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Prospects of lower earnings and higher capital requirements for banks

- The systemic credit institutions' results remain high, underpinned by low loan impairment charges since 2010. A substantial dampening of economic growth would lead to higher loan impairment charges and consequently lower earnings in future.
- In the current favourable situation, many banks have the capacity to increase lending. This intensifies competition for customers and increases pressure on the banks' credit standards. If credit standards are eased, this could result in losses when the economy reverses.
- Excess capital adequacy in systemic credit institutions was lower at end-2018 than the year before. The requirements for banks' capital structure are likely to be tightened considerably in the coming years. This may put pressure on the systemic credit institutions' excess capital adequacy if they fail to build up further capital adequacy beforehand.

MREL maturity dates

should be spread to ensure compliance in periods with limited market access

Read more

New reference rates

in Denmark is an important work and should also include longer maturities

Read more

The banks take on greater risks

when lending for acquisitions

Read more

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Summary and assessment

Expectations of lower growth and persistently low interest rates
The global economy is growing, but growth expectations have declined, especially for the euro area. In the euro area, monetary policy remains accommodative, and the market expects negative interest rates until the beginning of 2023. The equity price per krone of earnings, and hence the price of a share in European bank earnings, is falling. This fall may reflect a lower risk appetite among investors as well as more elements of uncertainty in relation to the banks' future earnings, e.g. economic growth, financial market developments and the extent of money laundering.

Measures to combat money laundering call for a strengthened effort on a European scale
Efficient anti-money laundering measures require a coordinated effort by banks and authorities. The banks play a key role by ensuring that they have sufficient knowledge of their customers and by monitoring the customers' transactions. The Danish authorities have launched several initiatives to strengthen the anti-money laundering effort, including tightening of legislation in 2018 and 2019. Economic crime exploits the infrastructure of the financial sector, which typically has a cross-border dimension. Consequently, a strengthened effort on a European scale is crucial in order to combat money laundering.

The work to develop new Danish reference rates is important
Finance Denmark has published a consultation paper on the introduction of a new risk-free overnight reference rate for the Danish krone market, based on overnight transactions. It is positive that a new reference rate will be based on actual transactions rather than quoted prices, as the underlying transactions will enhance confidence in the reference rate. With the aim of clarification and of strengthening confidence in reference rates in Denmark, the new reference rate should be implemented rapidly and the existing one should be phased out. International efforts are also ongoing regarding development of transaction-based reference rates for longer maturities than overnight. It is important that the Danish financial sector also continues this work. Denmark needs solutions concerning reference rates for longer maturities and for migrating existing contracts from old to new reference rates. Such solutions should match international best practice in this area.

Credit institutions' earnings are buoyed up by low loan impairment charges
Earnings remain high for the systemic credit institutions[1], despite lower results in 2018 than the historically high levels in 2016 and 2017. Since 2010, results have been underpinned by falling loan impairment charges, which were negative in some periods due to large reversals. The decline in profits since mid-2017 is largely due to lower value adjustments, as costs have been almost unchanged and core earnings have seen a weak decrease. Income from market activities has fallen and in 2018 it was below the average for the period 2010-18. A considerable dampening of growth would entail higher loan impairment charges. Unless compensated by other income, this would lead to lower earnings in future.

Total lending remains high by international standards
Denmark has a higher credit-to-GDP ratio than the other EU member states, although it has approached those of comparable countries in recent years. The high credit-to-GDP ratio in Denmark is offset by the considerable assets held by households, such as pension assets and real estate.

Medium-sized banks are increasing lending to households
Bank lending to households has declined in recent years. This decline is mainly attributable to the large banks, while the medium-sized banks have increased lending. The medium-sized banks' relatively high lending growth is driven by factors such as their expansion into the growth areas, defined as Copenhagen and environs and Aarhus. Moreover, competition for customers intensifies as medium-sized banks establish a foothold in the growth areas. While competition is healthy for the market, it is important that

1 For the data for the analysis, see Appendix.

the banks maintain high credit standards to ensure that they do not advance in new markets by taking excessive risk.

Intensified competition for corporate customers puts credit standards under pressure
In the current favourable environment, many banks have capacity to increase lending, which intensifies both competition for corporate customers and the pressure on credit standards. If credit standards are eased, this could result in losses when the economy reverses and firms' earnings opportunities decline. The interest margin should reflect the risk on the loan in question, and the robustness of firms should be assessed across the entire business cycle to ensure that their foundation is solid when the economy reverses.

Growing risk appetite among the banks when lending for acquisitions
Interest in leveraged buyouts has been rising in recent years, reflecting low interest rates and a growing economy. Traded prices have increased and there is fierce competition between banks and other actors who are ready to finance acquisitions. In November 2018, the Danish Financial Supervisory Authority warned that several banks are prepared to take on greater risks in the market than previously. This could mean that larger loans are granted and that requirements for repayment surety are reduced.

Lending by pension companies in Denmark is limited
In recent years, pension companies have increased their investment in alternative asset classes, such as direct lending, in response to the low interest rate environment and high valuations of other financial assets. In 2017, the pension companies received several instructions from the Danish Financial Supervisory Authority to strengthen their credit policies for direct lending. Pension companies' direct lending to real estate companies in Denmark is limited, however.

MREL maturity dates should be spread
The minimum requirement for own funds and eligible liabilities, MREL, will take effect on 1 July 2019 for most systemic credit institutions in Denmark. The typical maturities of issuances by Danish credit institutions are 3 or 5 years. According to Danmarks Nationalbank's stress test, the systemic credit institutions depend heavily on still being able to issue new MREL funds in a severe stress scenario in order to meet the MREL. Given that periods of no or limited capital market access may arise, the institutions should focus on the length and maturity profiles of their issuances to avoid strong concentration of maturing issuances and breach of the MREL. It is important for the credit institutions to have a certain excess of eligible liabilities relative to the MREL to ensure compliance through a period with no or limited market access.

Lower excess capital adequacy and prospects of tighter capital requirements
Excess capital adequacy in systemic groups was lower at end-2018 than the year before. Overall, the systemic groups channelled more than their profits for the year back to their shareholders in 2018. The requirements for banks' capital structure are likely to be tightened notably in the coming years, due to e.g. the Basel Committee's recommendation for revision of the banks' IRB approaches to calculating risk-weighted assets and an output floor. Unless the systemic groups build up further capital before the tighter requirements enter into force, their excess capital adequacy may come under pressure. Having sufficient capital is important if the banks for this reason are to avoid tightening their credit policies in the event of a cyclical reversal.

Denmark's MREL implementation is problematic and unnecessarily complex
The principle of always being able to recapitalise systemic groups without the use of public funds is a cornerstone of regulatory measures implemented by authorities all over the world after the most recent financial crisis. Danmarks Nationalbank has pointed out that the exemption of mortgage credit institutions from the MREL creates problems as regards lack of risk sensitivity and credible resolution planning. At the same time, the combination of capital, MREL and debt buffer requirements is unnecessarily complex. A complex requirement makes it difficult to assess the institutions' compliance and the size of their excess capital adequacy.

Expectations of lower growth and continued low interest rates

The global economy is growing, but growth is weaker, especially in the euro area
The global economy is growing, but growth expectations have declined, especially for the euro area. The global economy is expected to grow by 2.7 per cent in 2019 and by 2.9 per cent in 2020, cf. Chart 1. The IMF growth forecast for the euro area has been reduced from 1.9 to 1.3 per cent, reflecting lower economic activity in some countries and sectors.[2]

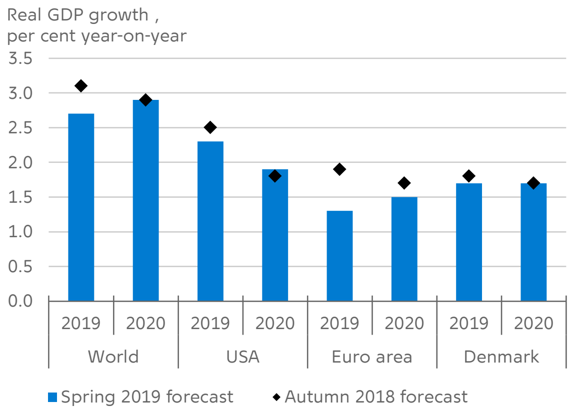
Interest rates are expected to remain low in the euro area
In the euro area, monetary policy is expected to remain accommodative. The European Central Bank, ECB, expects to keep its monetary policy interest rates unchanged at the current low levels throughout the 2nd half of 2019. The ECB's deposit rate is -0.4 per cent.

Market participants expect the ECB's key interest rate to remain negative until the beginning of 2023. This is a shift from December 2018, when market participants expected interest rates to become positive at the beginning of 2021, cf. Chart 2.

At the end of 2018, the ECB ceased to buy further bonds under the asset purchase programme introduced in 2015 to support euro area growth and bring inflation closer to the target. However, the ECB still makes extensive purchases in the bond market, as it reinvests the full amount from maturing bonds purchased under the programme. The ECB has announced that the reinvestments will continue for an extended period of time past the date of the first rise in interest rates.

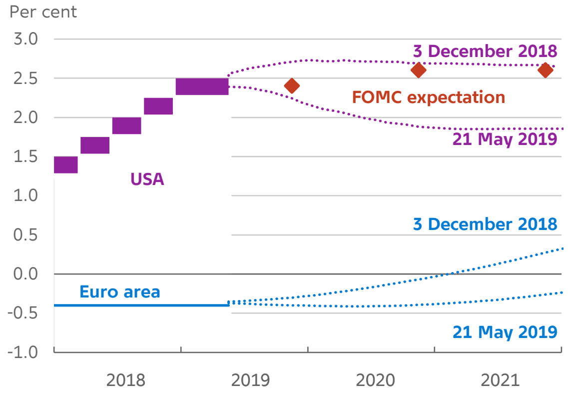
In March, the ECB announced a further accommodative measure in the form of a new round of Targeted Longer-Term Refinancing Operations, TLTROs, giving euro area banks access to loans on favourable terms to encourage them to increase lending. The first 2-year loans will be granted in September 2019 and the last ones in March 2021.

Expectations of lower growth, especially in the euro area Chart 1



Note: GDP growth forecasts for the world, the USA and the euro area are from the IMF's World Economic Outlooks from October 2018 and April 2019, respectively. The forecast for Denmark is from Danmarks Nationalbank's projections from September 2018 and March 2019.
Source: IMF and Danmarks Nationalbank.

Interest rates are expected to remain low in the euro area Chart 2



Note: The chart shows the ECB's deposit rate for the euro area and the Fed funds target range for the USA. The broken lines are based on implied 1-month forward rates for the euro area and futures prices for the USA. FOMC expectations from March 2019.
Source: Macrobond.

2 See IMF, *World Economic Outlook*, April 2019, Chapter 1.

The US Federal Open Market Committee, FOMC, has adjusted its economic outlook, now expecting lower target rates. In the short term, market expectations almost match the FOMC outlook, but in the longer term, the market expects even lower interest rates than indicated by the FOMC.

The financial markets have been influenced by a decreasing growth outlook

Equity prices in Denmark and globally dived in the autumn of 2018 in a market with higher volatility than in the preceding years. The global equity markets recovered in early 2019, and volatility fell again, cf. Chart 3. This should be viewed in the light of, inter alia, the Fed's announcement in January that the FOMC would be patient and consider financial market developments in its future interest rate decisions.

Financial market developments had a negative impact on earnings in several Danish banks at the end of 2018, cf. page 6.

Money laundering generates negative publicity

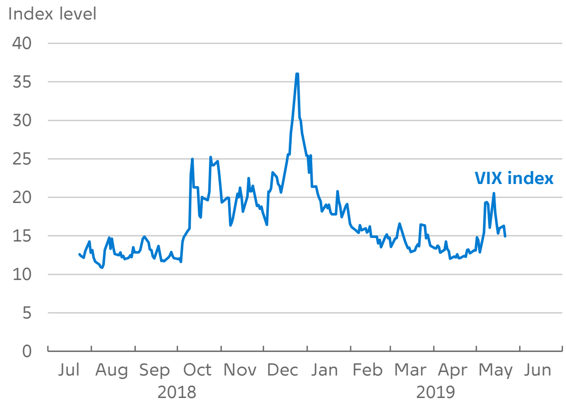
The media image of the Danish financial sector has been dominated by the money laundering problems in Danske Bank's branch in Estonia and the management's approach to this issue. This has led to a considerable increase in the number of newspaper articles in English giving Danish banks, primarily Danske Bank, negative publicity, cf. Chart 4.

Anti-money laundering measures require a coordinated effort by banks and authorities

Efficient anti-money laundering measures require a coordinated effort by banks and authorities. The banks play a central role by ensuring that they have sufficient knowledge of their customers and by monitoring the customers' transactions. Moreover, it makes great demands on a bank's risk assessment, policies, business procedures and systems if it chooses to expand its business abroad, where knowledge of its customers is limited. It is a precondition for the authorities' ability to efficiently investigate money laundering that the banks are capable of identifying and reporting suspicious transactions.

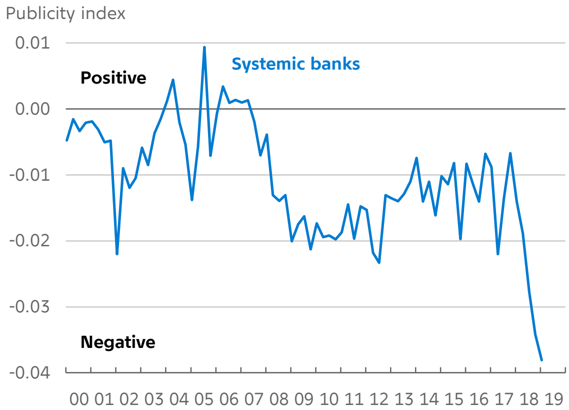
The Danish authorities have launched a number of initiatives to combat money laundering including tightening of legislation in 2018 and 2019. Legislation was tightened inter alia by increasing the maximum penalty and the level of fines for money laundering and by making it possible to revoke a firm's licence in the event of money laundering. In

Volatility declined in early 2019 Chart 3



Note: VIX is a US volatility index based on implied volatilities on S&P 500 index options with a maturity of 30 days, i.e. investor expectations of volatility over the next month. The most recent observation is from 21 May 2019.
Source: Bloomberg and announcements from the US Federal Open Market Committee.

