

Introduction to the Danish Mortgage Bond Market



Author

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Introduction

The Danish Mortgage Bond Market is one of the oldest and most stable in the world, tracing its roots all the way back to 1797 with no records of defaults since inception. Furthermore, the market value of the Danish Mortgage Bond Market is approx. EUR 402bn, making it the largest mortgage bond market in Europe.

The Danish Mortgage Bond Market is a unique blend of size, stability, transparency and liquidity, making it a viable investment opportunity as explained further by the following points:

- Attractive yields compared to EUR government and other EUR covered bond
- Largest market in Europe and one of the largest markets in the world with a value of app. EUR 402bn
- Has not experienced a single default since inception in 1797
- Resistant to crises: Issued same amount of bonds at the peak of the economic crisis in the last quarter of 2008 as in the same period in 2007. In the remaining Euro-area, the amount of bonds issued in the last quarter of 2008 was only 2% of the amount issued in 2007
- Unique match-funding principle where there is an exact match of the loan given and underlying bond issued, securing financial stability
- AAA rating
- Transparent and standardized market
- Very liquid - Perceived to be only slightly less liquid than government bonds by the European Banking Association

Origin & historical stability

The need for mortgage lending emerged in Denmark in 1795 after the Great Fire of Copenhagen. A quarter of the city was lost in the fire, creating a demand for new buildings over a short period of time, and thereby also creating a great demand for financing through an organized credit market. In 1797 Denmark's first mortgage association was established by a number of wealthy individuals, which granted loans based on the issuance of bonds. Since then the Danish mortgage model has gone through several legislative changes, but the main objective is still to provide stable and affordable mortgage financing.

The objective of stability is also seen in the resistance of the Danish Mortgage Bond Market to economic crises, as the Danish economy has gone through several crises in the past 40 years:

- The two oil crises of the 1970's
- The 1986 austerity package and the 1987 tax reform
- The Dot-Com bubble in 2000
- The Financial Crisis in 2008

Each crisis has affected the mortgage system in different ways, and even caused heavy losses for the Danish Mortgage Banks. However the losses have never affected the investors, as not one Danish Mortgage bondholder has lost the investment or even a part of it. Furthermore the market has stayed active and liquid under crisis, as evidenced by Dick-Nielsen et al. (2012) who find that the Danish Mortgage Bonds were as liquid as the Danish government bonds during 2008-2009.

The Danish Mortgage Market

In the following the basics and unique features of the Danish covered bond market will be explained, to give inside into the investment opportunities.

4 types of mortgage bonds

The Danish mortgage bond market mainly consists of the following 4 types of mortgage bonds:

- ARMs – Adjustable Rate Mortgage Securities, which are subject to refinancing until the longer-term underlying loan has matured. The maturities match the fixed-rate period of the underlying loans, and are mainly 1 to 5 years and the bonds are bullet
- Floating-rate note – Variable-rate annuities with redemptions matching the underlying loans. The maturities are mainly from 1 to 5 years
- Capped floater – Variable-rate annuities with redemptions not matching the underlying loans. The maturities are mainly from 5 to 30 years
- Callable bonds – Fixed-rate callable annuities, where payments and redemptions match the underlying loan. The maturities are mainly 15, 20 or 30 years

All 4 types of mortgage bonds have underlying loans where maturities of up to 30 years are available. Furthermore most loans can be offered with an interest-only (IO) period of up to 10 years. If the IO option is chosen, the loan must be repaid as an annuity profile over the remaining lifetime of the loan (min. 20 years). At the moment the amount of loans with an interest-only period is declining, and currently 52.7% of the loans to Danish house-holds have an interest-only option.

The Danish mortgage model

The Danish mortgage model is based upon a very stable and transparent system, with several advantages and unique features.

Advantages of the Danish mortgage model:

- The mortgage banks do not function as commercial banks, and can only fund loans

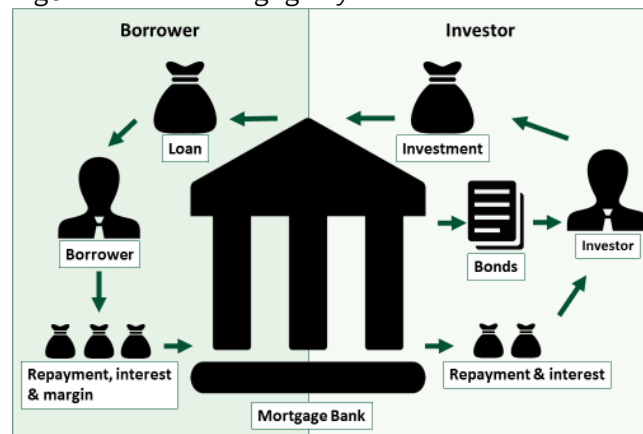
through the sale of bonds which limits the risk of the mortgage banks

