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MONETARY AND FINANCIAL TRENDS — MARCH 2019

Low interest rates support the upswing

- The exchange rate of the krone gradually weakened in the autumn, to a level slightly on the weak side of the central rate. Danmarks Nationalbank intervened in the foreign exchange market in December and January, and subsequently the exchange rate has been very close to the central rate.
- Overall, financial conditions are accommodative and support the ongoing economic upswing. Interest rates on household and corporate debt have been falling as global growth has slowed down. In some cases, interest rates have fallen to the lowest levels ever.
- Credit growth remains moderate despite the very low level of interest rates, so the economic upswing is not credit-driven. Throughout the upswing, households have increased their financial wealth more than their debts. Firms have been able to strengthen their financial positions due to higher profits.

Intervention

For the first time in 21 months

Read more

Falling interest rates

To the lowest level seen for several years

Read more

Equity volatility

Fluctuations driven by changes in risk perception

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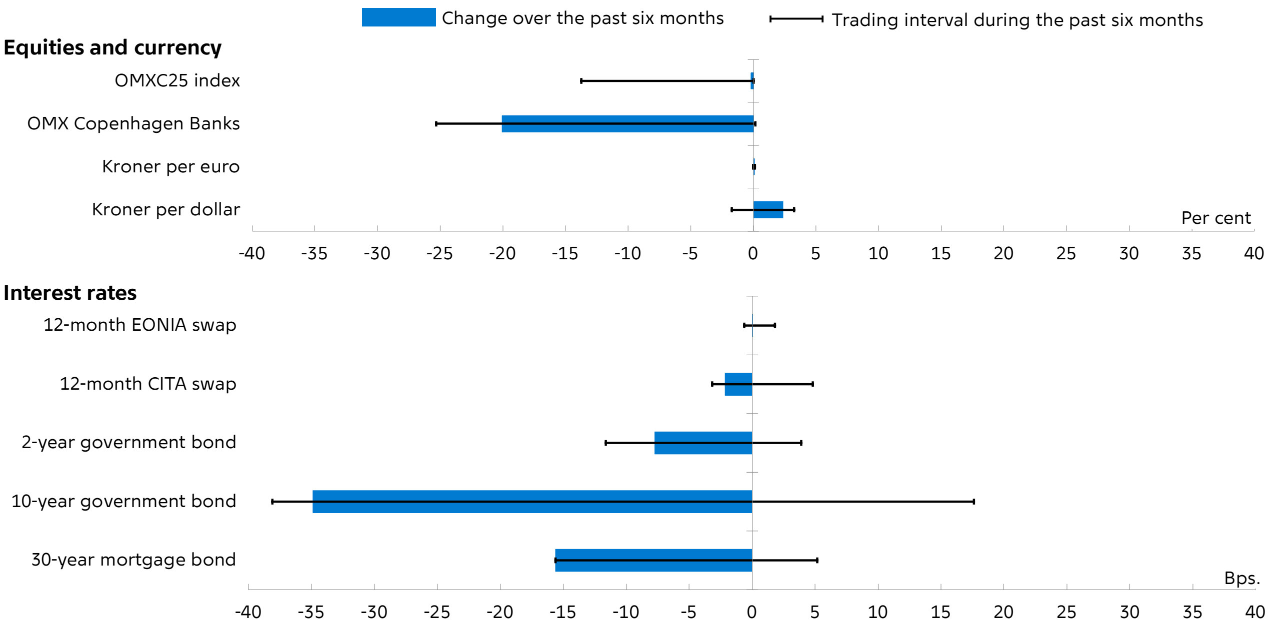
Key trends in the financial markets since September 2018

In the last six months, the financial markets have been characterised by a slowdown in global growth. Factors such as the Brexit process and ongoing trade conflicts have led to mounting concerns among market participants about whether euro area growth will subside further. This has caused the yields on, inter alia, government bonds to decline, and the expected time when monetary policy in the euro area will normalise further has been postponed. As a result of the uncertainty, equity prices in Denmark and globally dived in the autumn of 2018 in a market with higher volatility than in the preceding years. In 2019, equity prices have risen again so that, overall, they are more or less unchanged.

The European Central Bank, ECB, discontinued its net asset purchases at the turn of the year, but monetary policy remains very accommodative. Monetary policy interest rates in the euro area are at the lowest levels ever, and reinvestment of maturing bonds from the purchase programme continues.

Danmarks Nationalbank intervened in the foreign exchange market in December 2018 and January 2019, purchasing kroner for kr. 13.5 billion to support the exchange rate. Danmarks Nationalbank's monetary policy interest rates and the monetary policy spread to the euro area have remained unchanged.

Overview:
Financial markets since September 2018



Note: The blue bar indicates the change at the cut-off date of 15 March 2019 relative to the cut-off date for the previous edition, i.e. 7 September 2018. The endpoints of the black lines indicate the largest and smallest changes, respectively, over the period from 7 September 2018.
Source: Thomson Reuters Datastream and Eikon.

The foreign exchange market and demand for the krone

Danmarks Nationalbank intervened for the first time in almost two years

The exchange rate of the krone vis-à-vis the euro has been close to the central rate, cf. Chart 1. Since the beginning of 2017, the krone has gradually weakened from being on the strong side of the central rate to being slightly on the weak side. This weakening has taken place in very calm market conditions without any large day-to-day fluctuations in the krone rate. In December 2018 and January 2019, Danmarks Nationalbank sold foreign exchange for kr. 13.5 billion in order to keep the krone stable and close to the central rate. This was the first intervention in the foreign-exchange market in 21 months – the longest period without intervention since the current fixed exchange rate policy was introduced in 1982. At end-February 2019, the foreign exchange reserve amounted to kr. 456 billion.

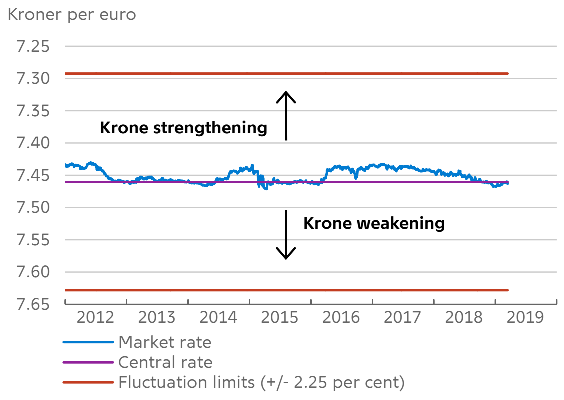
Non-residents sell kroner, residents buy them

In the 2nd half of 2018, domestic sectors overall purchased kroner, cf. Chart 2. Other domestic[1] and investment funds purchased kroner for kr. 85 billion and 58 billion, respectively. The insurance and pension sector stands out from the rest of the domestic sectors in that it sold kroner for kr. 53 billion. This reflects that the currency risk on purchases of foreign securities has been hedged to a lesser extent than previously.

Sales of kroner by non-residents were lower in the 2nd half than earlier in the year, but over the full year 2018, non-residents accounted for the largest sales of kroner. Sales of kroner by non-residents should be viewed in the context of divestment of Danish equities, including bank equities, cf. Box 1. The overall fluctuations in purchases of kroner between sectors in 2018 are to a large extent attributable to purchases and sales of securities.

