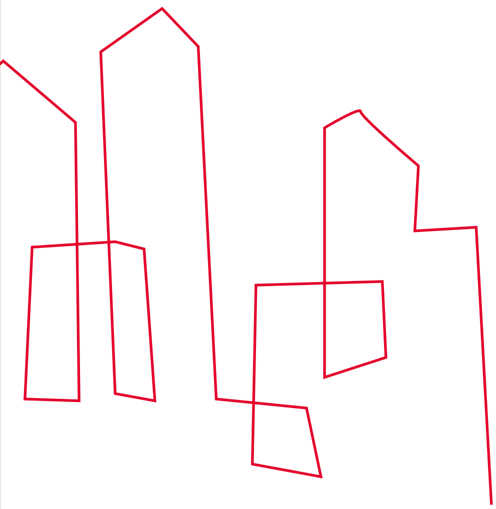
The traditional Danish mortgage model



Contents

Introduction

Denmark has one of the world's most effective models for the financing of residential and commercial property, which is also highly attractive to borrowers. It is flexible and transparent, and prices are market-driven.

The mortgage model enables people all over Denmark and of all ages to buy their own home. Further, the model is the backbone of finance for Danish businesses, including SMEs, which are important drivers of economic growth and job creation in Denmark. The model offers homeowners as well as SMEs financial security, as their loan rate can be fixed for up to 30 years. In addition, mortgage loans offer families and businesses an opportunity to extend their financial room for manoeuvre by, for instance, refinancing when interest rates decline or opting for an interest-only (IO) period. That paves the way for repaying more expensive debt, realising a dream of working less, or something completely different.

The interest rate and the prepayment price of a mortgage loan are directly determined by the price of the bonds funding a loan. Danish borrowers can prepay their mortgage loans at current market prices. In several other countries, the cost of prepaying a loan is subject to negotiation. In some cases, there is a penalty of up to as much as 10% of the principal amount. The European Consumer Organisation has praised the option of prepaying a loan on favourable terms as being smooth and efficient[1]. Also the European Commission has lauded the Danish prepayment system[2].

To investors, Danish covered bonds are attractive due to their high level of security and liquidity, which makes for low mortgage rates and enables Danish families to buy their own home or to start or expand their own business.

The Danish mortgage system has proved resilient during economic upturns and downturns, including the corona crisis and the financial crisis. Especially during the financial crisis, when other funding sources dried up, the mortgage sector proved that it was still able to sell bonds and raise funds for lending to Danish homeowners and businesses. Over the past eight years, Danish mortgage banks have increased their lending by more than DKK 480 billion, distributed evenly across Denmark.

The attractive and affordable mortgage loans benefit all Danes and not just homeowners. Almost half of these loans were granted to the business sector, for instance the agricultural sector or for retail, office and private residential rental property. Moreover, many housing cooperatives and public housing estates are also funded by the mortgage sector, for the benefit of families with children as well as young and elderly people. That way, the Danish mortgage system is a pillar of financial security for many Danes, whether they are business owners or wage earners, and regardless of their life status.

The mortgage sector increasingly contributes to the financing of the green transition. Together with banks, mortgage lenders financed green activities worth DKK 400 billion in 2020, and this amount is expected to increase to DKK 700 billion by 2030. The funding provided is mostly in the form of loans for homes and commercial properties with energy label B or better, but the mortgage sector also finances eg solar panels, wind turbines and organic farming. Affordable mortgage loans also allow homeowners and businesses to improve the energy efficiency of buildings, subject to sufficient equity in the property and credit approval. They could for instance replace an oil-fired boiler with a greener source of heat.

The Danish mortgage sector contributes substantially to the Danish economy. Three quarters of lending in Denmark is provided by mortgage banks. The Danish mortgage sector meets more than half of the financing requirement of Danish businesses, spanning agricultural, industrial and urban businesses. With its affordable and stable financing, the Danish mortgage system constitutes an important foundation for Denmark and has a significant positive effect on the competitiveness of Danish businesses and consequently on growth and welfare in Denmark.

[1] *Mortgage Credit – Report of the Mortgage Funding Expert Group – BEUC Comments (2007)*
[2] *White Paper on the Integration of EU Mortgage Credit Markets (Annex III, SEC (2007) 1634/4)*

Over the past 10 years, the financial sector has become subject to massive regulation. Focus has been particularly on the need to bolster sector capitalisation to prevent another financial crisis. This has resulted in substantially higher capital requirements, new liquidity rules, specialised regulation for systemically important institutions, consumer protection requirements and requirements for financial business governance.

By far most of the regulation is driven by the EU. In most EU countries, home and property financing builds on a universal banking model where lending is funded by deposits, short-term borrowing and bond issuance. Mortgage banks, on the other hand, are specialised banks that only provide loans against mortgages on real estate which are funded through bond issuance.

This poses challenges, as the technical and complex regulation includes features which do not accommodate the Danish mortgage model. The Danish mortgage system could come under pressure, as our model is based on entirely different principles.

This applies not least when the recommendations of the international Basel Committee are to be transposed into EU law. It is important that the EU considers separately whether the Basel recommendations accommodate the business models of European banks and mortgage lenders.

The Association of Danish Mortgage Banks agrees that there has been a general need to make the financial sector more resilient, even if the Danish mortgage system has performed well during crises.

However, regulation comes at a cost. Massive capital requirements and new cost-intensive rules require higher earnings. This will impact the finances of homeowners and businesses – and consequently growth and employment. Furthermore, there is a risk that the multitude of new rules will harm the highly effective and transparent market for covered bonds, which is the pivot of Danish mortgage finance.

We therefore need continued dialogue on how to strike the right balance between financial stability and growth. And dedicated Danish efforts are still needed in order to influence international regulation and have it adapted to Danish conditions when the EU presses for harmonisation of the European financial sector.

The aim is to preserve the core of the Danish mortgage model, which has provided Danish homeowners and businesses with affordable and stable financing for more than 200 years.

This publication, revised in 2021, is the contribution of the Association of Danish Mortgage Banks to a qualified debate about the future of the Danish mortgage model. It describes how the Danish mortgage system operates and outlines the importance of mortgage lending to the Danish economy.

I hope you will enjoy the read!

Ane Arnth Jensen,
Deputy Managing Director of Finance Denmark
and Director General of the Association of
Danish Mortgage Banks

SECTION 1

The traditional Danish mortgage model

A mortgage loan is a loan granted against a mortgage on real estate by a mortgage bank. In Denmark, the mortgage system dates back more than two centuries, and it is therefore referred to as the traditional Danish mortgage model. The model is based on a principle of matching a loan and the underlying bonds funding it. It is unique – also from an international perspective.

The traditional Danish mortgage model reflects the way Danish mortgage banks operate and differs significantly from the mortgage regimes of many other EU countries. Learn more about specialised and universal banks on page10.

The Danish mortgage model has a number of attractive properties, not only to borrowers and bond investors, but also to the Danish economy at large:

- Borrowers obtain low and transparent loan rates and unique prepayment terms.
- Investors who buy the issued bonds do not incur any default risk in practice.
- The mortgage model has a stabilising effect on the Danish economy and helps sustain financial stability.

The chart on page 9 shows how the traditional mortgage model works in practice.

THE LEGAL FRAMEWORK

The Danish mortgage model is based on two cornerstones: The statutory framework and the way in which mortgage banks operate in practice within this framework.

These are most important parts of the legal framework:

- Mortgage banks grant loans secured by mortgages on real estate. A limit has been determined for every loan relative to the assessed value of the property financed (LTV limit). Further, the loans are subject to a number of provisions on loan terms and IO periods.
- Mortgage banks must observe the rules of the Danish Financial Supervisory Authority (FSA) when assessing the value of a property.
- Mortgage banks fund loans solely by selling bonds.
- Mortgage banks must observe a so-called balance principle when issuing bonds. The balance principle restricts the market risk that mortgage banks may incur.
- The bonds are bankruptcy-remote. Hence, it is very unlikely that investors should suffer any losses.