Sentiment measure reflects reputational risk for Danske Bank Chart 4



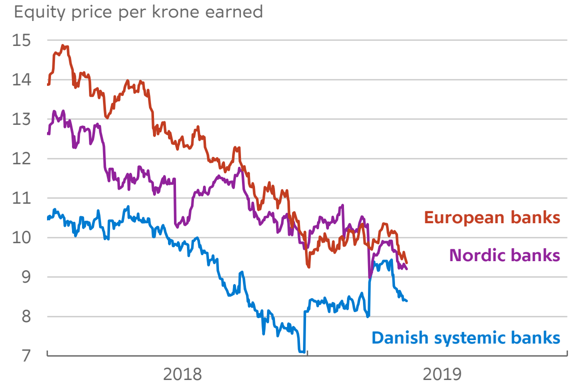
Note: The publicity index is calculated on the basis of all Reuters articles in English about Danish systemic banks. The measure indicates the difference between the number of positive and negative words in a text, weighted by the total number of words in the text. A dictionary of positive and negative words defined by Loughran and McDonald, specifically for financial content documents has been used, cf. When is a liability not a liability? Textual analysis, dictionaries and 10-Ks, *The Journal of Finance*, Vol. 66, No. 1, February 2011, pp. 35-65.
Source: Thomson Reuters and Danmarks Nationalbank.

addition, in May 2019, enhanced cooperation between the Nordic and Baltic supervisory authorities was established to combat money laundering.

The European effort to combat money laundering should be strengthened
The reinforced anti-money laundering efforts by the Danish authorities are necessary, but it is also absolutely essential to create a better framework for European cooperation. Given the cross-border nature of money laundering, a cross-border EU effort is also necessary to combat it. A joint European effort would enable the build-up of strong competencies in this area and also provide a far better overview of international banking groups' cross-border activities.

Declining interest in acquiring shares of bank earnings
The equity price per krone of earnings, and hence the price of a share in Danish bank earnings, has fallen since the beginning of 2018. Comparable Nordic and other European banks show a similar development, cf. Chart 5. Falling interest may reflect a lower risk appetite among investors as well as more elements of uncertainty in relation to the banks' future earnings, e.g. economic growth, financial market developments and the extent of money laundering.

Falling price of future bank earnings Chart 5



Note: The chart shows equity prices measured by the price/earnings ratio for listed systemically important Danish banks and selected Nordic banks (DNB, SHB, Swedbank, Nordea and SEB). European banks are based on the MSCI Europe Banks Index. The most recent observation is from 20 May 2019.
Source: Bloomberg.

The work to develop new Danish reference rates is important
Reference rates are of major importance to the financial markets, both internationally and in Denmark, where a large volume of mortgage loans and derivatives are linked to reference rates. Consequently, it is also essential to ensure confidence in the reference rates applied.

Finance Denmark has published a consultation paper on the introduction of a new risk-free overnight reference rate for the Danish krone market, based on overnight transactions. It is positive that a new reference rate will be based on actual transactions rather than quoted prices, as the underlying transactions will enhance confidence in the reference rate. A shift from quoted to transaction-based reference rates has also taken place in the euro area, the USA and the UK, among others.

With the aim of clarification and of strengthening confidence in reference rates in Denmark, the new reference rate should be implemented rapidly and the existing Tomorrow/Next rate, T/N rate, should be phased out. Phasing-out of the T/N rate is in step with the euro area's decision to phase out EONIA in favour of the new transaction-based €STR.

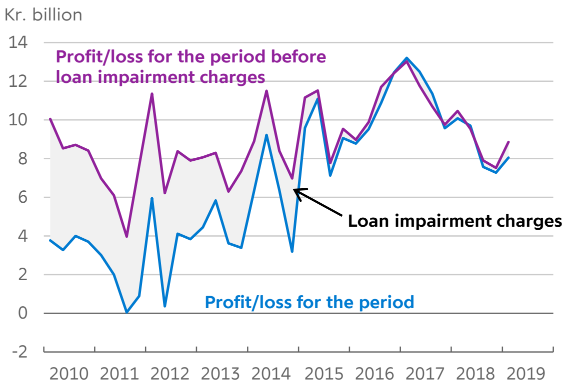
International efforts are also ongoing regarding development of transaction-based reference rates for longer maturities than overnight. It is important that the Danish financial sector also continues this work. Denmark needs solutions concerning reference rates for longer maturities and for migrating existing contracts from old to new reference rates. Such solutions should match international best practice in this area.

Credit institutions' earnings are buoyed up by low loan impairment charges

Low loan impairment charges buoy up results
The systemic credit institutions' earnings remain high, although results were lower in 2018 than the historically high levels in 2016 and 2017, cf. Chart 6. The beginning of 2019 has seen an increase in the results compared with the two previous quarters. Since 2010, profits have been underpinned by falling loan impairment charges, which have been negative in some periods due to large reversals. In 2018, new loan impairment charges slightly exceeded reversals,

The systemic credit institutions' results have declined

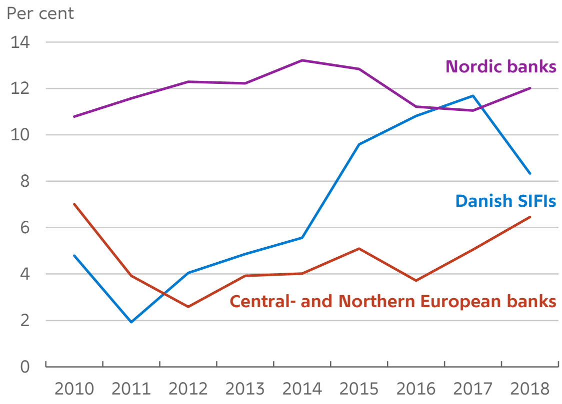
Chart 6



Note: Data is quarterly and the most recent observation is from the 1st quarter of 2019. The result is before tax and adjusted for goodwill impairment charges.
Source: Danmarks Nationalbank.

The systemic credit institutions' return on equity is approaching that of the large European banks

Chart 7



Note: Annual data for large credit institutions. The most recent observation is from 2018. Danish SIFIs include Danske Bank, Jyske Bank, Nykredit Realkredit, Spar Nord and Sydbank. Nordic banks include Nordea, DNB, Handelsbanken, SEB and Swedbank. Central and Northern European banks include Dexia, KBC, BNP Paribas, Crédit Agricole, Crédit Mutuel, Groupe BPCE, Société Générale, ABN Ambro, Rabobank, ING, Credit Suisse, UBS, Barclays, HSBC, Lloyds Bank, Royal Bank of Scotland, Standard Chartered, Commerzbank, Deutsche Bank, Erste Group Bank and Raiffeisen Bank.
Source: SNL and own calculations.

resulting in marginally positive total loan impairment charges.

In an international perspective, the return on equity was high in 2016 and 2017 compared with large Central and Northern European banks, while the Nordic banks maintained a high return on equity throughout the period, cf. Chart 7. In 2018, the Danish banks were placed somewhere between the Nordic and the European banks. Several Danish systemic credit institutions have reduced their expectations relative to 2016 and 2017.

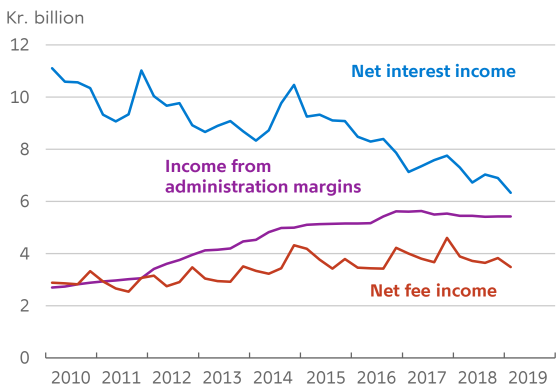
The impact of net interest income on earnings has declined

Declining net interest income still has an impact on the institutions' earnings, cf. Chart 8. Lower net interest income is a result of the low interest rates and is mainly attributable to falling interest margins. Previously, the fall in net interest income was offset by higher income from administration margins and fee income. Total net interest and fee income fell in 2018 due to stagnating income from these items. The continued downward trend in net interest income means that it accounted for 43 per cent of total net interest and fee income in 2018, compared with 67 per cent in 2010.

A considerable dampening of GDP growth would entail higher loan impairment charges. Unless com-

Sustained fall in net interest income

Chart 8



Note: Quarterly data for systemic credit institutions. The most recent observation is from the 1st quarter of 2019.
Source: Danmarks Nationalbank.

pensated by other income, this would lead to lower earnings in future.

Value adjustments have driven profit developments in recent years

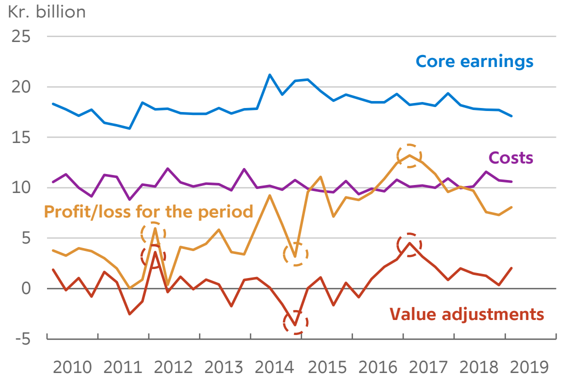
Fluctuations in systemic credit institutions' profits are mainly attributable to items other than traditional bank earnings such as net interest and fee income. Accordingly, lower value adjustments have been the main driver of the decline in the groups' profits since mid-2017, cf. Chart 9. On the other hand, costs have remained almost unchanged, while core earnings have fallen a little. Fluctuations in value adjustments have also had a considerable impact on results in other periods.

Market-related income is putting pressure on credit institutions' results

The systemic groups' income from market activities has decreased in recent years and in 2018 it was below the average for the period 2010-18, cf. Chart 10 (left). In the first quarter of 2019, however, income from market activities increased to about the average for the period. Conversely, income from traditional banking activities such as lending and deposits is higher than at the beginning of the period.

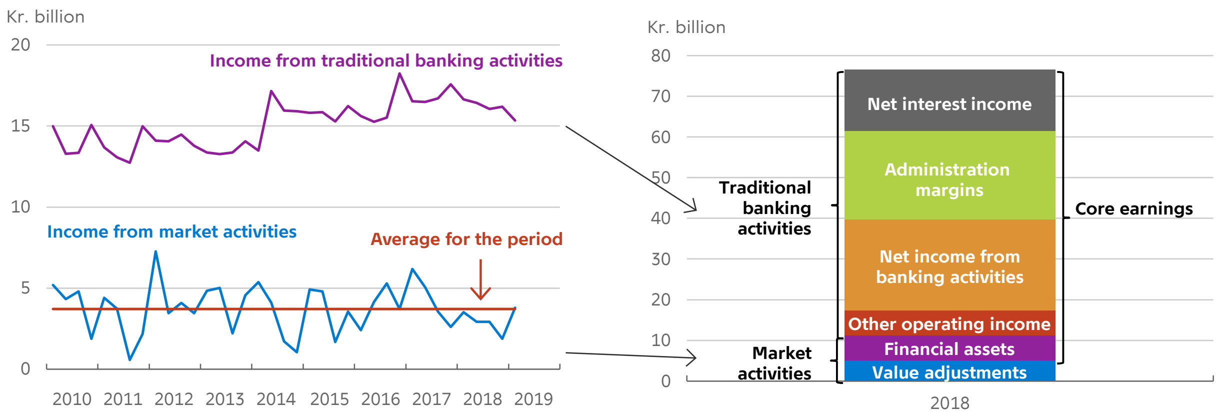
Market-related income is seldom the largest source of income for the large Danish institutions. In 2018, income from market activities was just under kr. 11 bil-

Fluctuations in value adjustments affect results Chart 9



Note: Core earnings are defined as profit before tax less loan impairment charges, value adjustments and costs. The result is before tax and adjusted for goodwill impairment charges. The broken circles indicate periods of either high or low value adjustments. Quarterly data for systemic credit institutions. The most recent observation is from the 1st quarter of 2019.
Source: Danmarks Nationalbank.

Income affected by financial market developments was below average throughout 2018 Chart 10



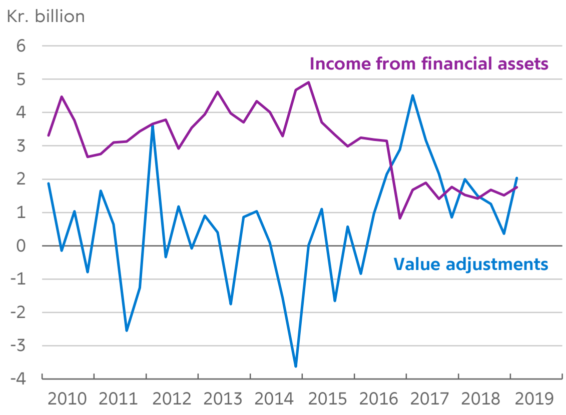
Note: Traditional banking activities are defined by net interest income on lending-related items and net fee income. Market-related income covers value adjustments, interest income and dividends from financial assets. In addition to net core earnings, the result consists of other income, costs and loan impairment charges. Left: Quarterly data for systemic credit institutions, where the most recent observation is from the 1st quarter of 2019. Right: Annual data from 2018 for systemic credit institutions.
Source: Danmarks Nationalbank.

lion, accounting for 14 per cent of total earnings from traditional banking activities and market activity, cf. Chart 10 (right). This is the lowest share in the period 2010-18, when income from market activities accounted for 20 per cent on average of total income from traditional banking activities and market activity.

A breakdown of earnings from market activities shows that the decline is primarily attributable to the lower value adjustments from the institutions' financial positions as mentioned above. Income from financial assets also fell slightly in 2018, cf. Chart 11. Overall, these income items were 9 per cent lower than in 2017, and income has generally fallen in recent years, mainly driven by lower interest income from bond portfolios.