The krone has been close to its central rate

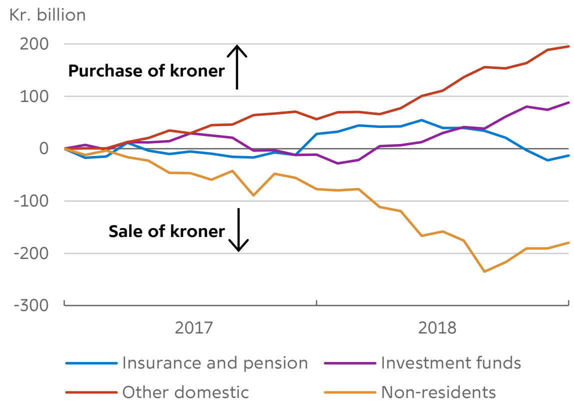
Chart 1



Note: Reverse scale on left-hand axis.
Source: Danmarks Nationalbank.

Accumulated net purchases of kroner broken down by sectors

Chart 2



Note: Estimated net krone purchases for selected sectors. A positive value indicates that the sector has purchased kroner. Accumulated purchases since the beginning of 2017.
Source: Danmarks Nationalbank.

1 Other domestic covers, inter alia, the non-financial sector, the banking sector and the public sector.

Purchases and sales of securities determined the sectors' purchases of kroner in 2018

Box 1

Non-residents have sold Danish bank equities
In 2018, non-residents sold kroner for kr. 103 billion, cf. Chart A. This amount more or less matches their sales of Danish securities. Danish equities accounted for kr. 91 billion of the sales, kr. 20 billion of which related to bank equities. The divestment of bank equities may reflect increased lack of confidence in the Danish banking sector during 2018 in the wake of the money laundering case. The exchange rate risk on non-resident investors' portfolios of Danish securities is partly hedged. Consequently, non-residents in the same period purchased kroner for kr. 50 billion in foreign exchange derivatives (including outright forwards).

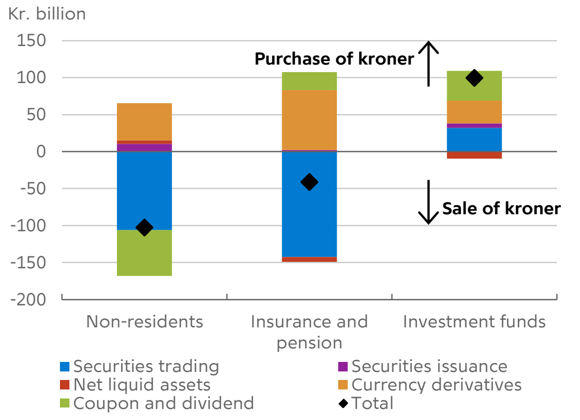
The insurance and pension sector's net sales of kroner reflect unhedged purchases of dollar assets
The insurance and pension sector purchased foreign securities for kr. 143 billion in 2018, cf. Chart A. In the same period, this sector purchased kroner for kr. 81 billion in foreign exchange derivatives to hedge its exchange rate risk.

During 2018, the insurance and pension sectors' hedging ratio in dollars declined. The reason is that the growing portfolios of dollar assets have not been hedged to the same extent as previously. This was particularly true in the first nine months of 2018, cf. Chart B, possibly owing to an increase in the price of dollar hedging (the forward exchange rate for dollar) in this period. In the last three months of 2018, the hedging ratio in dollars was more or less unchanged. During this period, new purchases of dollar assets were more than offset by the marked falls in US equities in the autumn of 2018, cf. the section on the equity market below.

Investment funds have increased their krone purchases
In 2018, investment funds accounted for considerable purchases of kroner relative to the preceding years. Over the year, their net purchases of kroner were higher than their total net purchases in the preceding three years. Investment funds' purchases of kroner should be viewed in the light of the funds having sold foreign securities for kr. 32 billion and received interest and dividend payments totalling kr. 40 billion in foreign exchange.

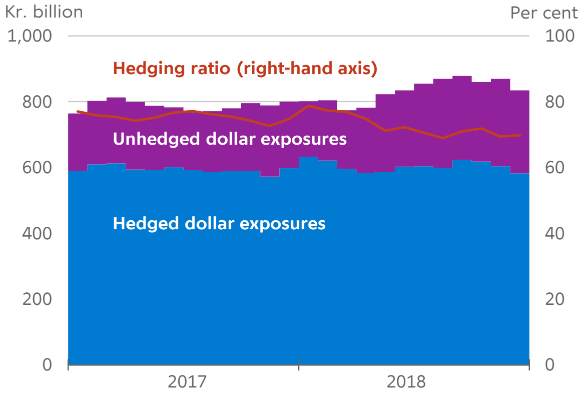
The current account surplus leads to structural demand for kroner
Denmark's current account surplus amounted to 6 per cent of GDP in 2018. The current account surplus entails that, all else equal, domestic sectors are accumulating external assets. Denmark has posted current account surpluses practically every year since 1990. As external assets continue to build up, residents (including Danmarks Nationalbank) need to invest the surpluses in foreign exchange. Alternatively, non-residents can sell kroner.

Underlying activity for the sectors' net purchases of kroner in 2018 — A



Note: Estimated source of net krone purchases in 2018 for selected sectors. A positive value indicates purchase of kroner.
Source: Danmarks Nationalbank.

Dollar exposure of the insurance and pension sector — B



Source: Danmarks Nationalbank.

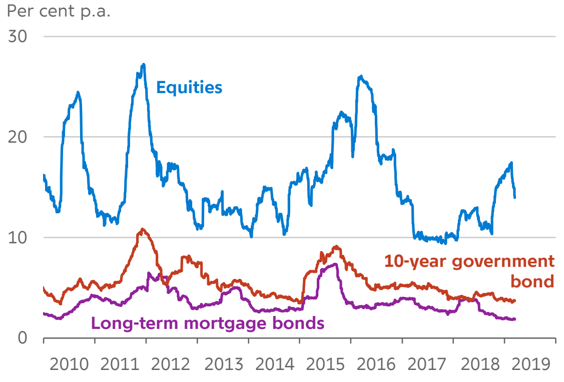
Developments in the financial markets

Weaker growth and downside risks
Economic growth in the euro area, among other places, slowed down in the autumn of 2018 and inflation expectations have fallen – measured by market-based expectations as well as the ECB's Survey of Professional Forecasters.[2] In addition, there have been concerns about the downside risks in connection with the ongoing trade conflict and the Brexit process.

Against that background, volatility in the equity markets has risen, cf. Chart 3. However, volatility has been higher in several periods of market turmoil since the financial crisis in 2007-08. In contrast, volatility in the Danish bond markets is close to being historically low.

Overall, the levels of volatility in the financial markets do not indicate much greater concerns about the future than normally.

