

Totens Sparebank Boligkreditt

Norwegian Mortgage Covered Bonds



Ratings

Cut-off date	Cover pool	Cover asset type	Covered bonds*	Rating/Outlook
30 Sept 2018	NOK 2,078m	Residential mortgage loans	NOK 1,705m	AAA/Stable

* Obligasjoner med fortrinnsrett (OMF) – Norwegian 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 our covered bond [rating definitions](#).

Rating rationale (summary)

The AAA rating with Stable Outlook assigned to the Norwegian mortgage covered bonds (obligasjoner med fortrinnsrett, OMF) issued out of Totens Sparebank Boligkreditt (TSBB) reflect the A- issuer rating of the bank further enhanced by factors specific to the covered bonds:

1. fundamental credit support factors providing five notches of uplift above the bank's rating. The fundamental uplift determines the programme's rating floor at AA+, disregarding any uplift from the cover pool; and
2. cover pool support enabling the programme to be rated AAA taking into account another one-notch uplift reflecting the credit strength of the covered bond programme.

	D8	(Unused)	Cover pool support +8
	D7	(Unused)	Cover pool support +7
	D6	AAA	Cover pool support +6
Resolution regime +3	D5	AA+	Cover pool support +5
Resolution regime +2	D4	AA	Cover pool support +4
Resolution regime +1	D3	AA-	Cover pool support +3
Legal framework +2	D2	A+	Cover pool support +2
Legal framework +1	D1	A	Cover pool support +1
Issuer rating	D0	A-	Issuer rating

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Fundamental credit support	Distance	Ratings	Cover pool analysis
	Covered bond uplift		

TSBB is a wholly owned, specialised credit institution dedicated to providing secured covered bond funding for its parent, Totens Sparebank (TSB). Our A- issuer rating on TSBB reflects its full ownership by TSB (A-) and its ability to refinance residential mortgage loans using covered bonds.

Outlook

The Stable Outlook on the covered bond rating reflects our expectations that: i) the credit performance of TSB, TSBB 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	n/a
Covered bond rating	AAA
Outlook	Stable
Rating action	New
Last rating action date	n/a

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Rating-change drivers

Covered bond ratings may be downgraded if: i) the issuer is downgraded by more than two notches; or ii) the legal framework and resolution regime becomes materially less supportive to Norwegian mortgage covered bonds.

Rating drivers and mitigants (summary)

Positive rating drivers

The issuer. Savings bank with a strong market position in an economically sound local area of south-east Norway with healthy profitability supported by good cost efficiency and low credit costs.

Covered bond legal framework in Norway (+2 notches). Norway's mortgage bank act provides a very strong framework, ensuring the covered bond structure can fully support and enforce recourse to the cover pool.

Resolution regime assessment (up to +3 notches). Norwegian covered bonds are excluded from bail-in; TSB is deemed resolvable; and a cohesive stakeholder group supports the market's ongoing development.

Cover pool support (up to +3 notches). Asset quality is sound, supported by the stable performance of Norwegian residential mortgage loans; and available overcollateralisation is robust.

Positive rating-change drivers

Issuer/group. Managed and sustained profitable growth accompanied by continued sound liquidity and solvency metrics.

Covered bond legal framework. An upgrade is not possible as the highest uplift is already achieved.

Resolution regime assessment. A strengthening of the bank regarding its relative importance in its sector and prominence as a covered bond issuer could be positive for the rating.

Cover pool support. As the full potential cover pool uplift is not utilised, it is providing rating stability upon an issuer downgrade

Negative rating drivers and mitigants

The issuer. The bank operates in one region of Norway and its performance is dependent on economic conditions in the local area as well as in the country more generally.

Covered bond legal framework. Principle based mitigants to markets risk less defined in an international context.

Resolution regime assessment. A transfer or orderly wind down of the programme is more likely than its continuation given the size and low contagion risk should the bank cease operations. Limited visibility as a covered bonds issuer.

Cover pool support. Asset-liability mismatch risk is high.

Negative rating-change drivers

Issuer/group. A deterioration in TSB operating environment which materially impacts profitability. Profitability could also be negatively impacted from a loss of services and economies of scale that the bank enjoys from being a member of the Eika Alliance.

Legal covered bond framework. No deterioration is expected; and EU harmonisation is not expected to negatively impact the existing legal framework if translated into national law.

Resolution-regime assessment. No deterioration is expected.

Cover pool support. A further increase in asset-liability mismatch or the introduction of interest rate and foreign exchange risks that are not mitigated by overcollateralisation could result in a downgrade.

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1. The issuer

The ratings of Totens Sparebank Boligkreditt (TSBB) reflect those of its parent bank, Totens Sparebank (TSB).

Established in 1854, TSB is a savings bank with a strong market position in its local area in south-east Norway. Macroeconomic conditions in Norway are supportive, with the country recovering from the impact of lower oil prices in 2015. The bank operates primarily in the Mjos region, an area where agriculture, manufacturing and the public sector are important industries. Over 70% of the bank's loan portfolio is comprised of residential mortgages.

With deep local roots and its membership in the Eika Alliance, TSB competes successfully against larger players despite its smaller size. Through the alliance, the bank can provide a full range of products and services and benefits from economies of scale. Further, management is mindful of the need to further develop its digital capabilities to meet evolving customer expectations.

TSB generates healthy profits, supported by good cost efficiency and low credit costs.

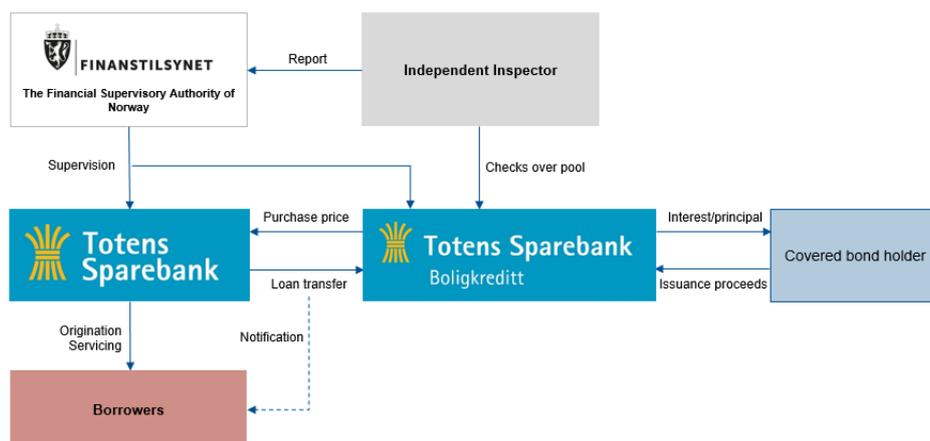
As with other Norwegian banks (and other Nordic banks in general), TSB relies to a non-negligible extent on market funding. The bank, however, has demonstrated its ability to regularly issue in the domestic market and makes use of covered bonds which remain a very stable source of funding.