Earnings from market activities have been significantly reduced

Chart 11



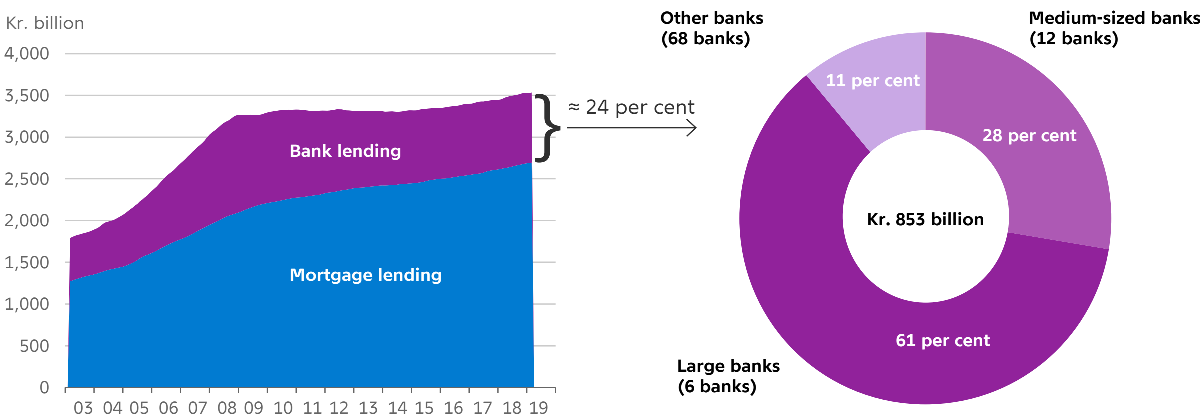
Note: "Income from market activity" from Chart 10 split into income from financial assets (interest income and dividends) and value adjustments.
Source: Danmarks Nationalbank.

Total lending remains high by international standards

Rising lending to households and the corporate sector
Lending to households and non-financial corporations continues to rise, cf. Chart 12. (left). Lending growth has been driven by mortgage lending since 2009, while bank lending has decreased in a large part of this period. Mortgage lending now accounts for 76 per cent of total lending to Danish house-

Mortgage lending is driving total lending growth

Chart 12



Note: Lending to households and non-financial corporations, 3-month moving averages. The most recent observation is from the end of March 2019. Other banks are made up of groups 3-4 and branches of foreign banks not belonging to large and medium-sized banks.
Source: Danmarks Nationalbank.

holds and corporate customers of just over kr. 3,500 billion, relative to around 67 per cent in 2010. The six large banks account for the lion's share of bank lending, cf. Chart 12 (right).

Recent years have been characterised by limited demand for loans and expansionary financial conditions. At the same time, the institutions have ample liquidity which they wish to lend. This could induce the institutions to take greater risks when lending, although total lending growth is limited.

Total lending is high by international standards

Denmark has a higher credit-to-GDP ratio than the other EU member states, although it has approached those of comparable countries in recent years, cf. Chart 13.[3] The credit-to-GDP ratio rose until the end of 2009. Subsequently, the combination of higher GDP and relatively modest lending growth has led to a decrease in the credit-to-GDP ratio.

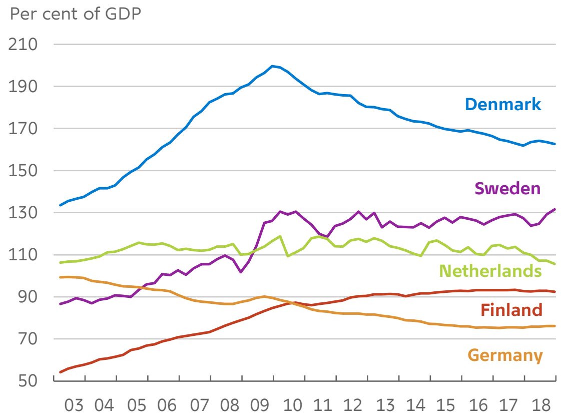
High household debt is offset by considerable assets

The high credit-to-GDP ratio in Denmark is offset by the considerable assets held by households. The total increase in household assets of 37 per cent since the end of 2012 has been driven mainly by pension and housing wealth and shares and other securities, cf. Chart 14.

Household deposits have also increased in this period in step with the other assets, and deposits still accounted for around 10 per cent of total assets at end-2018.

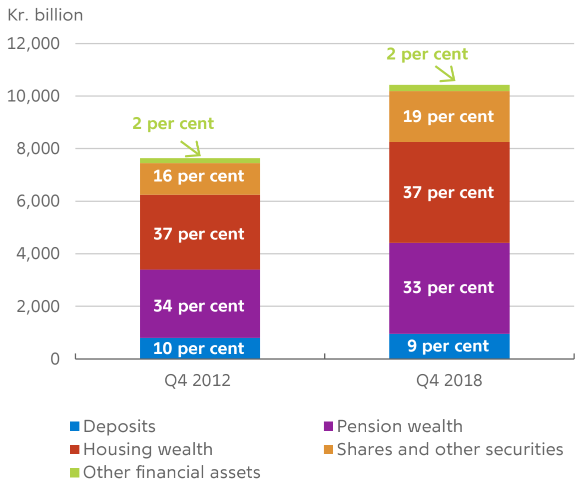
Especially for households in the highest income brackets, deposits relative to income have increased in recent years. One reason is the lack of more attractive alternative placement options.[4] All other things being equal, the historically low interest rates imply low opportunity costs of holding deposits. At the same time, lending rates have fallen considerably. The low interest rate environment could therefore induce households to increase their deposits rather than reducing their debts.

Denmark has the highest credit-to-GDP ratio by international standards Chart 13



Note: Credit institutions' lending to households, non-profit institutions serving households and non-financial corporations. The most recent observation is from the 4th quarter of 2018.
Source: ECB and own calculations.

Deposits account for only a modest share of household assets Chart 14



Note: The calculation of households' housing wealth does not include cooperative housing, commercial properties owned by the household sector (including self-employed individuals), agricultural land and undeveloped building plots. Shares and other securities consists of debt instruments as well as shares and other equity investments. Other financial assets comprises banknotes and coins, trade receivables and other unpaid outstanding accounts due, other deposits from financial intermediaries other than banks and mortgage credit institutions as well as financial derivatives and employee options. All assets are stated in market prices. Closing balance 4th quarter 2012 and 4th quarter 2018.
Source: Danmarks Nationalbank.

3 In the 4th quarter of 2018, Denmark had the highest credit-to-GDP ratio out of 26 EU member states.

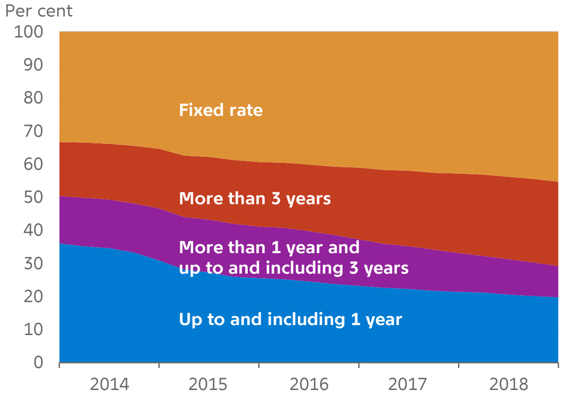
4 Cf. Jonas Ladegaard Hensch and Erik Haller Pedersen, Low interest rates boost bank deposits, *Danmarks Nationalbank Analysis*, No. 9, July 2018.

Homeowners have become less vulnerable to interest rate increases

Households are still moving towards mortgage loans with longer fixed interest periods, cf. Chart 15. The share of variable rate mortgage loans with fixed interest periods exceeding three years has risen in recent years. The same applies to fixed rate mortgage loans. The fact that households increasingly opt for longer fixed interest periods and fixed rate loans should be viewed in the light of, inter alia, the historically low interest rates, which make it more attractive for highly indebted households to lock interest rates. In addition, the mortgage credit institutions' administration margin structure may also have played a role, as deferred amortisation loans and loans with short fixed interest periods have become relatively more expensive.

Homeowners choose longer fixed-interest periods

Chart 15



Note: Mortgage loans, nominal values, of employees and old-age pensioners by initial interest-rate fixing. The most recent observation is from January 2019.
Source: Danmarks Nationalbank.

The tendency among households to opt for longer fixed interest periods also reflects the banks' changed credit policies as a result of the implementation of new borrower-based regulatory measures in recent years.

Recent regulatory measures include amendments to the rules for good practice in lending for housing purposes, which took effect in 2018. The amendments restrict fixed interest periods and deferred amortisation for loans to highly indebted households with an LTI, loan-to-income, ratio of more than four and an LTV, loan-to-value, ratio of more than 60 per cent.[5]

At the same time, the Danish Financial Supervisory Authority's 2016 guidelines on prudent lending to households with high LTI ratios and insufficient wealth in growth areas have also limited the borrowing opportunities of certain households.[6]

Despite the growth in fixed rate mortgage credit, more than half of all mortgage loans are still at variable rates of interest. So higher interest rates will still have an impact on homeowners' future interest payments, but to a lower degree than previously.

As homeowners move towards longer fixed interest periods, they are also moving towards loans with amortisation. The share of mortgage loans with deferred amortisation is 46 per cent and has fallen steadily since the peak in 2014, when deferred amortisation loans accounted for 56 per cent of mortgage lending. In other words, the Danes are opting for less risky loan types.

Over the past year, the institutions have introduced the option of mortgage loans with deferred amortisation for up to 30 years. Given that the introduction of new loan types has previously had a substantial impact on the loan market, careful monitoring of developments in these new loans is important.

Slowdown in price increases for owner-occupied flats

Following several years of rising prices for owner-occupied flats in Copenhagen, prices have been

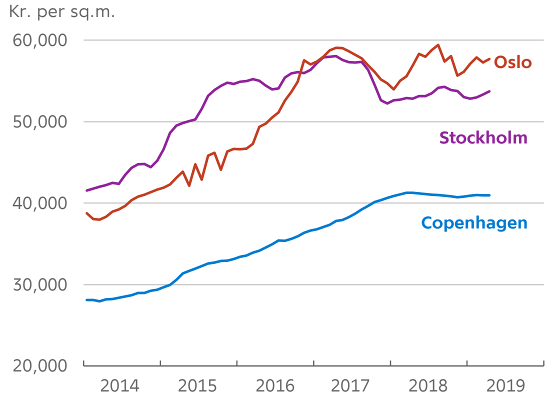
5 See Helene Kronholm Bohn-Jespersen and Katrine Graabæk Mogensen, While the sun is shining, prepare for a rainy day, *Danmarks Nationalbank Analysis*, No. 16, November 2018 for an overview of other borrower-based measures.

6 See Christian Sinding Bentzen, Henrik Yde Andersen and Simon Juul Hviid, Impacts of 2016 guidelines on mortgaging of homes, *Danmarks Nationalbank Analysis*, No. 18, November 2018.

almost unchanged for the past year, while trading activity has subsided. This could indicate that prices have peaked for the time being. But prices for owner-occupied flats are still at a lower level than in Oslo and Stockholm, cf. Chart 16. Several international organisations, including the IMF, have regularly assessed that house price developments in both Norway and Sweden constitute a major risk to the real economy and the financial sector.

Given this slowdown, the Copenhagen housing market is set for a soft landing where prices will be more likely to reflect the development in household income and the level of interest rates. The slowdown in the Copenhagen housing market may be driven by several factors. On the supply side, a substantial new construction and the consequent increase in the housing stock contributed to the slowdown. On the demand side, recent years' considerable price increases and regulatory measures mean that fewer home buyers in the large cities have access to sufficient loans to finance a home purchase.

The price for owner-occupied flats in Copenhagen has flattened out Chart 16



Note: Price per square metre for owner-occupied flats in Copenhagen City and Stockholm. For Oslo the price per square metre is shown for all dwellings. Price per square metre for Copenhagen City is seasonally adjusted. The most recent observation is from April 2019. Average exchange rate for January 2014-April 2019 for DKK/SEK and DKK/NOK.
Source: Boligsiden, Svensk Mäklarstatistik, Eiendom Norge and own calculations.

The slowdown in the housing market is clearly reflected in the market for project flats

The slowdown in the Copenhagen housing market is clearly reflected in the market for project flats, which can be seen as an early indicator of trading activity in the housing market in general. While the supply of project flats remains high, sales of project flats have declined markedly since 2017, cf. Chart 17 (left). In Copenhagen City, sales of project flats peaked in May 2017, but had fallen by around 80 per cent until April 2019. However, it should be noted that sales of project flats account for only a modest share of total sales of owner-occupied flats, cf. Chart 17 (right). The general decrease in sales of project flats may increase the risk of losses for the owners of the project properties up for sale if the lower demand leads to a decline in prices or potential loss of value if the project flats are rented out rather than sold.

Overall, households are reducing bank debt

Total bank lending to households has decreased in recent years, amounting to just under kr. 485 billion at end-March 2019. Overall, households are not raising more bank debt, but mortgage debt. One reason is that households who are homeowners have access to cheaper loan financing of consumption and home improvements by converting existing mortgage loans or raising top-up loans secured on the home.

The overall decline in bank lending to households can be attributed to lower lending for both housing purposes and consumer loans, cf. Chart 18. However, consumer lending has flattened recently.

Consumer loans are normally uncollateralised, meaning that they typically imply a higher credit risk. Households who are not homeowners and are not able to pledge their homes as collateral thus have to raise consumer loans. At the same time, consumer loans are characterised by a smaller principal and a considerably shorter maturity than housing loans. Consequently, the composition of total consumer lending may change quickly as old loans are serviced and new loans are raised.

Consumer banks are winning market shares

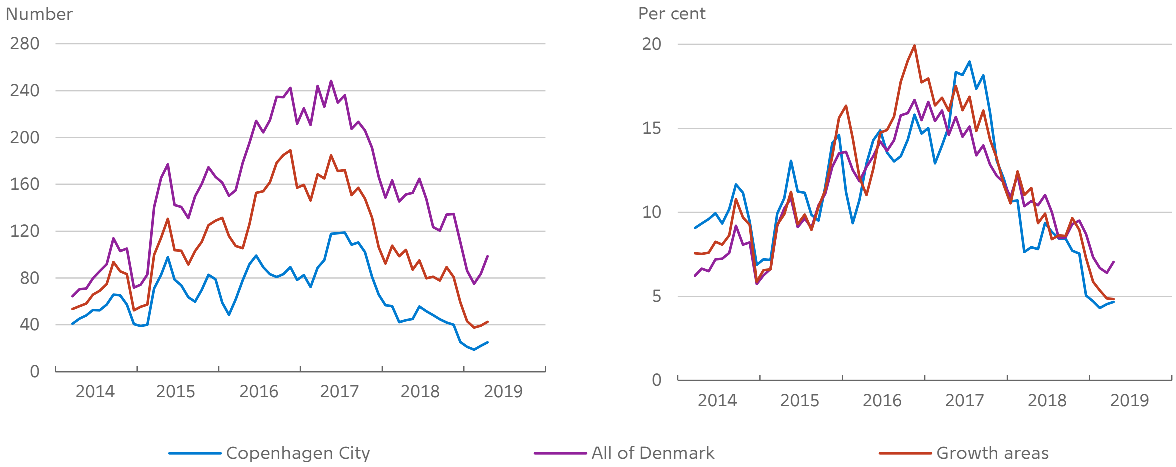
In Denmark, there are several specialised banks almost entirely providing consumer lending services. Below, banks where consumer loans account for more than 95 per cent of their lending to households are referred to as consumer banks.

