

Landkreditt Boligkreditt AS

Norwegian Mortgage-Covered Bonds



Scope Ratings

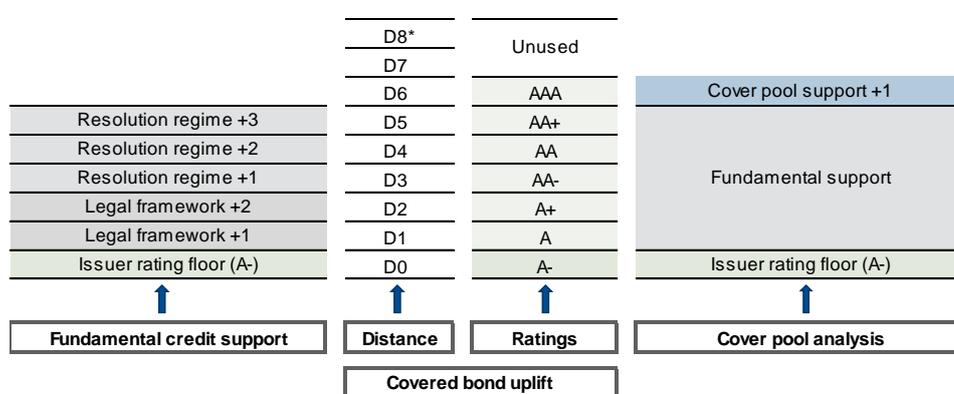
Ratings

Cut-off date	Cover pool	Cover asset type	Covered bonds*	Rating/Outlook
31 Dec 2017	NOK 4.3bn	Mortgage loans	NOK 3.2bn	AAA/Stable

* Obligasjoner med fortrinnsrett (Norwegian mortgage-covered bonds)

Scope's covered bond ratings constitute an opinion about the relative credit risks and reflect the expected loss associated with the payments contractually promised by an instrument on a particular payment date or by its legal maturity. See Scope's website for the covered bond [rating definitions](#).

Mortgage-covered bonds



*Maximum issuer-specific uplift of eight notches (D8) as per Scope's methodology. The rated covered bonds reflect a six-notch uplift: five notches (fundamental credit support) + one notch (cover pool-analysis)

Rating rationale (summary)

Scope Ratings (Scope) has assigned AAA with Stable Outlook to the Norwegian mortgage-covered bonds issued by Landkreditt Boligkreditt AS (LKBol).

LKBol is a wholly owned, specialised credit institution dedicated to providing secured covered bond funding for its parent. Scope's A- issuer rating on LKBol reflects its full ownership by Landkreditt Bank (LKB, A-) and its ability to refinance residential mortgage loans with covered bonds.

The covered bond rating is anchored at the issuer rating, further enhanced by:

- five notches reflecting Scope's analysis of Norway's legal covered bond framework as well as the credit benefits of the resolution regime and systemic importance;
- at least one additional notch uplift reflecting the cover pool's ability to mitigate identified credit and market risks under stressed assumptions.

Outlook

The Stable Outlook on the covered bond rating reflects Scope's expectations that: i) the credit performance of LKB, LKBol and its mortgage borrowers will continue to be stable; ii) the issuer will maintain the prudent risk profile of its covered bond programme; and iii) both the parent and direct issuer remain willing and able to provide sufficient overcollateralisation for supporting the covered bond's very strong credit quality.

Provided the covered bond programme's risk structure does not change materially, the rating uplift supported by the cover pool can withstand up to a two-notch downgrade of the issuer – also supporting the Stable Outlook on the covered bonds.

Ratings & Outlook

Issuer rating	A-
Outlook	Stable
Last rating action	New
Last rating action date	04.04.2018
Covered bond rating	AAA
Outlook	Stable
Rating action	New
Last rating action date	04.04.2018

The issuer has solicited the assigned rating and participated in the rating process.

Lead analyst (covered bond)

Karlo Fuchs
+49 69 6677389-78
k.fuchs@scoperatings.com

Lead analyst (issuer bank)

Pauline Lambert
+44 203 4570 444
p.lambert@scoperatings.com

Scope Ratings GmbH

Lennéstraße 5
10785 Berlin
Tel. +49 30 27891 0
Fax +49 30 27891 100
info@scoperatings.com
www.scoperatings.com

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Rating-change drivers

The covered bond ratings are already at the highest level possible. The ratings could be affected negatively by a downgrade of the issuer by more than two notches, a change to Scope's view on the issuer's resolvability, and a reduction in cover pool support. However, Scope currently deems such outcomes to be unlikely. The fundamental credit support factors also provide a minimum five notch difference between the issuer and the covered bond.

Rating drivers and mitigants (summary)

Positive rating drivers

The issuer. Ownership structure and strategy supporting a low-risk business with reasonable returns; continued focus on high efficiency underpinned by a digital distribution model; and reassuring solvency metrics driven by regulatory requirements

Covered bond legal framework in Norway (+2 notches). Strong framework that provides investor protections before and after the potential insolvency of the covered bond issuer. Meets most requirements of the EU's covered bond harmonisation directive. Further, rating relevant expectations for a supportive covered bond legislation are also met.

Resolution regime assessment (+3 notches). Covered bonds excluded from bail-in; potential for regulator to restructure the issuer, or transfer the bank's critical operations, including LKBol, to a different bank; and active stakeholder support

Cover pool support (+1 notch). Strong cover pool; low loan-to-value (LTV) ratios; adequate asset quality; and adequate overcollateralisation

Positive rating-change drivers

Issuer/group. Track record of profitable growth

Covered bond legal framework. Not applicable as highest rating uplift already achieved

Resolution regime assessment. An increase in LKBol's systemic importance and prominence as a covered bond issuer

Cover pool support. Not applicable as highest rating already fully supported

Negative rating drivers and mitigants

The issuer. Reliance on market funding

Covered bond legal framework. N/A

Resolution regime assessment. The issuer's low prominence and systemic importance as a covered bond issuer, and the potential for the regulator to transfer LKBol to another bank should the parent bank be under resolution

Cover pool support. High asset-liability mismatch risk

Negative rating-change drivers

Issuer/group. A decline in the operating environment which materially impacts profitability; and a business expansion which increases the banking group's risk profile

Legal covered bond framework. No changes expected

Resolution-regime assessment. Not applicable

Cover pool support. Further increased asset-liability mismatch or introduction of interest rate and foreign exchange risks that are not mitigated by overcollateralisation

Leader in agricultural financing with an aim to diversify and establish the business in retail sector

1. The issuer

The ratings on Landkreditt Boligkreditt AS (LKBol) reflect those of its parent bank, Landkreditt Bank (LKB).