Driven by the desire to remain an important pillar of the local community, management aims to ensure the long-term health and solidity of the bank. This is underpinned by the bank's governance structure, with employees, customers and local government representatives having material influence.

For further details on our bank credit analysis see the full bank rating report available on www.scooperatings.com.

2. Covered bond structure

Figure 1: On-balance sheet issuance structure



Source: TSBB and Scope

The Norwegian legal covered bond framework is mainly based on the relevant section on covered bonds in the Financial Institutions Act and a related regulation on mortgage credit institutions, both introduced in 2007. Under this framework, issuance is permitted only through specialist covered bond issuers. Like TSBB, 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.

A Boligkreditt issues covered bonds whose proceeds are used to purchase mortgage assets from its parent bank, thereby financing the latter's lending business. TSB pays for the bonds' financing costs and TSBB's operational expenses.

The Boligkreditt's status as a non-deposit-taking institution protects the covered bonds from set-off risk.

3. Fundamental credit support

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

We view the Norwegian covered bond framework to be one of Europe's strongest, meeting our criteria for protecting investors. Therefore, we assign the highest credit differentiation of two notches for this area.

Norway is not a member of the EU but participates in the EU's internal market under the European Economic Area Agreement. According to this agreement Norway is obliged to implement all EU directives and regulations that relate to financial institutions and markets, such as the CRR/CRD IV, MiFID, Prospectus Directive, Solvency II, among others. This gives financial institutions in Norway the same rights and obligations as those in the EU.

Accordingly, the covered bond harmonisation principles proposed by the European Commission in March 2018 will be transposed into national law once approved by the European Parliament. None of those proposals would be credit-negative for the Norwegian covered bonds, nor are the changes to the current framework expected to be material.

Segregation of cover pool upon insolvency

The act gives bondholders a preferential claim over the cover pool if the issuer is placed under public administration. Norway's term for covered bonds, obligasjoner med fortrinnsrett, or "OMF" is protected by law. While the assets in the pool remain with the estate in case the issuer is placed under public administration, bondholders and derivative counterparties have an exclusive, equal, proportionate and preferential claim over the cover pool, and the administrator is obliged to ensure timely payment provided the pool gives full cover to the respective claims.

Ability to continue payments after issuer insolvency

Under the act, covered bond issuers cannot be declared bankrupt, but must be placed under public administration if facing solvency or liquidity problems. This gives authorities more flexibility to deal with covered bond companies while maintaining the rights of covered bond holders. The liquidator ensures that the cover pool is properly managed and that covered bond holders and derivative counterparties receive agreed and timely payments. Public administration or insolvency does not in itself give covered bond

Norwegian covered bond framework supports maximum credit uplift...

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

holders and derivative counterparties the right to accelerate their claims. If contractual payments cannot be made when claims fall due, and an imminent change is unlikely, the liquidator halts payments.

Programme enhancements remain available

OMF have a mandatory minimum overcollateralisation requirement of 2% (nominal). All voluntary overcollateralisation is part of the cover pool.

Key eligibility criteria

The definition of eligible assets follows European standards. There is a maximum loan-to-value ratio of 75% for the main collateral type (residential mortgages) and 60% for commercial, holiday and leisure properties. The share of commercial or residential mortgage loans is not restricted. Further, the act permits the inclusion of substitute assets (maximum 20% of the cover pool). Generally, cover assets can be domiciled in the European Economic Area or certain OECD countries. The regulation adds rating requirements for the national government of the country where the mortgaged property or borrower is located.

By law, non-performing loans remain in the cover pool. However, the act specifies that non-performing loans are only partly accounted for in cover pool tests, with the share dependent on the loan-to-value of the respective collateral. This requirement would still apply upon the borrower's non-performance as covered bond investors remain entitled to foreclosure proceeds.

Liquidity and other risk management guidelines

The covered bond programme's risks are generally managed as part of the group's liquidity and risk management. Available reserves are not required to buffer upcoming redemptions. However, given the covered bonds are issued as soft bullet with a one-year extension, the final legal maturity provides an additional buffer to facilitate redemption at the due date.

The issuer must adopt strict internal regulations to actively manage market risks and apply prudent guidelines. This is aimed at limiting the impact of pre-defined market risk stresses on capital. Derivatives can be used for this purpose.

Overcollateralisation generally remains available in the event of a parent bank default that does not trigger a cross default for the issuer.

Covered bond oversight

TSBB is supervised by both an independent inspector and the Financial Supervisory Authority of Norway (Finanstilsynet). Upon solvency or liquidity problems for the issuer, a public administrator would ensure timely payment to the covered bond holders. There is also ongoing regulatory oversight for Norwegian covered bonds which complies with UCITS and the CRR.

Other legal framework considerations

We do not expect a credit-negative impact from the upcoming European covered bond harmonisation as Norwegian legislation already covers the rating-relevant aspects.

3.2. Resolution regime and systemic importance

TSBB's covered bonds benefit from an additional three-notch uplift that reflecting its benefits from a bail-in exemption and support by a strong stakeholder community. We reflect the combination of: i) a moderate to high likelihood that the covered bond issuer will be maintained in a resolution scenario; and ii) the high systemic importance of

Soft bullet with one-year extension protects against maturity mismatches

covered bonds in Norway. We however recognise a low visibility and importance of TSBB as a covered bond issuer and believe that, in general, Norwegian covered bonds of resolvable and very visible issuers could benefit from four additional notches of support.

Exclusion from bail-in

Norwegian covered bonds will benefit from a bail-in exemption. 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) exempts covered bonds and related derivatives from write-downs affecting an issuer's other debt instruments.

We believe that the current sound capital structure will allow regulators to restructure the group using available resolution tools. However, given the high number of retail banks even in the more rural areas such as the Mjoes region TSB is active in, retail banking could possibly appear as a non-critical business which either would be subject to an orderly wind-down or transferred to another bank in a resolution scenario. As a result, the current covered bond issuer structure might not be maintained as a going concern.

