also make sure that assets in their liquidity buffer are adequately diversified. Among other things, the various types of securities and issuers, including the issuer's sector and geographic location, must be taken into account.

In Sweden, a requirement has been introduced which entails that the proportion of covered bonds issued by Swedish entities cannot exceed 50 per cent of their liquidity buffer. In Denmark, the supervisory authority has recommended that banks should limit their holdings in a single series of bonds and own a maximum of 50 per cent in each series. Thus far, no equivalent requirements or recommendations have been introduced in Norway. It is important that the banks are aware of the importance of having a diversified liquidity buffer and take other level 1 assets in NOK into account when considering purchases of covered bonds.

Covered bonds have proven to be a secure and stable source of funding, and the secondary market for covered bonds has also been functioning well. Norwegian residential mortgage companies are heavily overcollateralised and are thus able to withstand a significant decline in house prices before action needs to be taken.[25] However, the covered bond market is a relatively new market that has not been tested under market conditions with major reductions in Norwegian house prices.

[23] Mortgage companies' funding, and hence their liquidity buffers, has a very different maturity structure than is the case for banks. However, they also have few issuers and a high issuer concentration.
[24] Commission Delegated Regulation (EU) 2015/61
[25] See Risk Outlook December 2022 and Financial Stability 2022 (in Norwegian only).

# STRESS TEST OF NORWEGIAN BANKS' CAPITAL ADEQUACY

Finanstilsynet conducts annual stress tests to assess the impact of a severe economic downturn on Norwegian banks' capital adequacy. The stress test for 2023 shows that a number of Norwegian banks will not fulfil the overall CET1 capital requirement during the stress period, even if the countercyclical capital buffer were to be reduced to zero. Losses on loans to firms and private individuals have the most adverse impact on banks' capital adequacy.

## BACKGROUND FOR THE STRESS TEST

In Finanstilsynet's stress tests of capital adequacy, the effect of various adverse events on the banks' profits and capital adequacy is estimated. The calculations illustrate how well banks will fare in such scenarios.

The design of the stress tests seeks to capture the interaction between various risks present in the banks and in the economy as a whole. The calculations are based on the individual bank's financial statements and exposures. The projections are made by using the macroeconometric model NAM-FT[26].

The assessments in this chapter are based on a baseline scenario and a stress scenario. The two scenarios describe possible development paths for the Norwegian economy from 2023 to 2027, but neither of the scenarios represents forecasts of future developments. The probability of the stress scenario occurring is relatively low, but not unrealistic.

The stress scenario in this year's stress test has strong similarities with the stress scenarios in the two previous years' stress tests and also has clear parallels with the stress scenario in this year's stress test coordinated by the European Banking Authority (EBA).

In the stress scenario, delivery problems in the Norwegian and international economy are assumed to continue and to worsen as a result of geopolitical unrest and supply chain disruptions. Commodity and energy prices are assumed to rise. This will have a dampening effect on economic activity internationally and contribute to further inflationary pressures. Central banks are assumed to raise their policy rates in an effort to curb inflation. This results in higher market rates, repricing in the financial and real estate markets and a downturn in the real economy both internationally and in Norway. Turbulence in the global banking market contributes to pushing up risk premiums. In the stress scenario, higher interest rates, greater uncertainty among investors and financial market turmoil depress prices of equities, fixed-income securities and real estate. Policy and market rates remain high[27] during the projection period as price inflation is expected to be above the central banks' inflation targets. There is a fall in demand for commodities and traditional goods and services produced in Norway. Lower activity levels, elevated prices and high interest rates result in a decline in households' real disposable income. Growth in credit to households slows, and private consumption declines. The Norwegian economy enters a recession characterised by a reduction in mainland GDP and a sharp rise in unemployment. Investment activity in the petroleum sector increases somewhat as oil prices show a stronger trend than in the baseline scenario. The real economy starts to recover towards the end of the period.

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[26] NAM-FT is based on the Norwegian Aggregate Model (NAM) and has been developed specifically with a view to stress testing of banks and analysis of financial stability. NAM was developed by Professor Gunnar Bårdsen (Norwegian University of Science and Technology) and Professor Ragnar Nymoen (University of Oslo). Documentation of NAM can be found at Normetrics.no.
[27] Compared with the average for the period from 2015 to 2021.

## NORWEGIAN ECONOMY

### Baseline scenario

In the baseline scenario, developments in the Norwegian economy are largely assumed to be consistent with the forecasts in Statistics Norway's 'Economic Survey 1/2023' and Norges Bank's 'Monetary Policy Report 1/2023' (table 2).

**Table 2 Developments in key international variables. Percentage growth in annual averages, unless otherwise stated**

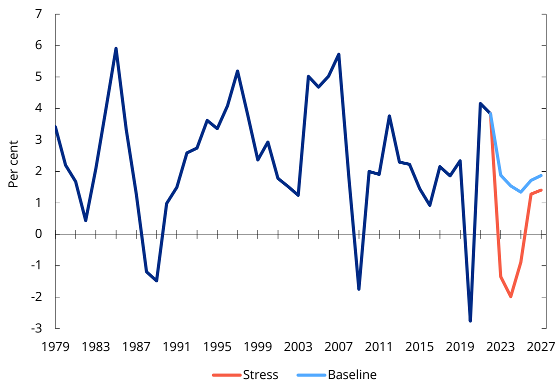
| | | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|---|---|
| Foreign consumer prices (trade weighted) | Baseline | 8.4 | 4.9 | 2.9 | 2.3 | 2.0 | 1.9 |
| | Stress | 8.4 | 8.7 | 6.8 | 4.8 | 3.6 | 3.3 |
| European 3-month money market rate (Euribor, level) | Baseline | 0.3 | 3.3 | 3.4 | 3.0 | 2.9 | 2.9 |
| | Stress | 0.3 | 5.2 | 5.8 | 4.9 | 4.0 | 3.4 |
| Oil price in USD (level) | Baseline | 100.9 | 77.6 | 72.9 | 70.6 | 68.8 | 67.4 |
| | Stress | 100.9 | 130.0 | 120.0 | 120.0 | 110.0 | 110.0 |
| Export market indicator (trade weighted) | Baseline | 7.3 | 1.8 | 1.9 | 3.6 | 3.7 | 4.0 |
| | Stress | 7.3 | -8.0 | -7.0 | -3.0 | 0.0 | 0.0 |