Volatility increased for equities and fell for bonds in 2018 — Chart 3



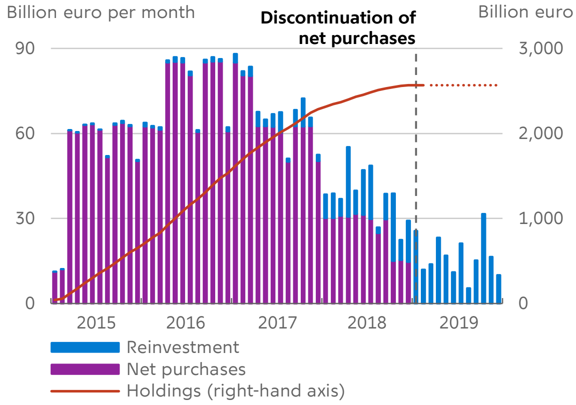
Note: Realised day-to-day volatility of returns (standard deviation) over 100 trading days, annualised. Based on "total return" index for Danish equities, the Danish 10-year bond and Danish long-term mortgage bonds.
Source: Thomson Reuters Datastream and own calculations.

Monetary policy and money markets

The ECB is focusing on more conventional instruments
At the end of 2018, the Eurosystem stopped increasing its portfolios of assets under its Asset Purchase Programme, APP. Since the turn of the year, it has only reinvested the principal payments from maturing securities in its portfolio, which amount to 2,570 billion euro, cf. Chart 4.

In December 2018, the ECB's Governing Council enhanced its forward guidance regarding the APP. The Council now expects to reinvest the principal payments from maturing securities for an extended period of time after the date when the ECB's key policy rates are increased. Principal payments from maturing securities are expected to amount to around 203 billion euro in 2019. By comparison, gross purchases by the Eurosystem amounted to 462 billion euro in 2018 and 831 billion euro in 2017.

Reinvestments mean that the ECB is still purchasing bonds on a large scale — Chart 4



Note: Includes all four purchase programmes under the ECB's APP. Reinvestment in 2019 is based on the Eurosystem's expectations for principal payments from maturing securities.
Source: ECB and own calculations.

2 Survey of Professional Forecasters January 2019.

The ECB has kept its deposit rate at -0.4 per cent and announced in March 2019 that the Governing Council expect to keep the key policy rates at their current levels at least until the end of 2019. The Governing Council decided at the same occasion to launch a new series of longer-term refinancing operations (TLTRO-III).

Market expectations regarding future short-term money market rates have declined, cf. Chart 5. These expectations indicate that interest rate increases by the ECB are not likely to take place until around halfway through 2020.

Unchanged interest rate spreads to the euro area

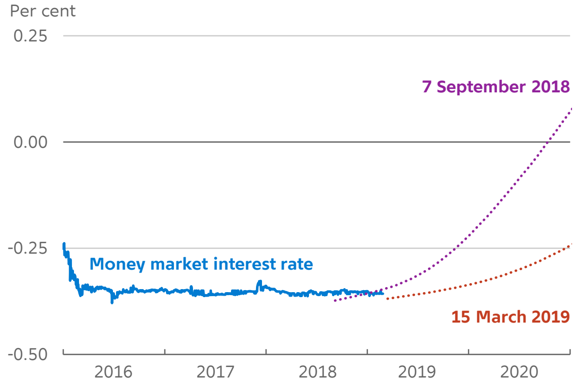
Danmarks Nationalbank's monetary policy interest rates have been unchanged since January 2016. The rate of interest on certificates of deposit is -0.65 per cent. This means that the monetary policy interest rate spread to the euro area has remained negative by 0.25 per cent, cf. Chart 6.

The spread between money market interest rates in Denmark and the euro area has been more or less unchanged around a range of -0.15 to -0.20 percentage point over the last half year. The spread narrowed briefly before the turn of the year.

The banks' net position vis-à-vis Danmarks Nationalbank has increased over the last six months. This has contributed to lower overnight money market interest rates. The increase in the net position is primarily attributable to the central government having reduced its account at Danmarks Nationalbank.[3]

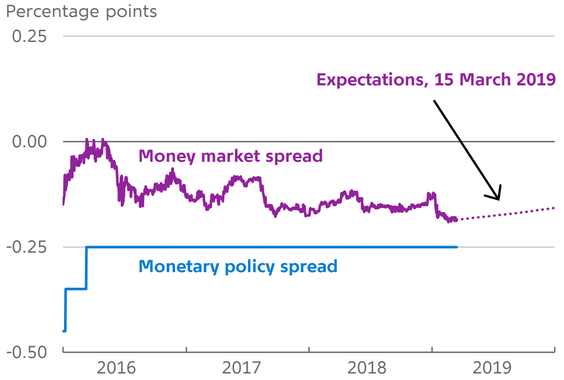
In 2018 and 2019, the central government has bid for the mortgage bonds issued in connection with the central government's restructuring of the financing of social housing. At the end of February 2019, central government purchases totalled kr. 43 billion, which has contributed to reducing the balance of the central government's account, thereby increasing the banks' net position.

Expectations of rising interest rates in the euro area have been postponed Chart 5



Note: 3-month EONIA swap rate. The dotted curves indicate 3-month forward rates on the specified dates.
Source: RIO Scanrate and Thomson Reuters Datastream.

Stable short-term interest rate spreads to the euro area Chart 6



Note: Spread between 3-month EONIA and CITA swaps.
Source: RIO Scanrate and Thomson Reuters Datastream.

3 Danmarks Nationalbank, Danish Government Borrowing and Debt 2018, *Danmarks Nationalbank Report*, No. 1, January 2019.

Bond markets

German government bond yields have declined
German government bond yields have declined steadily since the autumn of 2018, to a level close to zero for the 10-year yield. That is the lowest level since the autumn of 2016 and may reflect expectations of lower growth and inflation.

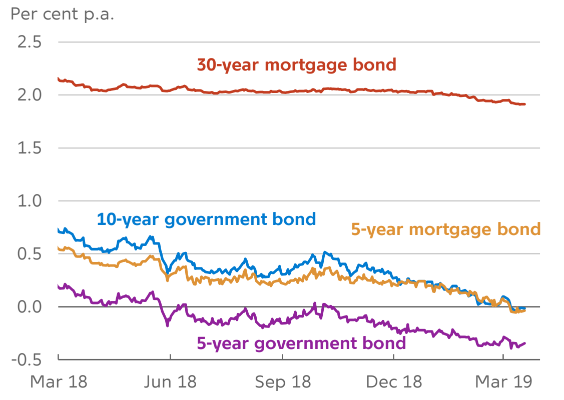
Unchanged government yield spread to Germany
Danish government bond yields have fallen in both the medium- and short-term segments, cf. Chart 7. This is broadly in line with developments in Germany. The spread between Danish and German 10-year government bonds has been stable at around 5 basis points since mid-2017.

Long-term mortgage yields have never been lower
Danish mortgage yields have declined and long-term yields are now at the lowest level ever.[4] The decline in yields has been smaller than for government bonds, so the spread between mortgage and government bonds has widened across the yield curve. This has been most pronounced for the long-term maturity segment. The widening of the yield spread was in line with developments in the euro area for equivalent bond classes.

New 1.5 per cent loans can boost consumption
From 2016 until the most recent decline, long-term bond yields were relatively stable, at just over 2 per cent for most of this period. Consequently, the volume of outstanding mortgage bonds is highly concentrated on bonds with a coupon of 2 per cent, cf. Chart 8.