Systemic relevance of covered bonds in Norway

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 stood at 32% at the end of 2017. Annual issuance hovers at around EUR 20bn, reaching EUR 21.7bn in 2017. In Norway, 25 institutions currently issue covered bonds, with collateral including residential, commercial and public-sector assets.

Globally, Norway was the sixth largest issuer in 2017 and the seventh largest by total outstanding size. This is remarkable given the market has only existed for 10 years.

Relevance of covered bond funding for Totens Sparebank

From our standpoint, TSBB's covered bond issuing activities and market share only results in a low to moderate systemic importance. TSB has only recently started to become more active in using TSBB to refinance residential mortgage loans. The bank is only issuing into the domestic market which likely reduces negative repercussions on other issuers in the event of a failure. The low to moderate systemic importance also reflects that most of the 25 covered bond issuers are similarly subsidiaries of small to midsize banks. A failure of a covered bond issuer with the size and setup of TSBB could thus result in contagion, effectively creating systemic problems for issuers reliant on this refinancing channel for their core product, residential mortgage lending.

Proactive stakeholder community

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. An example is the March 2017 increase in minimum overcollateralisation to 2%, aimed at avoiding potential challenges for cover pool derivatives arising from the European Market Infrastructure Regulation. Norway's covered bond investors, which include 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'

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

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

... while TSBB's systemic importance is low to moderate...

... a cohesive and supportive stakeholder group supports the product

Cover pool provides additional rating uplift to protect the highest achievable rating...

...but also provides additional rating stability

Granular residential mortgage cover pool...

during 2008-14. Norway's financial supervisory authority also has an active interest given the bonds' widespread use to refinance residential mortgage lending.

4. Cover pool analysis

TSBB's cover pool provides at least one notch of credit uplift from fundamental support factors as well as additional rating stability when tested against a scenario in which the issuer is downgraded.

As of 30 Sept. 2018 the cover pool provides overcollateralisation of 21.9% for the outstanding covered bonds. In our view, 8% can support the current one-notch cover pool uplift and 9% 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, we expect sufficient overcollateralisation to remain available in the foreseeable future to maintain the maximum cover pool rating uplift.

Figure 2: Key cover pool characteristics

Reporting date	30.09.2018
Total cover pool (NOK m)	2,078
Covered bonds outstanding (NOK m)	1,705
Current overcollateralisation	21.9%
Minimum regulatory overcollateralisation	2%
Duration/ WAM (cover pool) (years)	7.8/ 11.6
Duration/ WAM (covered bonds) (years)*	1.9/ 2.6
Duration/ WAM mismatch (years)	5.8/ 9.0
Overcollateralisation to support current rating	8.0%
Overcollateralisation to support current rating upon a one-notch issuer downgrade	9.0%
Main cover pool asset type	Residential mortgages loans
Number of obligors	1,384
Average loan size (NOK '000s)	1,389
Average loan-to-value	53.1%
Top-10 exposure share	3.9%
Top-20 exposure share	6.4%

*including the 12-month extension

Source: TSBB and Scope

4.1. Cover pool composition

The cover pool is predominantly secured by Norwegian residential mortgage loans denominated in Norwegian krone. The cover pool also comprises substitute assets which can be split between cash of NOK 101m and highly rated bonds NOK 110m.

As of September 2018, the mortgage loans were granted to 1,384 obligors. We consider the cover pool to be granular due to the average loan size of NOK 1,389,608 (around EUR 146,600). The largest obligor accounts for 0.6% with a total balance of NOK 12.3m. Together, 83% of the obligors have loan amounts below NOK 3m while 78% of the collateral ranges between NOK 1.5m-6m. The average market value of collateral per obligor is NOK 3.1m, more than twice the average loan balance per obligor.

Figure 3: Share of cover pool by obligor (NOK m)

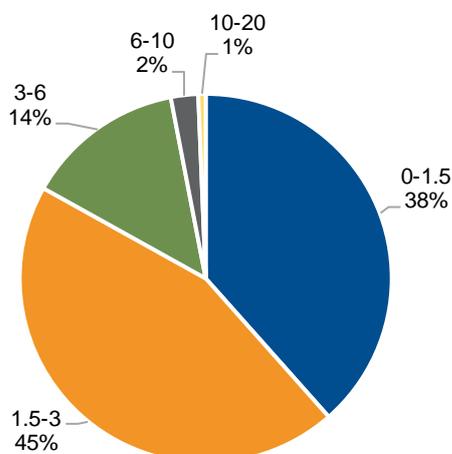
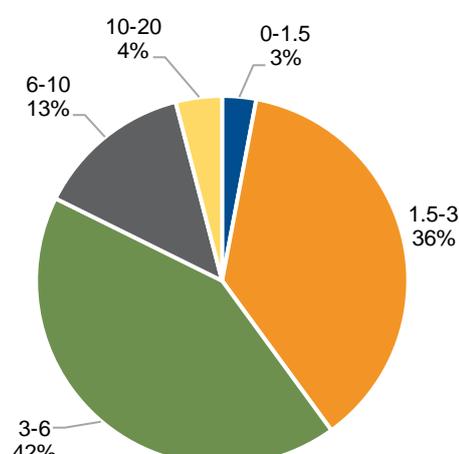


Figure 4: Collateral size (by obligor in NOK m)



Source: TSBB and Scope

Most of the loans are standard amortising loans, and around 9% are granted with an initial interest-only period. Since the introduction of new macroprudential measures in 2018 (see Table 1), such interest-only periods can only be granted for loans with a loan-to-value of up to 60%, as exceeding this would require a minimum 2.5% amortisation p.a.. The bank's guidelines limit interest-only periods to 10 years, but in practice it only grants up to three years. During the loan's term only the bank's approval can suspend principle repayments. Loans cannot be redrawn once amortised.

...characterised by regulations limiting risky credit growth and leverage

In addition to the limits on interest-only periods the Norwegian regulators have introduced further macroprudential measures to prevent credit risk from increasing the leverage of mortgage loans and to buffer against a decline in house prices. This has already had an impact on the cover pool's composition.