LKB is a leader in financial services for agricultural customers in Norway, with a prudent growth strategy in that segment. An additional focus on retail customers reflects its strategy to achieve greater scale and business diversification. LKB aims to establish a customer base balanced equally between agricultural and retail sectors.

LKB has a low-risk profile with minimal credit losses, as most of its loans are secured by residential, agricultural or land properties.

The bank's cooperative ownership further reinforces its low-risk business, as members have a stake in the group's strength. Scope expects the bank's operating environment to remain supportive: Norway, its main market, continues to benefit from solid economic growth, low unemployment and high wealth levels.

As an online bank, LKB is efficient and continues to invest further in digitalisation and improving customer service.

The bank keeps a sufficient liquidity buffer to access domestic unsecured and secured debt markets, as well as rigorously maintaining solvency metrics as per Norwegian regulatory requirements.

Scope regularly monitors the credit quality of LKB and LKBol, the issuer of the rated covered bonds.

Further details on the issuer ratings of LKB and LKBol can be found in the [Landkreditt Bank AS issuer rating report](#).

2. Covered bond structure

Figure 1: Transaction structure

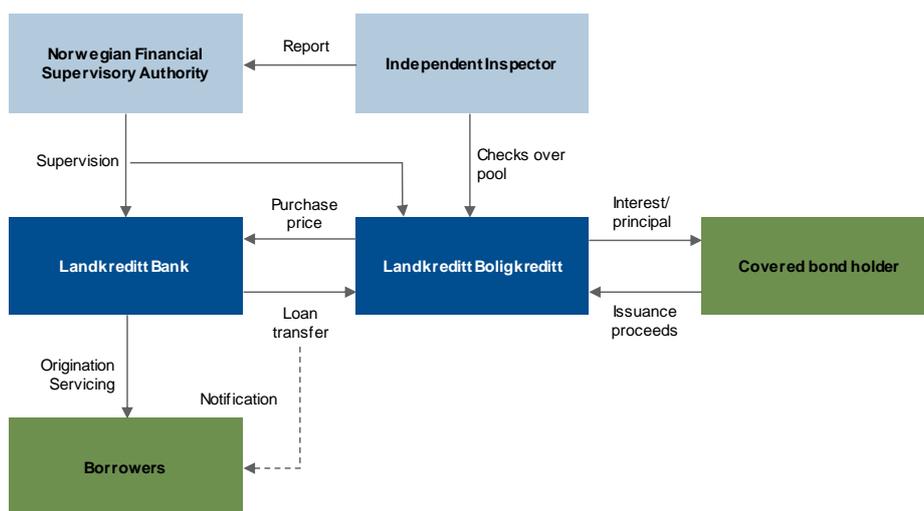


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Under Norway's covered bond framework, issuance is permitted only through specialist covered bond issuers. Like LKBol, most issuers of covered bonds (called Boligkreditt, or specialised residential mortgage institutions) are subsidiaries that rely on loans originated by their respective parent banks. The parent banks generally also provide most of the services for these subsidiaries, allowing the latter to keep staff numbers low.

Like other Norwegian covered bond issuers, LKBol is supervised by both an independent inspector and the Financial Supervisory Authority of Norway (Finanstilsynet).

Covered bond ratings supported by the cover pool

Norwegian covered bond framework supports maximum credit uplift...

...reflecting strong investor protection and alignment with European best practice

A Boligkreditt issues covered bonds whose proceeds are used to purchase mortgage assets from its parent bank, thereby financing the latter's lending business. The scheduled interest and principal proceeds from the cover pool are used to pay covered bond investors.

Upon solvency or liquidity problems for the issuer, a public administrator would take control to ensure timely payment to the covered bond holders.

3. Fundamental credit support

Fundamental credit support factors enhance the covered bond rating by five notches above LKBol's issuer rating. This is based on Scope view of: i) Norway's covered bond legal framework (two notches); and ii) the resolution regime and systemic importance of LKBol's covered bonds (three notches).

Fundamental credit support provides a rating floor for the covered bonds of five notches above the issuer rating. This mitigates the impact from an adverse management of the cover pool.

3.1. Legal framework

Scope views the Norwegian covered bond framework to be one of Europe's strongest, meeting the agency's criteria for protecting investors. Scope therefore assigns the highest credit differentiation of two notches for this area.

Norway is not an EU member; therefore it has no need to comply with the covered bond harmonisation proposed by the European Commission in March 2018. However, once the proposal is approved, Norwegian stakeholders are likely to closely align the country's covered bond framework with the relevant changes to ensure continued alignment and the ability to maintain regulatory benefits for investors.

Norway's legal covered bond framework is based mainly on the relevant sections in the Norwegian Financial Institutions Act and a regulation governing mortgage credit institutions, both introduced in 2007. The framework provides for:

- The use of a specialist, independently licensed mortgage bank to segregate and isolate cover assets from the general insolvency estate of the originating bank (typically the parent).
- A senior claim on eligible cover pool assets for covered bond holders.
- A definition of eligible assets that follows European standards, with a 75% LTV limit for residential mortgages (LKBol's main form of collateral).
- The exclusion of non-performing loans from cover pool tests though the law exempts their removal from the cover pool.
- The Boligkreditt's status as a non-deposit-taking institution, protecting the covered bonds from set-off risk.
- The issuer's obligation to manage market risks actively and apply prudent guidelines to limit the impact of pre-defined market risk stresses on its capital.
- Derivative use to mitigate market risks and the issuer's unlimited ability to buffer risk further through overcollateralisation. Overcollateralisation generally remains available in the event of a parent bank default that does not trigger a cross default for the issuer.
- Ongoing regulatory oversight for Norwegian covered bonds, allowing them to comply with both UCITS and the Capital Requirements Regulation.