These banks have markedly increased their market share, cf. Chart 19. Over the last 5 years alone, their consumer lending has grown by 10 per cent p.a., and

Fewer project flats are being sold, but project flats account for only a modest share of total sales of owner-occupied flats

Chart 17

Sales of project flats | **Share of total sales of owner-occupied flats**



Note: Growth areas are defined as Copenhagen City, Copenhagen environs and the City of Aarhus. 3-month moving averages. The most recent observation is from April 2019. The shares are calculated as the share of project flat sales of total sales of owner-occupied flats in the three areas.
Source: Boligsiden and own calculations.

consumer banks now account for just over 20 per cent of the market for consumer loans in Denmark, or kr. 40 billion.

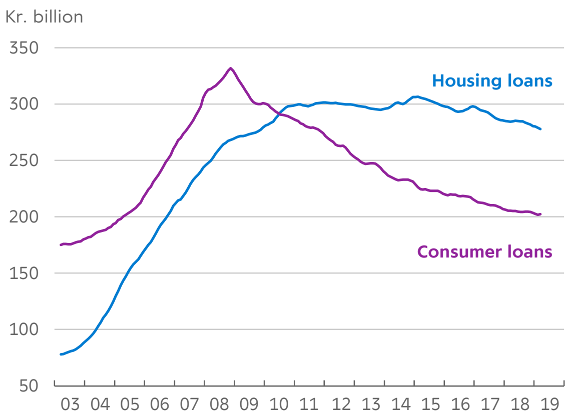
The Danish Financial Supervisory Authority has pointed out that there are pronounced differences in credit assessment practices among selected consumer banks – especially in relation to households' disposable amounts.[7]

A too lenient credit assessment may undermine a household's resilience to changes in the economy, such as interest rate increases or higher unemployment. This may impact the households' ability to service their total debt.

Outside the banking sector, there are several credit *firms* providing consumer loans to households which are not defined as consumer *banks*. These firms are supervised by the Consumer Ombudsman. They provide mainly short-term loans with maturities of

Households are raising less bank debt

Chart 18



Note: Total bank lending to households broken down by housing and consumer loans. Consumer loans is the sum of bank lending for the purposes of Consumer credit and Other. 3-month moving averages. The most recent observation is from March 2019.
Source: Danmarks Nationalbank.

7 (*link*) – in Danish only.

less than 3 months, known as quick or instant loans. In 2017, the total volume of this loan type, which is not included in this analysis, was estimated at kr. 0.5 billion.[8]

Medium-sized banks are increasing lending to households

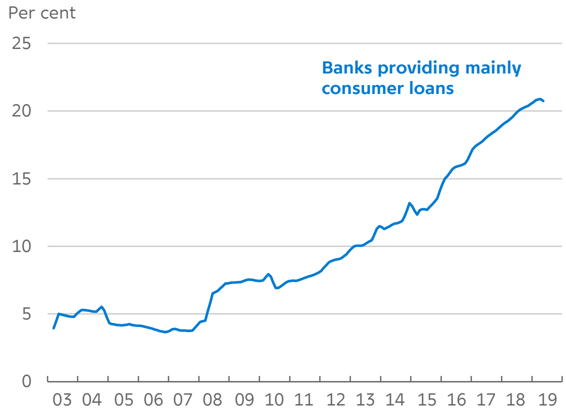
The decrease in total bank lending to households has been driven mainly by the large banks in recent years, cf. Chart 20. At the same time, the medium-sized banks have increased their lending to households by just over 21 per cent since the beginning of 2015.

This implies considerable variation in lending growth across banks. The large banks have increasingly provided mortgage loans, including mortgage-like bank loans, which are to some extent transferred from the banks' to the mortgage credit institutions' balance sheets. This may help to explain the increase in the medium-sized banks' market share, cf. Chart 21.

The medium-sized banks' relatively high lending growth is driven by factors such as their expansion into the growth areas, which has intensified competition. This could lead to easing of credit quality requirements and conditions for new lending. Compared with the large banks, the medium-sized banks have a larger share of loans with impaired credit quality. This seems to indicate that, on average, customers of medium-sized banks are in a weaker position than customers of large banks.

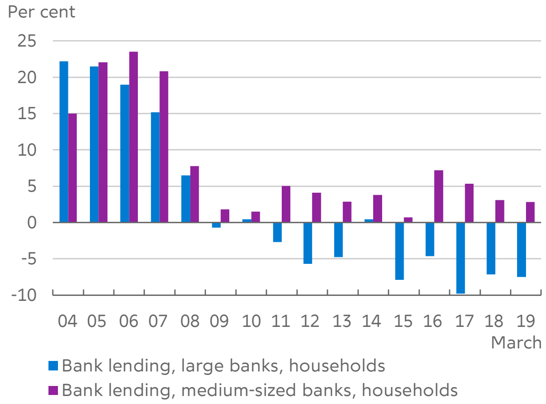
According to the banks themselves, they are not easing requirements for households. In Danmarks Nationalbank's lending survey, the medium-sized banks responded that they are not easing credit standards for households. However, they also responded that competitor behaviour is negatively affecting credit standards. Intensified competition could be the result of the medium-sized banks' growth in lending to households. While competition is healthy for the market, it is important that the banks maintain high credit standards to ensure that they do not advance in new markets on the basis of excessive risk-taking. When the economy reverses, such behaviour could cause substantial problems.

Banks providing mainly consumer lending services are winning market shares for consumer loans Chart 19



Note: Banks where consumer loans account for more than 95 per cent of their lending to households in a given quarter. The number of banks providing mainly consumer lending services varies from 11 to 27 banks. 3-month moving averages. The most recent observation is from March 2019.
Source: Danmarks Nationalbank.

Medium-sized banks have increased their lending to households Chart 20



Note: Growth in bank lending to households by large and medium-sized banks. Growth rates until and including 2018 are calculated at end-December. The most recent observation is calculated from March 2018 to March 2019.
Source: Danmarks Nationalbank.

8 (*link*) – in Danish only.

Competition for corporate customers puts credit standards under pressure

Growth in lending to the corporate sector continues at a moderate pace
Lending to the corporate sector has risen by 4 per cent over the last year. That is marginally more than in the preceding years, and lending growth is showing a slight upward tendency. Mortgage credit is still driving lending growth, cf. Chart 22. Bank lending is rising a little, and the distribution of market shares between the large and medium-sized banks is stable. Average annual growth for the large and medium-sized banks is 3.3 and 4.9 per cent, respectively. The industry breakdown of bank lending has been stable in recent years, but there has been a slight tendency for lending to "Trade" to have risen over the last year.

Strong competitive pressure among the banks
In the current favourable situation, many banks have capacity to increase lending. This intensifies competition for customers and increases pressure on the banks' credit standards. According to Danmarks Nationalbank's lending survey, credit standards for the corporate sector were more or less unchanged in the 1st quarter of 2019. The institutions still report stronger competitive pressure as the primary reason why credit standards are squeezed, cf. Chart 23. The institutions have been reporting increased competition continuously since 2013.

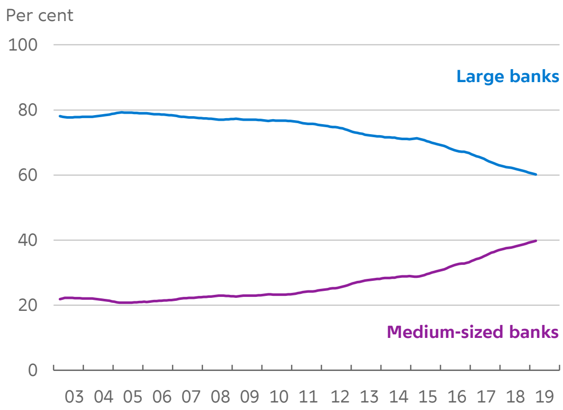
Competitive pressure has mainly been reflected in lower interest margin and fee requirements, cf. Chart 24. With few exceptions, the institutions have been reporting easing of margin and fee requirements since 2013.

There is ample access to funding. Only few firms are reporting financial restrictions on production, cf. Chart 25. This indicates that the limited growth in lending is driven primarily by low demand.

Wider spread in corporate leverage ratios
Leverage ratios show a wider spread, and on average firms have consolidated. An indicator[9] based on

Rising market share for bank lending to households by medium-sized banks

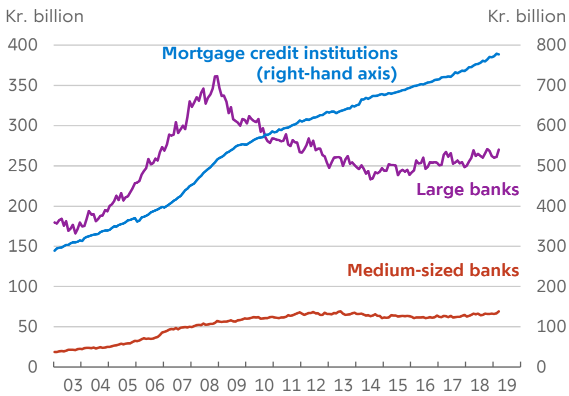
Chart 21



Note: Shares of total lending to households by large and medium-sized banks, 3-month moving averages. The most recent observation is from March 2019.
Source: Danmarks Nationalbank.

Moderate growth in lending to the corporate sector is still driven by mortgage credit

Chart 22

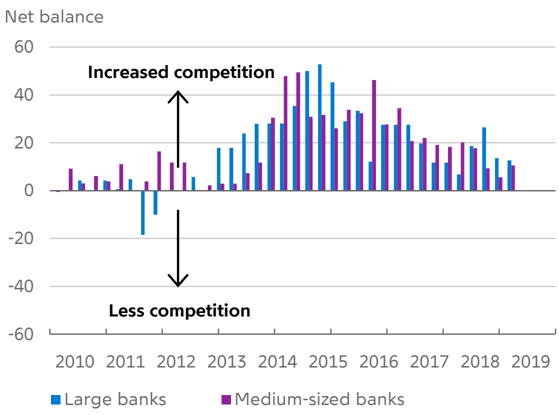


Note: Lending to Danish non-financial corporations by all large and medium-sized banks and mortgage credit institutions. The most recent observation is from March 2019.
Source: Danmarks Nationalbank.

9 Danmarks Nationalbank, The riskiness of corporate credit allocation is increasing, *Danmarks Nationalbank Analysis*, No. 4, February 2019.

Increasing competitor pressure since 2013

Chart 23

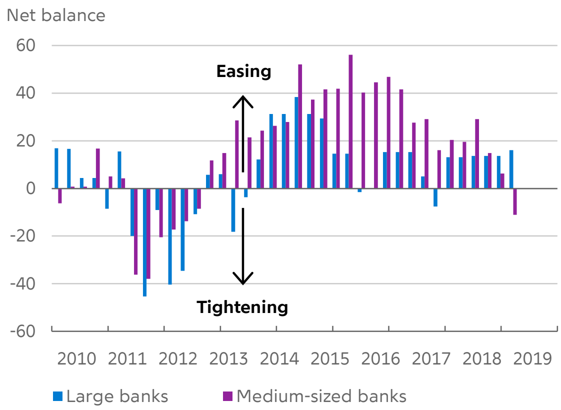


Note: Lending survey for corporate customers. The net balance may lie within the −100 to 100 interval. A positive (negative) net balance means that credit managers of the institutions in question have, overall, i.e. lending-weighted, stated that competitor behaviour has contributed to easing (tightening) of credit standards relative to the preceding quarter. The most recent observation is from the 1st quarter of 2019.

Source: Danmarks Nationalbank.

Banks are easing their interest margin and fee requirements

Chart 24

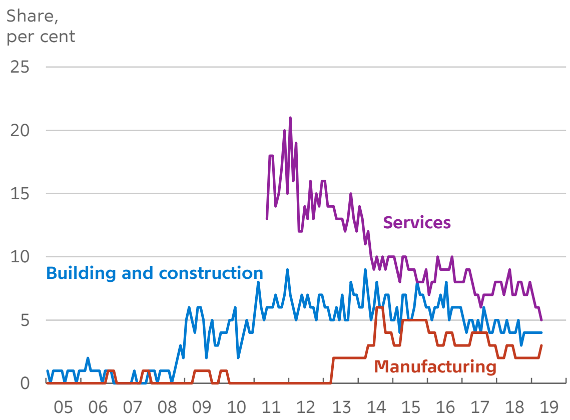


Note: Lending survey for corporate customers. The net balance may lie within the −100 to 100 interval. A positive (negative) net balance means that credit managers of the banks in question have, overall, i.e. lending-weighted, stated that their margin and fee requirements have been eased (tightened) relative to the preceding quarter. The most recent observation is from the 1st quarter of 2019.

Source: Danmarks Nationalbank.

Few firms are reporting restrictions on the access to funding

Chart 25



Note: Share of firms stating financial restrictions as the reason for production constraints. The most recent observations are from April 2019.

Source: Statistics Denmark.

firms' financial statements shows that the riskiness of credit allocation has risen since 2013, as the firms which increase their debts the most have higher average leverage ratios than those which increase their debts the least, cf. Chart 26. Overall, the indicator was at a lower level in 2017 than in the pre-crisis period, however.

So despite the economic upswing, the firms that increase their debts the most have not consolidated. It is important for the credit institutions to charge the right price when extending new loans to the most highly leveraged firms, and they should not ease their credit standards. If equity accounts for a smaller share of funding, this will make the finances of the individual firm less robust and the debt riskier.

Historically, the indicator used has proved to have explanatory powers as it showed a rising riskiness of credit allocation in the years leading up to the financial crisis, followed by lower risk during the crisis as the banks tightened their credit standards for corporate customers.

Interest margins are still declining
The lower margin requirements for loans may be one of the reasons why the banks' average interest margin continues to decline, cf. Chart 27. The interest margin is measured as the difference between the banks' average lending and deposit rates for the corporate sector.