- The mortgage bank protects the investor from the borrower defaulting (Credit Risk)
- Market risk is fully transferred to either the investors or borrowers
- Issued bonds are secured by the mortgage issuer, and by mortgage loans and other collateral in the cover pool
- Mortgage banks must ensure that the cover pool complies with loan-to-value (LTV) limits on a continuous basis and supply additional collateral if house prices are falling
- Mortgage banks must comply in accordance to the rules of the Danish Financial Supervisory Authority when assessing the value of a property
- Strict LTV requirements since mortgage banks are responsible for managing their exposure to credit risk, this creates incentives for lenders to ensure good underlying credit quality
- Danish home owners pay an interest rate determined by the market
- The system provides a high degree of transparency and standardization, and keeps transaction costs low

Match funding principle

As already mentioned one of the unique features of the Danish Mortgage model is the match-funding principle illustrated in figure 1.

Figure 1 – The Mortgage System



Source: Jyske Capital

The match-funding principle entails that for every loan made by the mortgage bank, a new bond is issued with matching cash-flow properties. This eliminates mismatches in cash-flows and refinancing risk for the mortgage bank, which also secures payments for the bondholder. In the Danish mortgage system the mortgage bank functions as an intermediary between the investor and borrower. Mortgage banks fund loans on a current basis, meaning that the bond must be sold before the loan can be given. This also entails that the market price of the bond determines the loan rate. The loan is therefore equal to the investment, which passes through the mortgage bank. Repayment and interest from the borrower to investor also passes through the mortgage bank, however the mortgage bank charges the borrower a margin throughout the lifetime of the loan, which is a percentage of the debt outstanding. Since the mortgage bank is only an intermediary it is not affected by changes in the floating rate, as it passes repayments and interest through to the investor. The drawback for the mortgage bank is that it endures the credit risk in the event of a default of the borrower, as it still has to make repayment and interest to the bondholder. This however protects the investor as the credit risk is removed, but is also a great incentive for the mortgage bank to put an emphasis on the due diligence process when issuing loans and adds to the stability of the system. Part of the due diligence is not only valuing the property when making a credit assessment of a potential borrower, but also assessing the borrower's current economic situation including income and wealth.

The activities in which mortgage banks are allowed to participate are by law limited to mortgage lending by issuance and sales of mortgage bonds (The Specialist Bank Principle). Legislation also dictates eligibility criteria for granting and funding loans. The specialist bank principle secures transparency and standardization in the Danish mortgage bond market.

Delivery and prepayment

Another unique feature of the Danish mortgage model is the delivery option which means that the

borrower always has the possibility of buying the underlying bond in the market, and deliver it back to the mortgage bank, who then cancels the loan. This is a unique way for the borrower to reduce the notional amount of his loan if interest rates rise, and the related bond price falls. It also has a hedging effect on the expected drop in house prices that follows increasing interest rates as the two effect offset each other. This has no effect on the investor as the bond will be traded at market prices.

Callable bonds also have a prepayment option (Embedded call-option). The prepayment option gives the borrower the opportunity to prepay the loan at par (100) at any given time.

The capped floater bonds have a similar prepayment option, however the price depends on the contract and is typically 105. This is favourable when the current available coupon rate is below the coupon rate on the mortgage.

The prepayment option on Danish callable and capped floater bonds are more difficult to price than corresponding bonds without the prepayment option and come with an additional prepayment risk for the investor, this is however rewarded with a higher interest rate. The prepayment risk is further explained in the risk section.

Regulatory viewpoint

As mentioned previously Danish Mortgage bonds are viewed upon favourably by regulatory institutions, especially in regards to capital requirements.

Capital Requirement Directive

1st of July, 2007 a new Danish covered bond legislation came into effect. The legislation was created to implement the Capital Requirements Directive (CRD) from EU, into Danish law and make Danish mortgage bonds comply with the covered bond definition. As traditional Danish mortgage bonds did not comply with the CRD an introduction of new covered bond types was necessary, giving Mortgage banks 3 types of bonds to fund their loans:

- Traditional mortgage bonds (Realkredit Obligationer - RO)
- Covered mortgage bonds (Særligt Dækkede Realkredit Obligationer - SDRO)
- Covered bonds (Særligt Dækkede Obligationer - SDO)

	RO	SDO/SDRO
Collateral Assets	Real Estate	Real Estate, Public Loans, Derivatives and substitution assets
LTV compliancy required	At the time of granting loan	Continuously

Source: Jyske Capital

The SDRO and SDO were the two new bond types introduced as CRD-compliant, whereas the RO is not CRD-compliant. Mortgage banks can issue all 3 types of bonds but commercial banks may only issue covered bonds. In practice there are no essential differences between the two types of covered bonds, as both types of covered bonds must comply with a number of requirements that do not apply to traditional mortgage bonds.