MORTGAGE LENDING IN PRACTICE

Within the legal framework, mortgage banks operate in a way that offers borrowers and investors further advantages. The mortgage system is generally based on a principle of matching a loan with certain bonds, as illustrated in the chart on page 9. This means that mortgage banks fund loans by selling bonds with matching characteristics. Therefore, the loan type, repayment profile, term and currency determine which bonds a mortgage bank will sell.

Mortgage banks typically fund loans on a current basis. In other words, a mortgage bank does not sell the required bonds until it disburses the loan to the borrower. The market value of the bonds at the time of sale consequently determines the loan rate. As mortgage banks grant new loans daily, they also issue new bonds daily. This is called tap issuance. Mortgage banks can also issue large amounts of bonds independently of loan disbursements. These are referred to as pre-issued bonds and are less common than bonds issued on tap.

MATCH FUNDING MINIMISES RISK OF LOSS

There are several reasons why mortgage banks want to maintain the principle of match funding, even if they are not obliged to do so under Danish law.

The match funding principle is a result of past legislation and mortgage banks' need for reducing the risk of loss related to financial market developments. Match funding eliminates mortgage banks' risk of loss in case of market movements during the loan term – for instance if interest rates go up,as the interest and principal payments due from by borrowers match the coupon and redemption payments made by the mortgage bank to bondholders.

However, mortgage banks incur risk relative to borrowers, as they will suffer a loss if a borrower defaults on the interest and principal payments and the property ends up being foreclosed. This provides mortgage banks with a strong incentive to offer reliable and sound advice to borrowers, thereby reducing this risk to a minimum, while at the same time ensuring consumer protection. Consequently, borrowers are subject to credit assessment based on their income, net worth and ability to pay if interest rates rise. Also, loans are granted subject to specific loan-to-value limits (LTV – the value of a loan relative to the value of a property), which serves to reduce the risk of loan losses.

MATCH FUNDING PRINCIPLE – THE FOUNDATION OF THE UNIQUE MODEL

Match funding is what makes the Danish mortgage system unique – also by international standards. This principle ensures that borrowers benefit from attractive terms such as:

- Transparent loan costs
- Market-based prices
- Unique prepayment options.

TRANSPARENT LOAN COSTS

All loan costs are fully transparent to borrowers. Total loan costs consist of interest and principal payments relating to the bonds funding the loan as well as a margin charged by mortgage banks. The margin covers the costs of loan administration, expected future losses, return requirements on the capital funding loans and accumulation of capital buffers.

Borrowers know which bonds fund their loans, and the bonds are listed on a stock exchange. Bond prices are quoted daily. There is transparency in connection with the raising of new loans and with refinancing and prepayment.

MARKET-DRIVEN PRICES

The price a borrower pays for a loan depends directly on the current financial market trends, as the loan rate depends on the coupon rate of the bonds funding the loan. The match funding principle therefore ensures market-driven prices.

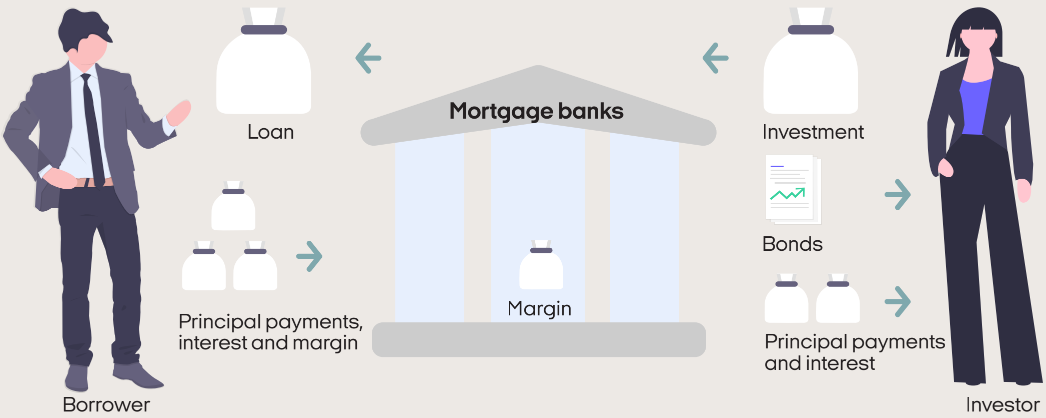
At the same time, the supply of loan products is relatively standardised. As a result, investors can compare bonds across issuers and quote sharp prices in the market. For the benefit of borrowers.

UNIQUE PREPAYMENT OPTIONS

Also, the match funding principle ensures favourable prepayment terms for borrowers. Borrowers can always prepay their loans by buying the underlying bonds in the market and in this way take advantage of attractive market prices.

Borrowers can prepay their loans in other ways too, depending on the loan type. For a detailed description, please refer to section 2.

The mortgage system



A mortgage bank is an intermediary between persons requiring a loan for the purchase of real estate and investors funding the loans by purchasing bonds.

A mortgage bank does not operate as a commercial bank, which can take deposits or raise funding with other banks for lending purposes. When a mortgage bank grants a customer a loan for the purchase of real estate, it must first raise the funds.

The mortgage bank will issue and sell bonds to investors, who in this way fund the loans. During the loan period, borrowers will make principal and interest payments to the mortgage bank, which will then transfer these amounts to investors.

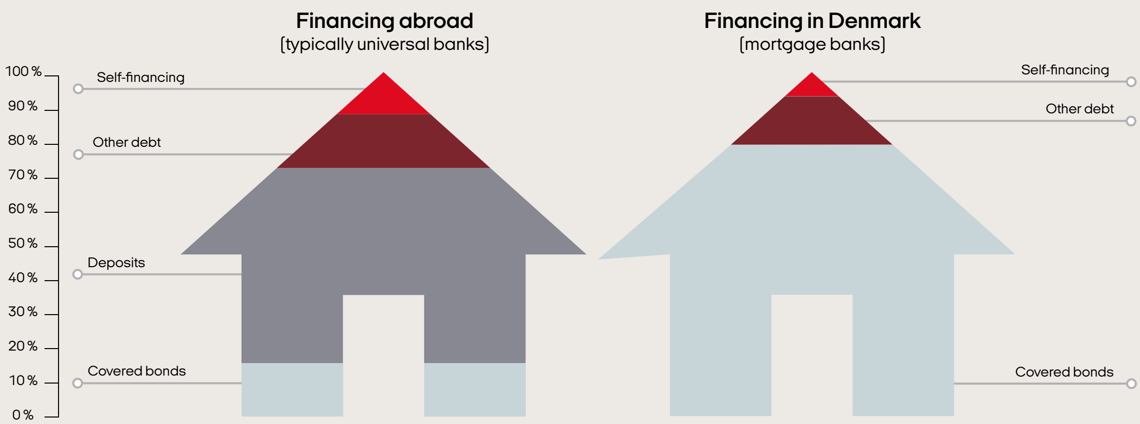
A mortgage bank therefore remains entirely unaffected by any changes in floating loan rates. In case of declining interest rates, mortgage banks will receive lower interest from borrowers, but is only required to transfer the same low interest to bondholders, ie investors. Thus, such changes affect only investors and borrowers.

The mortgage bank charges a margin on the loan to cover various costs, for instance the costs of loan administration, expected future losses, return requirements on the capital funding loans and accumulation of adequate capital buffers. The margin is a percentage of the debt outstanding and is payable by borrowers throughout the loan term.

Financing of homes and properties in Denmark and abroad

In most EU countries, home and property financing is based on a universal banking model. In Denmark, lending is provided mainly by mortgage providers, supplemented by bank lending for the part exceeding the statutory LTV limits applying to mortgage loans.

Universal banks and mortgage banks are all credit institutions according to EU regulation, but there are a number of differences between the two types of institution.



