Creditreform Covered Bond Rating

Luminor Bank A.S.

Mortgage Covered Bond Program

Creditreform Rating

Rating Object	Rating Information	
Luminor Bank A.S., Mortgage Covered Bond Program	Rating / Outlook : **AAA / Stable**	Type: Initial Rating (unsolicited)
Type of Issuance : Mortgage Covered Bond under Estonian law Issuer: Luminor Bank A.S. LT Issuer Rating: A- (Luminor Bank) ST Issuer Rating: L2 Outlook Issuer: Stable	Rating Date : 27.04.2022 Rating Renewal until : Withdrawal of the rating Maximum Validity: 01.01.2050 Rating Methodology : CRA „Covered Bond Ratings"	

Program Overview			
Bond Nominal value	EUR 500 m.	WAL maturity covered bonds	3.25 (Years)
Cover pool value	EUR 2,547 m.	WAL maturity cover pool	11.00 (Years)
Cover pool asset class	Mortgages	Overcollateralization (nominal/committed)	409.37%/ 5.00%
Repayment method	Soft Bullet	Min. overcollateralization	5.00%
Legal framework	Covered Bonds Act	Covered bonds coupon type	Fix (100.00%), Floating (0.00%)

Cut-off date Cover Pool information: 31.12.2021

Content

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Summary

This rating report covers our analysis of the mortgage covered bond program issued under Estonian law by Luminor Bank A.S. („Luminor Bank"). The total covered bond issuance at the cut-off date (31.12.2021) had a nominal value of EUR 500.00 m, backed by a cover pool with a current value of EUR 2,546.86 m. This corresponds to a nominal overcollateralization of 409%. The cover assets include mortgage obligations in Estonia, Latvia and Lithuania.

Taking into consideration the issuer rating, our analysis of the regulatory framework, liquidity- and refinancing risks, as well as our cover pool assessment and results of the cash flow analysis, Creditreform Rating AG ("Creditreform Rating" or "CRA") has assigned the covered bond program an AAA rating. The AAA rating represents the highest level of credit quality and the lowest investment risk.

Key Rating Findings

+ Covered Bonds are subject to strict Estonian legal framework for covered bonds
+ Covered bonds are backed by the appropriate cover asset class
+ Covered bond holders have recourse to the issuer
+ Current high nominal overcollateralization (OC) of 409.37% as of 31.12.2021
- This covered bond program suffered from lower recovery assumptions of mortgage loans derived from historical data of mortgage price indexes in the Baltic region
- Higher maturity mismatches between covered bonds and cover assets
- High RWA/Risk Exposure Amount ratios of the issuer compared to larger corporate banks in mature markets

Table1: Overview results

Risk Factor	Result
Issuer rating	A- (rating as of 20.04.2022)
+ Legal and regulatory framework	+4 Notches
+ Liquidity and refinancing risk	+1 Notch
= Rating after 1st uplift	AA+
Cover pool & cash flow analysis	AAA
+ 2nd rating uplift	+1 Notch
= Rating covered bond program	**AAA**

Issuer Risk

Issuer

Our rating of Luminor Bank covered bond program is reflected by our issuer rating opinion of Luminor Bank AS due to its group structure. On 20.04.2022, Creditreform Rating assigned an initial Long-Term Issuer Rating of 'A-' with a 'stable' Outlook for Luminor Bank AS.

Although Luminor Bank AS is a young bank itself with its foundation in 2017, it was consolidated from six predecessor banks. This is also a reason for its favorable market position, which did not have to be built from the bottom up. Under the aegis of the new majority owner, a further transformation process has been initiated, which is intended to develop Luminor into the leading independent bank in the Baltic region. The transformation costs continue to weigh on the bank's results, which from an external perspective does not appear to be very profitable. Capitalization, on the other hand, appears to be very good, and asset quality is good and steadily improving. It remains to be seen when and to what extent the transformation costs will decrease and a true picture of profitability and cost effectiveness will emerge.