Furthermore the legislation enabled mortgage banks to abandon the match-funding principle, and separate loans from bonds. However the Danish mortgage banks have decided to uphold the match-funding principle, giving further credit to the efficiency and positive effects of the Danish mortgage credit system.

Covered bonds compared to traditional mortgage bonds

From an investor viewpoint there are two significant differences between Traditional mortgage bonds and the covered bonds:

- For traditional mortgage bonds the LTV limits are only a requirements at the time the loan granted. However for covered bond and covered mortgage bonds, the bonds must comply with the LTV limits continuously, and

the banks must provide supplementary security if the LTV limits are exceeded.

- Both types of covered bonds are subject to more lenient capital requirements for investors, than traditional mortgage bonds. Investors are therefore willing to pay a higher price for covered bonds, and mortgage banks have mainly issued covered bonds since the inception of the new legislation.

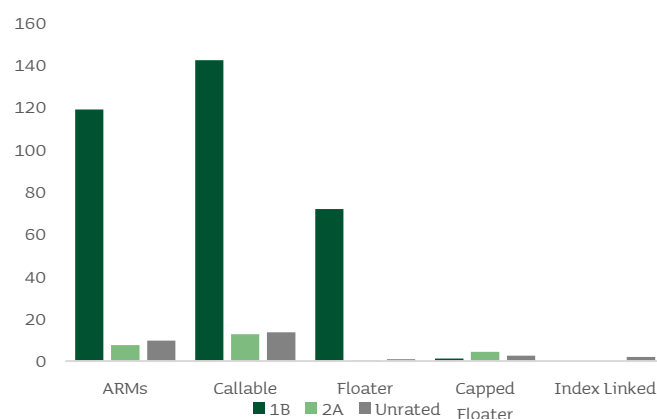
CRR/CRD IV (LCR)

Under the implemented CRD IV legislation most of Danish mortgage bonds have been classified as liquid as Government bonds, as 92,9% of Danish mortgage bonds are rated level 1B, as of January 2016. As Danish mortgage bonds live up to the CRD regulations, differences in ratings are mainly due to differences in volume outstanding as:

- Level 1B must have an outstanding volume of at least EUR 500m
- Level 2A must have an outstanding volume of at least EUR 250m

The total outstanding volume of products and their LCR-classification can be seen in figure 2.

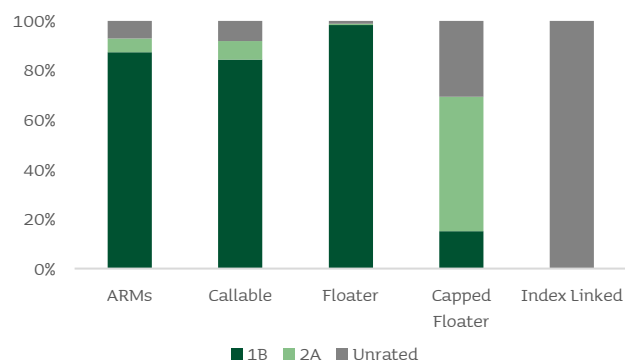
Figure 2 – Total Outstanding volume by LCR Classification (EURbn)



Source: Jyske Capital

The distribution of the ratings across product types can be seen in figure 3 below. Here it can be seen that most bonds in the Danish market are rated 1A or 2B.

Figure 3 – Share of Level 1B and Level 2A



Source: Jyske Capital

Since Danish mortgage bonds comply with the covered bond definition and have high ratings, they are treated favourably in the Solvency Capital Requirements (SCR) framework introduced with Solvency 2.

Risks

As explained the Danish Mortgage Market has very low risk for the individual, as the system is designed to share risk between all the participants. This section will however explain in more detail how an investor is protected in the Danish market.

Credit risk

Historically there has never been a single case of a Danish Mortgage bondholder losing the investment, as the Mortgage banks protects the bondholder from credit risk as a result of loan defaults. The investor is also protected from credit risk arising from the bankruptcy of a Mortgage bank as legislation favours bondholders, and specifies detailed guidelines in case of bankruptcy.