Sources: Statistics Norway and Finanstilsynet

High inflation at the beginning of the projection period is rapidly brought down towards the central bank's inflation target. Developments in public demand are assumed to be in line with Statistics Norway's forecasts. The Norwegian economy cools down and GDP for mainland Norway grows moderately throughout the projection period (chart 48). Unemployment (LFS) rises approximately to the level prevailing before the outbreak of the Covid-19 pandemic (chart 49). Prices of both residential and commercial property are assumed to fall slightly in the first two years of the projection period, before rising towards the end of the period (charts 50 and 51).

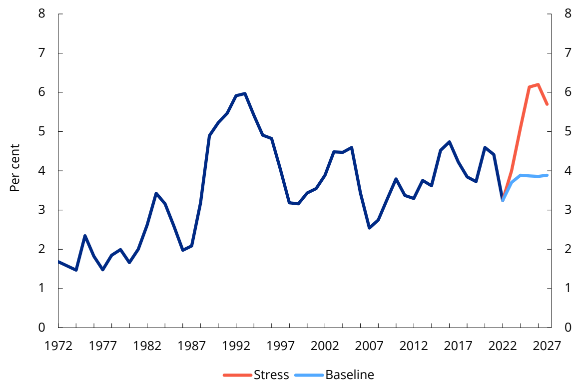
Banks' average lending rate rises by 2 percentage points during the first year of the projection period, to 5.8 per cent, and thereafter declines by approximately 40 basis points up to the end of the period (chart 52). As a result of high debt, households' interest burden rises to more than 11 per cent in 2023. The interest burden decreases slightly from 2024 (chart 53). For the projection period as a whole, growth in households' disposable income is higher than credit growth, and the debt burden is therefore reduced from 242 per cent in 2022 to 231 per cent in 2027. Banks' losses on loans remain low during the projection period in both the personal customer market and the corporate market.

**Chart 48 GDP for mainland Norway, year-over-year growth**



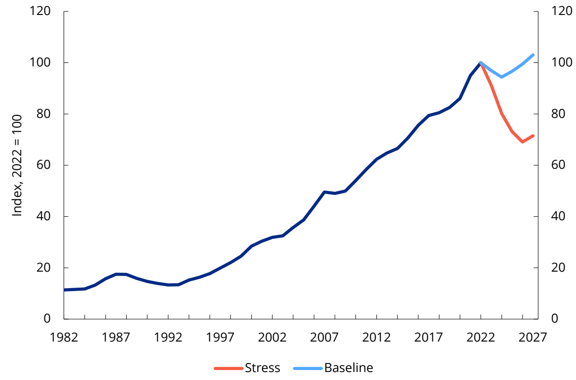

Sources: Statistics Norway and Finanstilsynet

**Chart 49 Unemployment (LFS)**



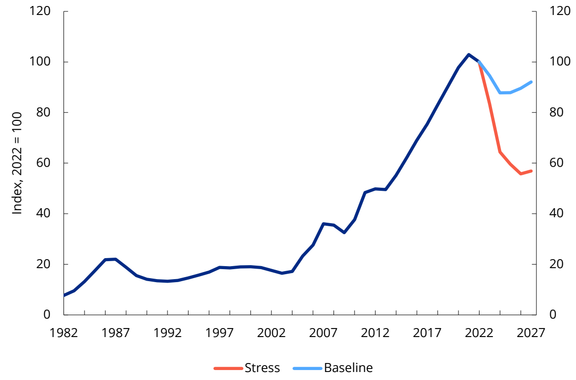

Sources: Statistics Norway and Finanstilsynet

**Chart 50 House prices**




Sources: Statistics Norway and Finanstilsynet

**Chart 51 Commercial property prices**

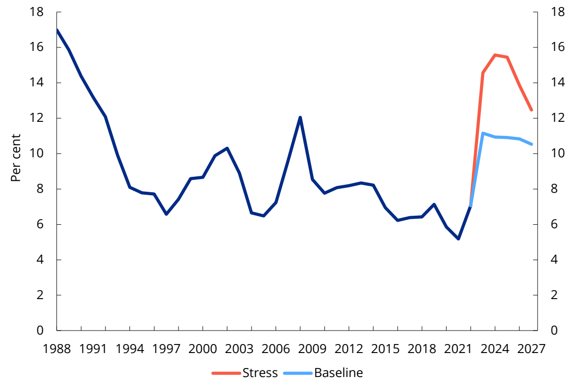



Sources: Dagens Næringsliv, OPAK, Entra and Finanstilsynet

**Chart 52 Banks' average lending rate**


Sources: Statistics Norway and Finanstilsynet

**Chart 53 Households' interest burden***




* The interest burden is interest expenses in per cent of the sum of interest expenses and disposable income adjusted for dividends received. Sources: Statistics Norway and Finanstilsynet

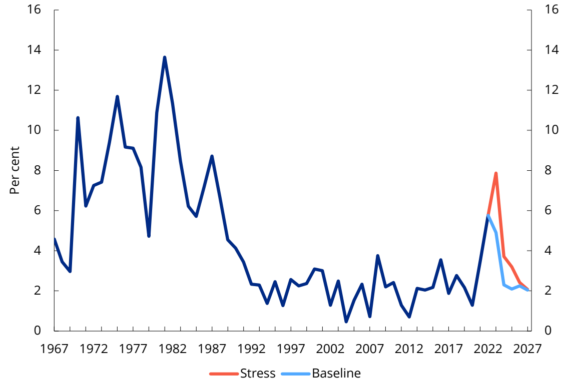
## Stress scenario

International inflation (trade weighted) is assumed to rise from 8.4 per cent in 2022 to 8.7 per cent in 2023 (table 2). In response to the high inflation, central banks implement additional policy rate hikes. The rate hikes and increased uncertainty surrounding economic developments lead to a significant rise in market rates internationally. The high international inflation is only partially reduced during the projection period. At the end of the period, international inflation is assumed to be 3.3 per cent, which is above the central banks' inflation target.