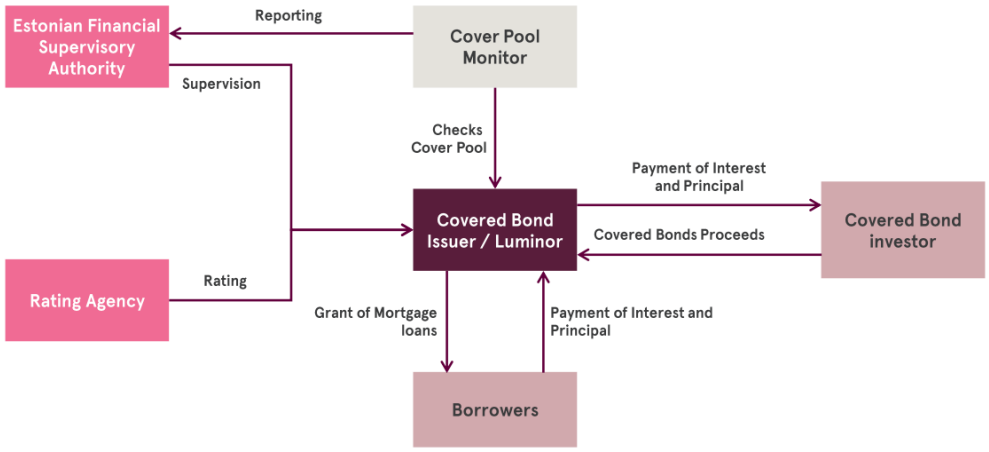
Structural Risk

Transaction structure

Table 2: Overview of all transaction's parties | Source: CRA

Role	Name
Issuer	Luminor Bank AS
Trustee	The trustee and his deputy are appointed in the issuer's general meeting
Cover pool administrator	Appointed by the court upon approval from Estonian FSA in case of issuer default

Figure1: Overview of Covered Bond emission | Source: Luminor Bank



Legal and Regulatory Framework

On 1 March 2019, the Estonian Covered Bond Act (ECBA) entered into force after passed in the parliament on 13 February of the same year. The legislation was the first to regulate the covered bond market in the country, providing the directives of mortgage and mixed assets covered bonds. Subsequently, as of 1 October 2019, an issuer was able to submit a covered bond prospectus to the Estonian Financial Supervision Authority's (EFSA) approval and issue covered bonds.

In order to issue covered bonds in Estonia, a company shall hold the Credit Institution authorisation and obtain an additional permission to issue covered bonds. The legal framework specifies some requirements regarding the organizational structure and risk management for issuing covered bonds. The issuer must adapt its risk management system to perform accurately the identification, measurement and management of the risks related to the administration of the covered bond portfolio. The issuer has to hold a plan for the separation of covered bond portfolios, which covers the disclosure of the documents and data locations as well as all the technological tools and systems necessary for the administration of a covered bond portfolio. In addition, the issuer has to provide a list with the description of the operational procedures needed for the administration of the covered bond along with a list of employees with the description of their tasks.

The European Commission on November 2019 adopted the legislative package to provide for enhanced harmonisation of the EU covered bond market. The Directive requirements include asset eligibility criteria, liquidity buffer, maturity extensions as well as the role of the cover pool monitor. Each of the Member States should implement the Covered Bond Directive by 8 July 2021 and the national measures shall be applied at the latest from 8 July 2022. In Estonia, the implementation of the covered bond directive for full transposition measures were already communicated to the European Commission.[1]

[1] https://ec.europa.eu/info/publications/covered-bonds-supervision-directive-transposition-status_de

In Estonia, the issuer holds the cover pool assets and it will not be held by SPV, which means that the issuer has to keep the separate cover registers for different types of covered bonds. The collection and storage of data related to mortgage and mixed assets covered bonds is performed by the cover register. All the operational procedures have to observe the rules for database management and policies for data input and deletion.

A forecast with the covered bonds portfolio's costs of administration and management during the first year is also demanded. Additionally, a cover pool monitor has to be assigned to track the performance of the issuer's obligations, such as the compliance of the cover pool and register with the regulation as well as the management of risks and reporting.