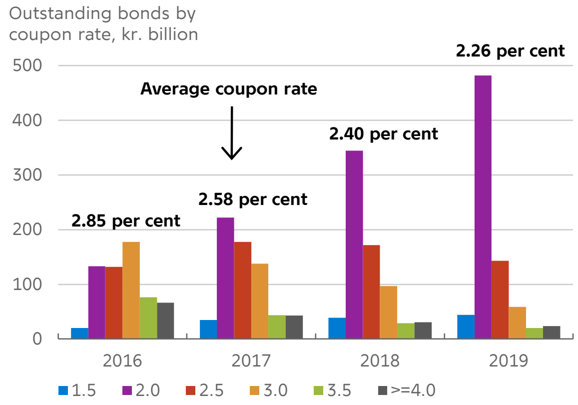
In 2018 there were fewer borrowers than in 2015-16 who could benefit from replacing their fixed rate loans with new loans with lower coupon rates, thereby reducing interest payments. Following the most recent decline in yields, more households may, once again, reduce their interest costs by refinancing. The decline in yields meant that 2 per cent bonds closed for new loans and the capital loss from raising loans with a coupon rate of 1.5 per cent was reduced.

Yields on Danish bonds have declined Chart 7



Note: Yields to maturity. Government bond yields are based on Danish government bonds maturing in 2023 and 2027. The 5-year mortgage bond is a Nykredit bond with a 1 per cent coupon maturing on 1 July 2023. The 30-year mortgage bond is a Nykredit bond with a 2 per cent coupon maturing in 2050.
Source: Thomson Reuters Datastream.

Higher concentration in coupon yields after a lengthy period of stable yields Chart 8



Note: Callable bonds underlying outstanding 30-year fixed rate loans. January of each year.
Source: Danmarks Nationalbank.

4 Cf. Kim Abildgren, *Danmarks Nationalbank 1818-2018*, Danmarks Nationalbank, 2018.

A new study has shown that a decline in yields may amplify the consumption effect of an unanticipated house price increase, cf. Box 2. Homeowners are more likely to increase mortgage debt and consumption when they could benefit from refinancing their existing mortgage at the same time as the value of their house appreciates more than they expected. House price rises are expected to be moderate in 2019 and 2020.[5]

Interest rate risk in the bond market will increase considerably if interest rates rise

The widespread use of callable mortgage bonds sets the Danish bond market apart from those of comparable countries. Callable bonds have the special characteristic that the interest rate risk (duration) under some conditions changes substantially if interest rates change. That may have an impact on the entire Danish bond market.

The interest rate risk in the mortgage bond market was broadly unchanged in 2016-18, cf. Chart 9.[6] This masks two opposite tendencies: on the one hand, the aggregate volume of outstanding long-term mortgage bonds has increased in recent years, which pushes up the overall interest rate risk.[7] On the other hand, the average interest rate sensitivity of the bonds has been declining slightly as long-term mortgage yields have fallen. That effect has been more pronounced in 2019 and led to a drop in total interest rate risk. The falling yields mean that the outstanding bonds are close to or above par. Bonds around or above par carry a relatively low interest rate risk as the borrower is entitled to redeem the loan at par.

If interest rates rise, the aggregate interest rate risk will increase because bonds with low coupons will fall below par and thus become more interest rate sensitive again. The potential increase in the interest rate risk[8] on a rise in the level of interest rates has

5 Cf. Danmark Nationalbank, The Danish economy is heading deeper into the boom, *Danmarks Nationalbank Analysis (Outlook for the Danish economy)*, No. 7, March 2019.

6 The strong increase in interest rate sensitivity in mid-2015 reflects rising interest rates.

7 New issuance of mortgage loans has predominantly taken place in fixed rate bonds, cf. the credit developments section below.

8 Convexity is a measure of how much the duration changes when the rate of interest changes.

Mortgages and the real economy Box 2

The mortgage credit system plays an important role when households translate their housing wealth into spending. Rising house prices give households an opportunity to increase their mortgage debt against the home as collateral. By doing this, households can finance higher consumption.

New analyses from Danmarks Nationalbank show that Danish households increase their mortgage debt and consumption in response to unanticipated house price increases, cf. Andersen and Leth-Petersen, 2019.[1] The authors also find that this link is amplified if rising house prices go hand in hand with falling interest rates on fixed rate mortgage loans. This indicates that housing wealth gains are converted into increased private consumption when it is advantageous for homeowners to refinance their mortgage in order to lock in a new, lower interest rate.

Similarly, another study finds that households increase their mortgage debt when house prices rise, cf. De Stefani and Hviid, 2019.[2] This study shows that homeowners increase their mortgage debt by refinancing or taking up additional mortgages in order to convert wealth gains into liquid funds. Hence, house price rises facilitate increased consumption or the ability to reduce other, more expensive debt.

1. Henrik Yde Andersen and Søren Leth-Petersen, Housing Wealth Effects and Mortgage Borrowing: The Effect of Subjective Unanticipated House Price Changes on Home Equity Extraction, *Danmarks Nationalbank Working Paper,* No. 133, January 2019.
2. Alessia De Stefani and Simon Juul Hviid, Housing Collateral and Home-Equity Extraction, *Danmarks Nationalbank Working Paper,* No. 135, February 2019.

become much larger since mid-2015 (purple curve in Chart 9). The increase in interest rate risk will thus be considerably stronger than it was in connection with e.g. the rise in interest rates in mid-2015. In addition, demand for interest rate risk from the insurance and pension sector[9] will be lower when interest rates rise. This is because the value of their long-term pension commitments falls when interest rates rise.

Combined with the lower demand for interest rate risk, the increase in interest rate risk can potentially trigger an even stronger rise in mortgage yields. The reasons are that the interest rate risk on the individual bond increases, and at the same time investors are likely to demand a higher risk premium for holding the aggregate outstanding volume of interest rate risk in the bond market. Non-resident investors still hold around 30 per cent of Danish callable mortgage bonds and hence also a considerable share of the interest rate risk.[10]

The banks' and mortgage credit institutions' lending rates are falling

The average effective lending rates have fallen to the lowest level ever, cf. Chart 10. The rates of interest on mortgage loans to households and firms were 2.0 and 1.5 per cent, respectively, in January 2019. The corresponding bank interest rates were 4.0 and 2.4 per cent.

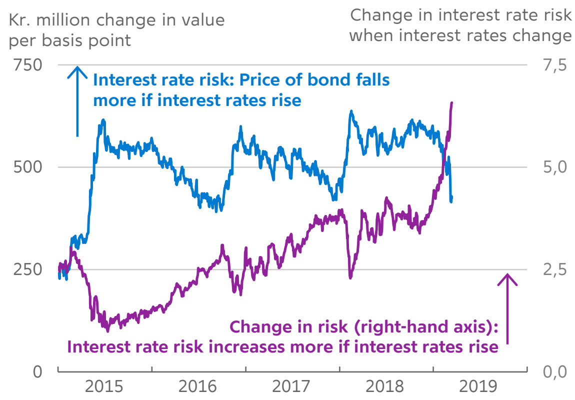
The shift towards more fixed rate mortgage lending has contributed to limiting the fall in average interest rates on outstanding mortgage loans. For non-financial corporations, the rate of interest on new business has been falling over the last half year. For households, it has been virtually unchanged.