Universal bank

- Universal bank with a wide business range
- Loans may be funded by deposits, short-term borrowing or bond issuance
- Deposits are allowed = risk of bank runs
- No direct match between a loan and the universal bank's funding of the loan
- The universal bank sets the price for loan prepayment

Mortgage bank

- Specialised banks with a limited business range – loans against mortgages on real estate
- Loans are funded by covered bonds (ROs, SDOs, SDROs)
- Deposits are not allowed = no risk of bank runs, where customers stand in line to cash their money
- Direct match between a loan and the bonds issued to fund the loan
- Borrowers may always prepay their loans at the market price of the bonds funding the loan

Match funding

The principle of matching a loan with certain bonds is the backbone of the Danish mortgage model and a guarantee of the model's unique properties.

Example: A borrower raises a 30-year mortgage loan at a fixed interest rate of 1%. The mortgage bank funds the loan by issuing bonds with a coupon rate of 1% and a maturity of 30 years. If a borrower makes regular mortgage payments, the mortgage bank also makes regular principal payments to the bondholders. If a borrower prepays a loan, the bondholders will get their investment back when the loan is redeemed. Accordingly, the mortgage bank does not incur any risk of loss due to movements in financial markets. Also, the loan conditions are transparent. This is an advantage for borrowers because they can monitor the price of the bonds underlying the loan, for instance in newspaper price lists. Therefore, borrowers always know the price of prepaying a loan.

The match funding principle applies to all mortgage loans. For loans funded by bonds with shorter maturities than the loan term, eg adjustable-rate mortgages (ARMs) with 3-year funding, the match funding principle applies to the individual interest periods between refinancing auctions. When the loan is refinanced, the underlying bonds are replaced.

SECTION 2

Mortgage lending

Mortgage loans play an important part in the Danish economy, as all homeowners and businesses can take out a mortgage loan if they have a property that may serve as security for the loan. One of the most important reasons is the competitive loan rates. But the loans offer many other advantages: They have transparent terms, they are available to all, and they can be prepaid on favourable terms.

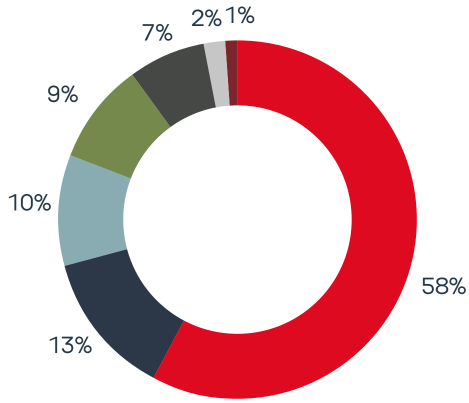
Mortgage lending is on the increase in Denmark. By the end of 2020 mortgage loans totalled DKK 2,965 billion. This corresponds to a mortgage loan of around DKK 492,000 for every citizen in Denmark – young and old. The amount of Danish mortgage lending is more than three times the amount of bank lending, see Chart 2.

More than 70% of lending in Denmark originates from the mortgage sector, and the mortgage banks provide loans throughout Denmark, see Chart 6. Homeowners obtain the lowest possible loan rates, and the mortgage sector covers 75% of the financing requirement of Danish businesses, spanning agricultural, industrial and urban businesses[3]. With its affordable and stable financing, the Danish mortgage system constitutes an important foundation for Denmark and has a significant positive effect on the competitiveness of Danish businesses and consequently on growth and welfare in Denmark.

Mortgage banks provide loans for all types of property in all parts of Denmark, but housing loans account for the bulk, see Chart 1.

Chart 1
Mortgage lending by property type, late 2020.

- Owner-occupied dwellings including holiday homes
- Private rental housing
- Office and trade
- Agriculture
- Subsidised housing etc
- Industry etc.
- Other properties



Source: Finance Denmark

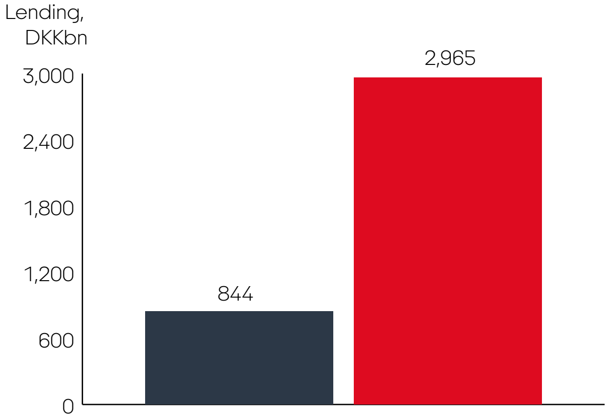
[3] *Covers domestic lending to non-financial companies and personally owned companies.*

Chart 2

Bank and mortgage lending to private individuals and businesses, late 2020.

■ Commercial banks
■ Mortgage banks

Source: Danmarks Nationalbank



MANY ADVANTAGES FOR BORROWERS

Mortgage loans are so popular because they are available to all real estate owners if they are creditworthy and their property is mortgageable. Also, mortgage loans offer the following significant advantages to borrowers:

- **Competitive price:** Mortgage loan prices are competitive, because the legal framework as well as the lending terms and credit policy of mortgage banks make the loans very secure. When the security behind the bonds funding a loan is high, the buyers do not demand a high yield. International studies show that the prices of Danish mortgage loans are very low.

- **Transparent loan pricing:** A loan matches a particular bond. Everyone can always monitor the price of this particular bond, for instance in the newspaper price lists or on the websites of banks or the stock exchange.

- **Borrowers can prepay their loans on attractive terms:** A Danish mortgage loan can always be prepaid by purchasing the underlying bonds at market price. The favourable prepayment terms make for flexible management of a borrower's debt and financial risk. This may be of great importance in case of unexpected events, such as a change of jobs or divorce, prompting a prepayment need.

- **Mortgage banks cannot call loans prematurely:** A loan is non-callable as long as the borrower services the loan.

ASSESSMENT OF LOAN APPLICATIONS

When a mortgage bank receives an application for a mortgage loan, it must assess the ability of the borrower to repay the loan as well as the value of the property.

Based on the Danish FSA's rules on good practice, mortgage banks will assess the repayment ability of borrowers. This assessment is usually based on income, wealth, credit record and a budget. The assessment is designed to ensure the financial resilience of borrowers relative to the interest rate risk on their loans. Borrowers can only obtain an ARM or IO loan if they can credit qualify for a 30-year fixed-rate repayment loan carrying a loan rate higher than the prevailing market rate. This is to ensure that a borrower has a certain amount of financial leeway when raising an ARM or IO loan.

The LTV of a property is subject to statutory limits. The statutory LTV limit for owner-occupied dwellings and other properties for residential purposes is 80%. As for the remaining part of the purchase price, homebuyers must make an appropriate down payment, and the rest can be financed by way of, for instance, a bank loan. When a mortgage bank has approved the loan amount, the funds can be disbursed and the purchase completed. Lending to business customers, including small and medium-sized enterprises, is based on a valuation of the property serving as security and a credit assessment of the borrower.