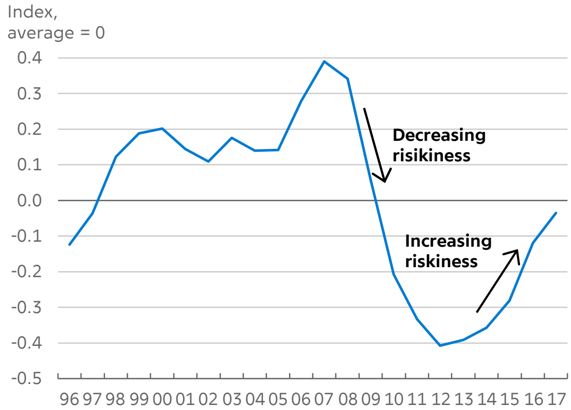
In the current environment of intense competition among banks in an economic upswing, it is important that the banks maintain a solid credit quality. If credit standards are eased, this could result in losses when the economy reverses and firms' earnings opportunities decline. The interest margin should reflect the risk on the loan in question, and the robustness of firms should be assessed across the entire business cycle to ensure that their foundation is solid when the economy reverses.

Although the credit quality of the medium-sized banks has improved, it remains considerably lower than for the large banks
The quality of the medium-sized banks' lending is substantially lower than that of the large banks. This is to some extent due to the large and medium-sized banks having different business models.

The lower credit quality can help to explain why the medium-sized banks have higher interest margins. Whether the interest level is sufficient to cover the risks cannot be known for certain until the economy reverses. It is important that the medium-sized banks take the lower credit quality into account as it can, all else equal, be expected to lead to greater losses in the long term, also on new customers. Loan impairment charges and losses are not likely to remain at the current low level when the cyclical position changes.

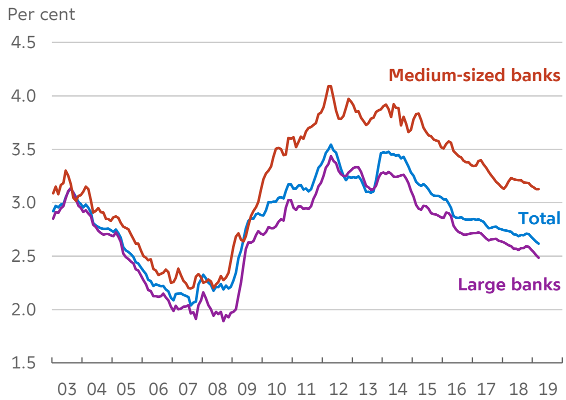
The lending portfolios of the medium-sized banks have, however, improved, cf. Chart 28. One of the reasons for the improved credit quality is that the finances of corporate customers are supported by the economic upswing and the low level of interest rates. The proportion of impaired and reduced-quality loans has decreased in recent years. In particular, the credit quality has improved for loans for real estate and agriculture. For the large banks, the credit quality is more or less unchanged.

Increasing riskiness of credit allocation Chart 26



Note: The riskiness of credit allocation indicator is based on financial data for firms' leverage. A positive (negative) value indicates that the index is higher (lower) than its historical average. See Danmarks Nationalbank, The riskiness of corporate credit allocation is increasing, *Danmarks Nationalbank Analysis*, No. 4, February 2019, for a more detailed description of how the indicator is calculated.
Source: Bisnode and own calculations.

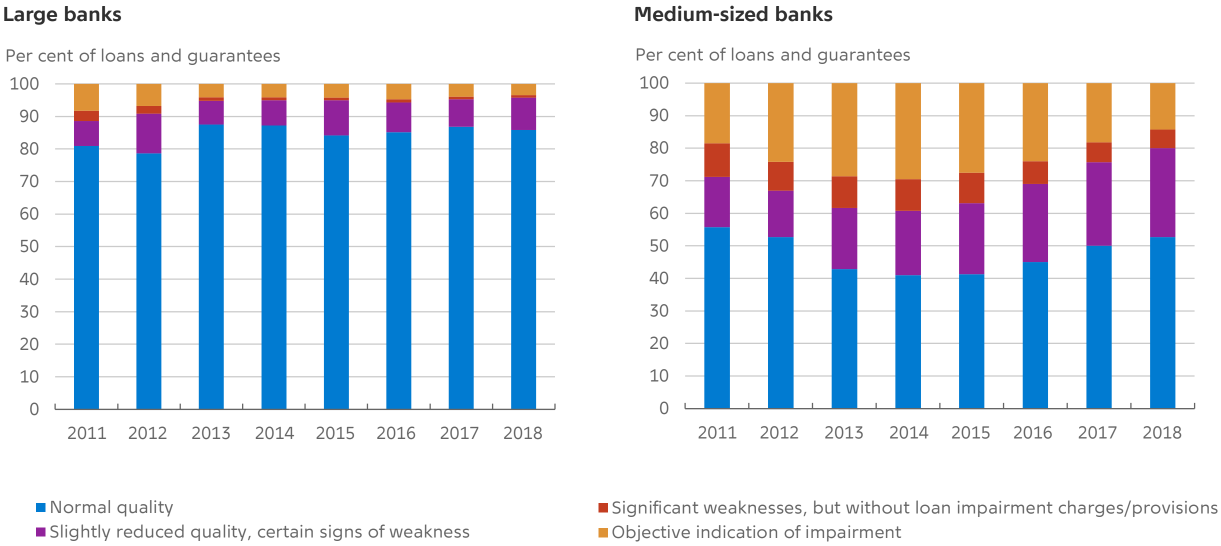
Continued decline in interest margins Chart 27



Note: Interest margins on outstanding business, excluding repo transactions, 3-month averages. The interest margin is calculated as lending rates less deposit rates. The spread between large and medium-sized interest margins reflects differences in the lenders' credit risks, but also other factors such as product structures. The most recent observation is from March 2019.
Source: Danmarks Nationalbank and own calculations.

The credit quality of the medium-sized banks has improved, but remains considerably lower than for the large banks

Chart 28



Note: Lending and guarantees to the corporate sector by quality for large and medium-sized banks.
Source: Danish Financial Supervisory Authority and own calculations.

Growth in leveraged buyouts with high risk

Growing risk appetite among the banks when lending for acquisitions

Interest in leveraged buyouts has been increasing in recent years, reflecting low interest rates and an expanding economy. Traded prices have risen and there is fierce competition among banks and other actors who are ready to finance acquisitions.

In November 2018, the Danish Financial Supervisory Authority warned that several banks are prepared to take on greater risks in the market than previously.[10] Risk appetite differs across the banking sector, and credit policies are to varying degrees inadequate. This could imply reduced requirements for repayment surety. It is a widespread practice that the loan document requires the firm to have e.g. a minimum solvency ratio. If this requirement is breached, the loan may fall due for redemption.

More firms are being acquired by private equity funds

Many leveraged buyouts are made by private equity funds. A private equity fund is an investment firm with capital commitments from a number of investors. The fund subsequently invests the capital by acquiring firms, cf. Box 1. The investments are leveraged by means of loans from e.g. banks to fund a substantial share of the acquisition price.

Since 2010, private equity funds have been acquiring a growing number of firms in Denmark, cf. Chart 29. In 2018, more than 200 firms were owned by private equity funds. They account for only around 1 per thousand of all Danish firms and for

10 The Danish Financial Supervisory Authority's thematic analysis of loans for acquisitions from November 2018 was based on inspections at Danske Bank, Jyske Bank, Nordea, Nykredit Bank, SEB and Sydbank (*link*) – in Danish only.

What is a private equity fund?

Box 1

A number of private equity funds, including large European players and smaller Danish players, have investments in Danish firms. The chart below shows the structure of Capital A/S, a fictitious private equity fund that has invested in a firm called the Portfolio company 1.

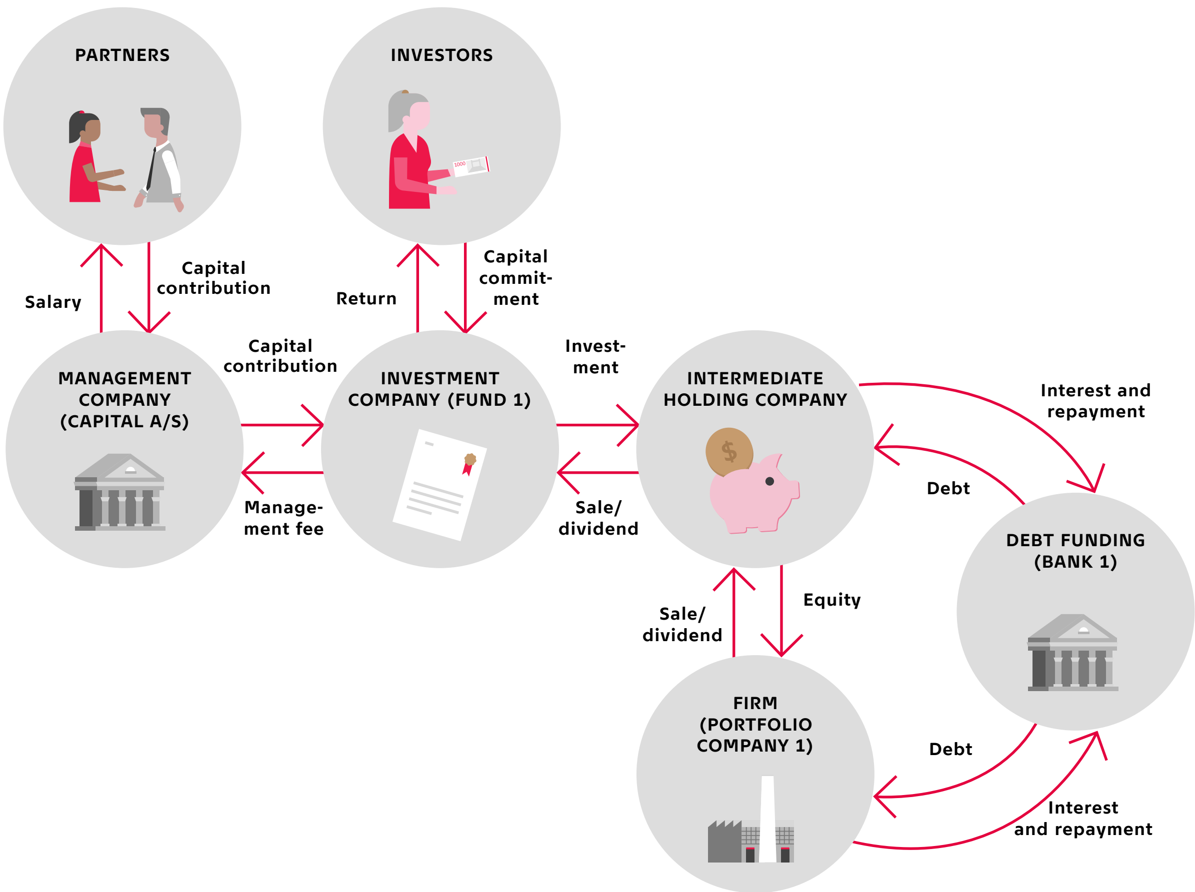
The private equity fund consists of a number of funds with a joint management company. Each fund is established as an independent investment firm (fund), often a limited partnership, acting independently under the management of one or more partners of the private equity fund. By way of example, Capital A/S has established a fund called Fund 1.

A number of investors make a capital commitment to a fund that they will contribute up to a certain amount for its company acquisitions. In most cases, the partners also contribute by making a personal capital commitment to the fund. Once the partners have selected a candidate for acquisition, they typically establish an intermediate holding company owned by the fund, in which they place funds from their investors. At the same time, the intermediate holding company raises debt in one or more banks and/or other financial institutions. The intermediate holding company then acquires the selected firm with funds from both investors and loans raised. For example, the investment in the Portfolio company 1 was made as part of Fund 1, in which Bank 1 contributed the debt funding.

Return on equity in a portfolio company consists of current dividend and, in the longer term, income from resale of the portfolio company. Most often, private equity funds will own portfolio companies for 3-7 years. Income is forwarded from the intermediate holding company to the fund after servicing of debt. Ultimately, the investors recoup the return on their investments from the fund, less an administration fee to the management company and the partners.

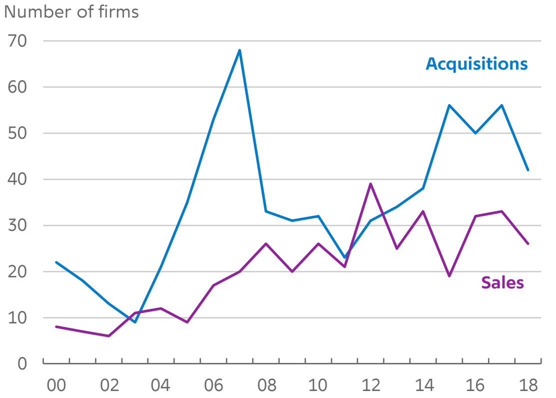
If a loss is incurred by one of the funds' investments, e.g. the failure of a portfolio company, the intermediate holding company will initially incur the loss. In most cases, the fund's entire investment will be lost, whereas part of the outstanding debt of the banks and/or other financial institutions may be repaid, depending on the available assets and securities of the insolvent estate. Since each fund invests in several portfolio companies, the loss in the event of the failure of a firm may be compensated by the return on investments in the fund's more successful portfolio companies.

Corporate structure of a private equity fund



The number of acquired firms has risen since 2010

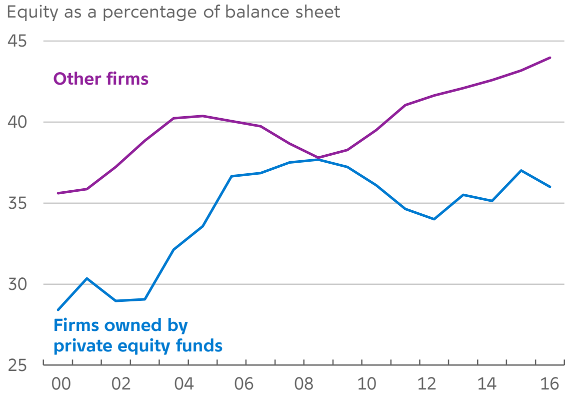
Chart 29



Note: Firms in Denmark acquired and sold by Danish and foreign private equity funds in a given year. The latest update is from 22 May 2019.
Source: Danish Venture Capital And Private Equity Association (DVCA) and own calculations.

Firms owned by private equity funds have not been consolidating to the same extent as others

Chart 30



Note: The sum of equity as a share of the total balance sheet of all firms in each group. 3-year moving averages. The compilation of the debt of each firm does not allow for any additional debt of intermediate holding companies between firms and private equity funds.
Source: DVCA, Experian, Bisnode and own calculations.

1.3 per cent of the aggregate accounting balance sheet.

Most recently, the number of acquisitions fell in 2018. This could be because prices for firms have reached a level that gives rise to concern about the firms' continued ability to service loans.