Furthermore legislation also put an emphasis on due diligence process and the LTV limits (max 80%), limits how exposed Mortgage banks can be to credit risk. The system itself is also very stable as there are public authority guarantees (in the form of subsidised non-profit housing), bank guarantees on loans provided by other banks and personal recourse on defaulted debt. The borrower is liable for debt even

after defaulting and the seizure of the property, theoretically the mortgage bank can proceed collection indefinitely.

Refinancing risk – Maturity Extension

On January 1st 2015 new legislation was introduced to reduce refinancing risk for variable-rate loans financed by several bonds with a lower time to maturity than the underlying loan (ARMs). The refinancing risk in this type of loan has previously had little effect on the investor, as failed auctions and shifts in interest rate only affected the mortgage bank and the borrower. Furthermore the investor is well-protected from the credit-risk associated with the mismatch in cash-flow from these types of events. However the new legislation also has some effect on the investor, as the law introduces a maturity extension that can be triggered by 2 types of events:

Interest-rate trigger – If, at the time of a refinancing auction, the yield level has increased by more than 5% in the previous one-year period and the underlying bond has a maturity of up to 24 months, the maturity of the bond will be extended by 1 year. In case of an extension the yield level on the underlying bond will be equal to the yield on a corresponding bond traded 11-14 months earlier plus 5%.

Failed auction trigger – In the case of failed refinancing auctions, where a mortgage bank is unable to sell the bonds to further finance a loan, maturity on the underlying bond is extended by 1 year, after which a refinancing auction is held. Maturity extension of 1 year by failed auction trigger is repeatable until either the loan is refinanced or the loan has matured. The yield of the extended bond depends on the remaining time to maturity of the loan:

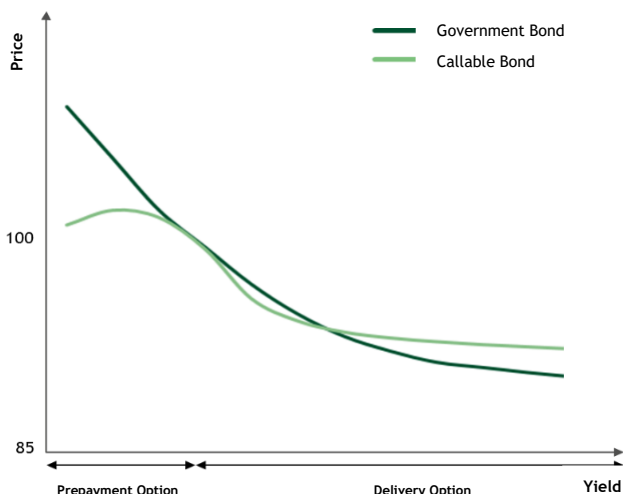
- If maturity is equal to or less than 24 months: Yield level on a corresponding bond traded 11-14 months earlier plus 5%
- If maturity is more than 24 months: Yield level on a corresponding bond with a maturity of 11-14 months traded 11-14 months earlier plus 5%

Due to the stability of the Danish mortgage system and the implemented legislation these events are very improbable and the associated risk is low, but in case of the improbable investors are secured a transparent and fair return.

Prepayment Risk

The prepayment risk arises from the option to prepay the loan at par, which exposes the investor to the risk of not being able to reinvest at the same conditions. The rational scenarios for prepayment are explained under “Delivery and Prepayment”, and bonds are priced with this risk in mind as seen in figure 5.

Figure 5 – Pricing curve of Mtg. and Gvt. Bonds



Source: Jyske Capital

When prices are close to par the price of the callable bond is lower than the price of a government bond, as the chances of prepayment increase. However the borrowers are not always rational, which can create opportunities for the active investor, but is also a source of risk for a buy-and-hold strategy.

Key risk measures

To calculate the risk of a portfolio we have a prepayment model, where we daily calculate different types of key risk measures. Through our prepayment model we calculate option adjusted duration, convexity, option adjusted risk and other risk measures.

The key risk measures is calculated on all Danish mortgage bonds, so we have the possibility to manage the different risk in a portfolio.

Size and liquidity

As mentioned previously the Danish Covered Bond Market is one of largest in the world.