Insolvency remoteness and Asset segregation

Regarding the ownership of the covered pool, according to the ECBA, the assets remain in the issuer's balance sheet until the final redemption. Even though, an independent administrator performs the monitoring of the covered assets as specified by law. In the event of a default by the issuer, ECBA enacts that the covered bond portfolio is considered split apart from other issuer's assets. For that reason, the issuer's bankruptcy state is not extended to the cover pool assets. Given its ring-fence nature, the cover pool proceeds shall only repay the covered bond holders, the counterparties of derivatives instruments in the covered register or management costs and expenses related to the covered pool.

In order to secure the continuation of the cover bond's portfolio operations in case of bankruptcy or dissolution, a cover pool administrator shall be appointed by the court upon proposal of the EFSA. In that case, the right of disposal of the cover pool assets is transferred to the administrator, which shall diligently manage the portfolio in the way that the liabilities arising from the covered bonds and financial instruments entered in the register are met. To achieve that goal, the administrator is empowered to enter into derivative instruments and other financial operations.

Trustee

The trustee and his deputy for a covered bond program are appointed in the issuer's general meeting, in order to ensure that the record of the cover assets are correctly documented in the cover register and that their inclusion meet the eligibility criteria, amongst other issuer's obligations. The term for a trustee must last at least one year, setting the inspections schedules on its own demand. The responsibilities of the trustee includes i.e. (i) compliance of stress testing of a covered bond portfolio; (ii) tracking of changes in the covered bond portfolio; (iii) checking if a cover pool is sufficient to cover the covered bond liabilities; (iv) valuation of properties with mortgage securing credit; and (v) compliance of the risk management and requirements of reporting. The trustee must immediately inform the EFSA if it becomes aware of any deficiencies or breaches in relation to the covered bond programme.

Special Administrator

If an issuer is declared bankrupt or a dissolution process is set, upon the proposal of the EFSA, a court shall appoint a special cover pool administrator for the covered bond portfolio. The bankruptcy administrator may perform all legal transactions with effect to the cover pool, insofar as these are necessary for an orderly settlement in the interest and to the full satisfaction of the covered bond creditors. In addition, the bankruptcy administrator is permitted to extend

the original maturities of the covered bonds. This task is executed by the issuer's general bankruptcy administrator, which will manage the cover pool.

Eligibility Criteria

Under the ECBA, cover assets mainly consists of primary cover assets and substitute assets. However, primary cover assets must constitute 80% of the main collateral of the relevant covered bond portfolio. Additionally, the law establishes different primary cover assets for mortgage covered bonds and mixed covered bonds. In the first case, the covered assets for mortgage covered bonds are composed of claims from a credit granted to a natural person against residential properties located in the European Economic Area (EEA). In the case of mixed covered bonds, the covered pool comprises assets from EEA's countries, such as (i) credit arising from residential mortgages, (ii) claims from housing construction against mortgaged residential building plots, (iii) commercial mortgages, and (iv) credit granted to, or debt securities issued by a regional government or local authority, an EEA country's legal person governed by public law, a regional government or local authority.

According to the ECBA, the geographical scope of mortgage loans is established as the EEA, while the public sector assets comprises assets from EEA, Switzerland, USA, Canada, Japan, Organisation for Economic Co-operation and Development (OECD), New Zealand and Australia.

The issuer's claims under a mortgage-backed loan may be used as coverage for mortgage-backed bonds up to 70% of the value of the property securing the mortgage-backed loan. Nonetheless, all of the issuer's claims under the mortgage-backed loan recorded in the cover register are included in the cover pool.

However, in order for an issuer's claim under a mortgage-backed loan to be included as coverage for mortgage-backed bonds, the mortgage securing the claim must be (i.e., the sum of the mortgages must be) at least 110 percent of the loan issued. The sum of the mortgage may exceed the value of the property securing the loan. Once assets or asset values have been registered in the register of cover assets, they are part of the cover pool until they are deleted from the register.