Credit developments

Moderate credit growth in line with GDP growth

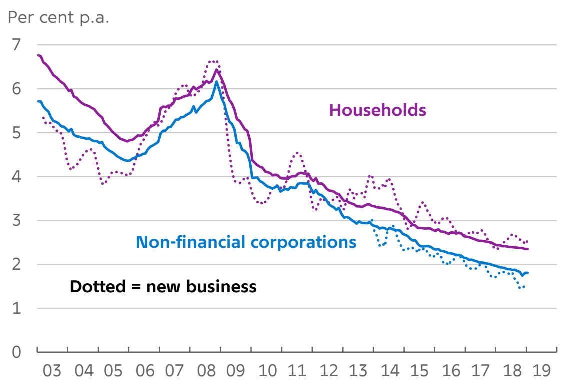
Overall, lending by banks and mortgage credit institutions has risen moderately, cf. Chart 11. Although

The interest rate risk can increase substantially if interest rates rise Chart 9



Note: All outstanding callable bonds. The purple curve indicates the aggregate negative convexity in the market.
Source: Rio Scanrate and own calculations.

Bank and mortgage interest rates are falling Chart 10



Note: Average rate of interest on all outstanding loans in Danish kroner (incl. administration margins). The interest rate on new business is a 3-month average. For non-financial corporations, data is only available from 2014 onwards as the series only includes loans with maturities of more than 12 months in new business.
Source: Danmarks Nationalbank.

9 The insurance and pension sector holds 40 per cent of all Danish bonds with remaining maturities of more than 20 years.

10 Cf. Danmarks Nationalbank, Monetary and financial trends – September 2018, *Danmarks Nationalbank Report*, No. 6, September 2018.

recent months have seen the highest rate of increase since the financial crisis, it is merely in line with GDP growth.[11] Non-financial corporations have accounted for the highest growth in lending. Firms have increased their borrowing at a slightly faster pace than households and have increased their borrowing from both banks and mortgage credit institutions. For households, growth in mortgage loans has taken place at the expense of bank loans.

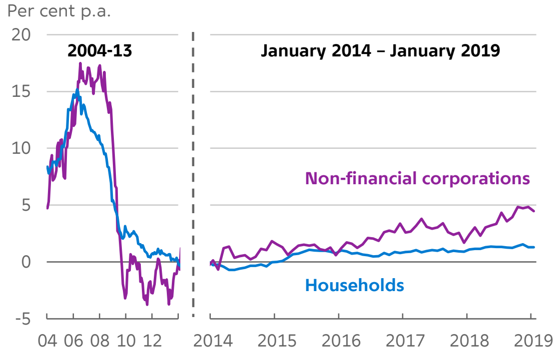
Households are still moving towards less risky loans

Recent years have seen rising activity in the form of new lending by mortgage credit institutions to households, but also increased amortisation. Ordinary amortisations on loans by households have been increasing throughout the upswing and were approximately 40 per cent higher in 2018 than in 2014.[12] This is in contrast to the situation during the pre-crisis upswing, when amortisations fell after the introduction of deferred amortisation from 2003. The increased amortisation contributes to a lower increase in the debt burden than would otherwise have been seen, given the higher demand for new loans.

Most of the new loans granted in 2018 have been with fixed interest rates. Since amortisations on loans with fixed and variable interest rates have been almost equal, the rise in total lending has taken place mainly in fixed rate loans, cf. Chart 12. A relatively small spread between the rates of interest on fixed and variable rate loans may have contributed to this shift, as may good business practice guidelines for lending by banks and mortgage credit institutions. Although most of the new loans are at fixed rates of interest, more than 55 per cent of outstanding loans still have a variable rate.

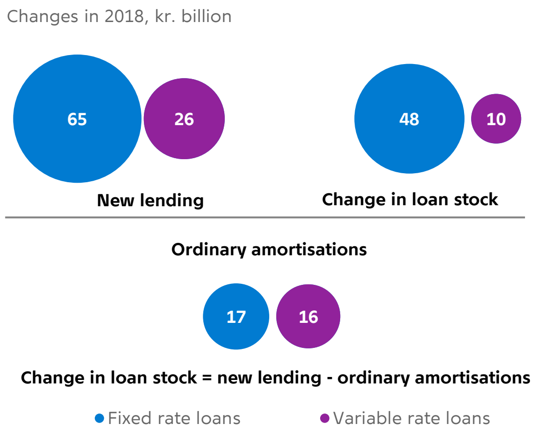
The volume of deferred amortisation loans fell in 2018 as the expiry of deferred amortisation periods for existing loans exceeded new lending. Deferred amortisation loans constituted just under half of all outstanding mortgage loans at end-2018.

Moderate growth in lending in 2018 Chart 11



Note: Total lending by banks and mortgage credit institutions to all domestic sectors. Lending in all currencies. Seasonally adjusted. Nominal value. Year-on-year growth rates.
Source: Danmarks Nationalbank.

The growth in mortgage credits in 2018 took place in fixed rate loans Chart 12



Note: Comprises households: employees, pensioners, etc. Net new lending, i.e. new lending less early redemptions. Variable rate loans are all loans without fixed rates.
Source: Danmarks Nationalbank.

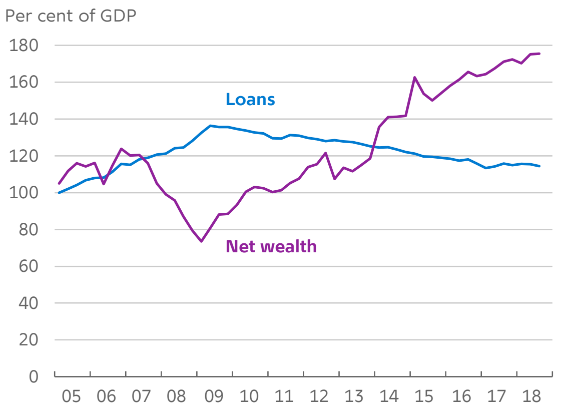
11 Average nominal GDP growth in 2016-18.

12 Cf. Danmarks Nationalbank, Danes repay more on their mortgages, *Danmarks Nationalbank Statistics, Banking and mortgage lending, interests, September 2018*, October 2018.

Increased financial wealth is mainly attributable to pension savings and gains on equities

The financial balance sheets of the households are increasing and are considerably larger than when the financial crisis set in, cf. Chart 13. In the pre-crisis years, the households' borrowing matched their net wealth.[13] Since the financial crisis, the households' financial wealth has risen more strongly than their debts. The increase in wealth since 2008 is primarily attributable to value gains on pensions and equities, etc., as well as large contributions to pension schemes. The households' savings ratio has risen from approximately -5 per cent of their disposable income in the pre-crisis years to 5 per cent in 2018.[14] This has also contributed to the increase in wealth.

Households' financial wealth was substantially higher in 2018 than in 2008 Chart 13



Note: Net financial wealth. This means that e.g. housing wealth is not included. Loans are the households' debts to the MFI sector.
Source: Danmarks Nationalbank.