Developments in Norway largely mirror international developments. In the stress scenario, inflation increases from 5.8 per cent in 2022 to 7.9 per cent in 2023 (chart 54). The Norwegian money market rate (3-month Nibor) rises from 2.1 per cent in 2022 to 7.1 per cent in 2024.

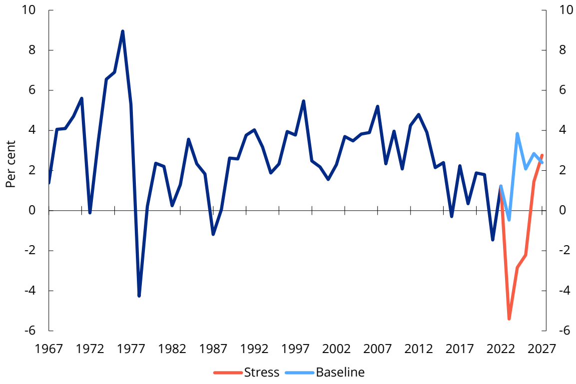
The banks' average lending rate is up from 3.8 per cent in 2022 to 8.1 per cent in 2024 (chart 52). Such an interest rate increase has major consequences for Norwegian households due to their high level of debt and the fact that approximately 95 per cent of household debt carries floating interest rates. Households' interest burden rises from 7.1 per cent in 2022 to 15.6 per cent in 2024 (chart 53). This is higher than the interest burden during the global financial crisis, but lower than the level during the late 1980s. The interest burden remains high, even though it drops to 12.5 per cent in 2027. Firms' interest burden increases from 9.0 per cent in 2022 to 18.7 per cent in 2024.

**Chart 54 Consumer price index in Norway, year-over-year growth**




Sources: Statistics Norway and Finanstilsynet

**Chart 55 Households' real disposable income, year-over-year growth**




Sources: Statistics Norway and Finanstilsynet

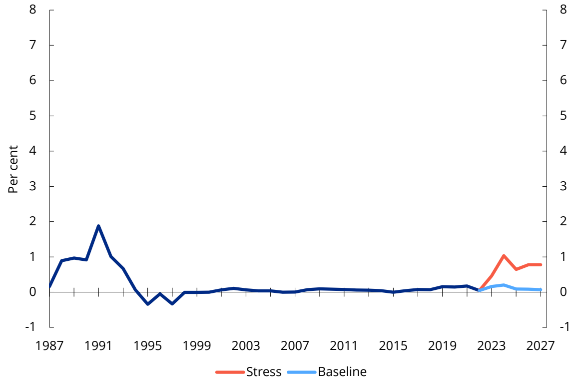
Low nominal growth in disposable income and high inflation result in a 10 per cent reduction in households' real disposable income from 2022 to 2025 (chart 55).

Income growth exceeds the increase in household debt during the projection period, and the debt burden decreases by 14 percentage points in the stress scenario, to 228 per cent in 2027.

High debt levels, rising interest rates and weak income growth among households put a strong damper on private consumption, which is down by a total of 7 per cent from 2022 to 2025. Coupled with a weak development in real investment and exports of traditional goods and services, this weighs heavily on economic activity in Norway. GDP for mainland Norway declines by 4.2 per cent from 2022 to 2025[28] (chart 48). Unemployment (LFS) increases from 3.2 per cent in 2022 to 6.2 per cent in 2026 (chart 49).

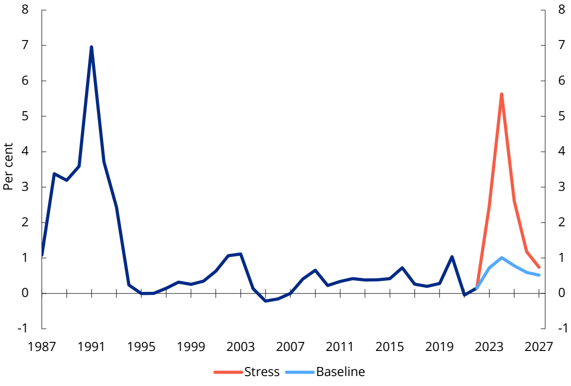
The economic downturn in Norway results in a pronounced fall in prices of residential and commercial property. Measured as a change in the annual average, house prices decrease by 31 per cent and commercial property prices by 44 per cent in nominal terms from 2022 to 2026 (charts 50 and 51).[29] The Norwegian stock market is down 44 per cent from 2022 to 2024.

**Chart 56 Banks' losses on loans to personal customers**




Source: Finanstilsynet

**Chart 57 Banks' losses on corporate loans**




Source: Finanstilsynet

[28] In the case of persistently high inflation, there is little scope for using fiscal stimulus measures to counteract the decline in activity levels as this alone will require a further increase in interest rates.

[29] House prices in Norway fell by 24 per cent in nominal terms (measured as a change in the annual average) from 1987 to 1992. During the same period, prices of office premises were down 40 per cent.

Banks' losses on loans to both private individuals and firms increase in the stress scenario. Losses on corporate loans rise the most and represent the highest volumes (charts 56 and 57). Accumulated losses on corporate loans in the projection period come to 12.6 per cent of lending. Accumulated losses on loans to personal customers represent 3.7 per cent during this period. Losses in the stress scenario are high, but clearly lower than the banks' losses during the banking crisis in the early 1990s. In the five-year period from 1988 to 1992, banks' losses on corporate loans were approximately 20.8 per cent, and losses on loans to personal customers came to approximately 5.7 per cent.