In addition to the 80% primary cover assets, the residual 20% can consist of substitution assets. Substitution assets include:

(i) claims on or guaranteed by central banks within the European System of Central Banks, central and regional governments, public sector entities or local authorities of the Member States of the European Union,

(ii) claims on or guaranteed by third-country central governments and central banks, multilateral development banks and international organisations that qualify for the credit quality according to the ECBA's criteria,

(iii) claims on or guaranteed by third-country public sector entities, regional governments and local authorities, for which a risk weight has been assigned the same way as for claims on credit institutions and investment, firms or central governments and central banks and which qualify for the credit quality according to the ECBA's criteria in sight of the risk weight so assigned,

(iv) claims specified in clauses ii) and iii), which qualify as a minimum for the credit quality in accordance to the ECBA's criteria, provided that they do not exceed 20% of the nominal value of the outstanding covered bonds in the covered bond portfolio that they cover,

(v) claims on credit institutions and investment firms, which qualify for the credit quality according to the ECBA's criteria, provided that they do not exceed 15% of the nominal value of the outstanding covered bonds in the covered bond portfolio that they cover,

(vi) claims on credit institutions and investment firms in the EU with a term to maturity not exceeding 100 days, which qualify as a minimum for the credit quality in accordance with the ECBA's, provided that they do not exceed 15% of the nominal value of the outstanding covered bonds in the covered bond portfolio that they cover,

(vii) net claims arising from derivative instruments that meet the conditions provided by law, which cannot be treated as the claims specified in clauses v) or vi), provided that they do not exceed 12% of the nominal value of the outstanding covered bonds in the covered bond portfolio that they cover.

Systematic Relevance and External Support

The first Estonian covered bond was issued in 2020 by Luminor Bank, constituted of mortgages from Baltic region in an outstanding value of EUR 500 million with 5 years maturity. At the year-end of 2020, the total issuance volume accrued EUR 850 million. Within that period, two programmes were issued, with two public placement in an amount of EUR 500 and EUR 250 million, and one private placement in the order of EUR 100 million. The covered bonds were totally denominated in euros, summing up EUR 850 million.

With total assets of EUR 13 billion, Luminor is the third largest universal bank in the Baltic. In addition, with a market share of approximately 59.0% in the covered bond segment as of 2020, Luminor is the largest covered bond issuer in the Estonian covered bond market

Summary Structural Risk

In general, the Estonian covered bond framework defines the legal basis for covered bond programs in Estonia, it defines clear rules to mitigate risks in particular regarding: insolvency remoteness, asset segregation, investor's special claim vis-à-vis other creditors, the roll and appointment of a trustee and bankruptcy administrator, among other provisions.

We considered the structural framework in Estonia as positive, accomplishing an adequate set of rules for Estonian covered bonds. Furthermore, we contemplate the importance of Luminor Bank in the Estonian Covered Bond market in our analysis. Due to those reasons we have set a rating uplift of four (+4) notches.

Liquidity and Refinancing risk

Minimum Overcollateralization

According to the ECBA, the issuer must perform a stress test on the covered bond portfolio every quarter to check the level of collateralization. It is under the issuer's responsibility to comply with the conduction of the stress tests through the application of the appropriate calculation model prescribed in its internal rules and clear documentation of the entire process. As result of the test, the issuer must fulfil the following requirements:

(i) the present value of all covered bonds of the same type and the net liabilities arising from derivative instruments entered in the cover register must be covered by a cover pool at any time. The present value of the cover pool shall exceed the liabilities covered by at least 2%.

(ii) the nominal value of all covered bonds of the same type must be covered by a cover pool of at least equivalent nominal value at any time. If the known redemption value of covered bonds is higher than their nominal value at the time of issuance, all covered bonds of the same type shall be covered by a cover pool whose nominal value is at least equal to the redemption value of the covered bonds. The nominal value of the credits must be deemed equal to the outstanding amount of the credits.

(iii) if the nominal value of the cover pool exceeds the nominal value of all the covered bonds of the same type by at least 5%, it shall be presumed that the requirement in clause (i) is met for the relevant covered bond portfolio.

If the legal requirements are not met as presented by the results of the stress tests, the cover assets shall be increased to satisfy the pre-requisites aforementioned.

Short-Term Liquidity Coverage

In order to maintain liquidity of the covered bond portfolio, the issuer must maintain a liquidity buffer. To calculate the minimum level of the liquidity buffer for short-term coverage, the difference between (i) the payments to redeem all the liabilities arising from covered bonds and the derivative instruments, on one hand, and (ii) the cash flow to be received from the cover pool, on other hand, shall be calculated on a daily basis for each of the following 180 days. Thereafter the sum of the accumulated daily differences has to be calculated for each of the following 180 days, and cover assets must cover the highest negative result at any time.