The rise in wealth reduces the macroeconomic risk

The rise in wealth means that the macroeconomic uncertainty linked to high debt is lower.[15] But pension wealth, which accounts for just over half of the wealth, is relatively illiquid, so it cannot immediately be used to meet short-term liquidity requirements, e.g. in connection with unemployment, or to reduce debt.[16] The households' liquid wealth, including bank deposits, has also increased. The rise in deposits reflects a growing Danish economy, as well as the fact that the rate of interest on alternatives to bank deposits, such as bonds, has fallen and is negative for many types of bonds.[17]

Danish households still have the highest level of debt in the EU. Their financial net wealth has risen at a faster pace than that seen in the euro area since 2012 and is also among the highest[18]. During the same period, the housing wealth of Danish households has increased. At the end of the 3rd quarter of 2018, housing wealth amounted to almost kr. 3,800 billion, corresponding to approximately 170 per cent of GDP. Most of the households' debt is linked to their homes.

Borrowing by the corporate sector is moderate

The accelerating growth in lending to non-financial corporations masks moderate growth in lending to

13 Net wealth is financial wealth less debt. It does not include housing wealth.

14 Cf. Danmark Nationalbank, The Danish economy is heading deeper into the boom, *Danmarks Nationalbank Analysis (Outlook for the Danish economy)*, No. 7, March 2019.

15 The households with the highest debts are those with high incomes, cf. the theme on household wealth and debt, *Danmarks Nationalbank's website,* and high wealth (*link*).

16 Furthermore, pension wealth has been calculated before tax.

17 However, the development in deposits cannot be explained by these factors alone. The reason is that rising housing wealth has to a larger extent contributed to higher deposits since the mid-2000s, cf. Jonas Ladegaard Hensch, A New Model for Money Demand in Denmark: Money Demand in a Negative Interest Rate Environment, *Danmarks Nationalbank Working Paper*, No. 136, February 2019.

18 In 2017, the net wealth of Danish households was 23 percentage points above the euro area average (in per cent of local GDP). Net wealth was higher in Belgium, the Netherlands and Italy.

Corporate borrowing lower than before the financial crisis

Box 3

Lower growth in lending to all industries
The generally low growth in lending to the non-financial corporate sector in the current upswing is broad-based across industries. Investments by the various industries have been rising since 2013, but have been financed primarily via retained earnings. It is normal for borrowing not to begin to rise until the late stages of an upswing. In 2018, borrowing began to increase a little in some industries, cf. Chart A.

Growth in borrowing is substantially lower than in the pre-crisis upswing. However, this should be viewed against the background of unusually strong growth in borrowing during that upswing, from a considerably lower debt level than in the current upswing.

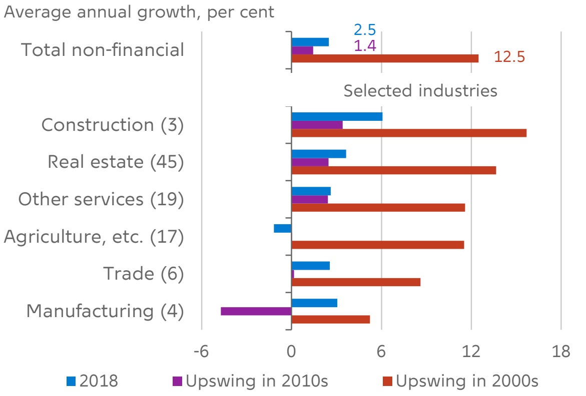
The lower growth in borrowing by the "real estate" industry has a strong impact on overall corporate borrowing, as this industry accounts for some 45 per cent of total borrowing. Just over one third of the industry's loans are linked to financing of private sector rental properties, the rest are more or less equally distributed on office and retail properties and social housing. In 2017, and to some extent 2018, the aggregate value of transactions in the property market was at a high level. Most of the industry's growth in borrowing in this period reflected rising investment in private sector rental properties, cf. the section on credit developments.

Lower demand for loans and change in investment mix
The lower growth in lending is driven mainly by lower demand for bank loans and not by a tighter supply of credit, cf. e.g. Danmarks Nationalbank's lending survey.

In the current upswing, the corporate sector has invested in intangible assets, such as intellectual property rights, to a greater extent than it did during the upswing in the 2000s. Presumably, this investment type is associated with less borrowing as the assets are difficult to value and hence to pledge as collateral for loans. The change in the investment mix should be seen in the light of a higher share of services in today's Danish business sector, while processing of Danish exports to a larger extent takes place outside Denmark's borders, i.e. processing and merchanting exports.[1] All else equal, this contributes to less machine-intensive domestic value creation.

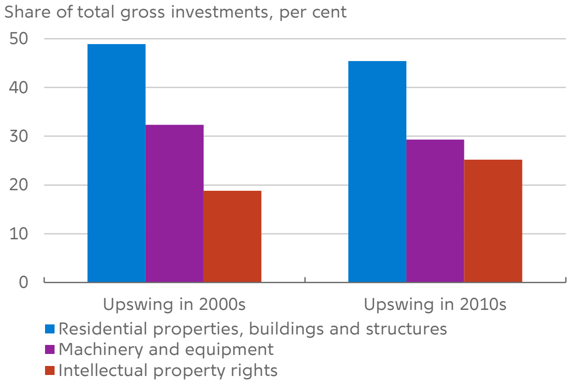
A changed funding structure
Firms increasingly obtain debt financing from other sources than the traditional credit institutions. Other financial corporations and intragroup accounts play a larger role as lenders.[2] All the same, credit growth remains lower than in previous upswings. In addition, firms increasingly fund themselves via equity issues or retained earnings.

Lower lending growth in current upswing — A



Note: Numbers in brackets indicate the industry's percentage share of total loans to the non-financial industries in December 2018. Lending by banks and mortgage credit institutions to non-financial corporations and sole proprietorships and unincorporated partnerships. The upswings in the 2000s and 2010s cover the periods 4th quarter 2003 – 4th quarter 2007 and 4th quarter 2012 – 4th quarter 2018, respectively.
Source: Danmarks Nationalbank.

Investment mix now includes more intangible assets — B



Note: Machinery and equipment includes ICT equipment, other machinery, fixtures and fittings and means of transport. Intellectual property rights before 2008 have been adjusted to reflect a new method of calculation applied from that year.
Source: Statistics Denmark and own calculations.

1. Cf. Danmarks Nationalbank, Globalisation complicates current account interpretation, *Danmarks Nationalbank Analysis,* No. 2, February 2018.
2. Cf. Danmarks Nationalbank, Monetary and financial trends – September 2018, *Danmarks Nationalbank Report,* No. 6, September 2018.

most of the non-financial sector and stronger growth in lending to the real estate rental sector.[19] However, short-term bank loans to the utilities sector contributed to high growth in lending to publicly owned companies in late 2018.

Growth in lending by banks and mortgage credit institutions to non-financial corporations has generally been low during the current upswing compared with previous upswings. This low rate of growth applies across industries, cf. Box 3.