Firms owned by private equity funds are more heavily indebted than other firms

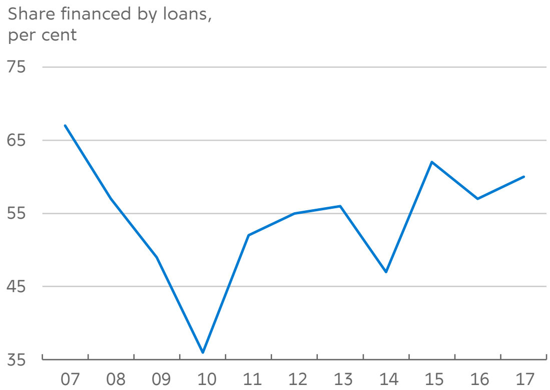
Firms owned by private equity funds generally have higher debts after the acquisition than before. While the share of equity in firms owned by private equity funds has been virtually unchanged since 2010, other firms have reduced their debts in the same period, cf. Chart 30. See Box 2 for a model-based analysis of the indebtedness of Danish firms owned by private equity funds.

One of the reasons why the debts of the acquired firms rise is that loans raised in connection with the acquisitions are placed in the firms.

In the assessment of the Danish Venture Capital And Private Equity Association, an average of 60 per cent of the price for acquisitions made by private equity funds was loan-financed in 2017, up from 36 per cent in 2010, cf. Chart 31. So the participating banks have funded an increased share of the acquisitions.

Rising share of debt funding in connection with acquisitions

Chart 31



Note: Share of purchase sum financed by loans in connection with business acquisitions by private equity funds in Denmark.
Source: DVCA and own calculations.

Level of indebtedness of firms owned by private equity funds in Denmark

Box 2

There are several possible reasons why firms owned by private equity funds are more indebted than other firms. Private equity funds generally acquire established firms, and, on average, such firms are both older and larger than other firms. Firms with stable earnings over a prolonged period have better access to obtaining loan financing at a relatively attractive interest rate. This box reviews the results of two quantitative analyses isolating the link between ownership by private equity funds and indebtedness from other factors that may affect a firm's financing structure.

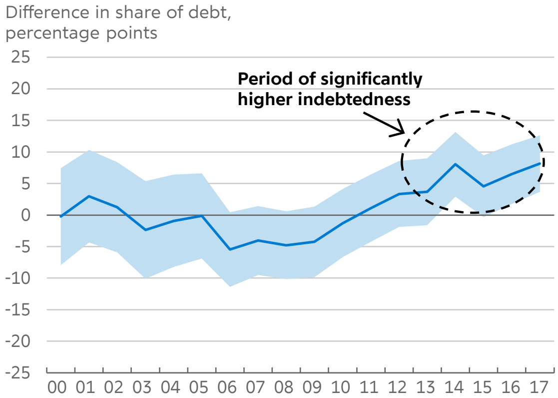
The first analysis estimates a linear regression model using data from the financial statements of most Danish firms in the period 1995-2017. The result shows that, viewed in isolation, the debt of firms owned by private equity funds is 1.37 percentage points higher as a ratio of the accounting balance sheet than would otherwise be the case, cf. the chart (left). While the effect is generally limited, the estimated parameter is significant at a 1 per cent confidence interval. Qualitatively, the effect of ownership by a private equity fund is in line with most earlier studies both internationally and in Denmark.[1]

In the other model, the effect is estimated independently for each year since 2000, cf. the chart (right). The parameter estimates indicate an increase in the indebtedness of firms owned by private equity funds since 2010 relative to other firms, and that the difference has been statistically significant since 2014. In the same period, traded prices in firm acquisitions have increased and competition among banks has been fierce.

Model of firms' debt as a percentage of the balance sheet in the period 1995-2017

Variable	Estimate	t-value
Ownership by private equity fund (dummy)	1.37391	2.688***
Age (log)	-0.11544	-3.191***
Balance sheet (log)	2.19939	141.174***
Fixed effects (years)	Yes	
Fixed effects (firms)	Yes	
Adjusted R^2	0.04523	

Annual effect of ownership by a private equity fund on firms' debt as a percentage of the balance sheet



Note: Left-hand chart: *** indicates that the estimated parameter cannot be rejected at a 1 per cent confidence interval. Linear regression model of firms' debt as a share of the accounting balance sheet with two-way fixed effects (firms and years). The model is estimated on the basis of unbalanced panel data with 2,192,178 observations. Right-hand chart: 18 linear regression models of firms' debt as a share of the accounting balance sheet with the explanatory variables ownership by private equity fund (dummy), age (log), balance sheet (log) and fixed effects (industry). Estimations are based on the same data as the overall model on the left.

Source: Bisnode, Experian, DVCA and own calculations.

1. See e.g. Bennedsen, M., Thomsen, S., Nielsen, S. B., Bundgaard, J., Meisner Nielsen, K., & Poulsen, T., Private equity i Danmark (Private equity in Denmark – in Danish only). Centre for Economic and Business Research, Copenhagen Business School, 2008; Vinten, F., The performance of private equity buyout fund owned firms, Centre for Economic and Business Research, Copenhagen Business School, 2008; Ministry of Economic and Business Affairs, Kapitalfonde i Danmark (Private equity funds in Denmark – in Danish only), *Økonomisk Tema*, No. 4, Nov. 2006; and Kaplan, S. N. & Strömberg, P., Leveraged buyouts and private equity, *Journal of Economic Perspectives, Vol. 23, No. 1, Winter 2009*, pp. 121-146.

In a situation where the economy reverses and/or the level of interest rates rises, firms with high debt ratios may experience problems servicing their debts, or they may violate other terms of the loan documents. However, a private equity fund often has further capital at its disposal that can rapidly be invested in a highly indebted firm if this is deemed to be advantageous.

Lending by pension companies in Denmark is limited

Pension companies are increasing their investments in alternative asset classes
Pension companies primarily invest their customers' assets in bonds, equities, properties and alternative asset classes. In recent years, pension companies have increased their investments in alternative asset classes, partly because of the low interest rate environment and high valuations of other financial assets.[11] Alternative investments are attractive to pension companies as they are often expected to provide stable, less cyclical long-term returns, similar to investments in bonds. In addition, pension companies can achieve higher returns by investing in less liquid assets.

Direct lending is one of many different alternative asset classes.[12] In general, with a direct loan a pension company lends money to a firm, such as a real estate company, outside listed markets. The loan may be provided directly by the pension company or via an investment fund. Direct loans are often illiquid compared with listed bonds, and hence the returns can be expected to be higher.

Property investments make up a considerable share of pension companies' assets
Pension companies can obtain exposure to the real estate sector via several channels, most frequently in the form of property investments on the balance sheet. In the 3rd quarter of 2018, pension companies had invested kr. 256 billion in properties.

Property investments are attractive for pension companies as they provide stable long-term payment flows and properties may rise in value over time so that an extra gain is achieved. However, high prices in the property market exert downward pressure on expected future returns.

An alternative way to become exposed to the real estate sector is to provide direct loans to real estate companies against the underlying properties as collateral.

The pension sector's lending to real estate companies in Denmark is limited
Total direct lending from the pension sector to all sectors amounted to kr. 141 billion in the 3rd quarter of 2018. The volume of direct lending provided by the individual pension companies varies strongly across the largest companies, cf. Chart 32. For one pension company, direct lending constitutes more than 10 per cent of the balance sheet.

Foreign exposures account for more than 80 per cent of the pension sector's direct lending. Foreign lending includes e.g. collateralised loans to banks, loans to non-financial corporations, loans for infrastructure projects,investments in collateralised loan obligations, CLOs, as well as other types of structured credit investments. Most of the foreign lending is managed by external investment funds.

Direct lending to Danish borrowers is limited and amounts to kr. 23 billion, of which kr. 13 billion is to firms in the real estate sector, cf. Chart 33. Real estate companies typically raise the loans in connection with the financing of construction projects. When lending to real estate companies, pension companies are to some extent competing with credit institutions.

Companies must have strong credit policy frameworks in order to handle direct lending
As a main rule, pension companies require properties as collateral when lending to real estate companies. This means that the pension company can acquire the property and add it to its existing

11 Hereafter, "pension companies" refers to life insurance companies, multi-employer occupational pension funds and ATP.

12 Direct lending is defined as collateralised and uncollateralised loans, structured credit investments, loans arranged by credit funds, mortgage deeds and other alternative credit investments.

portfolio if the counterparty defaults. Pension companies are often willing to take on the counterparty risk and potentially acquire a property on account of their long-term obligations. In times of low expected returns on real estate, it may therefore be an advantage for pension companies to lend money to real estate companies instead of purchasing properties themselves.

Real estate companies borrow from pension companies rather than banks and mortgage credit institutions if they can obtain better prices or better terms, or if they are unable to obtain financing from banks and mortgage credit institutions.

In 2017, the Danish Financial Supervisory Authority conducted a thematic survey in which it reviewed the credit policy framework of the individual pension companies in relation to direct lending.[13] All companies were instructed to strengthen their frameworks. Pension companies have an obligation to identify and manage the risks of the assets in which they invest.

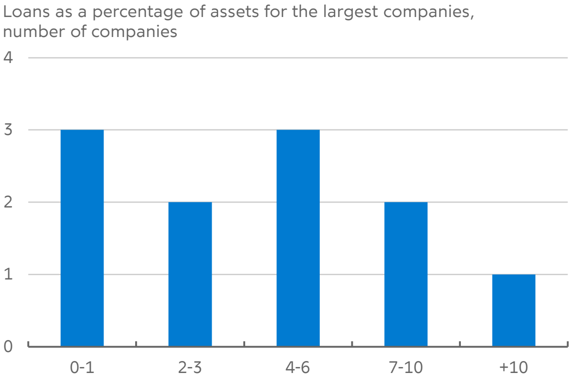
Pension companies' direct lending to real estate companies in Denmark is limited. If the volume increases, this may lead to increased competition with banks and mortgage credit institutions, which also provide financing for real estate companies, and could possibly result in a lowering of credit standards.

The banks are focusing on MREL compliance

The banks' liquidity coverage ratio is comfortably above the minimum requirement
All banks fullfil the minimum requirement for the liquidity coverage ratio, LCR, with a certain margin, cf. Chart 34.

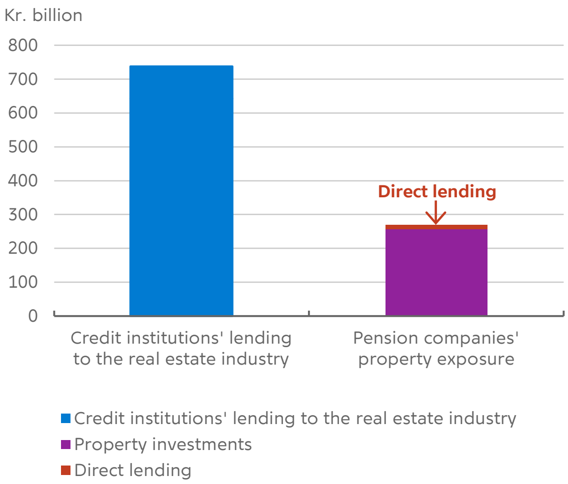
The LCR requirement set out in EU regulation is to ensure that the banks have adequate high-quality liquid assets to cover a net outflow of liquidity in an intensive 30-day stress scenario.

Loans as a percentage of assets vary across companies Chart 32



Note: Data includes the pension sector's assets categorised as lending, both direct and through investment funds. The 11 companies shown are the largest companies in the sector. Intragroup loans are included. The observation is from the 3rd quarter of 2018.
Source: Reporting by the sector and own calculations.

The pension sector's direct lending to real estate companies in Denmark is limited Chart 33

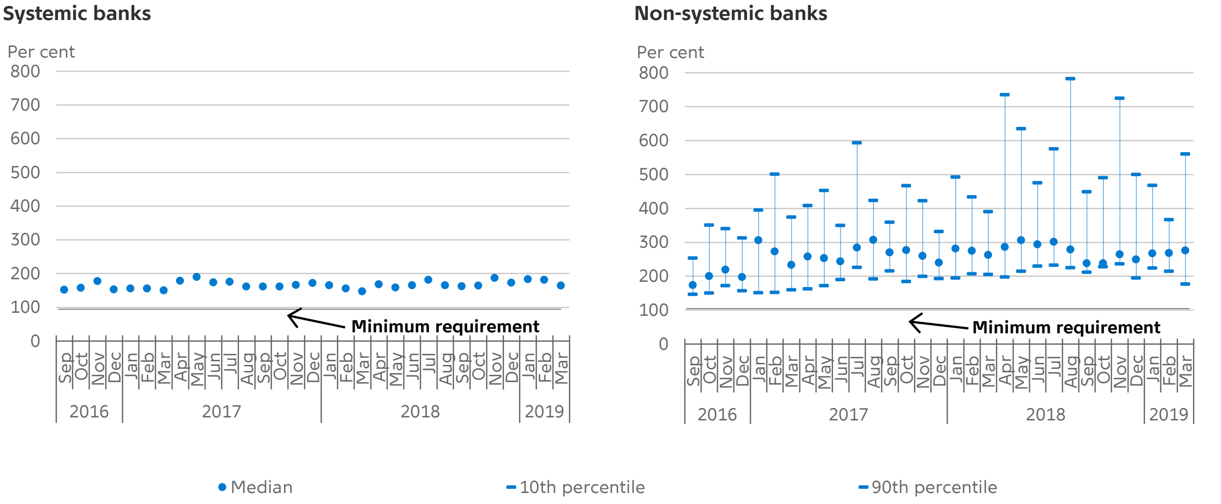


Note: Data includes the pension sector's assets categorised as lending, both direct and through investment funds. Intragroup loans are included. Credit institutions' lending is lending in Denmark to the real estate industry by banks and mortgage credit institutions. The observation is from the 3rd quarter of 2018.
Source: Danmarks Nationalbank, reporting by the sector and own calculations.

13 (*link*) – in Danish only.

The banks are LCR compliant

Chart 34



Note: The LCR, Liquidity Coverage Ratio, which must be higher than 100 per cent, is calculated as the bank's liquid assets divided by outgoing net cash flows over a 30-day stress period. The most recent observation is from end-May 2019.
Source: Danmarks Nationalbank.

The liquidity buffer consists primarily of central bank deposits and covered bonds

The banks' buffers of liquid assets consist primarily of covered bonds, such as Danish mortgage bonds, and claims on central banks. The high share of covered bonds should be seen in the light of a limited supply of Danish government bonds of kr. 427 billion at end-2018. A similar situation is seen in Sweden and Norway.