The covered bond programme's risks are generally managed as part of the group's liquidity and risk management. Should a regulator intervene in the bank, overcollateralisation above the legal minimum can mitigate these risks.

Minimum regulatory overcollateralisation generally does not allow very high cover pool support to be maintained, however.

3.2. Resolution regime and systemic importance

Three additional notches of uplift for the covered bonds reflect the benefits from the resolution regime and the bonds' systemic importance in Norway. Generally, Scope grants up to four notches for Norwegian covered bonds from resolvable and very visible issuers.

March 2018 BRRD translation confirms 'non-bail-in' for covered bonds

One notch of uplift reflects the almost certain exclusion of Norwegian covered bonds from a bail-in. Norway is in the European Economic Area, and the EU's Bank Recovery and Resolution Directive (2014/58/EU – BRRD) only takes effect in 1 January 2019. We understand that the 23 March 2018 translation of the BRRD into Norwegian law (LOV-2018-03-23-2; section 20-20) will exempt covered bonds and related derivatives from write-downs affecting an issuer's other debt instruments.

LKBol is currently a pure NOK and domestic focussed covered bond issuer

Another notch reflects: i) the moderate to high likelihood that the covered bond issuer will be maintained as a going concern in a resolution scenario; and ii) the covered bonds' high systemic importance in Norway. We note, however, LKBol's sole domestic visibility and its low to moderate systemic importance as a covered bond issuer.

Scope believes that the current capital structure would allow regulators to restructure the LKB group using available resolution tools should the need arise. However, given LKB's core focus on agriculture, regulators may view residential mortgage lending as non-critical for the group. Therefore, in a resolution scenario, that business would likely be subject to an orderly wind-down or transferred to another bank. This may result in the issuer's current structure not being maintained as a going concern.

From Scope's standpoint, LKBol's covered bond activities and market share suggest a low to moderate systemic importance. LKBol only issues in the domestic market, and this is likely to soften negative repercussions on other issuers should it fail. However, the bank's systemic importance also reflects that most of the 25 covered bond issuers in Norway are subsidiaries of small to midsize banks. Therefore, a failure of a covered bond issuer with the size and setup of LKBol could still result in a contagion to other issuers that rely on covered bonds to refinance residential mortgage lending.

Norwegian covered bonds are a systemic important refinancing instrument...

We generally classify Norwegian covered bonds as a systemic refinancing product, particularly for residential mortgages. The combined outstanding volume of covered bonds has averaged more than 25% of GDP since 2011 and was 33.2% at the end of 2016. Annual issuance hovers around EUR 20bn, reaching EUR 23.8bn in 2016. In Norway, 25 specialised covered bond issuers are active, issuing residential, commercial and public sector-backed covered bonds.

-- and rating uplift also reflects the cohesive and supportive stakeholder group

The last notch of uplift in this analytical area reflects Norway's cohesive and supportive stakeholder group. The country's covered bond issuers actively cooperate under the umbrella of the Norwegian Covered Bond Council to promote the product and initiate any changes to the framework, such as the March 2017 increase in minimum overcollateralisation to 2% to avoid potential challenges for cover pool derivatives due to the European Market Infrastructure Regulation. Domestic covered bond investors such as banks and insurers actively use covered bonds not only as a substitute for long-dated, NOK-denominated government debt, but also to manage liquidity. Moreover, Norway's central bank has demonstrated its support for covered bonds by using them in its repo operations and running a covered bond to government debt 'swap programme' during 2008-2014. Norway's financial supervisory authority also has an active interest given the bond's widespread use to refinance residential mortgage lending.

Cover pool provides additional rating uplift to support highest ratings...

...but also provides additional rating stability

4. Cover pool analysis

LKBol's cover pool allows not only one notch of credit differentiation above that benefits from the fundamental support factors but also provides additional rating stability when tested against a scenario in which the issuer is downgraded by one notch.

The cover pool provides overcollateralisation of 13.5% for the outstanding covered bonds. In Scope's view, a level of 11% supports the current one-notch rating uplift and 12% can support the current rating if the issuer is downgraded by one notch.

The overcollateralisation reflects the cover pool's sound credit quality as well as the current and planned issuance structure. Based on discussions with the issuer, Scope expects sufficient overcollateralisation to remain available in the foreseeable future to maintain the maximum cover pool rating uplift of one notch.

Current ratings only need one additional notch from the cover pool analysis to support the highest ratings. The quality of the cover pool also provides rating stability as it could support at least another notch in case we negatively would adjust the issuer rating or our fundamental credit support assessment.

Figure 2: Key cover pool characteristics

Reporting date	31-Dec-17
Total cover pool (NOK bn)	3.58
Covered bonds outstanding (NOK bn)	3.16
Current overcollateralisation (OC, of total cover pool balance)	13.5%
Legal minimum OC	2.0%
Duration/WAM (cover pool - assets)	12.98 / 16.45
Duration/WAM (covered bond- liabilities)	3.57 / 3.72
Duration/WAM mismatch	9.41 / 12.73
OC to cover credit risk at current uplift	3.3%
OC to support current rating/OC to maintain uplift upon one-notch issuer rating downgrade	11% / 12%
Main cover asset type	Residential mortgages
Number of loans	2,561
Average loan size (NOK m)	1.69
Weighted average loan-to-value	47.50%
Top-10 exposures	2.5%
Top-20 exposures	4.4%
Geographic split (top 3)	Akershus (32.1%)
	Oslo (31.4%)
	Buskerud (5.4%)