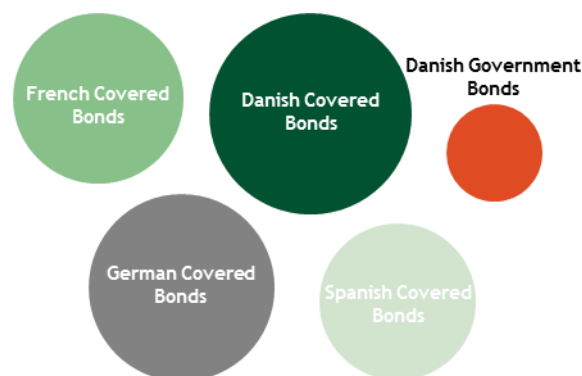
Volume Outstanding (EURbn)	
Danish Covered Bonds	419
German Covered Bonds	364
French Covered Bonds	334
Spanish Covered Bonds	241
Danish Government Bonds	86

Source: 2020 ECBC European Covered Bond Fact Book

The Danish market is larger than the German, French or Spanish markets. The liquidity in the Danish covered bond market is high, and we can get narrow bid offers spread on a daily basis.

Furthermore the covered bond market is 4x larger than the Danish government bond market. Figure 6 visualises the relative size-comparison of the different markets.

Figure 6 – Relative Size Comparison of Covered Bond Markets

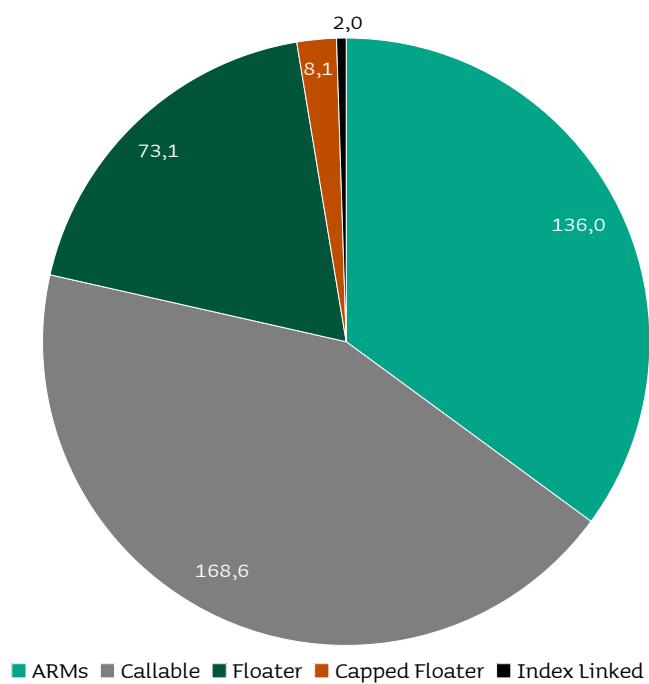


Source: Jyske Capital

As can be seen in figure 7, the largest share of mortgage bonds are ARMs, which are mainly made up of short-term fixed-rate bonds. Interestingly enough

even the 2nd largest product type alone is still larger than the market for Danish government bonds.

Figure 7 – Segmentation of Danish Covered Bond Market (EURbn)



Source: Jyske Capital

Danish mortgage bond issuers

The following section gives insight into the capital structures and distribution of market shares, by illustrating the unique features of the largest mortgage lenders in Denmark.

Realkredit Danmark A/S

Company profile

Realkredit Danmark is a wholly-owned subsidiary of the Danske Bank Group, which is the largest Danish financial institution. Danske bank was founded in 1871, and is present in 12 countries with a concentrated focus on the Nordic market. Its main business areas are within retail banking, corporate banking, asset management, life insurance, pensions, and mortgage finance.

Realkredit Danmark is the second-largest mortgage bank in Denmark with an estimated market share of 26.2%, with a total mortgage lending at fair value of DKK793bn at end-2020. The core market is residential housing (both owner-occupied and holiday homes) and the corporate market (property in urban trade, agriculture, and residential rental property) mainly in Denmark. However, Realkredit Denmark does also provide mortgage lending to selected business customers in Sweden and Norway respectively.

Financial performance

Realkredit Denmark reported a net profit of DKK 3.8bn in 2020, which was slightly lower than the reported DKK4.4bn in 2019. The decrease was mainly affected by higher impairments.

The company saw a small decrease in net interest income from DKK6.9bn to DKK6.4bn. Cost/core income ratio declined from DKK6.56bn (2019) to DKK5.34bn (2020) and the core capital ratio decreased from 30.7% in 2019 to 26.9% in 2020 with the total capital ratio decreasing from 31.1% to 27.4% in 2020.

Cover pools

Realkredit Danmark offers mortgage finance to homeowners, cooperative housing, rental housing, public housing, farmers, companies, and organizations within the private sector as well as the public

sector. The borrower segmentation as of Q4 2020 consisted of 56% private residential, 23% rental residential, 13% commercial mortgages, 6% agriculture and 2% Nordic with small deviations between Capital Centre T & S. However, Capital Centre S has a lower proportion of commercial loans than other Danish pools, hence lower risk.