Table 1 – Macroprudential measures in Norway

Effective since	Measure	Authority
Dec- 2011	Amortisation requirement for residential mortgage loans exceeding a loan-to-value of 70%	Finanstilsynet
	Affordability test assuming 5 pp increase in interest rates at origination	Finanstilsynet
Jan-2014	CRR implementation effectively leading to higher loss given default for residential real estate and higher risk weights for commercial real estate	Finansdepartement et; Finanstilsynet
Jan-2015	CRR and CRD implementation effectively tightening requirements for residential mortgage lending models; liquidity coverage ratio of at least 100%	Finansdepartement et; Finanstilsynet
Jul- 2018	Amortisation requirement of at least 2.5% p.a. or equivalent to 30-year term for residential mortgage loans exceeding a loan-to-value of 60%	Norges Bank
	Affordability test assuming 5 pp increase in interest rate while exception for 10% (8% in Oslo) of mortgage volume which fails the test	Norges Bank
	Total debt may not exceed five times gross annual income – same exception as affordability test	Norges Bank
	Loan-to-value capped at 85% for residential mortgage loans, and 60% for secondary homes in Oslo – same exception as affordability test	Norges Bank

Source: European Systemic Risk Board (ESRB); national measures of macroprudential interest in the EU/EEA

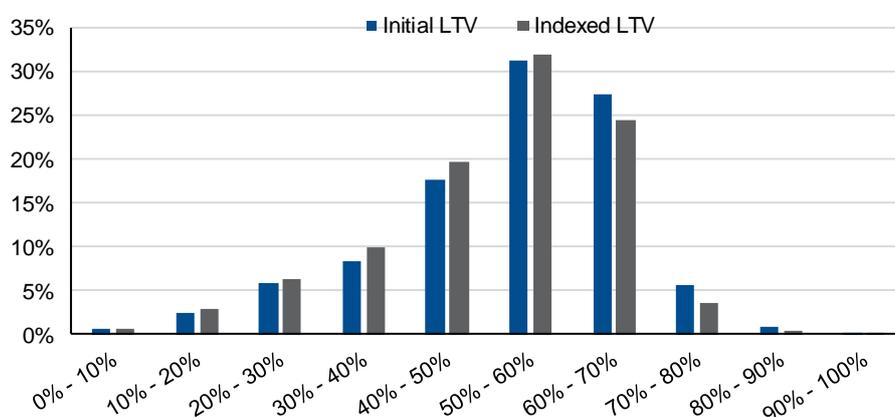
10% of collateral with senior claim to covered bonds issued by Eika Boligkreditt ...

...while LTV remains low at 51.3% (indexed)

As of September 2018 the average loan-to-value of the cover pool was 53.1%. About 10% thereof comprises collateral with senior claims pledged to Eika Boligkreditt, the secured funding platform used by TSB in tandem to its own. Eika Boligkreditt is a joint funding vehicle which pools members' mortgage loans and refinances them with covered bonds. We believe the pool's share of prior liens will decline because TSB is likely to decrease its use of Eika's mortgage covered bonds.

The low indexed loan-to-value of the cover pool is 51.3%, reflecting rising property prices in Norway since origination. Properties are generally valued (initial and monitoring) using an automated valuation system, "Eiendomsverdi", which is used throughout Norway and by most banks. The result is compared against the purchase price and assessed during the underwriting process. In individual cases the bank may request independent and full appraisals, including an inside inspection.

Figure 5: Cover pool by loan-to-value



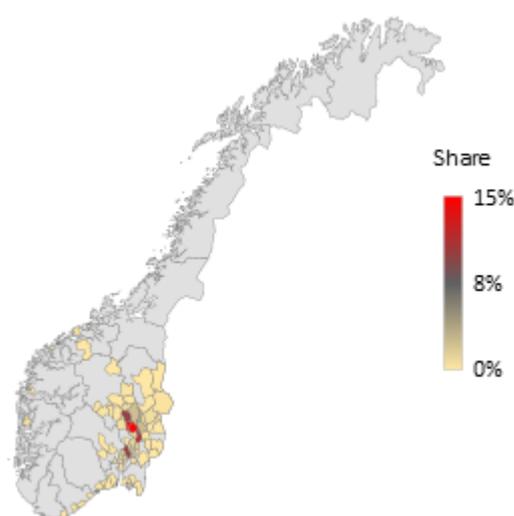
Source: TSBB and Scope

Figure 6: Regional distribution map

The bank operates primarily in the Mjos region, an area where agriculture, manufacturing and the public sector are important industries. This refers to the southeastern Norwegian regions of Oppland (47%), Akershus (26%), Hedmark (12%) and Oslo (11%).

Activities outside the core regions are driven by local customers. These are exceptions and only granted to borrowers with above-average credit quality.

The exposure towards the bank's home region of Toten is highest in Østre Toten and Vestre Toten, which together account for 30% of the total.



Regional focus on southeastern Norway – north of Oslo

Østre Toten (~15,000 population) is a Norwegian municipality in Oppland County, part of the traditional region of Toten. The municipality's administrative centre is the village of

Lena – where TSBB is based. Østre Toten is one of the Oppland's most productive farming municipalities and among Norway's largest producers of potatoes and onions. Vestre Toten (~13,000 population) is also a municipality in Oppland, with the village of Raufoss as its administrative centre. The largest sectors and sources of employment in Toten are farming, industry and the public sector.

Figure 7: Regional distribution by county

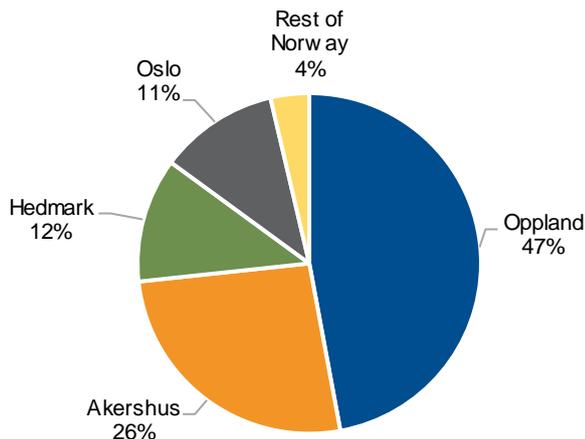
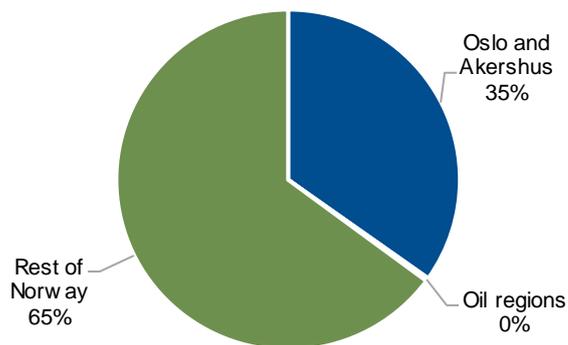