To ensure an adequate match between net outflows of liquidity and assets in various currencies, the systemic banks must also fullfil the LCR requirement in foreign currency if that currency constitutes more than 5 per cent of the bank's equity and liabilities.[14]

Few Danish issuers of covered bonds

The outstanding volume of covered bonds in Danish kroner consists primarily of issuances by the large mortgage credit institutions and Danske Bank. They have all been designated as systemically important institutions, making them subject to higher capital requirements and closer oversight.[15] This concentration on few issuers and the large volume of covered bonds in the liquidity portfolios make it particularly important that investors trust that the mortgage credit institutions are robust and comprised by credible resolution models.

The banks are focusing on MREL compliance

Danish systemic credit institutions had jointly issued non-preferred senior debt amounting to kr. 75 billion at end-April 2019. This debt can be used to meet the requirement for sufficient own funds and eligible liabilities that can absorb losses in a failing bank or be used for recapitalisation. The MREL takes effect for the systemic Danish banks on 1 July 2019.[16]

In some cases, issuance of non-preferred senior debt replaces maturing existing debt, while in other cases such issuance provides extra liquidity for the banks. It is important that the resultant liquidity is not used for increased risk-taking.

14 The foreign exchange LCR requirement does not apply to Swedish kronor and Norwegian kroner.

15 Danish Ship Finance and KommuneKredit also issue covered bonds.

16 Gradual phasing-in applies to Spar Nord Bank.

MREL maturity dates should be spread

Typical MREL issuances by Danish banks have maturities of 3 or 5 years. If the remaining maturity falls below one year, they can no longer be used to meet the MREL.[17]

According to Danmarks Nationalbank's stress test, the systemic credit institutions depend heavily on still being able to issue new MREL funds in a severe stress scenario in order to meet the MREL, cf. Chart 35.[18] Given that periods of no or limited capital market access may arise, the banks should focus on the length and maturity profiles of their issuances to avoid strong concentration of maturing issuances and breach of the MREL. It is important for the credit institutions to have a certain excess of eligible liabilities relative to the MREL to ensure compliance through a period with no or limited market access.

The maturity profile should allow adequate flexibility in terms of time of issuance

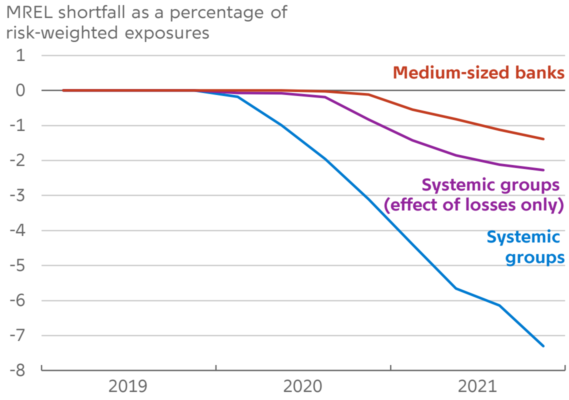
The risk premium on non-preferred senior debt, and hence the cost of issuance, reflects the general market appetite for debt in the relevant credit classes and the risk on the individual bank. At end-2018, the average risk premium for European banks was approximately 75 basis points higher than in April 2019 for a bank bond with a credit rating of around BBB, which is representative for MREL issuance by Danish banks, cf. Chart 36. So flexibility in terms of the time of issuance may have an impact on the cost of issuing non-preferred senior debt to meet the MREL.

Non-residents buy non-preferred senior debt

Non-residents hold around 92 per cent of the non-preferred senior debt issued by Danish banks, cf. Chart 37. Danish banks, on the other hand, hold less than 1 per cent of the issues. It is important for financial stability that problems in one bank do not spread to other banks in the event that debt is written down.

Short remaining maturities on MREL issues may lead to breaches of MRELs under stress

Chart 35



Note: Stress scenario with a severe recession. The MREL shortfall is defined as the amount the groups are short of in order to satisfy the MREL divided by the banks' total risk-weighted exposures (systemic and non-systemic banks, respectively). The purple line indicates the MREL shortfalls of the systemic groups, assuming they regularly refinance the maturing debt instruments that can be used to meet MRELs. For further information about the stress scenarios and the results of the stress test, as well as the underlying methodology, see Danmarks Nationalbank, Banks face new requirements in the stress test, Danmarks Nationalbank Analysis (Stress test), No. 10, May 2019.

Source: Danish Financial Supervisory Authority, Bloomberg and own calculations.

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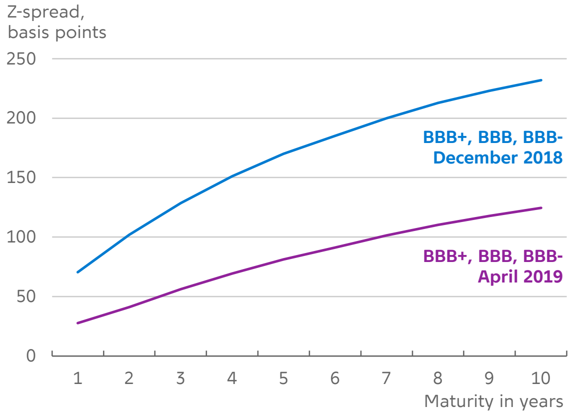
17 Under the EU's existing Bank Recovery and Resolution Directive, BRRD, the debt instruments may not have derivative-like characteristics either. With the forthcoming BRRDII, the resolution authority may permit an institution to include a call option in the debt instruments stating that the institution may redeem the debt if the remaining maturity is 1 year or less.

18 For further information about the stress scenarios and the results of the stress test, as well as the underlying methodology, see Danmarks Nationalbank, Banks face new requirements in the stress test, *Danmarks Nationalbank Analysis (Stress test)*, No. 10, May 2019.

The general credit spread for non-preferred senior debt may fluctuate

Chart 36

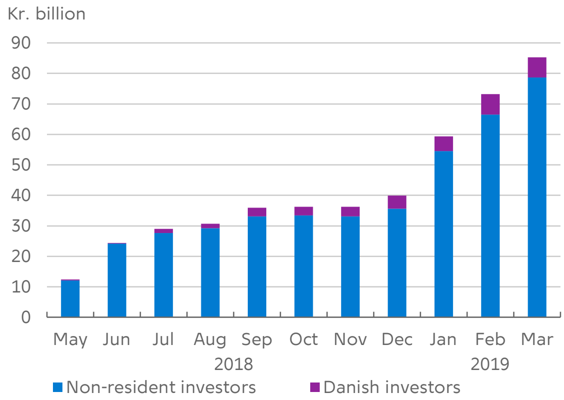


Note: The chart shows Z spreads for debt issued in euro by European banks with credit assessments (Bloomberg composite BBB+, BBB, BBB-) representative of Danish banks' non-preferred senior debt. The Z spread is an expression of the additional costs of obtaining funding with the debt instrument in question, where the additional costs are calculated by parallel-shifting a risk-free zero-coupon yield structure, so that the discounting results in the price of the debt instrument.

Source: Bloomberg.

Non-residents own most of the banks' non-preferred senior debt

Chart 37



Source: Danmarks Nationalbank.

Lower excess capital adequacy and prospects of tighter capital requirements

Excess capital adequacy decreased in 2018
Excess capital adequacy in the systemic groups was lower at end-2018 than the year before, cf. Chart 38. The groups still posted high earnings, but several other factors had a downward impact on excess capital adequacy.

On 1 January 2019, the European capital requirements had been fully phased in. The largest Danish banks observed these requirements as early as in 2013, but since then they have increased their capital ratios less than banks in the other Nordic countries.

Conversely, the medium-sized banks have increased their excess capital adequacy over the last year.

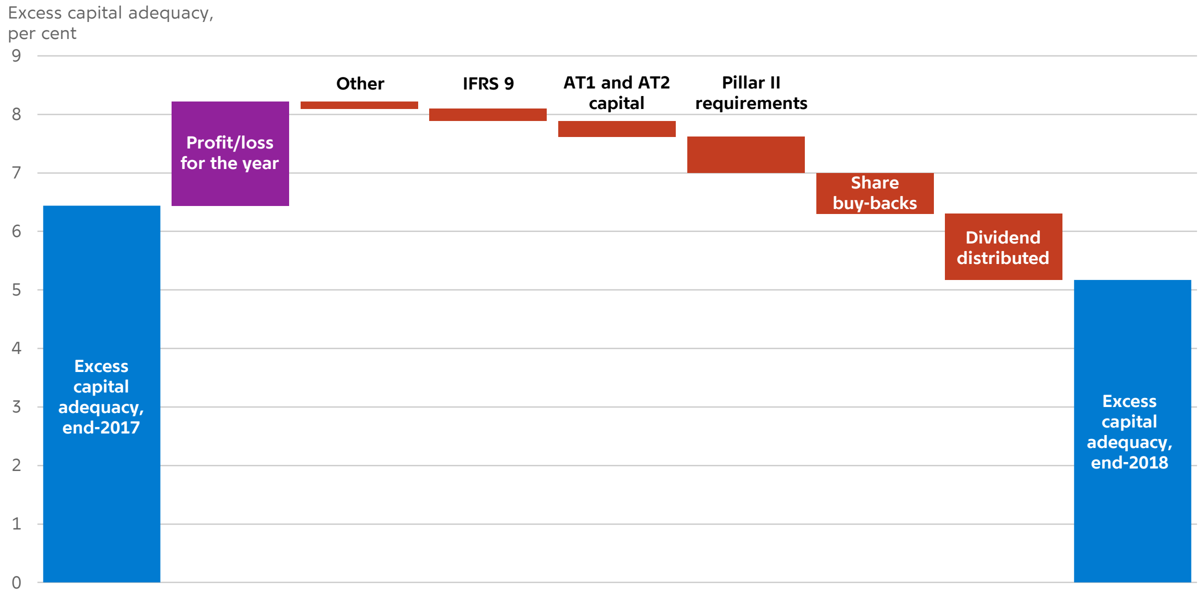
Systemic groups distribute profits to shareholders
Overall, the systemic groups channelled more than their profits for the year back to their shareholders in 2018, cf. Chart 39. Disbursements to shareholders came in the form of both dividends and share buybacks.

Dividends distributed in 2018 were adopted at annual general meetings early in the year on the basis of the 2017 profits, which were at a historically high level. The groups expect this year's profits to be lower than last year's.

Limited effect of new impairment rules
Other elements also had an impact on developments in the capital base in 2018. Notably, the Danish Financial Supervisory Authority increased the individual Pillar II requirements for several systemic groups. For example, the requirement for Danske Bank was increased in response to the money laundering case at the bank's Estonian branch.

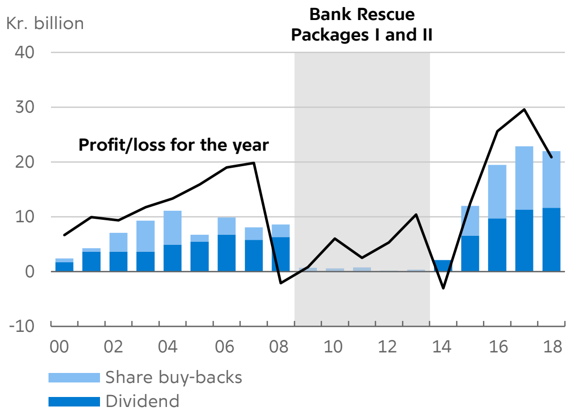
The transition to the new financial reporting standard IFRS 9 on 1 January 2018 reduced the groups' excess

Declining excess capital adequacy of the systemic groups Chart 38



Note: Excess capital adequacy is the capital base less the total risk-weighted capital requirement, including the fully phased-in buffer requirements, including a countercyclical capital buffer of 1 per cent.
Source: Danish Financial Supervisory Authority and own calculations.

Large disbursements to shareholders of systemic banks Chart 39



Note: Systemic banks. The banks' scope for distributing dividends was limited under Bank Rescue Packages 1 and 2.
Source: Danmarks Nationalbank and own calculations.

capital adequacy a little. The new calculation method for impairments has increased the accumulated loan impairment charges. The transition was recognised directly on the balance sheet, where the increase in accumulated loan impairment charges was offset by an equivalent after-tax reduction in equity.

The impact of the change has varied across the groups, as some have opted for gradual phasing-in towards 2023.

Capital requirements are likely to rise in the coming years

The requirements for banks' capital structure are likely to be tightened considerably in the coming years, cf. Chart 40. The tighter requirements may squeeze the excess capital adequacy of the systemic groups if they do not build up further capital beforehand. It is important that the banks hold sufficient capital so that they will not have to tighten their credit policies for this reason when the economy reverses.

In March, the Systemic Risk Council recommended that the Minister for Industry, Business and Financial Affairs should increase the countercyclical capital buffer rate in Denmark from 1.0 to 1.5 per cent with effect from 30 June 2020. Within a period of three months, the Minister must either comply with the recommendation or explain why it will not be complied with.

The Systemic Risk Council expects to make a recommendation to the Minister to further increase the buffer rate to 2 per cent in the 3rd quarter. Unless the risk build-up in the financial system slows down considerably, the Council is of the opinion that the buffer rate should gradually be built up to 2.5 per cent.

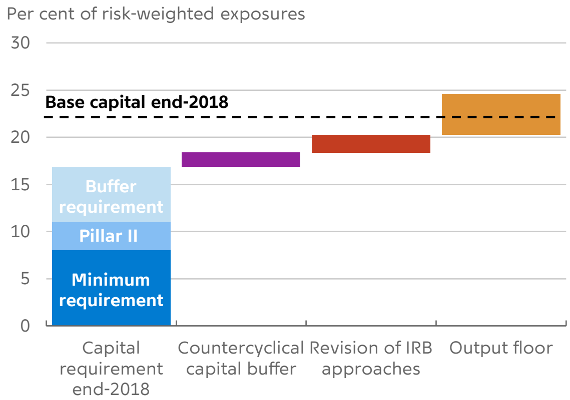
The Basel Committee has recommended a revision of the banks' IRB approaches to calculating risk weights, as well as an "output floor"[19]. With this proposal, the Basel Committee wishes to restore confidence in the banks' risk weights, and it has suggested implementing the requirements in 2022, with a gradual phasing-in of the output floor in the period until 2027.

According to the Danish expert group on Basel proposals[20], the Basel Committee's recommendations may increase the capital requirements for the systemic groups by 34 per cent on average. In that case, their existing capital base will not be sufficient. The Danish Financial Supervisory Authority may assess that the groups' individual Pillar II requirements can be reduced after implementation of the enhanced Pillar I requirements.