In the macroeconomic model NAM-FT, banks' loan losses are estimated on the basis of historical data covering the period 1987 to 2022. Household debt is considerably higher than during the Norwegian banking crisis at the beginning of this period. In the stress scenario, households' interest burden rises to a level that has not been observed since the late 1980s, and real disposable income shows a weaker development than previously observed. In such a scenario, banks' losses on loans to households may therefore be higher than projected. Households' debt burden is considerably higher than in the late 1980s. The interest rate level has long been very low and may continue to rise even during an economic downturn (stagflation). Losses on loans to non-financial corporations may also exceed the level in the stress scenario.

## THE BANKS' RESULTS IN THE BASELINE SCENARIO

In the baseline scenario, the banks enjoy stable and high earnings over the next few years, with a low level of loan losses. As a result of the notification period for raising interest rates on loans to personal customers, banks' net interest income in per cent of average total assets declines during the first year of the projection period. Net interest income thereafter increases gradually until it reaches the 2024 level and remains at that level for the remainder of the projection period.

Overall, these factors help ensure stable and rising profitability and profits in the banking sector. Seen in isolation, this strengthens the banks' capital adequacy. At the same time, the growth in lending gives a rise banks' risk-weighted exposures.

Banks' overall capital adequacy improves in the baseline scenario. Their profitability is strong, and they are assumed to distribute 50 per cent of annual profits in dividends. For 18 of the largest banking groups combined (referred to as the macro bank), the CET1 capital ratio increases from 18.1 per cent at year-end 2022 to 19.1 per cent at year-end 2027.

## THE BANKS' RESULTS IN THE STRESS SCENARIO

### Assumptions underlying the stress test

In the stress scenario, banks' results are impaired by reduced income and large loan losses.

Banks' lending rates are raised in step with increases in policy and market rates in Norway and internationally. The banks' funding costs also rise as market and deposit rates increase. It is assumed that high debt-to-income ratios, a reduction in households' real income and higher operating and financial expenses in many non-financial corporations give the banks less scope for passing on higher funding costs to households and firms.

Owing in part to the notification period for interest rate increases on loans to personal customers, there is a significant reduction in net interest income in years when interest rates rise steeply. It is assumed that the banks' commission and fee income declines by 20 per cent as a result of lower activity levels in the economy, while administrative expenses follow developments in general wage expenses. Furthermore, it is assumed that the banks record no income from dividends or gains from hedging transactions during the projection period.

The banks' market and operational risk is taken into account in the stress test. Higher credit risk premiums, declining stock markets and falling property prices give a negative contribution to profits in the first years of the stress test (market risk). In line with the methodology used in the stress test coordinated by the European Banking Authority (EBA), losses arising from operational risk are deemed to be a share of average total assets (ATA).[30]

Most banks record positive net profits in the final two years of the stress test. It is assumed that 50 per cent of profit after tax is paid as dividends during years when the banks operate at a profit. Furthermore, it is assumed that no new equity is injected.

### Distribution of loan losses between the banks

The banks' total losses on loans to personal customers and non-financial corporations, respectively, are calculated using Finanstilsynet's macro model NAM-FT. In the model, loan losses are calculated as a percentage of total loan exposure for each of the years 2023–2027. Furthermore, banks' lending to personal customers and non-financial corporations is projected. The annual loss rate multiplied by the total loan exposure constitutes the banks' total loan losses in NOK. Total loan losses are distributed among the banks on the basis of the methodology described in 'Risk Outlook June 2021'.

In this year's distribution of loan losses to non-financial corporations, it is assumed that the industries 'development and sale of construction projects', 'commercial property' and 'retail trade' are more exposed than other industries. This means that banks with a large exposure, in relative terms, to these industries are also subject to a greater share of total loan losses to non-financial corporations.

## Stress test results for Norwegian banking groups

Finanstilsynet's stress test includes all Norwegian banks. Developments in the macro bank and the banks included therein are discussed below. Branches of foreign banking groups are not included in the sample.

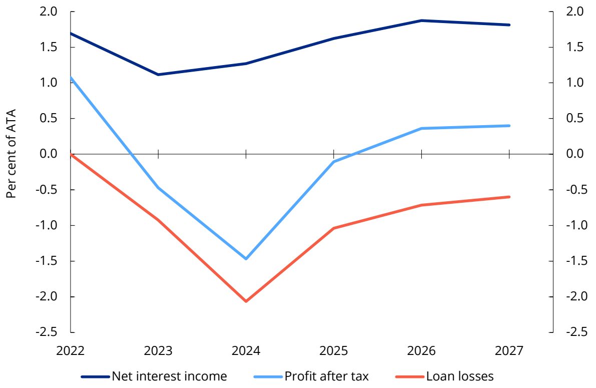
The banking groups' main source of income, net interest income, declines from 1.69 per cent of ATA in 2022 to 1.11 per cent in 2023 and 1.27 per cent in 2024 and thereafter increases to 1.60 per cent at the end of the projection period (chart 58). Reduced net interest income, declining commission and fee income and higher administrative expenses put pressure on banks' earnings. When the economic situation deteriorates and loan losses increase, the banks record annual net losses. This reduces the banks' equity. The banks' strong profitability at the beginning of the period helps cushion the impact.

Losses on corporate loans rise from close to zero in 2022 to 5.1 per cent of total lending to this segment in 2024. Losses on loans to households, which make up the largest part of the banks' loan portfolios, increase to 1.0 per cent of total personal market loans in 2024. As a consequence, the banking groups' profits after tax decline from 1.1 per cent of ATA in 2022 to a net loss of 1.5 per cent in 2024.