Figure 8: Regional distribution by risk type



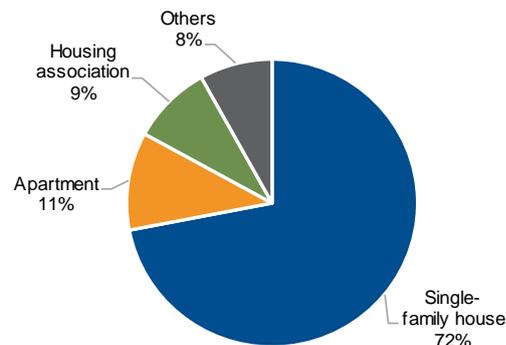
Source: TSBB and Scope

72% of cover pool composed of single-family houses – predominantly owner-occupied

Most of TSBB's cover pool is backed by mortgage loans secured by single-family houses (72%).

Figure 9: Property type

11% of property types in the pool are apartments and 9% are housing associations, of which 1 pp consists of shares to co-operatives that own the property themselves. The co-operative members buy shares, usually at full market value, which provides the right to occupy a specific home. The mortgage is registered via a notification to the housing co-operative.



Source: TSBB and Scope

The housing co-operative has to confirm the bank of this notification, also recording it in its registry of shareowners. Most of the exposure to housing associations is registered in exactly the same way as real estate property, as shares do not act as collateral but as mortgage rights.

The remaining 8% is composed of holiday homes (4%), agricultural property (3%), leasehold (0.8%) and land (0.2%).

TSBB did not provide the occupancy status of the collateral, but confirmed that buy-to-let properties cannot exceed 5% of the cover pool.

Currently no NPLs as typically transferred back to the parent

As of September 2018, 1.1% of the mortgage cover loans were in arrears for up to 30 days. Arrears do not exceed 30 days as loans that do not meet the bank's criteria (e.g. no arrears or non-performing loans) are mostly repurchased by TSB.

4.2. Credit risk assessment

Low credit risk...

We assess the credit risk of TSBB's residential mortgage loans to be low. The bank's record of benign losses and delinquencies supports this – even throughout the dot-com, subprime and European financial crises. Only once in the last 30 years did the Norwegian banking system suffer strong losses – in 1988 due to both sector deregulation and the banking crisis. Until 1994 losses reached 4%, driven mainly by the corporate and shipping sectors. During this time TSB's losses did not exceed 1.5%. Also, TSBB's low current average loan-to-value supports high recoveries even in a stressed scenario, further reducing credit risk.

Our projections of mortgage loan default use an inverse Gaussian distribution. Based on credit performance data provided by the bank (historical delinquencies and loan-level probabilities of default) and benchmarking, we have derived an effective, weighted average lifetime mean default rate of 9.5% and a volatility of default (weighted average coefficient of variation) of 50%.

...with mean loss at 3.2% in a stressed scenario...

For the mortgage loans we estimate a weighted average recovery rate of 99% under a base case scenario (D0) and 66.5% under the most stressful scenario (D8). The base case rate is supported by the portfolio's low average loan-to-value; the stressed rate is driven by the relatively high share of prior liens. Such prior liens are deducted in full after haircuts are applied on the properties. If prior liens form a major part of the collateral, mortgage loan losses can reach up to 100% in a stressed scenario.

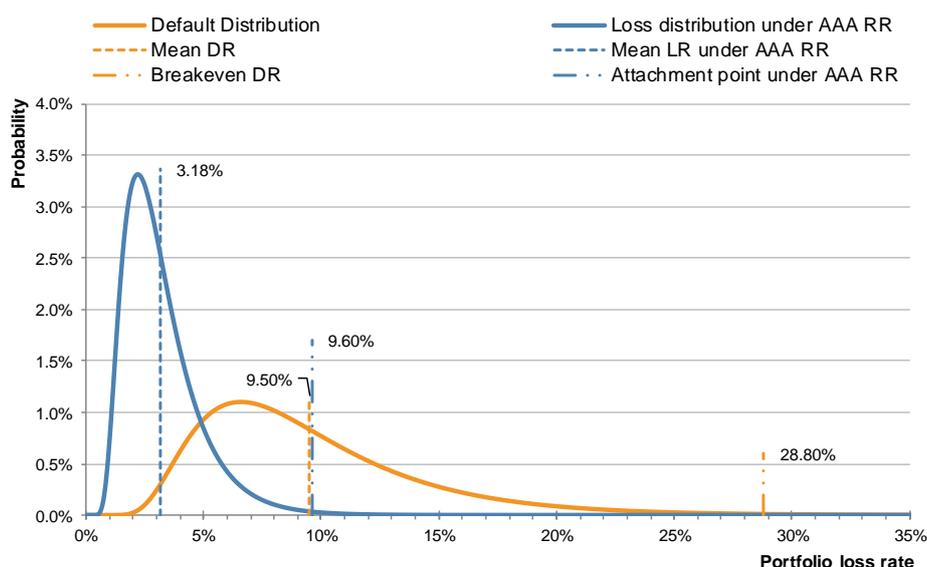
...and loss in a base case scenario below 10 bps supported by low loan-to-value

The mean default rate together with the stressed recovery rate translates into a mean loss rate of 3.2% for the mortgage loans, compared with an 8 bps mean loss rate under our base case recovery assumptions.

For more details see appendix I:

Appendix: Quantitative covered bond analysis'

Figure 10: Default and loss distribution



Source: Scope

Scope analysed the credit risk of the substitute assets. The NOK 101m held as cash was assumed to have the same default and recovery estimation as assumed for the mortgage loans because it is assumed that cash is reinvested into mortgage loans.

The liquid assets of NOK 110m consists of sovereign exposure and other domestic covered bonds. The agency estimated the sub-portfolio's default characteristics using a



Asset-liability mismatch risk remains main risk contributor

portfolio analysis framework. The respective non-parametric distributions can be described with a mean default rate of 0.11% and a coefficient of variation of 1,375%.

The low default rate and high coefficient of variation reflect the individually high credit quality but also the high obligor concentration in the respective sub portfolio.

Scope has applied a stressed recovery of 40% and a base case recovery of 100% considering the higher exposure to the sovereign bond.