The systemic groups find that their existing excess capital adequacy is sufficient to comply with the coming Basel requirements, or that they will be able to build up further capital by retaining profits.

The extent of the final requirements, which must first be implemented in EU legislation, remains uncertain. Initially, the European Commission has asked the European Banking Authority, EBA, to prepare a report on the consequences for the European banking sector. Several systemic groups in Denmark have contributed data for the report, which is expected to be published in June 2019.

Systemic groups may need to build up further capital adequacy Chart 40



Note: Capital base and fully phased-in capital requirements for systemic groups, including an already adopted countercyclical capital buffer of 1 percentage point. "Countercyclical capital buffer" is set at 1.5 per cent, calculated as 2.5 per cent less already adopted increases. The buffer rate can be set at a higher value if justified by the assessment basis. Combined, "Revision of IRB approaches" and "Output floor" make up the estimated effect of the most recent proposal from the Basel Committee.
Source: Danish Financial Supervisory Authority, expert group on Basel proposals and own calculations.

Danmarks Nationalbank shares the Basel Committee's aim of ensuring confidence in the banks' capital base. But while the output floor will potentially strengthen the groups' capitalisation, it may have an unfortunate impact on their incentives to pursue sound risk policies. Thus, groups with a binding output floor will have reduced risk sensitivity relative to risk weighting based on IRB approaches. Implementation of the output floor in EU legislation should, as far as possible, take place in such a way that detrimental effects on risk sensitivity are limited.

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19 The output floor applies for credit institutions using internal ratings-based (IRB) approaches when calculating their risk-weighted exposures. The floor is 72.5 per cent of the total risk-weighted exposures that would be calculated using the simpler standardised approach.

20 In February 2018, the expert group reported to the Minister for Industry, Business and Financial Affairs (*link*) – in Danish only.

Excess capital relative to buffer requirement halves in severe recession scenario
Danmarks Nationalbank's stress test shows that all the systemic groups will still be able to meet the current risk-based buffer requirements in the event of a severe recession in the next three years towards 2022, cf. Chart 41.[21] A few are close to exceeding their buffer requirements, but all of them keep a comfortable distance to the risk-based minimum requirement.

In the event of non-compliance with the buffer requirements, the institutions become subject to a number of restrictions, e.g. on dividend payments. Moreover, the institutions should expect that their access to external funding in the financial markets may be challenged.

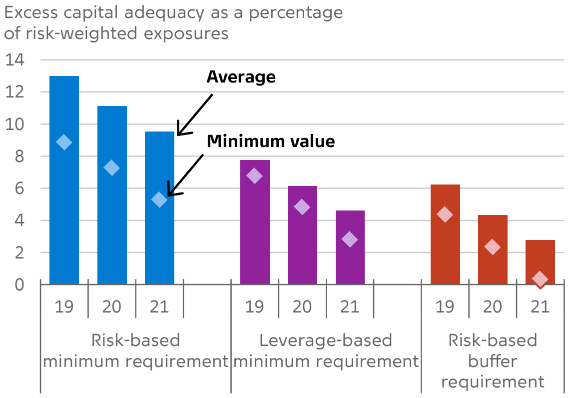
Leverage-based minimum requirement reduces the banks' buffers
For groups with a large share of assets with very low risk weights, the leverage ratio requirement could entail a higher Tier 1 requirement than the risk-based buffer requirement.

For several of the other groups, the leverage ratio constitutes a restriction in terms of the ability of the capital buffers to absorb losses before the minimum requirement is breached. The majority of the systemic groups are closer to hitting the leverage ratio requirement than the risk-based minimum requirement in a stress scenario. This means that a considerable portion of the capital buffer above the risk-based minimum requirement does not constitute an actual buffer. In practice, the groups will hit the minimum leverage-based requirement before their buffers are depleted. In the medium-sized banks, the leverage requirement is generally non-binding.

The minimum leverage ratio requirement will be implemented in 2021 with the amended Capital Requirements Regulation, CRR2. The requirement is a minimum Tier 1 leverage ratio of 3 per cent of the banks' non-risk-based exposures.

Systemic groups are still meeting all requirements in a severe recession scenario

Chart 41



Note: Excess capital adequacy in systemic groups in a severe recession scenario. The bars show a weighted average of excess capital adequacy for all systemic groups and the diamonds show the value for the systemic group with the lowest excess capital adequacy.
Source: Danmarks Nationalbank.

The largest systemic groups have sufficient MREL funds
Most of the systemic credit institutions have now built up sufficient funds to meet MRELs exceeding the existing capital requirements and the debt buffer requirement for mortgage credit institutions. Spar Nord does not have to meet its fully phased-in MREL until 2022. For the other groups, the requirement for sufficient MREL funds will be phased in on 1 July 2019.

In the event of non-compliance with the MREL, the Financial Supervisory Authority will as a first step require the institution to comply within a deadline. Furthermore, a non-compliant institution can be sanctioned with several restrictions, e.g. on dividend payment. Transfer of the institution to the Financial Stability Company is not a possibility before the institution's capital buffers are emptied.[22]

21 For further information about the stress scenarios and the results of the stress test, as well as the underlying methodology, see Danmarks Nationalbank, Banks face new requirements in the stress test *Danmarks Nationalbank Analysis (Stress test)*, No. 10, May 2019.

22 See Financial Supervisory Authority's note regarding the reaction chain in case of non-compliance with MREL from november 2017 (*link*) – in Danish only.

Denmark's MREL implementation is problematic and unnecessarily complex

The principle of always being able to recapitalise systemic groups without the use of public funds is a cornerstone of regulatory measures implemented by authorities all over the world after the most recent financial crisis. Danmarks Nationalbank has pointed out that the exemption of mortgage credit institutions from the MREL creates problems as regards lack of risk sensitivity and credible resolution planning.[23]

At the same time, the combination of capital, MREL and debt buffer requirements is unnecessarily complex, cf. the examples in Box 3. A complex requirement makes it difficult to assess the institutions' compliance and the size of their excess capital adequacy.

More severe sanctions are being introduced for non-compliance with the MREL

With the EU's forthcoming second Bank Recovery and Resolution Directive, BRRDII, a number of possible sanctions will be tightened. For example, in future resolution authorities will as a starting point have to restrict dividend payments after nine months' non-compliance with the MREL. Moreover, the authorities will be able to use their general powers to address impediments to resolution in connection with non-compliance.[24] The adjusted requirements are expected to be implemented as legislation in force from 2021.

23 See Danmarks Nationalbank, *Consultation response concerning the bill to amend the Danish Financial Business Act, Anti-Money Laundering Act, Act on Alternative Investment Fund Managers, etc. and various other acts (part III)*, 19 February 2018 (*link*).

24 As regards restrictions on dividend payments and the authorities' general powers to address impediments to resolution, see Article 45k of the forthcoming BRRDII.

Illustration of the complexity of the combined capital, MREL and debt buffer requirement for a group comprising a mortgage credit institution

Box 3

The combined requirement for the groups' capital structure comprises funds for loss absorption, recapitalisation and debt buffer for mortgage lending, respectively, cf. Charts A and B. The loss absorption funds correspond to the aggregate capital buffer requirement for the groups. The recapitalisation funds are to ensure that the bank in the group can always be recapitalised in a crisis. Consequently, the funds for recapitalisation constitute the aggregate buffer requirement for the bank – countercyclical buffer excepted, however. The mortgage credit institution in the group is exempt from the MREL and not included in the recapitalisation funds. Instead, the mortgage credit institution is subject to a "debt buffer" requirement of 2 per cent of its total lending.

From 2022, a minimum level of 8 per cent of the group's total assets will be introduced for the group's combined capital, MREL and debt buffer requirement. This is ensured by increasing the debt buffer requirement for the mortgage credit institution until the combined requirement for the whole group reaches 8 per cent.

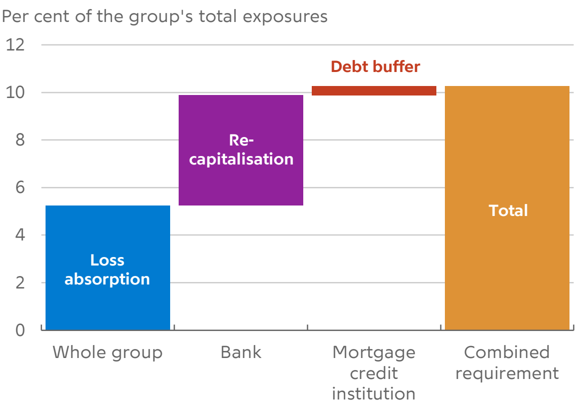
Examples of groups with high and low risk weights, respectively

The combined capital, MREL and debt buffer requirement and the future minimum requirement determine the combination of risk-weighted and unweighted requirements that must be met for the various activities of the group. The two stylised examples below illustrate the complexity of the calculations and possible differences in the final requirement.

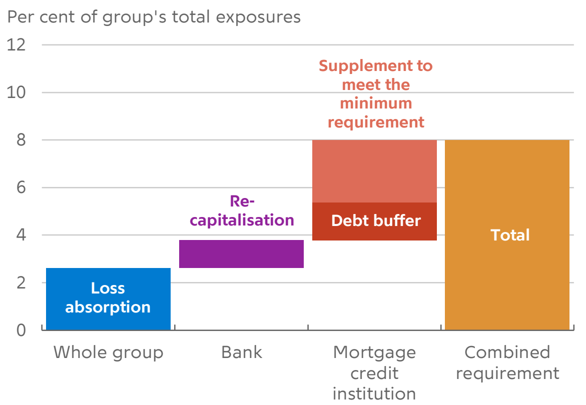
Chart A shows a group with a relatively large bank where lending has a higher risk weight in the bank than in the mortgage credit institution. The bank has a total exposure of kr. 80 billion, with an average risk weight of 35 per cent, and the mortgage credit institution has exposures of kr. 20 billion, with an average risk weight of 10 per cent. Intragroup exposures are disregarded; otherwise it would have been necessary to adjust for these on the balance sheets of the bank and the mortgage credit institution.[1] In the example, the unweighted debt buffer requirement is relatively modest, and the combined requirement is higher than the unweighted minimum requirement of 8 per cent.

Chart B shows a group with a relatively large mortgage credit institution. The bank has a total exposure of kr. 20 billion, the mortgage credit institution kr. 80 billion. The average risk weights for the bank and mortgage credit institution are still 35 and 10 per cent, respectively. In the example, the unweighted debt buffer requirement is initially relatively high, but in addition, the minimum requirement is higher than the combined requirement. This means that the debt buffer requirement is increased further until the combined requirement reaches 8 per cent of the group's consolidated balance sheet.

Example with large bank in the group — Chart A



Example with large mortgage credit institution in the group — Chart B



Note: The individual Pillar II add-on has been set at 12 per cent, the SIFI buffer at 2 per cent and the countercyclical capital buffer at 1 per cent. No intragroup exposures. Chart A: Bank has exposures of kr. 80 billion with average risk weight of 35 per cent; mortgage credit institution has kr. 20 billion with average risk weight of 10 per cent. Chart B: Bank has exposures of kr. 20 billion, mortgage credit institution of kr. 80 billion. Same risk weights.

Source: Own calculations.

1. An example of the calculations behind an adjustment on the basis of exposures across the group can be found in the Danish Financial Supervisory Authority's fact sheet *Fakta om krav til nedskrivningsegnede passiver (NEP-krav) for systemisk vigtige pengeinstitutter* (*Facts about minimum requirements for own funds and eligible liabilities (MRELs) for systemically important banks* (*link*) – in Danish only.

Appendix: Data for the analysis

Banks and mortgage credit institutions in the analysis by total assets as at 30 December 2018, kr. million

Table 1

Systemic credit institutions	Amount
Danske Bank (including Realkredit Danmark)	3,108,265
Nykredit Realkredit (including Nykredit Bank)	1,447,991
Jyske Bank (including BRFkredit)	599,947
Nordea Kredit	438,825
DLR Kredit	160,738
Sydbank	140,514
Spar Nord	82,793
Systemic credit institutions, total	**5,979,073**

Systemic banks	
Danske Bank	2,177,552
Jyske Bank	278,570
Nykredit Bank	186,581
Sydbank	142,869
Spar Nord	82,917
Systemic banks, total	**2,868,488**

Non-systemic banks	
Arbejdernes Landsbank	54,974
Ringkjøbing Landbobank	49,651
Sparekassen Kronjylland	26,422
Sparekassen Sjælland-Fyn A/S	23,818
Lån & Spar Bank	21,734
Vestjysk Bank	21,198
Sparekassen Vendsyssel	20,621
Jutlander Bank	18,248
Den Jyske Sparekasse	15,351
Alm. Brand Bank	13,155
Non-systemic banks, total	**297,293**

Mortgage credit institutions	
Nykredit Realkredit (including Totalkredit)	1,358,540
Realkredit Danmark	871,206
Nordea Kredit	438,825
BRFkredit	353,280
DLR Kredit	160,738
LR Realkredit	24,934
Mortgage credit institutions, total	**3,964,820**

Note: The balance sheet totals of systemic banks, non-systemic banks and mortgage credit institutions are stated at institution level, while the balance sheet totals of the systemic credit institutions are stated at group level.
Source: Danmarks Nationalbank.

The analysis applies the term "credit institutions" or "groups" when referring to the activities of both banks and mortgage credit institutions. The term "bank" refers specifically to entities carrying out banking activities.

The analysis of Danish credit institutions' earnings, liquidity and own funds comprises seven systemic credit institutions. The analysis also includes the non-systemic banks in the Danish Financial Supervisory Authority's group 2 in 2019.[25] These institutions are listed in Table 1. Unlike in the Authority's group 2, Saxo Bank has been omitted because of its business model. The grouping also applies back in time.

In the analysis and assessment of lending activity, focus is on the grouping of large and medium-sized banks in Danmarks Nationalbank's lending survey.[26] Large banks are the systemic banks plus Nordea Danmark, while medium-sized banks are the non-systemic banks plus Handelsbanken and Santander Consumer Bank.

25 See Financial Supervisory Authority's website for a breakdown of banks by size (*link*).

26 See Danmarks Nationalbank (*link*).

ABOUT ANALYSIS

As a consequence of Danmarks Nationalbank's role in society we conduct analyses of economic and financial conditions.

Analyses are published continuously and include e.g. assessments of the current cyclical position and the financial stability.

The analysis consists of a Danish and an English version. In case of doubt regarding the correctness of the translation the Danish version is considered to be binding.

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