Chart 3

Mortgage lending by demographic age group, early 2019

■ Share of population (above 18)
■ Share of total lending

Source: Statistics Denmark, Finance Denmark

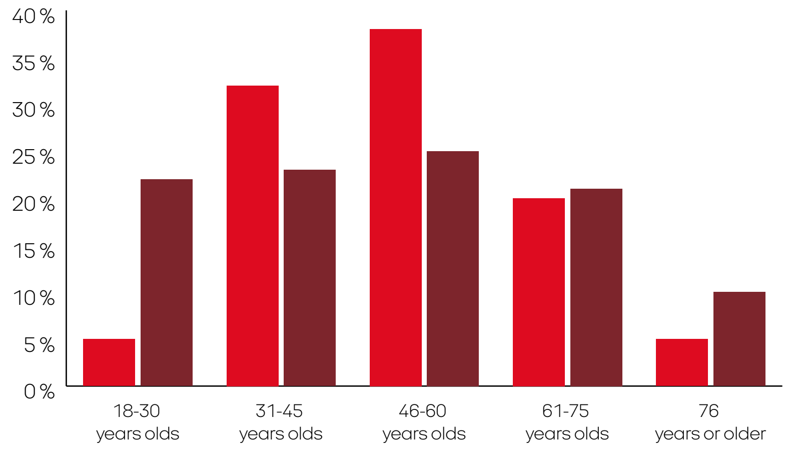
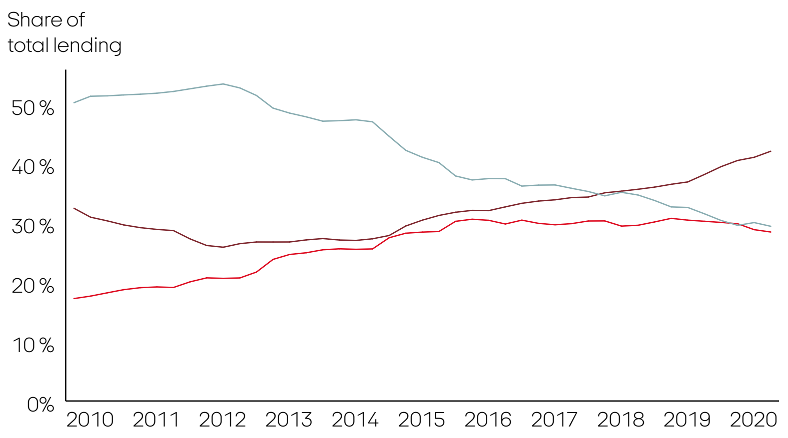


Chart 4

Mortgage lending by loan type

■ Fixed-rate loans
■ Adjustable-rate mortgages
■ Floating-rate loans

Source: Finance Denmark
Note: Floating-rate loans have interest periods of up to one year



TYPES OF MORTGAGE LOAN

Mortgage banks offer three main types of mortgage loan today:

- Fixed-rate mortgage loans
- Adjustable-rate mortgage loans
- Floating-rate mortgage loans (capped or uncapped).

They are all standardised loan types – or in popular terms: Off-the-shelf items. This offers economies of scale and keeps prices low.

Also, the loans may typically be combined with IO periods. This offers additional flexibility for repaying more expensive debt or creating room in the budget for other purposes, such as home renovation, higher pension contributions or taking leave.

The wide variety of loans makes it possible for borrowers and investors to choose a product that suits their individual risk profiles and investment requirements.

Chart 4 illustrates how the popularity of the different loan types has varied over time. Borrowers' preferred choice of loan type depends on, for instance, the current interest rate level.

FIXED-RATE LOANS

The long-term – typically 30-year – fixed-rate, callable loan is the traditional mortgage loan type. With this loan, the borrower knows in advance the interest payable throughout the term of the loan.

The long-term fixed-rate mortgage loan has a prepayment option, which can be exercised in two ways:

- Borrowers can prepay their debt outstanding at a price of 100 (par).

- Borrowers can prepay their debt outstanding at the market value of the bonds. This is the cheapest method if the price of the bonds is below 100.

ADJUSTABLE-RATE MORTGAGES

An adjustable-rate mortgage (ARM) is a long-term loan, for instance a 30-year loan, funded by short-dated bullet bonds with a maturity of 1 to 10 years. Previously, the loans were usually subject to annual interest rate adjustment, but today interest rates are typically reset every 3 to 5 years.

The loan rate is reset when the underlying bonds are replaced by new bonds. The coupon rate of the new bonds determines the loan rate for the period until the next interest rate adjustment. The lower initial loan rate should therefore be weighed against the risk that the loan rate will increase during the loan term.

The immediate advantage of ARMs to borrowers is that the loan rate is generally lower than that of fixed-rate loans at the time of origination. Conversely, borrowers do not know their future loan rate.

ARMs can be prepaid at a price of 100 in connection with an interest rate adjustment. Alternatively, borrowers can prepay their loans by purchasing the underlying bonds on market terms – as with all mortgage loans.

FLOATING-RATE LOANS

A floating-rate loan is characterised by having a long loan term, for instance 30 years, and being funded by short-dated floating-rate bonds with a maturity of 1 to 10 years.

Floating-rate loans differ from ARMs in that the loan rate changes at shorter intervals, typically three or six months. Also, the loan rate is fixed on the basis of a money market reference rate, typically the CIBOR or the CITA rate, plus an individual reference rate spread. CIBOR stands for Copenhagen Interbank Offered Rate and CITA for Copenhagen Interbank Tomorrow/Next Average. Both are published on a day-to-day basis by Danish Financial Benchmark Facility.

Borrowers can also opt for a loan where the floating interest rate is capped at a certain level. This way, they are protected from major interest rate increases.

A loan is refinanced when the underlying bonds are replaced by new bonds. In connection with refinancing, a new reference rate spread is fixed.

Floating-rate loans can be prepaid at a pre-agreed price – typically 100 or 105. Alternatively, they can be prepaid by purchasing the underlying bonds at market value.

ATTRACTIVE PREPAYMENT TERMS FAVOUR BORROWERS

The attractive prepayment terms offer borrowers various options for active debt management without having to negotiate them with their mortgage bank. Borrowers can refinance their loans if interest rates have changed or are expected to change in future. Loan refinancing is a widespread practice in Denmark.

By refinancing loans with a high fixed interest rate into loans with a lower fixed interest rate, borrowers can reduce their interest expenses. When interest rates go down, tens of thousands of borrowers exercise this option.

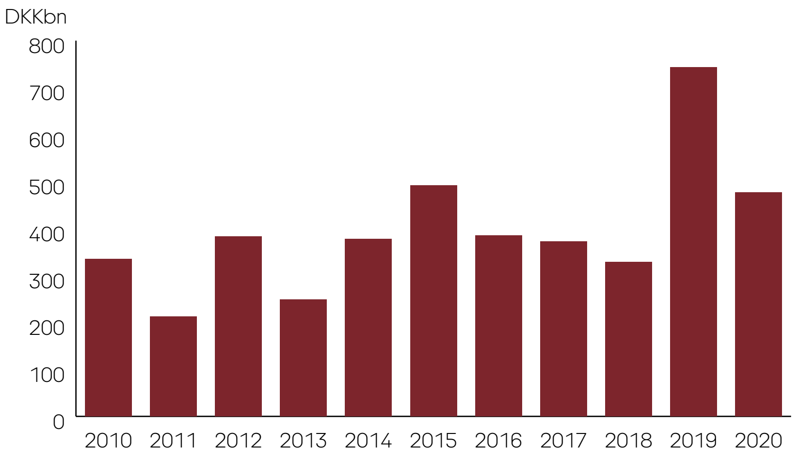
Borrowers with fixed-rate loans can also reduce their debt outstanding when interest rates increase, as bond prices will go down. The drawback is that the interest rate of the new fixed-rate loan will be higher. But if interest rates decline again, borrowers can refinance again into a lower loan rate, thereby obtaining a lower debt outstanding than originally.

The lower debt outstanding is also an advantage for borrowers who want to sell their homes after housing prices have dropped. Hence, falling housing prices as a result of rising interest rates go hand in hand with lower debt for homeowners with fixed-rate loans. The fixed loan rate serves to protect home equity.

Finally, a borrower can change risk profiles by switching from one type of loan to another. For instance, by refinancing a fixed-rate loan into a floating-rate loan or vice versa.

Chart 5
Mortgage loan prepayment

Source: Finance Denmark
Note: Prepayment includes the refinancing of existing mortgage loans and prepayment of mortgage loans in connection with a change of ownership.



Match funding principle and balance principle

In this publication, we use the match funding principle to describe the specific interrelation between a loan and the underlying bonds. The intention is to avoid conceptual confusion relative to the statutory balance principles.

A statutory balance principle limits the risk that a credit institution may incur. In other words, it governs the required balance between a lender's total lending and the bonds funding it.

All issuers of covered bonds (ROs, SDOs and SDROs) have a choice between two balance principles – the general and the specific balance principle. Minor imbalances are allowed under both principles, albeit with slightly more funding flexibility under the general principle. For most of their lending, mortgage banks have decided to maintain the match between a loan and its underlying funding.