Corporate profits are growing

Box 4

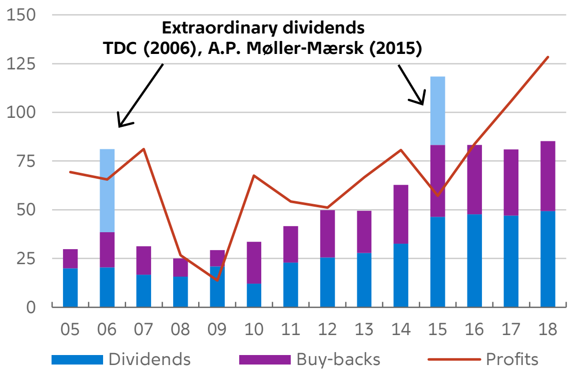
The profits of Danish non-financial corporations have been growing steadily since 2009. That can be seen from Statistics Denmark's accounts statistics[1] until 2016. This pattern is confirmed by an analysis of the financial statements of Danish listed companies[2] until the financial year 2018. Profits continued to rise in 2017 and 2018, cf. Chart A. The growing profits have contributed to the rise in equity prices since the end of the financial crisis.[3]

Firms' profits constitute the remuneration of their equity. That is why the owners of the firms, e.g. shareholders or parent companies, can decide on the use of the profits.

The owners can decide to distribute the profits or to retain them in the firm and e.g. invest in new capital stock or repay debt.

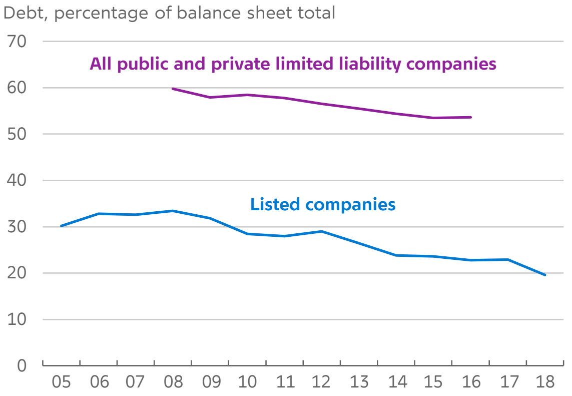
For listed companies, profits have to a large extent been used to remunerate shareholders: dividend payments have more than doubled compared to 10 years ago, and equity buy-backs have become far more common. But at the same time, the listed companies have increased their equity slightly and reduced their debts. Public and private limited liability companies combined increased their debts from 2008 to 2016, but not at a pace that matched their equity accumulation. Hence, their leverage ratio also fell, cf. Chart B.

Rising profits and remuneration of shareholders A



Note: Includes all Danish non-financial corporations listed on the Copenhagen Stock Exchange. 2018 includes firms that had posted their financial statements for 2018 on 13 March 2019.
Source: Thomson Reuters Datastream and own calculations.

Falling leverage ratios B



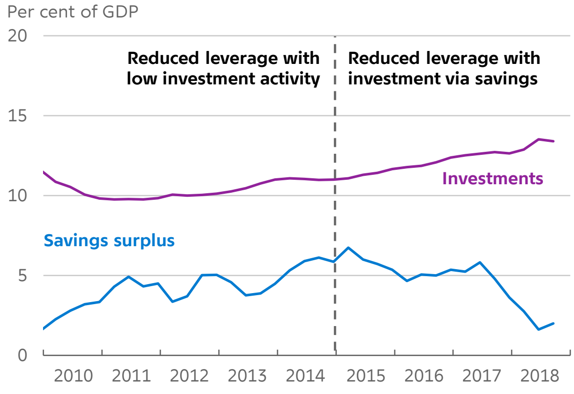
Note: Total debts stated in the financial statements relative to balance sheet total.
Source: Thomson Reuters Datastream, Statistics Denmark and own calculations.

1. For all Danish companies in the non-primary sector, excluding banks and energy and water supply.
2. The listed companies make up just under one third of the non-financial corporations, measured by profit after tax.
3. Cf. Danmarks Nationalbank, Monetary and financial trends – September 2018, *Danmarks Nationalbank Report,* No. 6, September 2018.

19 Mortgage lending to the private real estate rental sector has risen by 9 per cent on average over the last two years. It constituted 35 per cent of all mortgage debt held by non-financial corporations at end-2018. By comparison, growth in mortgage debt in other industries was just under 3 per cent in the same period.

Profits finance higher investments
The increasing investments of the corporate sector since 2015 have been funded primarily via current earnings, as the firms are still posting savings surpluses, cf. Chart 14. The savings surpluses should be viewed in the light of strong growth in profits, cf. Box 4. So although the upswing has lasted for more than five years, the non-financial corporations overall continue their lengthy process of strengthening their financial positions following the financial crisis.[20]

Firms invest via savings Chart 14

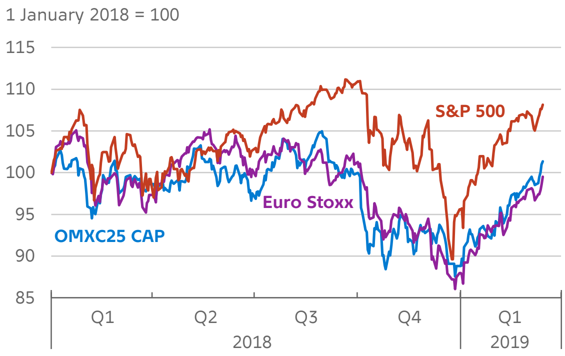


Note: Data covers 4-quarter moving averages. The savings surplus is net lending. Investments are fixed gross investments.
Source: Statistics Denmark.

Equity market

Danish equities show strong fluctuations
Over the past six months, Danish equity prices (OMXC25 CAP) have declined by 1 per cent., cf. Chart 15. The decline is primarily attributable to Danish bank equities falling by 19 per cent. Non-bank equity prices thus increased slightly. By comparison, US equities (S&P 500) have fallen by 2 per cent and European equities (Euro Stoxx) have been unchanged. The broadly unchanged equity prices over the period as a whole mask a strong decline in the last three months of 2018 and a corresponding increase in the first part of 2019.

Equity returns have been negative over the last six months Chart 15



Note: Total returns i.e. including dividends distributed.
Source: Thomson Reuters Eikon and own calculations.

Equity price declines in the autumn of 2018 were driven by rising risk
A decomposition[21] of the equity price decline in the autumn of 2018 indicates that the fall in Danish equities was driven by a rise in the risk premium, cf. Chart 16. Rising risk premia also drove the equity price declines in the USA and the euro area in the autumn of 2018. The higher risk premia are presumably linked to risks surrounding the ongoing trade war, fears of an economic slowdown and Brexit. On the other hand, falling interest rates supported the equity markets in all three areas in this period.

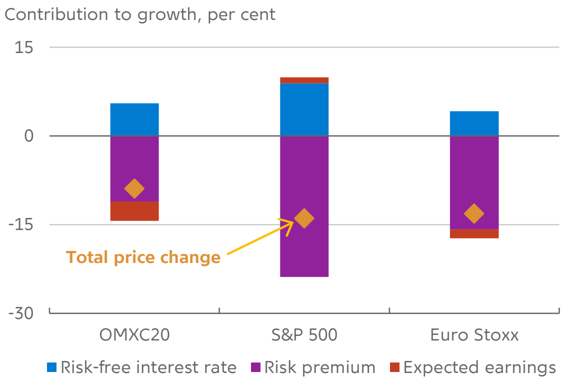
20 Firms have typically loan-financed investments in the late stages of an upswing.