In the stress scenario, the banking groups' CET1 capital ratio decreases from 18.1 per cent at the start of the period to 12.1 per cent in 2025 (chart 59). The reduction is primarily due to negative profits, driven by sizeable loan losses and weaker earnings before loan losses.

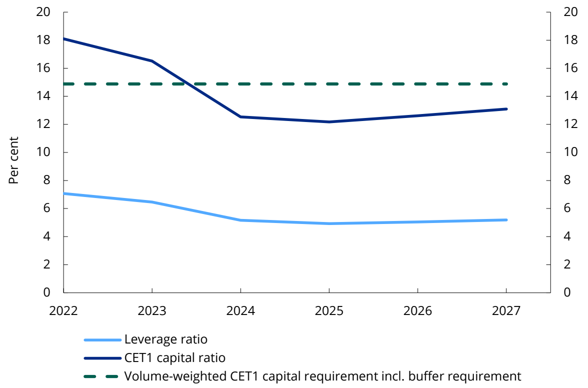
[30] The EBA's stress test spans three years. In Finanstilsynet's stress test, losses are distributed over five years and therefore constitute a weaker stress factor.

**Chart 58 Profits and main profit components. Norwegian banking groups. Stress scenario**




Source: Finanstilsynet

**Chart 59 Developments in capital adequacy ratios. Norwegian banking groups. Stress scenario**

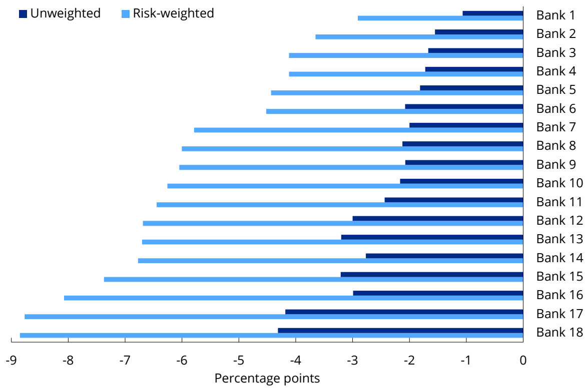



Source: Finanstilsynet

Three of the 18 banking groups maintain a level of CET1 capital that covers the aggregate capital requirement (minimum requirement, buffer requirement and Pillar 2 requirement) throughout the stress period. If the countercyclical capital buffer is assumed to be reduced to zero, eleven of the 18 banking groups will not meet the minimum requirement and the buffer requirement for CET1 capital in the stress scenario. There are wide differences between the banks with respect to how much their capital adequacy ratios narrow in the stress scenario (chart 60). This is partly due to differences in credit risk on loans to individual firms. All else equal, however, banks with the largest share of corporate loans suffer the greatest losses. As a consequence of the sharp decline in capital adequacy experienced by several of the banks, market turbulence could be amplified, and the confidence in individual banks and groups of banks could be impaired. Such a development could lead to a further tightening of lending and even higher risk premiums on banks' funding. This type of dynamics is not modelled and is therefore not included in the calculations.

The banking groups' leverage ratio declines from 7.1 per cent in 2022 to 4.9 per cent in 2025. None of the banking groups fail to meet the minimum leverage ratio requirement of 3 per cent in the scenario.

**Chart 60 Change in capital adequacy from 2022 to the minimum level. Norwegian banking groups. Stress scenario**




Source: Finanstilsynet

## Other Norwegian banks

Other Norwegian banks (83 in total) mainly comprise small and medium-sized savings banks. The capital adequacy of these institutions is stress tested at single company level (parent bank). The same macro scenarios and the same methodology as for banking groups are used.

Aggregate profits for small Norwegian banks decline steeply in the first three years of the stress scenario. This can partly be explained by higher losses on loans to personal customers, while the increase in losses on loans to non-financial corporations is the main factor behind the decline. Losses on loans to non-financial corporations are generally higher for the small banks than for the large banks as they carry higher risk in their corporate market portfolios.

Overall, small and medium-sized banks have a higher CET1 capital ratio than the large banks at the start of the stress period (20.8 per cent). In the stress scenario, this ratio is down to 12.3 per cent in 2026. This year, 56 of the 83 banks will not meet the overall capital requirement. If the countercyclical capital buffer is set at zero, 44 of the banks will not meet the capital requirement.

## Consumer loan banks

There is uncertainty surrounding how the losses on consumer loans will develop during a serious crisis. Analyses show that in normal economic periods, losses on consumer loans could be between 10 and 20 times higher than on other loans to households, primarily residential mortgages. In a stress scenario, it is likely that losses on consumer loans would be very high. However, Norway has not experienced a sharp and prolonged economic setback with high losses on loans to the personal customer market since the banking crisis in the early 1990s. At the time, the share of consumer loans was lower than today.

The lack of historical experience makes it difficult to conduct a scenario-based stress test of consumer loan banks. Therefore, as in 2022, the stress test is carried out as a ‘reverse stress test’ by calculating the maximum losses that the consumer loan banks combined may record without being in breach of the capital adequacy requirements. The stress test highlights the banks' ability to absorb losses during a serious crisis. Five banks that were classified as ‘consumer loan banks’ at year-end 2022 are included in Finanstilsynet's stress test.

Accumulated over the stress period, total losses may come to about 17 per cent of banks' total lending at the start of the period before the banks on average breach the capital adequacy requirements if the countercyclical capital buffer is set at zero. By way of comparison, the accumulated losses of the macro bank and the small savings banks included in the stress test measure 7 per cent and 9 per cent, respectively, of their overall net lending at the start of the period.