The weighted-average LTV ratio is approximately 60% for both Capital Centre S and T with smaller deviations. Generally, a loan-to-value (LTV) limit of 80% applies for private residential properties, 75% for holiday properties and 60% for commercial- and agricultural properties. Most of the assets in Capital Centre S pays a fixed rate (97.7%), where Capital Centre T only consists of ARM and floating-rate loans.

Ratings

Scope Ratings, Standard & Poor's, and Fitch have assigned Realkredit Danmarks' covered bonds issued out of Capital Centre S and Capital Centre T with its highest rating 'AAA'.

Nykredit Realkredit A/S

Company profile

Nykredit Realkredit is wholly owned by Nykredit Holding, which is an unlisted company headquartered in Copenhagen, Denmark. The history of Nykredit traits back to 1851, where mortgage financing took shape. Since then Nykredit has expanded its activities to cover retail and corporate banking, asset management, insurance, and real estate although mortgage financing is still the most important business area.

Nykredit is the largest mortgage bank in Denmark with an estimated market share of 41.8% with a total lending of DKK1,321bn at end-2020. Overall, Nykredit is the largest Danish creditor with contact to more than 1 million customers throughout the whole of Denmark providing loans and funding to homeowners and businesses. Nykredit Realkredit cooperates with more than 50 banks across Denmark, which is an important driver for the distribution of Nykredit mortgages.

Financial performance

Nykredit reported a profit for the year of DKK5.67bn in 2020, which was significantly lower than the reported DKK7.44bn in 2019. Despite net profits were affected by increased loan impairments prompted by covid-19, Nykredit recorded growth in customers, a high activity level and lending growth in 2020. As a result, Nykredit saw a small increase in net interest income from DKK9.344bn in 2019 to DKK9.780bn 2020.

Costs as a percentage of income increased from 36.5% (2019) to 39.6% (2020) due to decreased income. The total capital ratio increased from 23.7% in 2019 to 24.3% in 2020 where the common equity tier 1 capital ratio increased from 19.5% to 20.02%.

Cover pools

Nykredit has five different capital centers. However, the three most important ones are the open Capital Centre E and H where the majority of new issuances are conducted through and the closed Capital Centre D.

Capital Centre E and H have a value of DKK531bn. and DKK618bn., respectively. Owner-occupied homes make up the largest share in both capital centers with 82% and 63%.

The distribution of the total mortgage book is owner-occupied (63%), office and retail (9%), private rental (9%), agriculture (7%) and others (12%) (end-2020) geographically distributed in the following way: North Denmark (16%), Central Denmark (30%), South Denmark (12%), Sealand region (8%), Capital region (29%) and outside of Denmark (5%).

The average LTV ratio of Nykredits' cover pools are 51,7%. However, as the other mortgage bond issuers, Nykredit applies a cap of 80% for most mortgage loans and 60% for riskier lending.

Ratings

Standard & Poor's rates Nykredit's covered bonds issued out of Capital Centre D, E, and H 'AAA'. Nykredit has an 'A' long-term rating from S&P and Fitch.

Nordea Kredit

Company profile

Nordea Kredit Realkreditaktieselskab, founded in 1993, is part of the Nordea Group and wholly-owned by Nordea Bank Abp, which is the largest bank in Scandinavia with around 10 million household customers. Besides the four home markets in Scandinavia, Nordea is present in 19 countries worldwide and has the largest distribution network in the Nordic region.

Nordea Kredit has covered bonds outstanding with a value of EUR52.3bn and is the third-largest mortgage provider in Denmark with a market share of 14.2%.

Financial performance

Nordea Kredit reported profit before tax of DKK 1.640m compared to DKK2.373 in 2019. This was mainly due to lower commission income from re-mortgaging activity, which was in line with expectations, and an increase in commission expectations. Net interest income increased slightly with DKK55m to DKK3.211m in 2020.

The cost-income ratio was significantly higher in the period, which increased with 10,8%-point to 22.2%. Also, the total capital ratio increased with 2.56%-point to 29,6% end-2020. Furthermore, Tier 1 capital ratio increased from 24.4% to 25%

Cover pools

The total lending of Nordea Kredit increased by 3% to DKK409 by the end-2020. The increase is primarily driven by 5% growth in lending for owner-occupied and holiday homes, which accounts for 69% of the loan portfolio. Private rental housing accounts for 11% of the portfolio and commercial-, agricultural-, and other properties account for 8%, 10%, and 2% respectively.

The Capital Region of Denmark is the largest market for Nordea, as it makes up 40% of the portfolio. Central Denmark follows with 22%, Zealand (19%), Southern Denmark (15%), and North Denmark (4%).