Source: LKBol and Scope

Purely Norwegian cover pool with low LTV and secured with residential properties

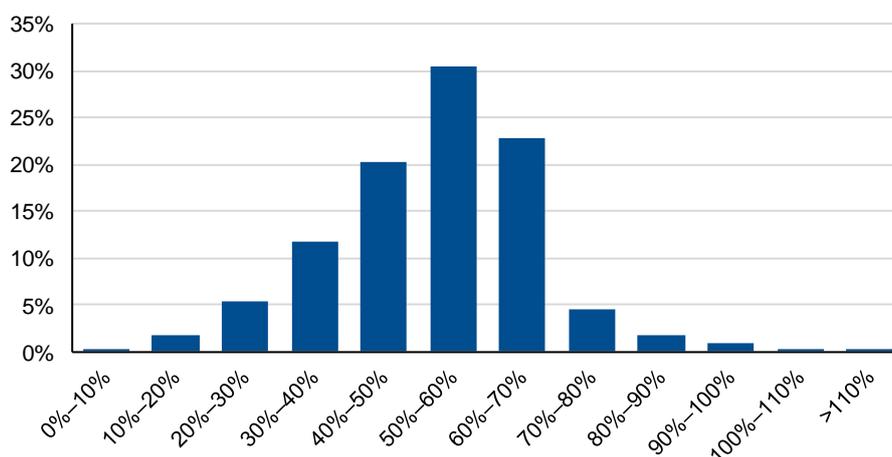
4.1. Cover pool composition

As of 31 December 2017, the cover pool comprises granular mortgage loans granted to 2,492 obligors. 69.2% of the cover pool consists of standard, amortising floating-rate mortgages, with the remainder (30.8%) being mortgage-secured credit lines. The secured lines are revolving credit products backed predominantly by residential properties. These mortgages do not necessarily amortise, are similar to interest-only loans, can increase to a maximum drawable balance, and have an average maturity of 15 years.

LKBol applies prudent underwriting criteria driven by its business strategy as well as regulatory requirements aimed to limit the Norwegian housing market runup. This regulation caps a mortgage at five times the borrower's pre-tax annual income, limits LTV to 85%, and requires a principal repayment of 2.5% for loans with more than a 60% LTV.

The cover pool only contains first-lien mortgage assets with a low weighted average LTV of 47.5%. Figure 3 illustrates mortgages grouped by current LTV. Scope has calculated the LTV on credit lines using the maximum drawable amount as the loan amount.

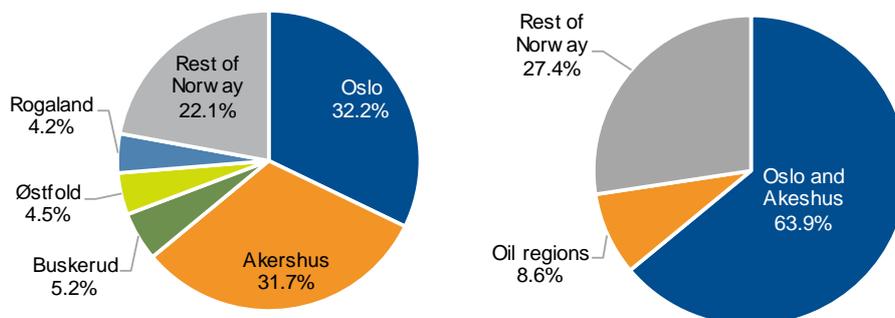
Figure 3: Cover pool by loan-to-value



Source: LKBol and Scope

The cover pool is fully domestic, primarily in the Oslo and Akershus region (63.9%). The southwestern oil regions of Norway (Rogaland, Hordaland and Vest-Agder) make up 8.7%, with the remainder (27.3%) distributed across rest of Norway.

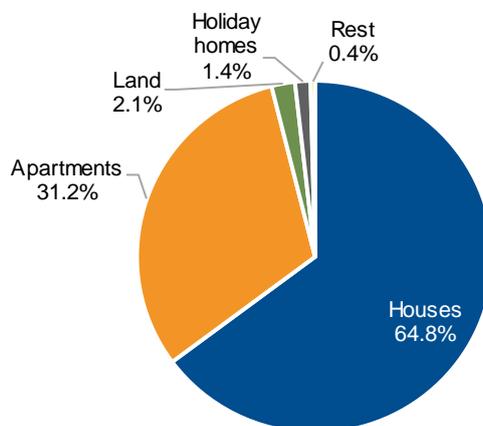
Figure 4: Regional distribution



Source: LKBol and Scope

The majority of LKBol's cover pool is backed by mortgage loans secured by residential properties (97.9%) and land (2.1%).

Figure 5: Collateral by property type



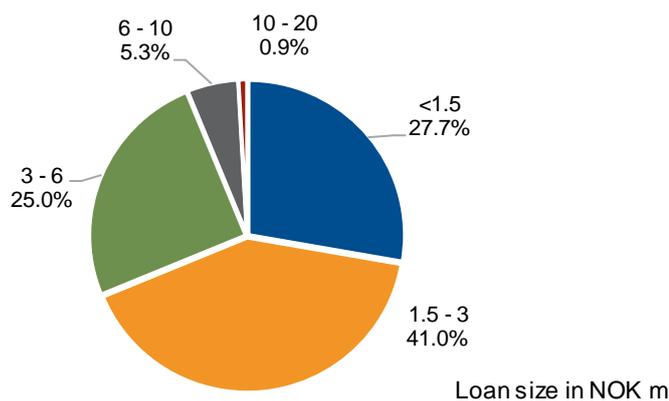
Source: LKBol and Scope

High granularity of the cover pool

Scope assesses the cover pool to be granular, with an average loan size of NOK 1.7m. Only 0.9% consists of large loans ranging between NOK 15m and NOK 100m. Top 10 exposures account for only 2.5%.