Geographical spread of lending

Mortgage banks grant mortgage loans all over Denmark, including rural districts. At present, mortgage loans granted for owner-occupied dwellings and holiday homes in rural districts – defined as rural and peripheral municipalities – exceed DKK 480 billion [July 2020 figures], and over the past year, more than 18,000 new mortgage loans [2019 figures] have been granted for home purchases in those municipalities.

Chart 6

New private residential mortgage lending, by type of municipality

- Urban municipality
- Interurban municipality
- Rural municipalities

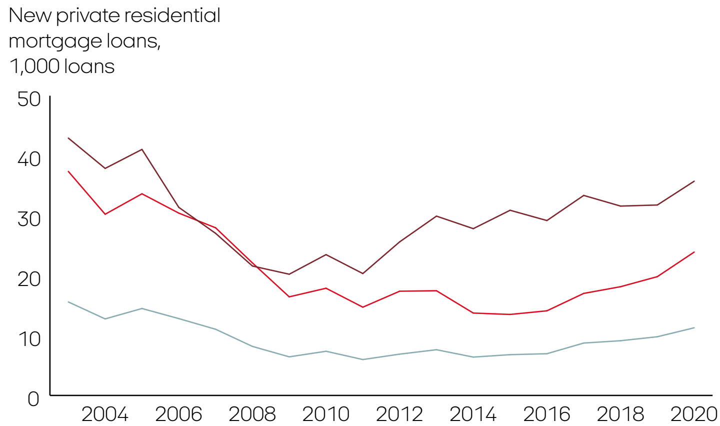
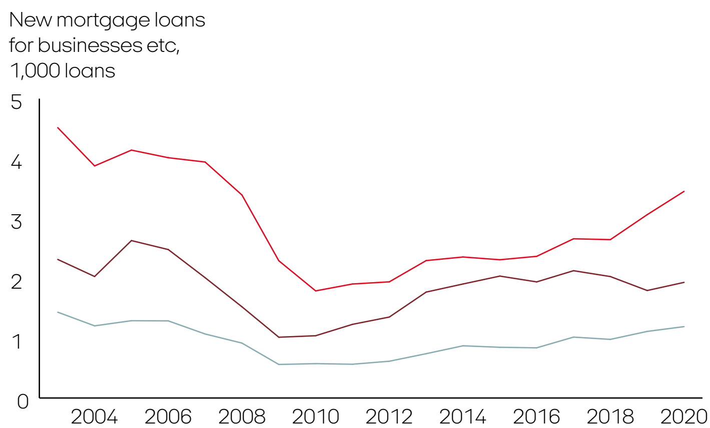


Chart 7

New business mortgage lending e.g. [change of ownership], by type of municipality

- Urban municipality
- Interurban municipality
- Rural municipalities

Source: Finance Denmark
Note: Rural districts are defined as rural and peripheral municipalities. "Business etc" includes the property segments public housing, private residential rental, properties for social, cultural and educational purposes, industry and trades, office and retail, agriculture, undeveloped land.



SECTION 3

The Danish mortgage sector's sustainability commitment

A sustainable transition has high priority, nationally as well as internationally. In Denmark, the government and a cross-party majority in the Danish parliament have set a goal to reduce CO2 emissions by 70% by 2030. That will require substantial changes in all sectors in Denmark – and that again requires funding.

The Danish mortgage sector plays an essential role in helping to finance the sustainable transition of Danish homeowners and businesses. Buildings account for a large part of Denmark's energy consumption – 40% in fact. They therefore hold huge green potential in terms of improving the energy efficiency of the Danish building stock and reducing its climate footprint. Moreover, about 10% of mortgage lending is to the agricultural sector, which also holds huge potential for investing in climate improvements.

In 2020 banks and mortgage lenders financed green activities worth about DKK 400 billion. Most of the current financing consists of mortgage loans for properties and homes with energy label B or better. But mortgage loans are also used to finance, for instance, wind turbines. The DKK 400 billion is expected to increase significantly by 2030.

Regardless of energy label, homeowners and businesses have access to mortgage loans for the purpose of energy renovation, provided that the property's equity and the customer's discretionary income and creditworthiness are satisfactory. This applies to, for example, the financing of green sources of heat, for instance heat pumps to replace natural gas and oil-fired boilers, and energy improvements, such as better insulation.

The EU is working on a new, common classification system, the EU taxonomy, to identify environmentally sustainable economic activities. The Danish mortgage sector supports the initiative of an EU taxonomy, which will promote the sustainable investment market in the EU and increase transparency as to the attractiveness of assets and technologies from a sustainability perspective.

It is a key priority to ensure that the Danish mortgage system is accommodated within the upcoming green EU framework. Hence, the taxonomy should ensure that the green transition goes hand in hand with the security of borrowers. In Denmark, borrowers can take out mortgage loans with a loan term of up to 30 years. To protect borrowers with eg green properties, their loan funding must remain secure throughout the loan term.

SECTION 4

New Basel capital requirements may hamper growth and green transition

The EU is considering the introduction of a new series of capital requirements for the financial sector to ensure that credit institutions are adequately capitalised to withstand losses. This at a time when the financial sector is expected to contribute massive amounts of funding to the green transition and investments are needed to boost the economy following a steep fall in economic activity due to covid-19.

The Danish mortgage sector is characterised by a track record of very low losses. Unique by international standards, this track record is not taken into account in the final Basel III standard issued by the Basel Committee in December 2017. There is cause for concern that the new capital requirements will have a negative bearing on Danish households' access to affordable home financing and businesses' access to capital.

Today, large credit institutions determine their regulatory capital requirements using internal models based on loan loss data. The models ensure that banks and mortgage lenders hold more capital to absorb losses when providing loans to higher-risk projects.

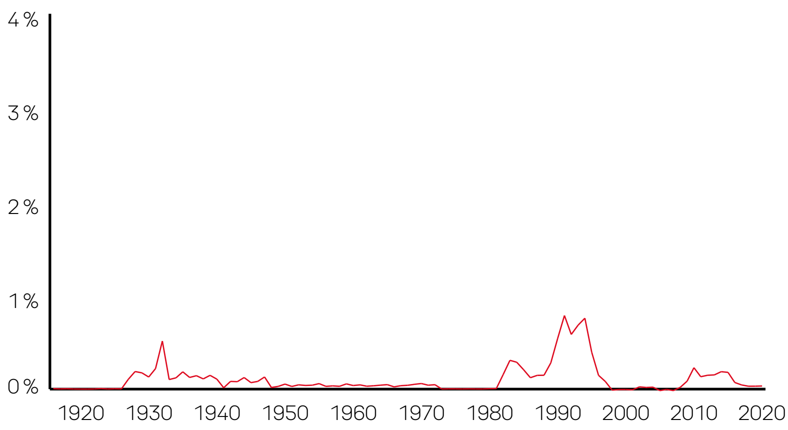
The Basel requirements go against this sound and prudent principle in that the Basel Committee wants to restrict credit institutions' scope for determining their own capitalisation on the basis of internal loss data. Instead, Danish credit institutions are required to apply calculation assumptions that are completely out of step with the reality in which they operate.

This will lead to overcapitalisation of Danish banks and mortgage lenders, which will be forced to hold much more capital to absorb losses than dictated by the risk associated with their lending. Investors demand payment for making the capital available to credit

Chart 8

Danish mortgage loan impairments from a historical perspective

Source: Statistics Denmark, Kindleberger, Danish FSA, Association of Danish Mortgage Banks



institutions that they need to hold to absorb losses. This means that business and household loans with the credit institutions will become more expensive than necessary, which will dampen economic activity.

If these requirements are transposed into European law, as proposed by the Basel Committee, they will increase the capital requirements of European banks by 18.5%, according to data from the European Banking Authority (EBA). And according to a report from Copenhagen Economics, this will permanently reduce the annual production of goods and services in Europe by 0.4%.

But the Basel requirements will hit Denmark even harder. It is estimated that the capital requirements to be met by the largest Danish banks and mortgage lenders will increase by about DKK 78 billion, or 34% relative to the capital requirements already known[4]. A main reason is that the Basel requirements excessively penalise loans characterised by a high level of security and low losses – such as Danish mortgage loans.