The weighted average LTV is estimated to be 56.8% with an average residential loan size of EUR197.440. Residential loans in the portfolio has an LTV of 58.3% and commercial loans of 45.1%.

The cover pool consists of 74.6% fixed-rate and 25.4% floating loans, where 47.2% of the loans are interest-only mortgages.

Ratings

All covered bonds issued by Nordea Kredit have been assigned an 'AAA' rating from S&P.

DLR Kredit A/S

Company profile

DLR Kredit, formerly known as Dansk Landbrugs Realkreditfond, was founded back in 1960 on an initiative of smaller financial institutions. Today, 50 local and nation-wide financial institutions still own and collaborate with DLR. The company has no physical branch offices, as loans are distributed through the banks shareholder networks. DLR has since 2001 expanded its business through financing of commercial properties, which is now the fastest-growing segment of the company.

DLR offers mortgage financing to agricultural property and residential farms as well as private residential rental property, cooperative housing, and office and retail property (but no single-family homes). DLR is the fifth-largest mortgage loan provider in Denmark with an estimated market share of 5.6%.

Financial performance

DLR reported an operating profit of DKK 960M by the end-2020, which was a decrease of DKK125m relative to 2019. Nonetheless, the profit before tax was satisfactory due to extraordinary uncertainty prompted by the COVID-19 pandemic, which, made DLR allocate a large amount to cover anticipated losses.

Net interest income increased with DKK70m from DKK1.804bn to DKK1.874bn. Impairment of loans and provisions decreased with 28% from DKK86m to DKK-62m by the end-2020.

The capital ratio increased with 1.7%-point from 17.1% to 18.8%, where the tier 1 (core) capital ratio increased from 15,5% to 17.1%.

Cover pools

DLR has two separate cover pools amounting to a total loan portfolio of DKK164.3bn, equivalent to a market share of 5.6% of total mortgage lending. However, Capital Centre B is by far the largest with DKK164.8bn of SDO loans and the remaining DKK1.2bn issued from General Capital Centre as RO loans.

Agriculture makes up 58% of Capital center B followed by office and business (19%), private rental (17%), and owner-occupied homes (4%). Since DLR has a strong focus on agricultural properties, most loans are provided to rural areas in Denmark, which is displayed in the geographical distribution of the loans. Central Denmark accounts for 30%, Southern Denmark (27%), Northern Denmark (22%), Zealand (14%), and Greater Copenhagen (5%) and outside Denmark (2%). The weighted average LTV for Capital Center B is 53.8%.

Due to a growing borrower interest in long-term fixed-rate loans, 33% of all DLR's bonds at the end of 2020 were fixed-rate callable bonds, which is 4%-points more than the year before.

Ratings

Standard and Poors' rate covered bonds issued by DLR Kredit 'AAA'. DLR is rated 'BBB+' as an issuer.

Jyske Realkredit

Company profile

Jyske Realkredit A/S (formerly BRFKredit A/S) has been an integrated part of the Jyske Bank group since the merger of BRFKredit and Jyske Bank in 2014, although the company was established in 1959. The company finances mortgage loans for both personal and commercial customers.

Jyske Realkredit is currently the fourth-largest mortgage-financing provider in Denmark behind NYK, RD, and Nordea Kredit with an estimated market share of 10.60%.

Financial performance

Jyske Realkredit delivered an operating profit of DKK1.168bn compared to DKK1.434bn, which reflected a decrease of 18.5%. However, this was in

line with management's estimates, where reservations were made due to uncertainty about the effects of price and sales development in the property market as well as the clients' ability to pay in future remains.

The core- and capital ratio increased from 23.1% to 25.4% as of 31 December 2020. Note, however, comparison between numbers from 2019-20 can be misleading due to a new settlement agreement between Jyske Realkredit and Jyske Bank regarding intra-group fees and costs.

Cover pools

The lending portfolio of Jyske Realkredit is made up of 51% owner-occupied homes, private rental (16%), subsidized (15%), office & business (11%) and cooperative housing (4%). On the whole, just above 86% of the loan portfolio still relates to properties for residential purposes.

Capital Centre E is focused around the largest cities in Denmark with 46% of the portfolio in the Metropolitan area around Copenhagen, Zealand (12%), Northern Jutland (7%), Central Jutland (20%), Southern region (14%) and other areas (1%). Capital Centre E stands at DKK308bn as of 2020 with an average LTV ratio of 52%. This ratio should be seen in the light of, that Jyske Realkredit applies an LTV limit of 80% for residential and 60-70% for commercial houses depending on the type.