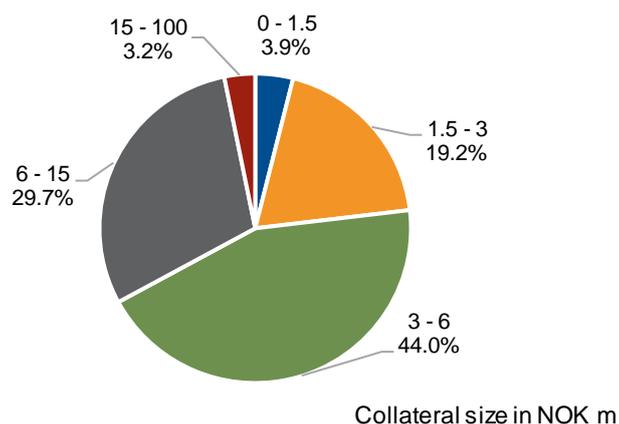
Scope has also analysed collateral sizes to determine whether illiquidity adjustments are needed. The average size of collateral is about NOK 4.2m. Around 4% of the properties are worth more than NOK 15m, for which an additional illiquidity haircut was applied in Scope's recovery estimations. Refer to Appendix 1, 'Quantitative covered bond analysis' for more detail on the illiquidity haircuts.

Figure 6: Share of cover pool by loan size



Source: LKBol and Scope

Figure 7: Collateral size



Source: LKBol and Scope

Low credit risk...

4.2. Credit risk assessment

Scope assesses credit risk in the covered bond programme to be low, given the prudent underwriting of the parent bank and low current weighted average LTV of 47.5% for the loans.

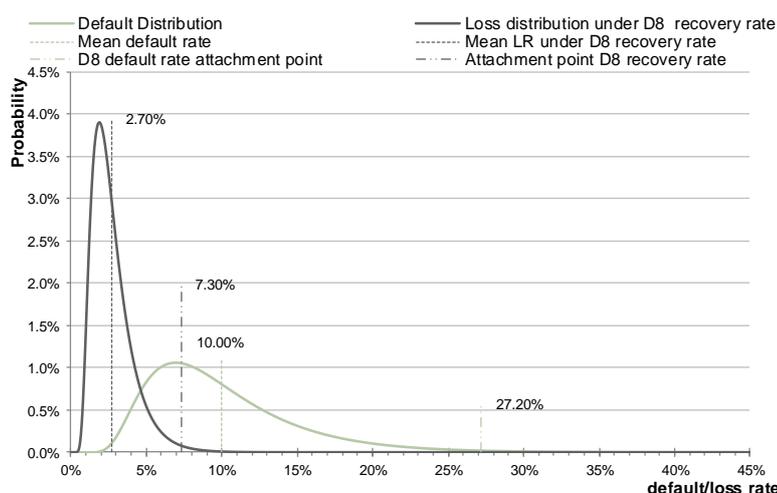
Scope's projections of default in the cover pool use an inverse Gaussian distribution with a mean default rate of 10% and a coefficient of variation of 50%.

The parameters for the default distribution were based on the bank's delinquency history, which Scope has also stressed because the bank has not seen losses for residential mortgages the past seven years. The long-term historical loss ratios for the Norwegian banking sector were also accounted for in the analysis.

Scope estimates a weighted average recovery rate of 98% under a base case scenario (D0) and 73% under the most stressful scenario (D8), enough to support the maximum uplift from the cover pool. This translates into a mean loss rate of 2.7% under the most stressful weighted average recovery rate, compared with a 0.2% mean loss rate under our base case recovery assumptions.

Refer to Appendix 1 'Quantitative covered bond analysis' for Scope's recovery rate analysis.

Figure 8: Default and loss distribution



Source: LKBol and Scope

...but high ALMM risk

4.3. Market risks

Scope views LKBol's market risk as high, mainly owing to asset-liability mismatches.

LKBol currently issues most covered bonds as public placements with relatively short-dated maturities. The weighted average life for the outstanding covered bonds is only about 3.72 years¹. The covered bond maturity structure does not exhibit high concentrations, and the largest issuance size to date is NOK 400m.

The asset-liability mismatch is high in Scope's view, evident from the large weighted average maturity gap (weighted average life) of 12.6 years between legal maturity of the mortgage loans (16.3 years) and outstanding covered bonds (3.7 years). Based on duration, the gap is of 9.3 years.

¹ Scope's cash flow analysis reflects the final legal maturity of the covered bonds, i.e. maturity plus the one-year extension.

Figure 9: Cash flow characteristics

Currency	Total assets	Net present value	WAM (principal)	Duration	Floating assets	Fixed assets
	NOK	NOK	Years	Years	%	%
NOK	3.58	3.94	16.33	12.89	100.00	0.00

Currency	Total liabilities	Net present value	WAM (principal)	Duration	Floating assets	Fixed assets
	NOK	NOK	Years	Years	%	%
NOK	3.16	3.22	3.72	3.57	100.00	0.00

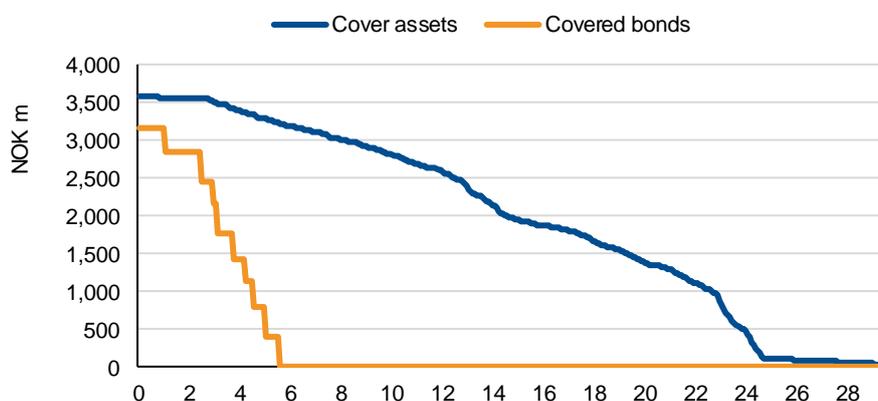
Nominal OC	13.3%
NPV OC	22.4%

WAM gap	12.61
Duration gap	9.32

Source: LKBol and Scope

The assets have a long redemption profile due to their slow amortisation, also reflecting the low weighted average seasoning of 3.5 years.