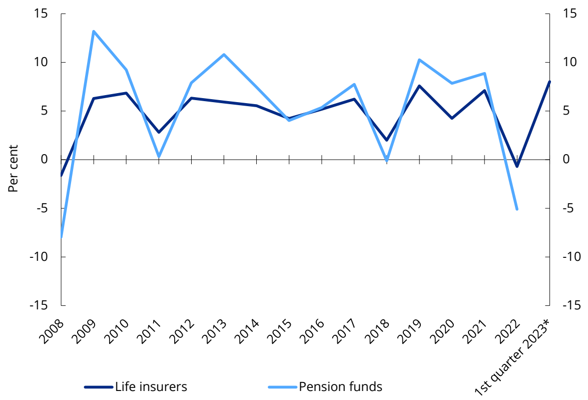
# NORWEGIAN PENSION INSTITUTIONS

Pension institutions (life insurers and pension funds) manage extensive capital and may be adversely affected by market turbulence. The institutions may also contribute to market turbulence or fluctuations if they, as a result of investment losses and reduced risk-bearing capacity, have to change their investment profile considerably in a short space of time. Market turbulence may also result in a fall in values in defined-contribution pension schemes (unit-linked portfolios) and thus lower pension payments, which in turn may reduce household consumption. Where pension institutions use foreign exchange and/or interest rate derivatives to hedge investments or increase duration, wide fluctuations in underlying values (exchange rates and interest rates) may trigger margin payment requirements that could enforce the sale of assets. In order to promote financial stability and public confidence in insurers' ability to meet their obligations, it is important that the institutions enjoy a strong solvency position.

## WEAKER PROFITABILITY, BUT UNCHANGED SOLVENCY POSITION IN 2022

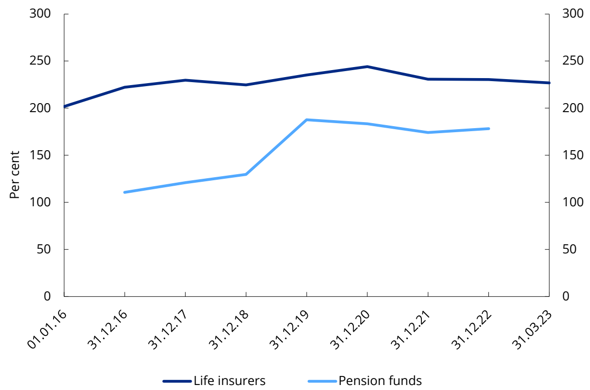
Higher interest rates and sluggish stock markets resulted in negative changes in the value of bonds and equities in 2022. Combined with realised losses on derivatives, this contributed to weaker returns for pension institutions (chart 61). A positive trend in international stock markets helped raise life insurers' returns in the first quarter of 2023.

**Chart 61 Adjusted return on pension institutions' collective portfolios**




* Annualised. Pension funds issue only half-yearly reports.
Source: Finanstilsynet

**Chart 62 Solvency position of life insurers and pension funds***




* The requirement for a solvency ratio above 100 for pension funds was introduced on 1 January 2019. The basis of the calculations was also changed. Pension funds issue only half-yearly reports.
Source: Finanstilsynet

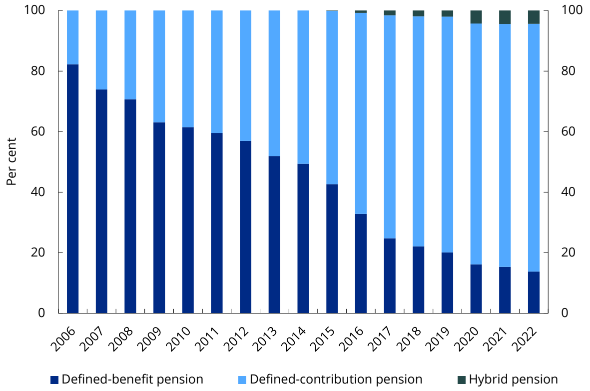
The solvency position of pension institutions was virtually unchanged from year-end 2021 to year-end 2022 (chart 62). A fall in long-term interest rates contributed to a certain decline in life insurers' solvency ratios in the first quarter of 2023.

The solvency capital requirement is designed as a stress test where the capital requirement for equities is reduced following periods of declining equity prices, which in isolation has a positive effect on solvency ratios during periods of market stress. The equity stress is calculated on the basis of the equity index at the end of the period compared with the average index over the past three years. For example, if equity prices have already fallen by 20 per cent, the capital requirement calculation does not include an equally steep fall as in the previous period.

## REDUCED RETURN RISK FROM INSURANCE OBLIGATIONS

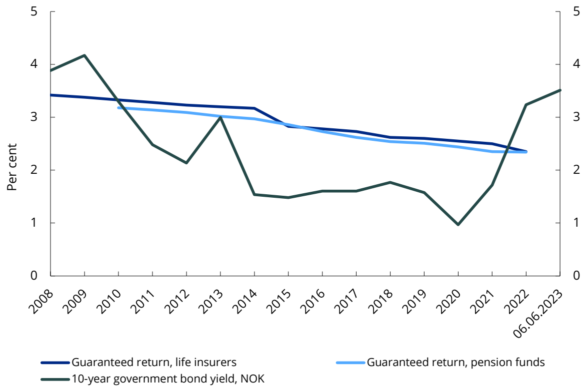
The persistently low interest rate level has prompted many employers in the private sector to replace defined-benefit pension schemes by defined-contribution pension schemes with no guaranteed rate of return. The shift to a larger share of defined-contribution pension schemes contributes to lower return risk for life insurers and to higher risk for policyholders. At year-end 2022, defined-contribution pensions accounted for 82 per cent of gross premiums written in private group pension schemes (chart 63). The unit-linked portfolio (defined-contribution pension schemes) represented 28 per cent of life insurers' investments.