4.3. Market risks

We consider TSBB's market risks to be high, mainly due to asset-liability mismatches. Interest rate and foreign currency risks are immaterial as assets and liabilities are both floating-rate and denominated in Norwegian krone.

4.3.1. Asset liability mismatch risk

As of 30 September 2018, TSBB had six outstanding covered bonds totalling between NOK 105m-400m. The bonds are issued as public placements with relatively short-dated maturities. The weighted average life for the outstanding covered bonds is only 2.6 years¹. Even with the low number of outstanding bonds, the covered bond maturity structure does not exhibit high concentrations.

The asset-liability mismatch is high, evident from the large weighted average maturity gap (weighted average life) of 9.0 years between the legal maturity of the mortgage loans (11.6 years) and outstanding covered bonds (2.6 years). Measured by duration, the gap is 5.8years.

Figure 11: Cash flow characteristics

Currency	Total assets	Net present value	WAM (principal)	Duration	Floating-rate assets	Fixed-rate assets
	NOK	NOK	Years	Years	%	%
NOK	2,078.3	2,282.9	11.59	7.75	100.00	0.00

Currency	Total liabilities	Net present value	WAM (principal)	Duration	Floating-rate assets	Fixed-rate assets
	NOK	NOK	Years	Years	%	%
NOK	1,705.0	1,723.3	2.60	1.94	100.00	0.00

Nominal OC	21.9%	WAM gap	8.99
NPV OC	32.5%	Duration gap	5.82

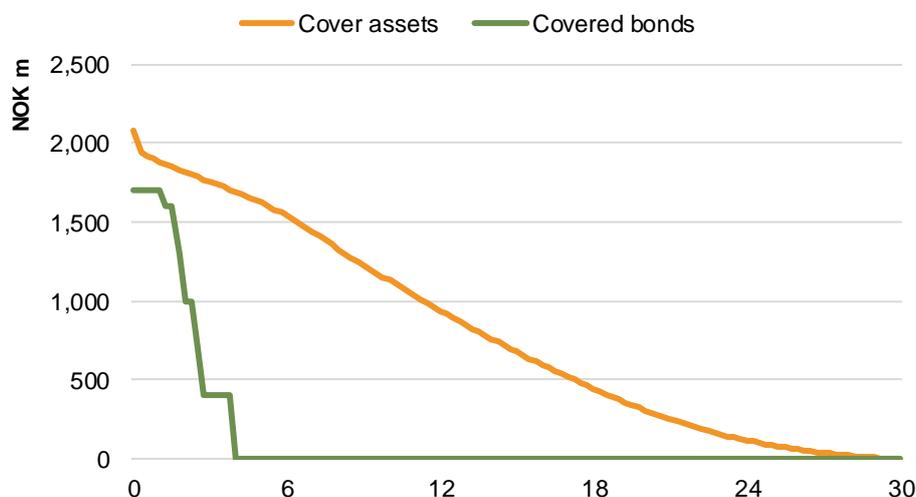
Source: TSBB and Scope

The mortgage assets have a long redemption profile due to their slow amortisation, also reflecting the low weighted average seasoning of 3.7 years as well as the average remaining term to maturity of 22 years. The substitute assets (bonds) mature in 2019.

Still, the economic life of the loans is generally much lower compared to the scheduled maturities. This is because Norwegian borrowers tend to prepay a loan opportunistically before its legal maturity to improve financing conditions, generally by entering into a new contract under a lower interest rate with either the same or a different mortgage bank. Unlike fixed-rate markets there are generally no prepayment fees in Norway that can discourage borrowers from repaying a loan prior to its scheduled maturity.

¹ Our cash flow analysis reflects the final scheduled maturity of the covered bonds plus the one-year extension (legal maturity).

Figure 12: Cash flow characteristics



Source: TSBB and Scope

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 the need to sell assets to ensure the full and timely payment of maturing covered bonds and interest due, exposing the programme to risks driven by the assets' disposal.

Stressed disposal proceeds were calculated by discounting the cover pool's remaining cash flows with a liquidity premium.

The balance of the current outstanding covered bonds was used to determine the rating-supporting overcollateralisation.

Negligible interest rate risks

4.3.2. Interest rate risk

Interest rate risk is limited because assets and liabilities are floating-rate. The programme is exposed to the typical six-week basis risk as borrowers must be notified six weeks in advance of a change in interest rates.

The programme benefits from excess spread. The slow-amortising mortgage assets have a weighted average spread of 107 bps and compare to short-dated covered bonds with a weighted average spread of 42 bps over the transaction's term.

No foreign exchange risks

4.3.3. Foreign exchange risk

There is no foreign exchange risk as assets and liabilities are denominated in Norwegian krone. At this stage we do not expect any foreign currency-denominated issuances.

Low overcollateralisation sensitivity upon issuer downgrade

4.3.4. Overcollateralisation

TSBB'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.

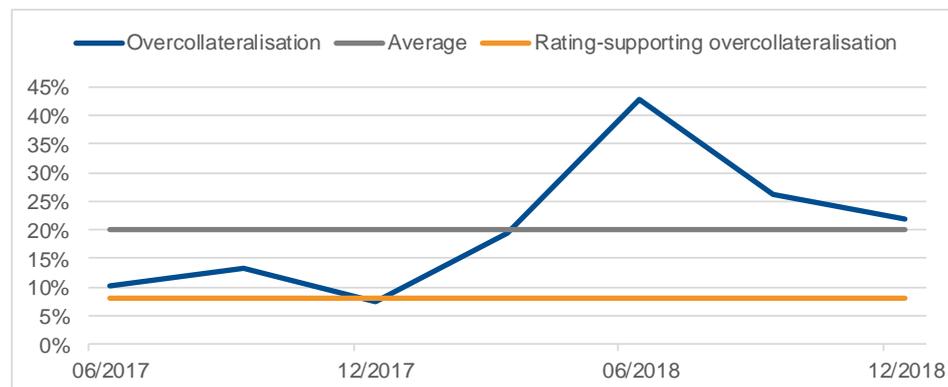
Our credit view on TSBB allows the full available overcollateralisation to be considered in the analysis. Applying all credit and market risk stresses we have established that an overcollateralisation of 8% can mitigate identified stresses and support the uplift under our rating methodology, giving the programme the highest rating.

If the issuer rating reduced by one notch, the covered bond rating would not be downgraded, but rating-supporting overcollateralisation would have to increase to 9%, provided the covered bond programme's credit and cash flow profiles remain the same.