Stress Tests and Matching

The issuer must ensure that the coverage and OC is also maintained in the case of stress periods. For this purpose, the underlying cover pool must be subjected to a stress test at least once a quarter to anticipate credit risk, interest rate risk, currency risk, and liquidity risk. If the value of the cover pool, as calculated during the stress test no longer meet he requirement provided in the ECBA, the cover assets to be entered in the cover register shall be increased by the maximum deficiency determined as result of the stress test.

Asset-Liability Mismatch

Asset-liability mismatches ("ALM") arise with different maturities of cover assets and covered bonds. According to the Estonian framework, natural matching - i.e. the congruence of present values – forms the essential approach to reduce ALM risk. In addition, the statutory liquidity coverage requirement for 180 days is a safeguard mechanism to ensure the servicing of pending principal and interest payments.

Repayment Method

This covered bond program issues covered bonds with soft bullet maturity, i.e. a final repayment with an extension option at the end of the term. Maturity mismatches between cover assets and liabilities thus can be partially mitigated by extension of the legal final maturity. This feature of Estonian covered bond programs is considered both qualitatively and quantitatively into our cash flow analysis.

Refinancing Costs

In the event of the issuer's insolvency, the special administrator has wide-ranging powers to mitigate the refinancing risks which includes transferring the covered bond programs to another

credit institutes in Estonia upon approval from EFSA or performing other necessary actions like use them as a guarantee for liquidity operations if liquidity shortfalls are foreseeable.

However, CRA's analysis assumes that any refinancing gaps due to ALM will be closed by the necessary arrangements of funds against the assets from the cover pool. In doing so, we take into account related costs in the form of discounts to the nominal value which is termed as asset-sale discount. The quantification of this discount is adjusted following an analysis of relevant market data and will be used in our cash flow analysis.

Other Liquidity Risks

Issuing banks are allowed to use derivative instruments in the cover pool to hedge market risks like interest rate and currency risks and to facilitate risk management. The legal framework provides for yearly stress tests to be conducted on interest rate- and foreign exchange risks. The stress scenarios are either static, dynamic or model-based.

Information on, among other things, the yields and maturity of outstanding bonds, the structure of the cover assets, the average amount and maturity of primary assets, fixed interest periods, the stress tests and the respective coverage shall be published each quarter.

Summary Liquidity and Refinancing Risk

Compared to other jurisdictions, the Estonian legal framework and the required risk management processes for liquidity risks constitute a comparatively strict framework by which the risks are effectively reduced. However, refinancing risks may not be completely structurally reduced under the soft bullet repayment structures, which can only be cushioned by sufficiently high OC or other liquid funds to bridge the asset liability mismatches in the portfolio. Nevertheless, we assess the overall legal provisions on liquidity management for Estonian Covered Bond programs as positive and set a rating uplift of one (+1) notch.

ESG Criteria

CRA generally takes ESG-relevant factors (environmental, social and governance) into account when assessing Covered Bond ratings. Overall, ESG factors have a significant impact on the current rating of this Covered Bond program. CRA identifies governance factors, in particular, to have a highly significant impact on Covered Bond ratings. Since Covered Bonds are subject to strict legal requirements, regulatory risk plays an important role in assessing the credit rating.

The Estonian Covered Bonds legislation defines clear rules to mitigate risks in particular regarding insolvency remoteness, asset segregation, investor's special claim vis-à-vis other creditors, the roll and appointment of a special administrator, among other provisions. Additionally, Risk management and internal controls as well as the macroeconomic factors such as hedging strategies, interest rates and yield curve are considered to have a highly significant impact on the assessment of the credit rating. Other individual factors with a potential key rating influence were not identified, and therefore did not affect the final rating.

Credit and Portfolio Risk

Cover pool analysis

The analysis of the cover pool is based on public information which has been made available by the Issuer, in particular the Harmonised Transparency Template („HTT“) as per regulatory requirements. This information was sufficient according to CRA´s rating methodology “Covered Bond Ratings”.