**Chart 63 Gross premiums written in private group pension schemes, life insurers**




Source: Finance Norway

**Chart 64 Average guaranteed rate of return and 10-year government bond yield**



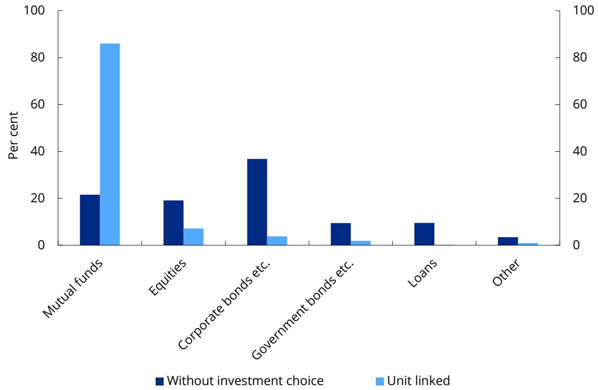

Sources: Finanstilsynet and Refinitiv

Even though the volume of defined-contribution pensions has been on the increase over several years, life insurers still have a substantial share of obligations with guaranteed rates of return. Guaranteed returns have been declining for a number of years, partly as a result of the phasing out of older paid-up policies with higher guaranteed returns, and the average guaranteed rate of return stood at 2.35 per cent for life insurers and 2.34 per cent for pension funds at year-end 2022. Since the interest rate level started rising in 2021, the risk-free market rate, represented by the 10-year Norwegian government bond yield, has risen above the average guaranteed rate of return in defined-benefit pension schemes (chart 64). The fact that the average guaranteed rate of return is lower than the risk-free interest rate helps reduce the return risk for pension institutions. Extensive use of amortised cost means that the return provided by life insurers will be higher than the prevailing interest rate level for a not insignificant share of their portfolio over the next few years. At year-end 2022, the market value of bonds at amortised cost was NOK 32 billion below book value, while there was an excess value of NOK 16 billion at year-end 2021.

## LIFE INSURERS HAVE INVESTED HEAVILY IN MUTUAL FUNDS

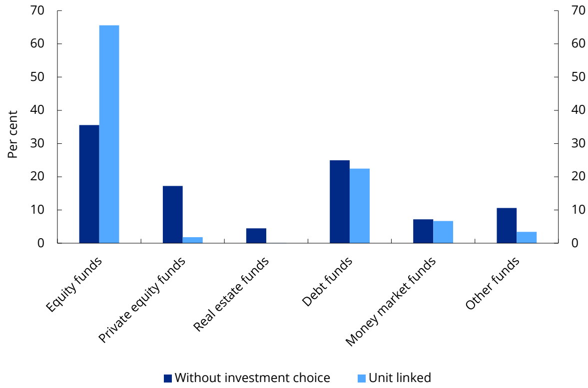
Life insurers' assets mainly comprise long-term investments in different types of instruments in various sectors. There are significant differences in the distribution of investments on instrument types between unit-linked portfolios and portfolios without investment choice. In unit-linked portfolios, where the policyholder bears the return risk, the proportion of mutual funds is 86 per cent, which is far higher than for portfolios without investment choice (chart 65). In the collective and corporate portfolios, corporate bonds account for the largest share of investments, followed by mutual fund investments. Bonds with long maturities and fixed yields are particularly suitable for life insurers, helping them achieve a better match between the duration of assets and liabilities with guaranteed rates of return. The largest share is invested in corporate bonds, including real estate bonds and bank bonds. Life insurers have also invested in equities and provided loans secured on residential property and loans to businesses.

**Chart 65 Life insurers' investments as at 31 December 2022**




Source: Finanstilsynet

**Chart 66 Life insurers' mutual fund investments as at 31 December 2022**



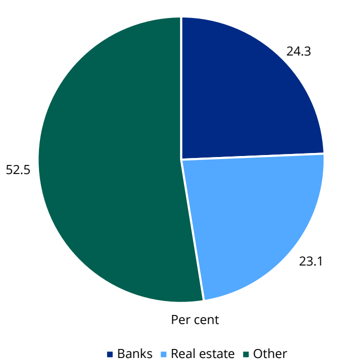

Source: Finanstilsynet

There is a larger share of mutual fund investments in equity funds and a considerably lower share in private equity funds in unit-linked portfolios than in portfolios without investment choice (chart 66). Investments in Norwegian insurance portfolios are distributed somewhat differently than in the portfolios of (other) European insurers. Insurers had a total of approximately NOK 60 billion invested in private equity funds as at 31 December 2022, representing 8 per cent of mutual fund investments. See also the report Alternative investment funds 2022 (in Norwegian only) for further details on investors in Norwegian alternative investment funds, etc.

## LIFE INSURERS HAVE SIZEABLE INVESTMENTS IN THE REAL ESTATE AND BANKING SECTORS

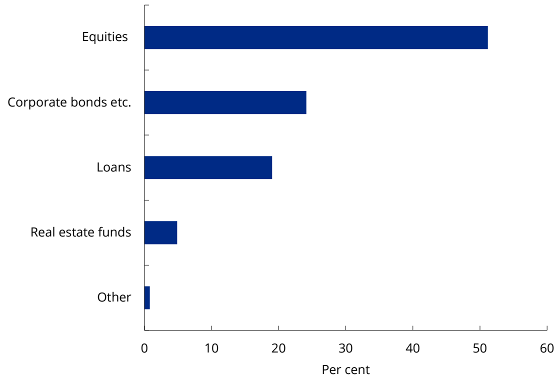
Of the total of about NOK 1 400 billion in the collective and corporate portfolios at year-end 2022, Norwegian life insurers had invested about 23 per cent (NOK 321 billion) in real estate and 24 per cent (NOK 338 billion) in the banking sector (chart 67). Real estate includes all types of real estate exposures (including equities, bonds, loans and investments in mutual funds (chart 68)), and banking includes all types of investments in the banking sector (bank bonds, deposits, equities, etc. (chart 69)).