21 A dividend discount model can be used to decompose the drivers behind changes in equity prices. The value of equities reflects investor expectations of firms' future earnings and their willingness to assume the risk related to investing in equities rather than e.g. bonds. The risk premium is a measure of the additional return required as compensation for investing in equities rather than "risk-free" assets (bonds). All else equal, the equity risk premium will fall when equity prices rise if nothing else changes.

Equity risk premia have fallen again in 2019
The increase in equity prices in 2019 has been driven by a fall in risk premia to a level close to that prevailing before the fall in equity prices in the autumn of 2018. So the fluctuations in equity prices over the last six months should be seen in the light of shifting risk appetite. This is in contrast to the situation in the preceding years, when equity prices rises were driven mainly by expectations of higher earnings.[22]

Trade-sensitive equities fell throughout 2018
The various risks have been reflected in different sectors of the equity market. Sectors that are particularly vulnerable to trade conflicts fell strongly throughout 2018, given that trade conflicts were on the agenda all year, cf. Chart 17. The most cyclically sensitive sectors rose until the autumn and then dived. This shift is in line with the general optimism about the strength of the economic upswing that prevailed among investors until the autumn of 2018, after which expectations of a coming economic slowdown became more widespread. The less cyclically sensitive sectors also fell in the autumn of 2018, but to a lesser extent than other equities.

Rising risks led equity prices to fall in the autumn of 2018 Chart 16



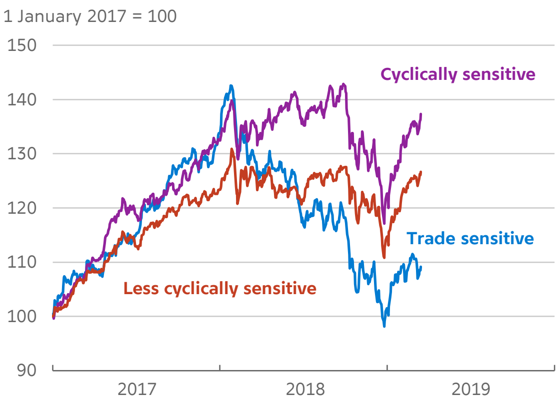
Note: Developments from 1 October 2018 to 31 December 2018. Based on OMXC20, Euro Stoxx and S&P 500. Implied future returns have been derived via an approximation to a 3-period dividend discount model. Consensus expectations collected from market analysts have been applied as expectations of growth in earnings, combined with long-term growth expectations that are equal to the realised average real GDP growth plus 2 percentage points. A 10-year government bond from the country to which the index relates has been applied as a risk-free asset. For Euro Stoxx, a 10-year German government bond has been used.
Source: Thomson Reuters Datastream and own calculations.

Financial conditions

Falling interest rates stimulate the economy
Average lending rates for households have been falling slightly over the last three years, cf. Chart 18. A weighted average of interest rates across different loan types provides an overview of the aggregate changes in their external loan costs over time.[23]

The reason that the fall in average borrowing cost over the last three years has not been stronger, is that the average mortgage credit rate only declined slightly as a result of households shifting towards fixed-rate loans, cf. above.

Trade conflict and risk of an economic slowdown have affected equity markets Chart 17



Note: Global sector indices. Own categorisation. "Trade" includes the automotive industry, aluminium, industrial machinery, industrial transport and shipping. "Less cyclically sensitive" comprises beverages and food, telecommunications, media and IT, medical devices, utilities and defence. "Cyclically sensitive" comprises personal consumption and retail trade, leisure activities and travel, as well as computer hardware. Simple average of total return indices.
Source: Thomson Reuters Datastream and own calculations.

22 Cf. Danmarks Nationalbank, Monetary and financial trends – September 2018, *Danmarks Nationalbank Report*, No. 6, September 2018.

23 Firms and households may draw on several external sources of loan financing when investing or consuming. External financing is financing from external sources, such as banks or the financial markets. It is assumed that financing takes place via new loans rather than via shifts between assets, e.g. by reducing deposits or selling equities.

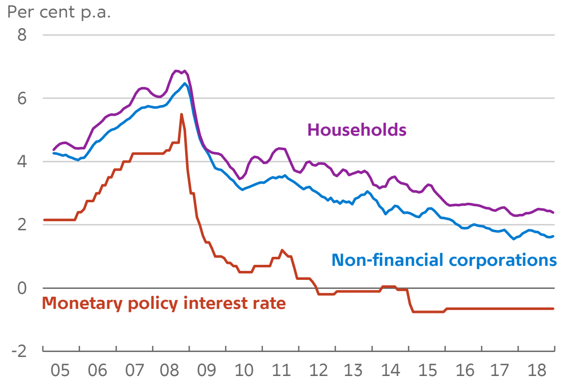
Interest rates on firms' debt financing have fallen in line with household rates. Overall, the low level of monetary policy interest rates is transmitted to lending rates in the economy, and monetary policy continues to provide stimulus.

So far the economic upswing has not been credit-driven

Over the last six months, the low and falling interest rates have remained the key driver of the favourable financial conditions, cf. Chart 19. Viewed in isolation, the fall in equity prices in 2018 had the opposite effect, but recent years' increases in equity prices mean that the equity market is still assessed to have a slightly stimulating effect on the economy. The effect of credit developments on the economic upswing is practically neutral, even though lending growth is picking up moderately. So at present the upswing is not credit-driven. Overall, financial conditions remain accommodative and contribute to growth in the Danish economy.[24]

Falling interest rates stimulate the economy

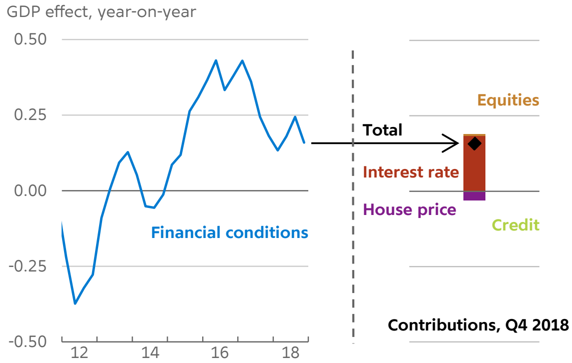
Chart 18



Note: Weighted mortgage and bank interest rates (both new business) and an estimate for consumer loans for households. Weighted mortgage interest rates (new business), bank interest rates and yields on corporate bonds for firms.
Source: Danmarks Nationalbank.

The contribution from financial conditions remained positive at the end of 2018

Chart 19



Note: Financial conditions show the total contribution from developments in credit, equity prices, interest rates and house prices to GDP growth. Financial conditions have been calculated by means of a structural VAR model and have thus been purged of cyclical factors.
Source: Statistics Denmark, Danmarks Nationalbank and own calculations.

24 See Jakob Roager Jensen and Jesper Pedersen, Financial conditions are supporting the upswing, *Danmarks Nationalbank Analysis*, No. 14, September 2018.

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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