This is drastic and will affect the secure Danish homeowner and business mortgage loans severely. It will ultimately hamper growth and employment and the green transition, which relies on the Danish mortgage sector for funding. And it is a needless additional cost, as the underlying risk has not grown. On the contrary, Danish mortgage loans are among the most secure loans in the world, and the new regulatory recommendations do not take this fact into account.

In other words, this is a paradoxical situation. For while the EU financial sector is meant to play a key role in the green transition, the EU considers implementing massive and quite unnecessary capital requirements. That will weaken not only the contribution of European credit institutions to growth, development and employment, but also their participation in the vital green transition of the economy.

For the time being, the Basel requirements are only recommendations made by the Basel Committee. But the EU will be translating the recommendations into concrete regulation applicable to all European credit institutions. Therefore, dedicated Danish efforts are required to ensure that such regulation will allow for the Danish mortgage model.

[4] *https://em.dk/media/9757/effekter-af-baselkomiteens-anbefalinger-om-kapitalkrav-til-kreditinstitutter.pdf*

SECTION 5

Danish covered bonds – a very safe investment

The market value of all outstanding Danish covered bonds (ROs, SDOs and SDROs) totals around DKK 3,300 billion.

Today, Danish mortgage banks primarily issue SDOs and SDROs, see Chart 9. This is because investors are generally willing to pay a higher price for these bonds than for ROs. One reason is that the capital they are required to hold (capital requirement) is lower when buying SDOs or SDROs than when buying ROs. Borrowers benefit from the higher price paid by investors, as it translates into a lower loan rate.

The Danish covered bond market is almost four times the size of the Danish government bond market, see Chart 10. Its market value is also one and a half times larger than total Danish GDP. Denmark has Europe's largest market for covered bonds backed by real estate. Due to its size alone, the covered bond market plays an important role in Danish financial markets.

Covered bonds are considered very safe investment objects:

- Legislation treats them as gilt-edged securities. This applies to, for instance, the short-term liquidity measure (LCR), where only the largest covered bond series qualify as assets of the highest quality (Level 1 assets).

- Danish covered bonds are repo-eligible with Danmarks Nationalbank, and some EUR-denominated covered bonds are also repo-eligible with the European Central Bank.

- Covered bonds have the highest credit ratings from international credit rating agencies – in line with government bonds.

- In connection with the recovery or resolution of a mortgage bank, covered bonds cannot in any circumstances be bailed in.

Chart 9

Breakdown of outstanding bonds issued by mortgage banks (market value) by SDOs, SDROs and ROs, late 2020

- SDOs
- SDROs
- ROs

Source: Danmarks Nationalbank

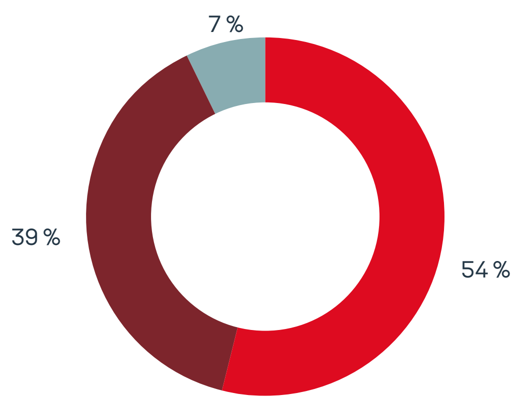
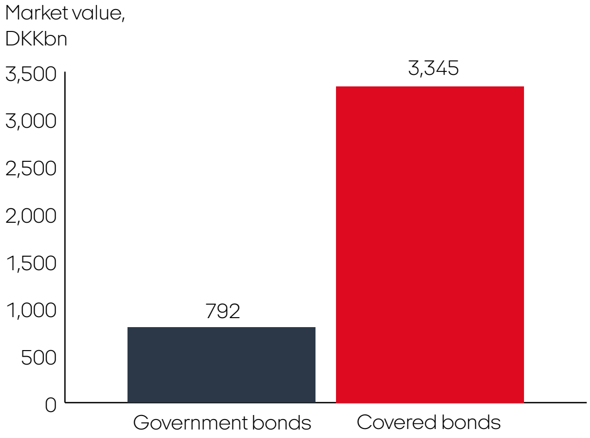


Chart 10
Market value of Danish government bonds and covered bonds, late 2020.

■ Government bonds
■ Covered bonds

Source: Danmarks Nationalbank
Note: Market value of issued mortgage bonds is determined by the price of the mortgage bonds, and may differ from the mortgage lending. E.g. when the price is above 100, market value of mortgage bonds is greater than the mortgage lending. Also, the market value of mortgage bonds increases in periods with refinancing auctions.



Due to their high classifications, the bonds are trading at attractive prices. This has a direct positive effect on mortgage loan rates, for the benefit of borrowers.

The high level of security and the ensuing high classification derive from legislation governing the field and the way Danish mortgage banks operate, which minimises the risk of loss.

COVERED BONDS REACH LARGE VOLUMES

Mortgage banks sell new bonds every time they distribute new loans. This takes place on a daily basis.

Mortgage banks open new bond series on an ongoing basis, for example when interest rates change or when new loan products are offered which require new bonds matching the loans. The mortgage banks aim to build the largest bond series possible. The large volumes are an advantage to borrowers, as bonds with large volumes are typically trading at more favourable prices than small bond series.

COVERED BONDS ATTRACT BOTH DANISH AND FOREIGN INVESTORS

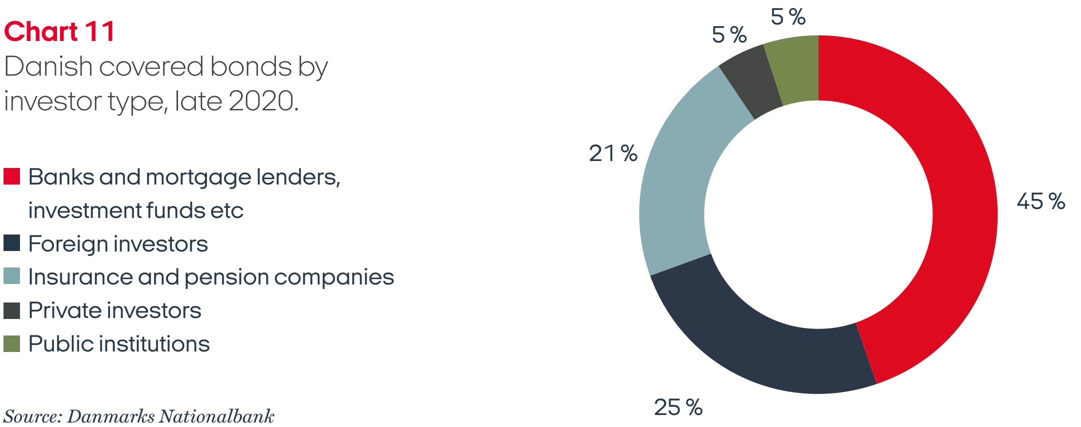
The high level of security has generated broad demand for Danish covered bonds – among Danish as well as foreign investors.

The majority of the bonds are held by banks and mortgage lenders, investment funds and insurance and pension companies. Together they hold 65% of the bonds.

Traditionally, life insurance and pension companies have large portfolios of long-term, fixed-rate covered bonds. These companies have a long investment horizon and are therefore particularly interested in secure, long-dated bonds. There is a trend towards life insurance and pension companies also opting for covered bonds with shorter maturities. By comparison, banks typically invest in short-term covered bonds.

In recent years, foreign investors have held about 25% of the total covered bond stock, see Chart 11.

Chart 11
Danish covered bonds by investor type, late 2020.



Source: Danmarks Nationalbank

Bond types

Danish mortgage banks can choose between three types of covered bond to fund their loans:

- Særligt dækkede obligationer (SDO)
- Særligt dækkede realkreditobligationer (SDRO)
- Realkreditobligationer (RO)

Both commercial banks and mortgage banks can issue SDOs, but only mortgage banks can issue SDROs and ROs. In practice, there is no essential difference between the first two types of covered bond.