It can be noted, that back in 2018, the company opened up a new Capital Centre S for the funding of interest-reset loans. However, this capital center has not received a rating. Moreover, Jyske Realkredit issues a very limited number of new RO bonds out of Capital Centre B (only floaters and short-dated ARMs).

Ratings

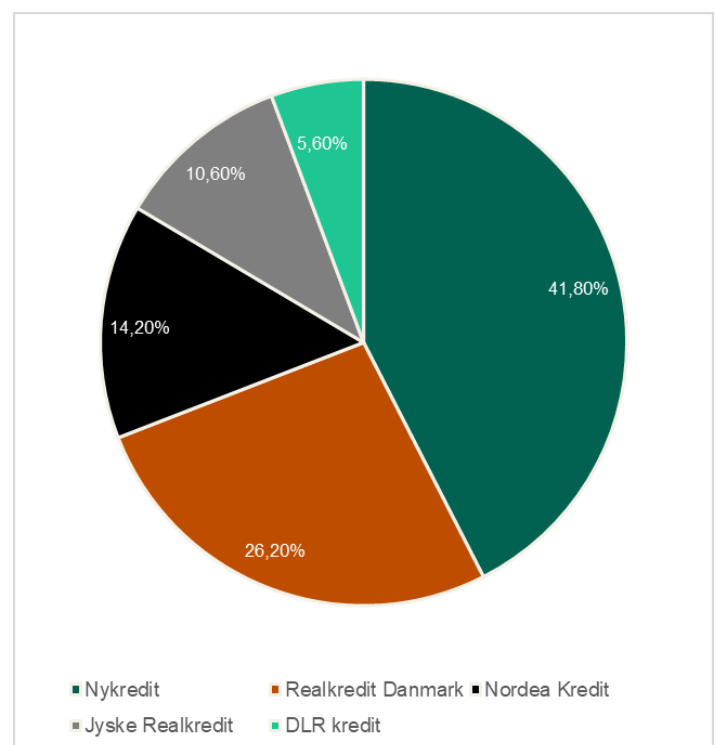
All capital centers (E, B and General, red.) of Jyske Realkredit has been assigned an 'AAA' rating by

S&P and Fitch. Jyske Bank holds an 'A' rating with a 'stable' outlook assigned by S&P.

Market share overview (DKK bonds):

- Nykredit → 41.8% (EUR 160.6bn)
- Realkredit Danmark → 26.2% (EUR 100.8)
- Nordea Kredit → 14.2% (EUR 54.7bn)
- Jyske Realkredit → 10.6% (EUR 40.9bn)
- DLR kredit → 5.6% (EUR 21.3bn)

Market shares:



Comparison:

ISSUER	OPERATING PROFIT (2020)	CORE- & CAPITAL RATIO (2020)	MARKET SHARE (2020)	ISSUER CREDIT RATING (S&P)
Nykredit	DKK5.673M	Core: 20.2% Total: 24.3%	41.80%	'A+'
Realkredit Danmark	DKK3.883M	Core: 26.9% Total: 27.4%	26.20%	'A'
Nordea Kredit	DKK1.640M	Core: 25,0% Total: 29,6%	14.20%	'AA-'
Jyske Realkredit	DKK1.168M	Core: 25.4% Total: 25.4%	10.16%	'A'
DLR Kredit	DKK960M	Core: 17.1% Total: 18.8%	5.60%	'A-'

Source: Nykredit, Realkredit Danmark, Nordea, Jyske Bank & DLR

Lending portfolio:

ISSUER	OWNER-OCCUPIED HOMES	PRIVATE RENTAL	AGRICULTURE	COMMERCIAL	OTHERS
Nykredit	63%	8%	7%	9%	13%
Realkredit Danmark	57%	22%	6%	13%	2%
Nordea Kredit	69%	11%	8%	10%	2%
Jyske Realkredit	51%	16%	0%	10%	24%
DLR Kredit	5%	19%	55%	17%	4%

Source: Nykredit, Realkredit Danmark, Nordea, Jyske Bank & DLR

Loans by type:

ISSUER	FLOATER	ARM 1-10Y	FIXED-RATE LOANS	CAPPED-RATE MORTGAGES	OTHER LOANS
Nykredit	22%	29%	43%	4%	2%
Realkredit Danmark	4%	58%	38%	0%	0%
Nordea Kredit	23%	28%	46%	0%	3%
Jyske Realkredit	11%	47%	37%	5%	0%
DLR Kredit	36%	31%	32%	0%	1%

Source: Nykredit, Realkredit Danmark, Nordea, Jyske Bank & DLR

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