Figure 10: Redemption profile



Source: LKBol and Scope

Mismatch risk mitigated through soft bullets –but asset sales needed to repay maturing bonds

In a stand-alone and run-down scenario, current overcollateralisation does not provide sufficient scheduled inflows for the bonds' full repayment at the scheduled or legal final maturity date. This implies that the covered bond programme needs to sell assets to ensure the full and timely payment of maturing covered bonds and interest due, exposing it to risks regarding the assets' disposal.

Stressed disposal proceeds were calculated by discounting the cover pool's remaining cash flows with an additional discount factor, a liquidity premium. Scope has assumed a premium of 150 basis points for the Norwegian mortgage cover pool, based on observed, stressed secondary-market covered-bond trading spreads in the country. Scope also benchmarked the liquidity premium assumption against similar 'core' covered bond jurisdictions.

The current outstanding covered bonds and the bank's issuance projections for 2018 were used to determine a rating-supporting overcollateralisation of 11%.

4.3.1. Interest rate risk

Negligible interest rate risk

Interest rate risk is limited because both assets and liabilities are floating rate. The program is exposed to a typical six week basis risk, however.

The covered bonds are short-dated with weighted average spread of 63 basis points, and the slow-amortising assets have a weighted average spread of about 79 basis points, which is higher through the life of the covered bonds.

No FX Risk

4.3.2. Foreign exchange risk

There is no foreign exchange risk as both assets and liabilities are denominated in Norwegian Krone. Foreign currency denominated issuances are currently not envisaged by Scope.

4.3.3. Overcollateralisation

LKBol's covered bond ratings are supported by the cover pool and therefore hinge on the issuer's ability and willingness to provide overcollateralisation above the legal minimum.

Scope's credit view on LKBol allows it to fully consider available overcollateralisation for the analysis. Applying all credit and market risk stresses Scope has established that an overcollateralisation of 11% can mitigate the identified stresses and support the full uplift under its rating methodology.

Low overcollateralisation sensitivity upon issuer downgrade

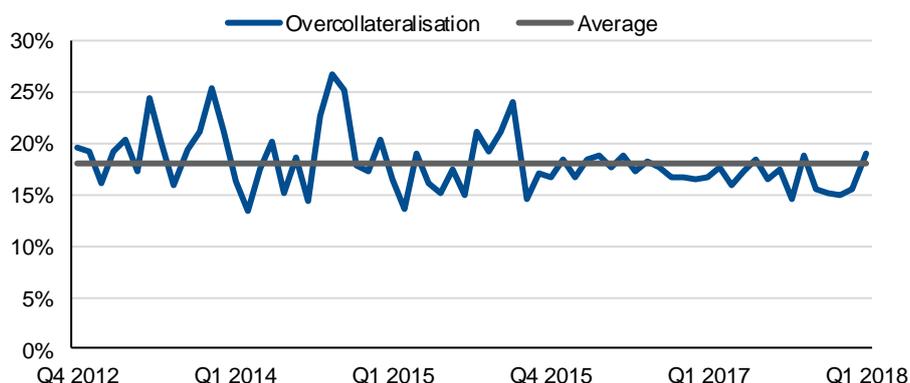
If the issuer rating were to reduce by one notch, the covered bond rating would not be downgraded by one notch, but overcollateralisation would need to increase to 12%, provided the covered bond programme's credit and cash flow profiles remain the same.

Scope is not aware of plans that would significantly change the risk profile or reduce available overcollateralisation to levels that would no longer support the current rating uplift.

Figure 11 below shows past overcollateralisation levels as communicated by LKBol. They are slightly higher than those taken into account in the rating analysis. The 'economic' view below disregards that repurchased covered bonds remain outstanding and are not registered in the cover pool. Therefore, in a potential insolvency the insolvency estate becomes the creditor that is preferred to the cover pool. If the cover pool cannot fully repay covered bond investors, these proceeds will need to be shared between the limited number of LKBol's other unsecured creditors (generally LKB) and the covered bond investors as they are part of the 'second-recourse'.

Repurchasing covered bonds allows the issuer to pre-emptively reduce the impact of liquidity requirements for a scheduled maturity, even though this practice is not contractually committed.

Figure 11: Overcollateralisation levels



Source: LKBol and Scope.

4.4. Counterparty risk

The covered bonds are exposed to LKB's roles as originator, servicer, bank account provider and paying agent. No documented replacement mechanisms shield the covered bonds from the credit deterioration of a counterparty. However, if such a scenario were to occur, Scope believes the strong alignment of interests between the bank and bond

holders would mitigate negative impacts before regulatory intervention in the counterparty.

Scope also views positively that collections are done mostly via direct debit, allowing payments to be redirected swiftly if needed.

In addition, Scope expects that, if the regulator intervenes in Landkreditt Bank, available resolution tools would be used to maintain the issuer. Scope does not expect the active management and servicing of the cover pool to be severely impacted in such a scenario.

5. Rating stability

Scope also checks for rating stability depending on the current overcollateralisation, the issuer's credit migration and planned issuances.

5.1. Changes to the issuer assessment

LKBol's covered bond ratings are resilient against a one-notch issuer downgrade. Currently, the programme only benefits from a one-notch uplift above fundamental support. Under Scope's methodology, upon an issuer downgrade the covered bonds still have the potential for a further two-notch uplift. The rating methodology limits the cover pool-specific uplift to up to three notches (provided overcollateralisation is able to mitigate identified risks).

5.2. Changes to overcollateralisation

A downgrade of the issuer by one notch would not cause a one-notch downgrade of the covered bond rating. However, Scope would increase the minimum rating-supporting overcollateralisation to 12% from 11%.

6. Sovereign risk

Sovereign risks (particularly macroeconomic) do not limit LKBol's mortgage-covered bond ratings. Scope believes the risks of an institutional framework meltdown or legal insecurity problems are currently very remote in Norway (rated AAA, Stable Outlook by Scope²).

7. Data adequacy

Scope considers the loan-by-loan data quality as adequate considering the cover pool's granularity.