Both SDOs and SDROs must comply with a number of requirements not applying to ROs. The most important requirement is that the loans (the collateral) funded must comply with a statutory LTV limit throughout the loan term. In the case of issued ROs, loans must comply with the LTV limits only at the time they are granted.


FRISØR

SECTION 6

Efficient Danish mortgage system also in times of crisis

The Danish mortgage system has survived all economic downturns thanks to a strong foundation.

A stable and tested mortgage system that has survived two centuries of Danish economic up- and downturns is of great value to society. This creates confidence – and confidence is key to the investment appetite of individuals and businesses.

The Danish and global economies have experienced a number of crises over the past 50 years, most recently the covid-19 crisis and the financial crisis. Each crisis has affected the mortgage system in different ways – but the system has never been under pressure.

Below please find a summary of past economic crises:

- The two oil crises of the 1970s
- The austerity package and the tax reform in the 1980s
- The dot-com bubble from 2001
- The financial crisis from 2007
- The covid-19 crisis in 2020

THE OIL CRISES OF THE 1970S

The first oil crisis set in at the beginning of the 1970s, the second at the end of the decade. Both crises were triggered by massive oil price increases. During the oil crises, unemployment and the number of foreclosures rose significantly, but the Danish mortgage system did not come under serious pressure.

AUSTERITY PACKAGE AND TAX REFORM

In the mid-1980s, the Danish government intervened substantially in the Danish economy. Considerable economic imbalances had built up, ia in the form of a large and growing current account deficit and a huge government debt. An economic policy change was required.

In the autumn of 1986, the Danish government implemented an austerity package. The package made home loans more expensive, as the maximum mortgage loan term was lowered to 20 years. Also, borrowers were forced to take out so-called mix loans. In consequence, principal payments increased considerably in the first years of a loan term.

On 1 January 1987, a new tax reform entered into force, which significantly reduced the tax value of deductible interest expenses. The reform was followed by seven years of low economic growth, soaring unemployment and declining housing prices. The number of foreclosures in Denmark has never been higher than during that period.

Danish mortgage banks suffered heavy losses, which resulted in a fair amount of consolidation in the sector as small mortgage banks merged into larger ones. But the losses did not affect investors. Not one Danish covered bondholder lost their investment.

THE DOT-COM BUBBLE

The next downturn in the Danish economy began in 2001 and was brought about by a minor international financial crisis. The crisis arose from a sharp drop in dot-com share prices after years of skyrocketing. The burst of the dot-com bubble resulted in a general, but short-lived, economic slowdown. The Danish mortgage system was not adversely affected by the crisis. Quite the contrary. Investors sold off their shares and fled to safety – in Danish covered bonds for example.

THE FINANCIAL CRISIS FROM 2007

The financial crisis in Denmark that began in the autumn of 2007 emerged from a collapse in the US financial system. A large number of home loans granted to customers with low creditworthiness and the collapse of the large US investment bank Lehman Brothers in September 2008 triggered a negative spiral. Banks had difficulties borrowing from each other, governments had to step in and provide support and guarantees to prevent a meltdown of the banking system.

Also the European covered bond market was affected. In several countries, the government had to step in and rescue credit institutions with large mismatches between loans granted and the bonds issued to fund them. The lack of coherence between loan rates and bond coupon rates made the credit institutions highly sensitive to interest rate changes. They suffered great losses when interest rates began to rise, as they had to pay a higher rate of interest to bondholders while receiving an unchanged rate of interest from borrowers.

The Danish mortgage sector did not need government guarantees for covered bonds. Danish mortgage banks continued their lending activities throughout the financial crisis because new bonds could be sold. Consequently, Danish homeowners and companies seeking property finance did not experience any limitations because of the financial market turmoil.

The financial crisis peaked in the last months of 2008, and most European bond markets were paralysed. The Danish market did not escape entirely unscathed, but it was never paralysed. For a period, there were much fewer bond buyers than sellers, which depressed bond prices further. Interest rates were therefore higher than under normal circumstances.

Foreign investors sold many of their Danish covered bonds – probably for the simple reason that these bonds were saleable. That was far from the case for all securities.

Also Danish insurance and pension companies came close to being forced to sell off part of their Danish covered bond portfolios due to the exceptional financial market conditions and the rules they had to comply with. The companies avoided any forced sell-offs because the authorities decided to amend the rules applying to their investments.

Many ARMs were scheduled for an interest rate reset during the peak of the crisis in December 2008. As a result, mortgage banks had to sell a large amount of bonds to replace maturing bonds. Despite the crisis, Danish mortgage banks managed to sell bonds worth more than DKK 350 billion.

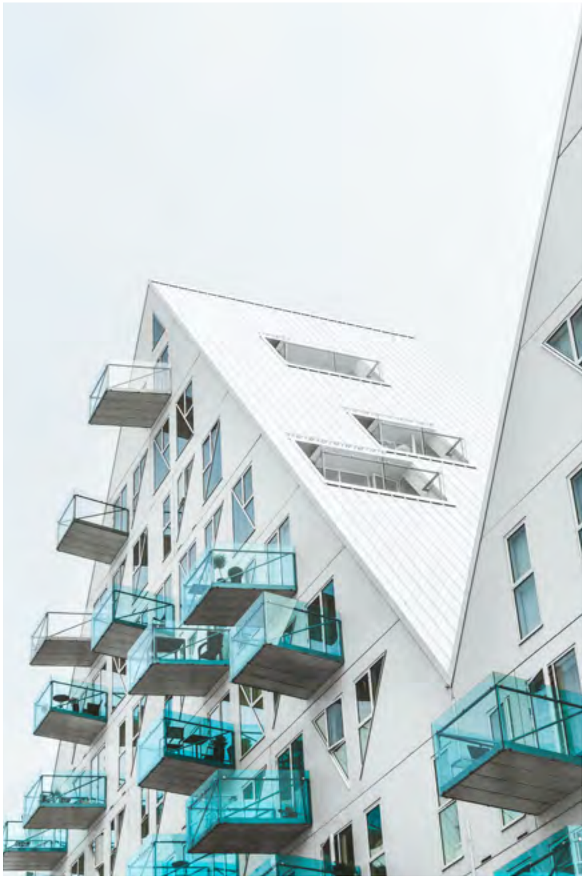
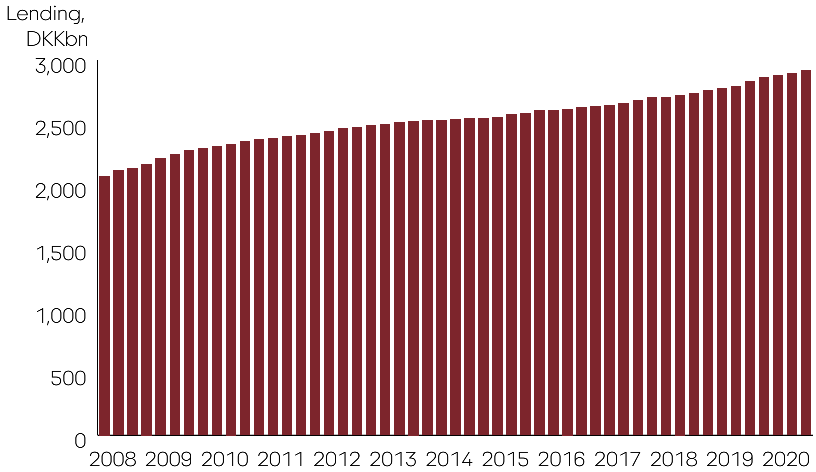


Chart 12

Total lending by Danish mortgage banks

Source: Finance Denmark



THE COVID-19 CRISIS

The outbreak of the covid-19 pandemic in early 2020 has left its market on the global economy. The lockdown of large parts of the Danish society in March 2020 also had major implications for the Danish economy.