**Chart 67 Investments in life insurers' collective and corporate portfolios as at 31 December 2022**




Source: Finanstilsynet

**Chart 68 Real estate investments in life insurers' collective and corporate portfolios as at 31 December 2022**

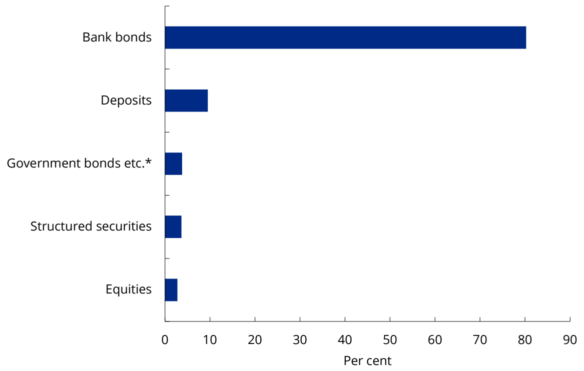



Source: Finanstilsynet

At 51 per cent, equities account for the largest share of real estate investments, followed by corporate bonds at 24 per cent (chart 68). The bulk of the equities are in subsidiaries that own and manage properties in Norway, Sweden and Denmark. Norwegian and Swedish bonds account for the greater part of real estate bonds at 60 per cent and 24 per cent, respectively. Loans include residential mortgages, loans to real estate subsidiaries and ordinary loans to real estate companies. The majority of loans to commercial real estate (CRE) companies have been granted to Norwegian companies while a small number have been granted to Swedish real estate companies. Norwegian insurers have the highest exposure to commercial real estate in Europe.

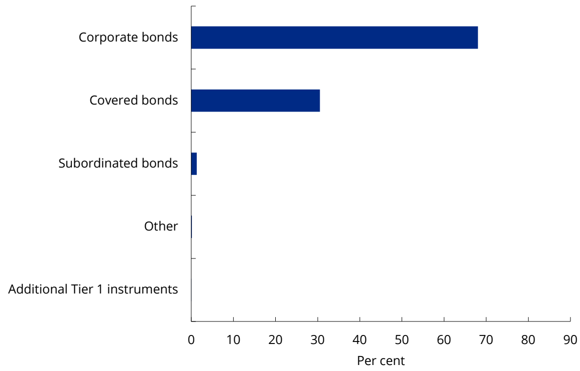
Life insurers have relatively limited investments in bank shares. Approximately 80 per cent of their exposure to the banking sector is through investments in bank bonds (chart 69).

**Chart 69 Investments in the banking sector in life insurers' collective and corporate portfolios as at 31 December 2022**




* Bonds issued by public banks
Source: Finanstilsynet

**Chart 70 Investments in bank bonds in life insurers' collective and corporate portfolios as at 31 December 2022**




Source: Finanstilsynet

Corporate bonds constitute a large share of life insurers' bond investments in the banking sector (chart 70). The investments in corporate bonds are spread over several countries. Corporate bonds issued by Norwegian banks account for the largest share of these investments at 24 per cent, followed by bonds issued by UK and US banks at 15 and 12 per cent, respectively. Investments in bonds issued by Norwegian banks are spread over a number of counterparties, with the 22 largest counterparties accounting for a total of 87 per cent of the investments and the largest of these for about 14 per cent.

Investments in covered bonds, which total NOK 83 billion, are also spread across several countries. The proportion of covered bond investments in Norway is far higher than for bank bonds at well over 80 per cent. Swedish covered bonds come in second place at about 5 per cent, followed by Dutch and Danish bonds. There is also a relative concentrated distribution of investments in Norwegian covered bonds. The three largest counterparties account for just under 40 per cent of investments in Norwegian covered bonds.

## LIFE INSURES WILL BE AFFECTED BY A FALL IN PROPERTY VALUES

Overall, real estate investments accounted for 23 per cent of investments in life insurers' collective and corporate portfolios. Investments in real estate are to be carried at fair value in solvency calculations and in the insurers' financial statements.

At year-end 2022, life insurers' collective and corporate portfolios included real estate investments of NOK 182 billion in the form of equities in real estate companies (mainly subsidiaries), directly owned property and real estate funds. Equities represented the major part of these investments at NOK 165 billion, followed by real estate funds (NOK 16 billion) and directly owned property (NOK 1.5 billion).

Life insurers are subject to solvency capital requirements to enable them to cope with a decline in the value of investments. Built-up customer buffers help mitigate the risk of losing equity. A substantial decline in the value of real estate will mean that the undertakings will have to use supplementary provisions / buffer funds and possibly equity to cover the shortfall.

The solvency capital requirement (and own funds and thereby the solvency ratio) in Solvency II is based on a stress test where real estate exposures in the form of directly owned property, shares in real estate companies and property funds are exposed to a 25 per cent fall in value. The solvency capital requirement for other real estate exposures, in the form of real estate bonds and loans, are calculated as part of the stress test of credit spread risk (spread risk), using factors that are dependent on the bonds' rating and duration.

Based on a 25 per cent decline in the value of real estate (directly owned property, equities in real estate companies and property funds), the undertakings will experience total losses of NOK 45 billion. If values fall by 44 per cent, as in Finanstilsynet's stress test of banks' capital adequacy, the undertakings will incur total losses of NOK 80 billion. The impact on the individual undertaking will depend on the level of customer buffers and capital. At year-end 2022, the undertakings had customer buffers (excluding fluctuation reserves) totalling NOK 151 billion and total equity of NOK 126 billion. Life insurers' total loss is thus lower than their combined customer buffers. For several of the undertakings, however, a 44 per cent fall in property values (in the form of directly owned property, shares in real estate companies and real estate funds) will exceed their buffer capital (supplementary provisions and buffer funds).

At year-end 2022, life insurers also had investments in real estate bonds and commercial real estate loans totalling NOK 113 billion. A sharp fall in property prices could also influence these investments due to either higher risk premiums or, in a worst case scenario, bankruptcies.

Overall, losses on life insurers' real estate exposures (including investments in real estate bonds and commercial real estate loans) resulting from a sharp fall in property prices could lead to a pronounced decline in Norwegian life insurers' capital buffers. Finanstilsynet expects the pension institutions' capital planning to factor in the considerable downside risk.

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