The agency's analysts visited Landkreditt bank and interviewed key personnel to understand the banks' origination, monitoring and workout processes. We also discussed key trends relevant for the development of the cash flow profile, including issuance plans.

8. Monitoring

Scope will monitor this transaction using information regularly provided by the issuer. The ratings will be monitored and reviewed at least once a year, or earlier if warranted by events.

9. Applied methodology

To analyse the mortgage-covered bonds, Scope applied the [Covered Bond Rating Methodology](#), published 31 July 2017, and the principles of the [General Structured Finance Rating Methodology](#), dated 28 August 2017, for the asset and cash flow analysis. For establishing Scope's credit view on the issuer, the principles of the [Bank Rating Methodology](#) were also applied. All rating methodologies are available on Scope's website at www.scooperatings.com.

² Sovereign report on Norway can be found [here](#).



I. Quantitative covered bond analysis

Credit risk analysis

LKBol's cover pool is granular enough to apply an inverse Gaussian distribution for assessing the likelihood of defaults in the cover pool. To derive the expected loss Scope used the default distribution coupled with different market scenarios to analyse the cash flows for the covered bonds.

The analysis applies rating-conditional recovery rates as a function of the distance (D0 to D8) between the covered bonds' and the issuer's ratings. D0 is the base case while D8 is the most stressful scenario allowing the highest rating uplift. The stress levels are only divided in eight levels for the covered bonds because fundamental support provides a five-notch uplift and the maximum credit differentiation the cover pool can provide is up to three notches – hence eight stress levels, D0 to D8.

To establish lifetime default rate assumptions, Scope analysed the bank's historical loss and delinquency data as well as the loss ratios for the Norwegian banking system provided by Norges bank. In the absence of more detailed issuer-specific vintage data, Scope compared default rates and the coefficient of variation observed for granular pools of mortgage loans in other jurisdictions like Germany, Austria and Spain.

Scope has used a front-loaded default timing structure. Back-loaded default scenarios are not as severe for the covered bonds because of excess cash build-up and the effect of seasoning on the portfolio. The defaults are defined as 'after 90+ days past due'.

Rating-conditional security-value haircuts

Scope calculates the recovery rate on mortgages by analysing movements in collateral's market value³. The recovery analysis considers the distance to a long-run or sustainable price for the underlying asset, as well as fire-sale discounts, for instance during a property's foreclosure.

Scope's framework for the fundamental recovery analysis involves the following:

1. estimating the asset's current value (typically by indexation);
2. applying a haircut to the asset's current value via a distance-conditional market value decline
3. applying fire-sale discount and haircuts for illiquidity; and
4. deducting costs from the estimated gross recovery proceeds.

The recovery rates considered in the analysis reflect the outstanding notional of the loan as of closing. These recovery value assumptions are thus conservative for underlying assets such as real estate, which benefit from value preservation as loan deleveraging reduces the loan-to-value ratio and increases the expected recovery rate over time.

Scope relied on fundamental recovery analysis because the security represents first-lien claims on the underlying real estate properties. We believe that the security cannot be challenged from a legal standpoint, as follows from our analysis of the legal framework.

Norwegian total security value haircuts

Scope analysed the current situation of the Norwegian property market to derive total security value haircut assumptions specific to three major regions; i) Oslo and Akershus; ii) oil regions (Rogaland, Hordaland, Vest-Agder); and iii) the rest of Norway.

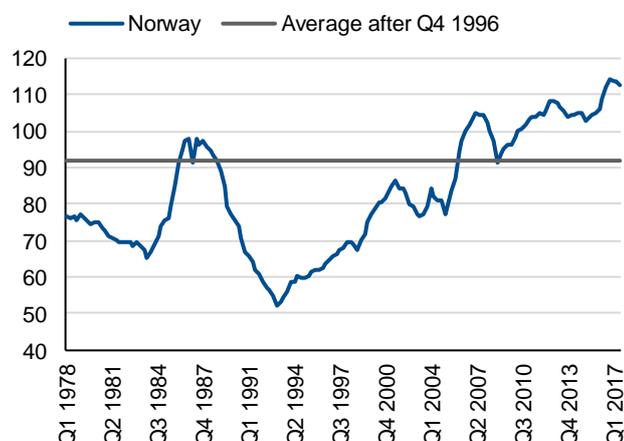
Scope analysed the house price indices provided by Statistics Norway to derive the market value declines. Using the nominal house price index, indices were reduced with region-specific sustainable deflation factors. Using this we measure current over/under valuation from the sustainable average in the different regions.

At the D8 stress level Scope tends to capture long observed volatility levels in addition to current over/under valuations, but due to the short time-series, only regional differentiations could be captured. Hence Scope has also analysed the affordability index provided by the OECD from Q1 1978 to Q3 2017, along with house price indices to capture the long-term observed volatility.

Scope has derived D8 level observed volatility stress from the OECD's house price affordability index for Norway. We have assumed a volatility of 45% for the scenario that allows the highest credit differentiation, based on the average affordability index value minus two standard deviations.

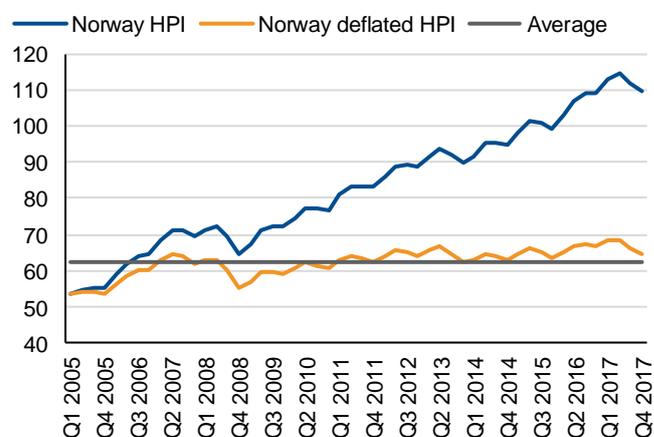
³ Scope has applied the covered bond analysis framework but also took recourse to the General structured finance methodology to establish the market value haircuts and the rating conditional recovery assumptions.