We are not aware of plans involving a significant change to the risk profile or available overcollateralisation that could negatively impact the current rating uplift.

Overcollateralisation is at 21.9% as of September 2018 and remained above the level of 8% during the last 12 months which is needed to support the rating.

Figure 13: Overcollateralisation levels



Source: TSBB and Scope

4.4. Counterparty risk

The rated covered bonds have counterparty exposures to the issuer, as well as to the issuer's parent as loan originator, servicer, bank account provider and paying agent. There are no documented replacement mechanisms that would, for example, automatically shield the covered bonds from a credit deterioration of counterparties providing bank accounts. However, before regulatory intervention we believe the strong alignment of interests between the bank and covered bond holders would prevent a negative impact from such risks. The bank's risk management process regularly monitors accounts to ensure remedial actions can be implemented early on. We also take a positive view that most collections are done via direct debit, allowing for a relatively swift redirection of payments if needed.

In addition, we expect that a regulatory intervention in TSB would involve available resolution tools with the aim of maintaining operations. In such a scenario, we do not expect the active management and servicing of the cover pool to be severely impacted.

5. Rating stability

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

5.1. Changes to the issuer assessment

TSBB's AAA covered bond ratings are resilient against a two-notch issuer downgrade. Currently, the programme benefits from a one-notch uplift above fundamental support. Under our 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 three notches, provided overcollateralisation can mitigate identified risks.

5.2. Changes to overcollateralisation

A downgrade of the issuer by one notch would not lead to a downgrade of the covered bond rating. However, we would – ceteris paribus – increase the minimum rating-supporting overcollateralisation to 9% from 8%.

Changes in our assessment of the bank will not directly impact the covered bond ratings



Detailed cover pool and performance data provided by the bank considered by Scope to be of good quality

6. Sovereign risk

Sovereign risks (particularly macroeconomic) do not limit the mortgage-covered bond ratings. We believe 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

We consider data quality to be good considering the cover pool's granularity.

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

TSBB has provided both public and confidential information on pool composition, including asset performance data. Based on the detailed asset and liability composition we have reconciled the aggregated cash flow profiles provided by the bank. This includes detailed loan-level data with relevant credit characteristics of the mortgage segment.

If detailed information on some credit aspects was unavailable, we benchmarked the bank's information with market data and made conservative assumptions. We have ensured as far as possible that sources were reliable before drawing upon them but did not verify each item of information independently.

8. Monitoring

We 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 covered bonds we applied our [Covered Bond Rating Methodology](#), and the [General Structured Finance Rating Methodology](#) for the asset and cash flow analysis. All rating methodologies are available on our website, www.scoperatings.com

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



I. Appendix: Quantitative covered bond analysis

Credit risk analysis

TSBB's cover pool is granular enough to apply an inverse Gaussian distribution for assessing the likelihood of defaults. To derive the expected loss we have used the default distribution coupled with different market scenarios to analyse the cash flows of the covered bond programme.

Scope's analysed the substitute (bonds only) assets defaults with a non-parametric distribution performing a monte-carlo analysis. The agency assumed a global correlation factor of 2%, a regional correlation factor of 5% and an industry-specific (covered bonds) correlation factor of 20%. A large obligor stress was applied to both obligors with an additional correlation factor of 20%.

For the analysis of the mortgage collateral we applied rating-conditional recovery rates as a function of the six-notch distance between the covered bond rating of AAA and the issuer rating of A-. The six-notch stress is the difference between the highest stress scenario of D8 (anchored at the highest achievable rating of AAA) and D2 stresses anchored at the issuer rating. The stress levels are divided into eight levels because fundamental support provides a five-notch uplift and the cover pool support can provide a maximum three-notch uplift – hence eight stress levels, D0 (base case) to D8.

To establish lifetime default rate assumptions, we have analysed the bank's dynamic delinquency data and considered the one-year probabilities of default (through the cycle) assigned by the bank to each loan. Together with the scheduled maturity of the mortgage loans we derived a mean lifetime default rate on the portfolio. We have also compared default rates and coefficients of variation observed for granular pools of mortgage loans in Norway and other jurisdictions including Denmark, Germany and Austria.

We have considered different default timings. Back-loaded default scenarios are not as severe for OMF because of their short lives.

Rating-conditional security-value haircuts

We have calculated the recovery rate on the mortgages by analysing movements in the 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.

We have relied on fundamental recovery analysis because the security represents predominantly first-lien claims on the underlying real estate properties. Our legal analysis has determined that the security cannot be challenged from a legal standpoint.

Norwegian residential total security value haircuts

We analysed the current Norwegian property market to derive total security value haircut assumptions specific to the three regions which exhibit different trends and risk characteristics; i) Oslo and Akershus; ii) the oil regions (Rogaland, Hordaland, Vest-Agder); and iii) the rest of Norway.

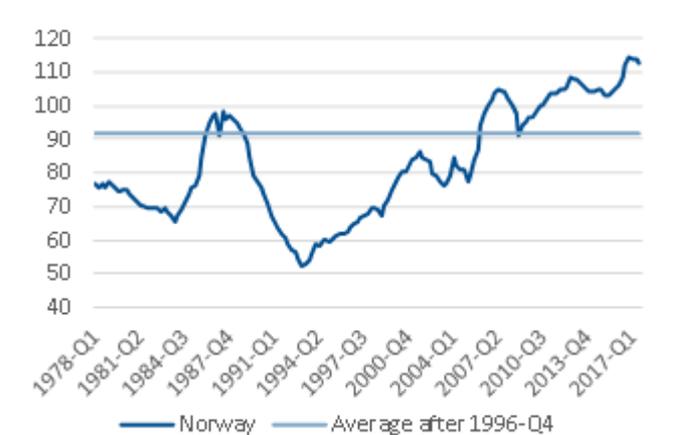
We analysed the house price indices provided by Statistics Norway to derive the market value declines. Using the nominal house price index, indices were reduced with region-specific sustainable deflation factors. Using this we measure current over/under valuation from the sustainable average in the different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

At the D8 stress level we tend to capture long-term observed volatility levels in addition to current over/under valuation. Regional differences could be captured by using the affordability index for Norway. Hence we have also analysed the affordability index from Q1 1978 to Q3 2017 provided by the OECD, along with house price indices to capture the long-term observed volatility.

³ We have 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-distance conditional recovery assumptions.