When the crisis in spring 2020 was at its highest, the covered bond market largely escaped the financial market turmoil. Interest rates rose briefly at the onset of the crisis, but soon returned to the low levels of early 2020. Mortgage banks continued their lending activities, and the housing market generally performed well in 2020. Sales activity remained high, and especially holiday home sales boomed. House and flat prices reached a historical high during the year.

Banks and mortgage lenders stepped in to help thousands of customers with temporary payment difficulties due to the lockdown, thereby underpinning growth and employment in Denmark. The sector and the Danish government issued a joint statement in March 2020 declaring that the sector would provide loans and liquidity to financially sound businesses and individuals whose finances were temporarily affected by the corona crisis. This implied e.g. expanded credit facilities, IO periods for mortgage loans, increased overdraft facilities or payment holidays.

200 years of Danish mortgage lending

Danish mortgage lending literally emerged from the ruins of the Great Fire of Copenhagen in 1795 and consequently dates back more than two centuries. The basic principles are the same, but legislation has been amended on an ongoing basis according to a ”change to preserve and strengthen robustness” principle.

Danish mortgage lending originated from the Great Fire of Copenhagen in **1795**, when a quarter of the city burnt to the ground. After the fire, a great need arose for an organised credit market, as a large number of new buildings had to be erected over a short period of time.

1795

1797

A number of wealthy individuals took the initiative to establish the first mortgage association in Denmark in **1797**. It was called Kreditkassen for Husejerne i Kjøbenhavn and granted loans based on the issuance of bonds.

The lenders established the association – not the borrowers. This may be the reason why the first loans were a rough version of what later came to characterise mortgage loans.

Kreditkassen for Husejerne i Kjøbenhavn was the only mortgage association in Denmark for more than 50 years.

In the 1830s, the debate about more organised mortgage lending flared up as a consequence of the large funding need that arose in the wake of the agrarian reforms at the end of the 18th century.

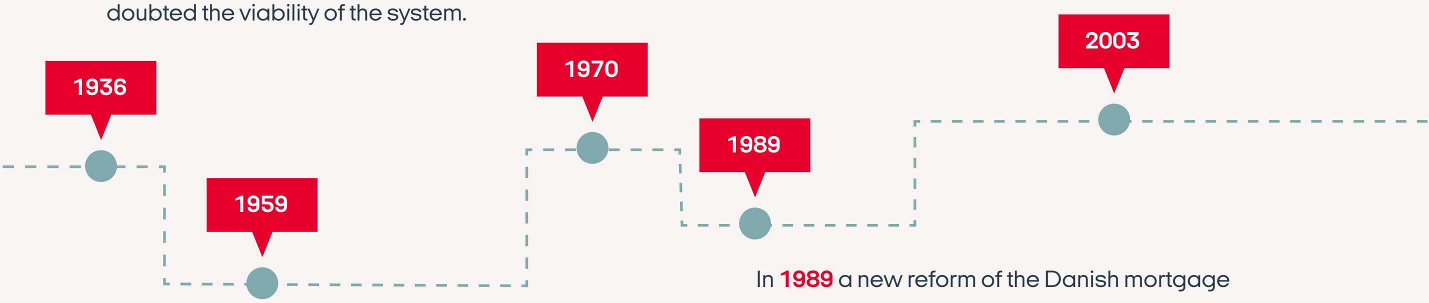
1849

The adoption of the Constitution of the Kingdom of Denmark Act in **1849** was the main catalyst for the establishment of mortgage associations. The Constitution guaranteed the freedom of association, and groups of borrowers took advantage of this freedom. They set up associations where members were jointly and severally liable for the capital raised by issuing bonds. This type of organisation became characteristic of the Danish credit market for nearly a century. The mortgage associations were able to offer loans of up to 60% of the value of a property.

The new mortgage associations were founded to safeguard member – ie borrower – interests. The loans were therefore made non-callable by the lender, and the assets of the associations belonged to the members, who would receive part of the assets when leaving the association.

The joint and several liability of the associations resulted in very restrictive credit policies. Upon reaching a certain size, the incentive to withhold funds was very strong. New borrowers would increase the risk of the association, as younger borrowers often have lower creditworthiness than established borrowers.

The Danish Act on credit institution lending against second and third mortgages was adopted in **1936**. This type of credit institution had existed since 1896 and was able to supplement lending up to 75% of the value of a property. But it was not until 1936 that legislation was introduced in this field, as politicians doubted the viability of the system.



In **1959** and 1960, special mortgage funds were founded for the purpose of supplementing lending. There were several reasons why these funds were needed: Mortgage associations and credit institutions lending against second and third mortgages were extremely reluctant to grant loans, both because of their structure and because of the subdued credit markets following World War II.

The mortgage funds were independent institutions, and borrowers were not jointly and severally liable for the loans.

The next major changes to the Danish mortgage system were in **1970**, when the Danish parliament adopted the Danish Mortgage Credit Act of 1970. The Act tightened the fairly unrestricted access to organised mortgage lending, introducing lower LTV limits, shorter maturities and a limitation of the purposes for which mortgage loan funding should be available.

The number of mortgage banks was also reduced through mergers. Few, but nationwide, mortgage banks would generate economies of scale for the benefit of borrowers and investors.

In **1989** a new reform of the Danish mortgage legislation was introduced, prompted by an EC directive. It was the first time the European Community was the cause of changes to the Danish mortgage system. A number of objective conditions for approval of new credit institutions were introduced, and the institutions had to be approved when they met the conditions. New institutions could no longer be denied approval based on an assessment of whether they were needed. In addition, new mortgage banks had to be public limited companies. Existing mortgage banks were also allowed to convert into public limited companies.

In **2003** the Danish parliament adopted the Danish Financial Business Act, which altered the entire legal basis for mortgage banks. The Act combined six specific industry acts into one general act for the financial sector. Since then, Danish mortgage banks have been governed by the Danish Mortgage-Credit Loans and Mortgage-Credit Bonds etc. Act and the Danish Financial Business Act.

2007

In **2007** the Danish parliament adopted legislation on Danish covered bonds. The act transposed EU rules on SDOs from the Capital Requirements Directive into Danish law. In addition, the covered bond legislation provided for covered bond issuance by both mortgage banks and commercial banks.

2014

In **2014** the Danish parliament adopted the Danish refinancing act (amending the Danish Financial Business Act and the Danish Mortgage-Credit Loans and Mortgage-Credit Bonds etc. Act), under which the maturity of ROs, SDROs and SDOs will be extended if a mortgage bank is unable to complete the refinancing of maturing bonds on market terms, or if interest rates rise steeply.

Further, in 2014 the Danish parliament adopted extensive amendments to the Danish Financial Business Act. The amendments introduced the EU's new capital requirements and liquidity rules (CRR/CRD IV) as well as rules on systemically important financial institutions.

In **2014** the Danish FSA introduced a Supervisory Diamond for mortgage banks. The Supervisory Diamond defines benchmarks for mortgage lending within the areas of lending growth, borrowers' interest rate risk, IO lending to individuals, loans with short-term funding and large exposures. The purpose of the Supervisory Diamond is to increase the stability of the Danish mortgage system. The Supervisory Diamond became effective in 2018; however, the benchmarks for IO lending and loans with short-term funding did not take effect until 2020.

2015

In **2015** EU banking crisis management rules were transposed into Danish law with the Danish parliament's adoption of a new act on the restructuring and resolution of certain financial undertakings and by amendment of the existing financial legislation.

2019

In **2019** the EU adopted new covered bond regulation, which also applies to Danish covered bonds. The covered bond directive provides for maintaining the basic structure of the Danish mortgage model and for continued issuance of SDOs/SDROs and ROs. The directive specifies the types of assets that may serve as collateral for SDOs/SDROs, ROs and bonds issued by Danish Ship Finance, which will also qualify as "European Covered Bonds" going forward. Going forward, this definition will be the cornerstone of covered bond regulation in other EU regulation.

For more information on the story of Danish mortgage lending, see: Michael Møller and Niels Christian Nielsen, BRF, 1997: Dansk realkredit gennem 200 år.

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