Figure 12: Affordability index



Source: OECD and Scope.

Figure 13: House price index (HPI) – Norway



Source: Statistics Norway and Scope

This gives us market value declines for D8 and D0 levels as follows

$$\text{Market value decline (D8)} = 1 - (1 - \text{D8 volatility adjustments}) * (\text{Regional over/under valuation})$$

$$\text{Market value decline (D0)} = \text{Regional over/under valuation}$$

The next step in our analytical approach is to derive fire-sale discount assumptions. Fire-sale discounts reflect our view that the properties are expected to be sold under non-standard market or distressed conditions due to several factors, such as asset deterioration or insufficient competition in the auction process. We have assumed a fire-sale discount of 20% for Norway.

Total security value haircut assumptions are derived based on the following equation:

$$\text{Total security value haircut} = 1 - (1 - \text{Market value decline}) * (1 - \text{Fire-sale discount})$$

Scope derives intermediate rating stresses through linear interpolation between the D0 and the D8 scenarios.

Figure 14: Total security value haircuts

	D8	D7	D6	D5	D4	D3	D2	D1	D0
Oslo and Akerhus	60.0%	55.6%	51.3%	46.9%	42.5%	38.1%	33.8%	29.4%	25.0%
Oil regions	52.5%	48.4%	44.4%	40.3%	36.3%	32.2%	28.1%	24.1%	20.0%
Rest of Norway	57.5%	53.4%	49.4%	45.3%	41.3%	37.2%	33.1%	29.1%	25.0%

Source: Scope.

In addition to the total security value haircut, Scope has also applied illiquidity adjustments for large properties. Generally, the market for larger properties is less fungible than 'standard' properties. To allow for a swift realisation, a freehand sale might therefore only be possible if additional price-concessions are made.

Scope applies for the most stress full scenario an additional stress of 5% for properties above NOK 5m, 13% for properties above NOK 10m and 20% for properties above NOK 20m. Under D0 or base case no stresses were applied. We have linearly interpolated the stress levels between D0 and D8.

Figure 15: Illiquidity adjustments

NOK millions	D8	D7	D6	D5	D4	D3	D2	D1	D0
< 5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 - 10	5.0%	4.4%	3.8%	3.1%	2.5%	1.9%	1.3%	0.6%	0.0%
10 - 20	13.0%	11.4%	9.8%	8.1%	6.5%	4.9%	3.3%	1.6%	0.0%
>20	20.0%	17.5%	15.0%	12.5%	10.0%	7.5%	5.0%	2.5%	0.0%

Source: Scope.



Landkreditt Boligkreditt AS

Norwegian Mortgage-Covered Bonds

II. Summary of covered bond characteristics

Reporting date	31-Dec-17
Issuer name	Landkreditt Boligkreditt AS
Country	Norway
Covered bond name	Obligasjoner med fortrinnsrett (OMF) Norwegian mortgage covered bonds
Covered bond legal framework	Norwegian legal covered bond framework
Cover pool type	Residential mortgages
Issuer rating	A- / Stable
Covered bond rating	AAA / Stable
Covered bond maturity type	Soft bullets (one-year extension)
Cover pool currency	NOK (100%)
Covered bonds currency	NOK (100%)
Fundamental cover pool support (notches)	5
Max. achievable covered bond uplift (notches)	8
Potential covered bond rating buffer	1
Cover pool assets [NOK bn]	3.58
Covered bonds [NOK bn]	3.2
Substitute assets [NOK bn]	0
Current overcollateralisation/ legal minimum OC	13.5%
OC to support current uplift	11.0%
OC to support rating upon a one-notch issuer downgrade	12.0%
Weighted average seasoning (years)	3.5
Duration / WA maturity of assets	12.98 / 16.45
Duration / WA maturity of liabilities	3.57 / 3.72
Duration gap / WA maturity gap	9.41 / 12.73
Number of loan exposures	2,561
Average loan size [NOK mn]	1.69
Top-10 exposures	2.5%
Top-20 exposures	4.4%
Interest rate type - cover pool	100% (floating)
Interest rate type - covered bonds	100% (floating)
Weighted average loan-to-value	47.50%
Geographic split (top 3)	Akershus (32.1%)
	Oslo (31.4%)
	Buskerud (5.4%)
Default measure	Inverse Gaussian
Weighted average default rate	10.0%
Coefficient of variation	50.0%
Weighted average recovery assumption (D0/D8) ¹	98% / 73%
Current share of loans > six month in arrears	0.0%
Interest rate stresses (min./max.; currency-dependent)	-1% to 10%
Foreign exchange stresses (min./max.; currency-dependent)	N/A
D8 ¹ liquidity premium	150bps
Servicing fee (mortgage)	20bps

¹ D0 and D8 denote the stresses commensurate with the rating distance between the issuer rating and the covered bond ratings



Landkreditt Boligkreditt AS

Norwegian Mortgage-Covered Bonds

Scope Ratings GmbH

Headquarters Berlin

Lennéstraße 5
D-10785 Berlin

Phone +49 30 27891 0

London

Suite 301
2 Angel Square
London EC1V 1NY

Phone +44 203-457 0 4444

Oslo

Haakon VII's gate 6
N-0161 Oslo

Phone +47 21 62 31 42

Frankfurt am Main

Neue Mainzer Straße 66-68
D-60311 Frankfurt am Main

Phone +49 69 66 77 389-0

Madrid

Paseo de la Castellana 95
Edificio Torre Europa
E-28046 Madrid

Phone +34 914 186 973

Paris

33 rue La Fayette
F-75009 Paris

Phone +33 1 82885557

Milan

Via Paleocapa 7
IT-20121 Milan

Phone +39 02 30315 814

info@scoperatings.com

www.scoperatings.com

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Scope Ratings GmbH, Lennéstrasse 5, 10785 Berlin, District Court for Berlin (Charlottenburg) HRB 192993 B, Managing Director: Torsten Hinrichs.