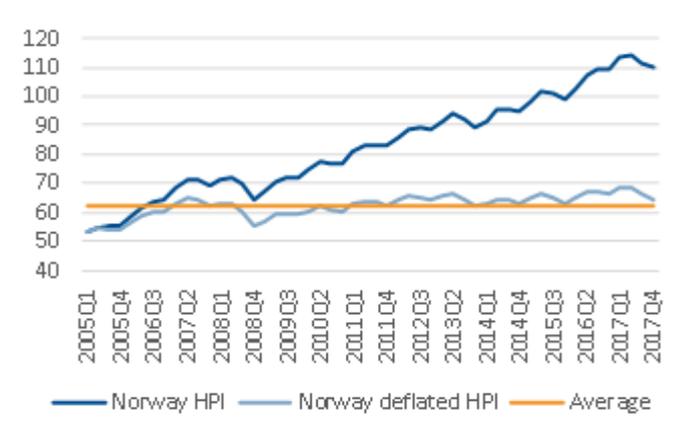
We have derived a D8-level observed volatility stress from the OECD's house price affordability index for Norway, assuming a volatility of 45% for the scenario with the highest credit differentiation, based on the average affordability index minus two standard deviations.

Figure 14: Affordability index



Source: OECD and Scope

Figure 15: 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, which was supported by the issuer's data.

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

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

We have derived intermediate rating stresses through a linear interpolation between the D0 and the D8 scenarios.

Figure 16: Total security value haircuts for Norway

Regions	D8	D7	D6	D5	D4	D3	D2	D1	D0
Oslo and Akershus	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, we have also applied illiquidity adjustments for large properties. Generally, the market for larger properties is less fungible than for 'standard' properties. Therefore, a swiftly realised freehand sale might only be possible if additional price-concessions are made.

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

Figure 17: Illiquidity adjustments

Property value, NOK m	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%



Totens Sparebank Boligkreditt

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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%

Other parameters

The highest stress assumptions only apply in the scenarios which, if passed, allows our maximum credit differentiation between the issuer and its covered bonds.⁴

Liquidity premium. We have applied 150 bps as an additional and most stressful liquidity premium to discount Norwegian residential mortgage loans and 100 bps for the substitute assets (bonds). The liquidity premium was determined by analysing the historical trading spreads of Norwegian mortgage covered bonds as well as benchmarked against other core covered bond countries' trading spreads.

Market risk stresses. In the cash flow analysis we have assumed deterministic interest rate stresses, applying a common framework to establish the stresses. This allows us to establish stresses that equate to the maximum achievable rating uplift.

Interest rate analysis. We have tested the rated OMF against several scenarios of rising and falling interest rates. The programme is most sensitive to a scenario in which interest rates rise after two years and plateau at 10%. For further details see Covered Bond Rating Methodology.

Recovery timing. We have assumed a recovery lag of 24 months for residential loans originated by TSBB and 48 months for the substitute assets (bonds). Recovery timing for the mortgage loans was based on an analysis of the Norwegian enforcement processes, the potential less fungible mortgage market in the Mjos region and the fact that 10% of the loans have prior liens, both of which may lengthen the overall recovery process.

Prepayment rate assumptions. We have tested constant prepayment rate assumptions of 0% and 15% for all cover assets. Sensitivities towards 20%-25% were also tested. The high maturity gap in combination with a low (0%) constant prepayment rate results in the most stressful scenario, primarily due to the additional liquidity discount applied to Norwegian residential mortgage loans.

Servicing fee. We have applied country- and asset-type-specific servicing fees to be paid by the cover pool annually. For the residential mortgage loans we have assumed a servicing fee of 25 bps and 10 bps for the substitute assets (bonds).

Missing information. For properties without detailed regional information from the bank, we conservatively assumed their location to be in Oslo, thereby applying the highest haircut. While we did not receive line-by-line information on repayment status, interest-only loans were approximated based on cash flows provided for each individual loan.

Other analytical assumptions. The asset margins on the mortgage loans were compressed down to 1%, reflecting potential basis risk and the likelihood of prepayments or refinancing on loans with current margins above the average.

⁴ The maximum credit differentiation between the rating of the issuer and its covered bonds is typically determined by our fundamental assessment of the legal and resolution framework. Our methodology sets out that the maximum credit differentiation can only be three notches higher than this fundamental uplift. For the issuing bank, we have determined a fundamental support of five notches. According to our methodology, the maximum uplift are eight notches (5+3).



II. Appendix: Summary of covered bond characteristics

Reporting date	30.09.2018
Issuer name	Totens Sparebank Boligkreditt
Country	Norway
Covered bond name	Obligasjoner med fortrinnsrett Norwegian mortgage covered bonds
Covered bond legal framework	Norwegian legal covered bond framework
Cover pool type	Residential mortgages loans
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	2
Cover pool assets (NOK m)	2,078
Covered bonds (NOK m)	1,705
Substitute assets (NOK m)	211
Current overcollateralisation/ legal minimum overcollateralisation	21.9% / 2%
Overcollateralisation to support current uplift	8%
Overcollateralisation to support rating upon a one-notch issuer downgrade	9%
Weighted average seasoning of mortgage loans (years)	3.7
Duration / Weighted average maturity of assets (years)	7.8 / 12.0
Duration / Weighted average maturity of liabilities (years) ¹	1.9 / 2.6
Duration gap / Weighted average maturity gap (years)	5.8 / 9.0
Number of loan exposures	1,425
Average loan size (NOK m)	1.4
Top-10 exposures	3.9%
Top-20 exposures	6.4%
Interest rate type – cover pool	100% floating
Interest rate type – covered bonds	100% floating
Weighted average loan-to-value	53.1%
Geographic split (top 3)	Oppland (47%); Akershus (26%); Hedmark (12%)
Default measure	Inverse Gaussian
Weighted average default rate	9.5%
Coefficient of variation	50%
Weighted average recovery assumption (D0/D8) ²	99% / 66.5%
Current share of loans > six month in arrears	0%
Interest rate stresses (min./max.; currency-dependent)	-1% / 20%; no
Foreign exchange stresses (min./max.; currency-dependent)	n/a
D8 liquidity premium ² (mortgage loans / substitute assets (bonds))	150 bps / 100 bps
Servicing fee (mortgage loans / substitute assets (bonds))	25 bps / 10 bps

¹including the 12-month extension

²D0 and D8 denote the stresses commensurate with the rating distance between the issuer rating and the covered bond ratings



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