At the cut-off-date 31.12.2021, the pool of cover assets consisted of 52,561 debt receivables from 49,654 debtors. The total cover pool volume amounted to EUR 2,546.86 m in residential (100.00%), commercial (0.00%) and others (0.00%).

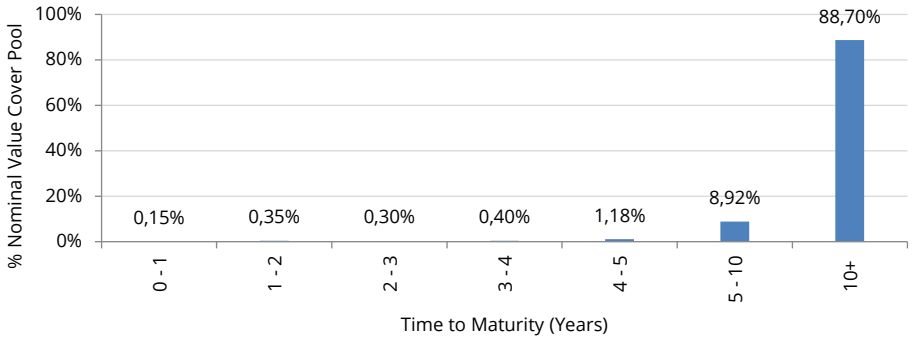
The residential cover pool consists of 52,561 mortgage loans having an unindexed weighted average LTV of 62.92%. The non-residential cover pool does not have any mortgage loans. The ten largest debtors of the portfolio total to 0.17%. Table 3 displays additional characteristics of the cover pool:

Table 3: Cover pool characteristics | Source: Luminor Bank

Characteristics	Value
Cover assets	EUR 2,547 m.
Covered bonds outstanding	EUR 500 m.
Substitute assets	EUR 75.80 m.
Cover pool composition	
Mortgages	97.02%
Substitute assets	2.98%
Other / Derivative	0.00%
Number of debtors	49,654
Mortgages Composition	
Residential	100.00%
Commercial	0.00%
Other	0.00%
Average asset value (Residential)	EUR 47.01 k.
Average asset value (Commercial)	EUR 0.00 k.
Non-performing loans	0.0%
10 biggest debtors	0.17%
WA seasoning	66.37 Months
WA maturity cover pool (WAL)	11.00 Years
WA maturity covered bonds (WAL)	3.25 Years

We have listed an extended view of the composition of the cover pool in the appendix section “Cover pool details”, with, for example, a detailed regional distribution. The following chart displays the maturity profile of the cover assets at the cut-off date 31.12.2021 (see figure 2):

Figure 2: Distribution by remaining time to maturity I Source: Luminor Bank



Maturity profile

The following charts present the cash flow profile of the Issuer (see figure 3 and figure 4):

Figure 3: Cover asset congruence | Source: Luminor Bank

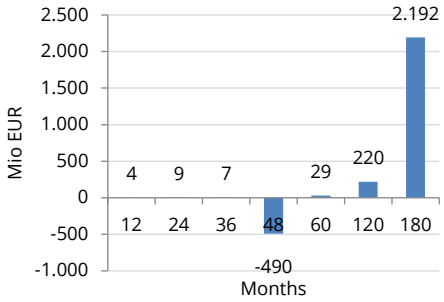
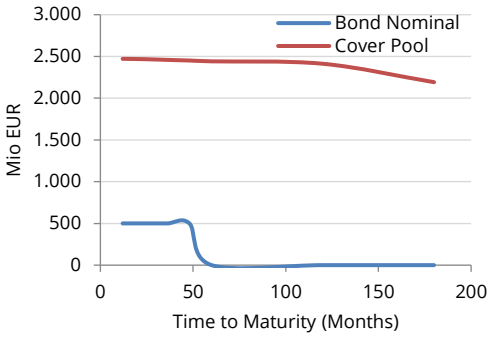


Figure 4: Amortization profile | Source: Luminor Bank



During its cash flow modelling, CRA has taken into consideration the maturity structure of cover assets and liabilities. This structure was an integral part of the cash flow analysis.

Interest rate and currency risk

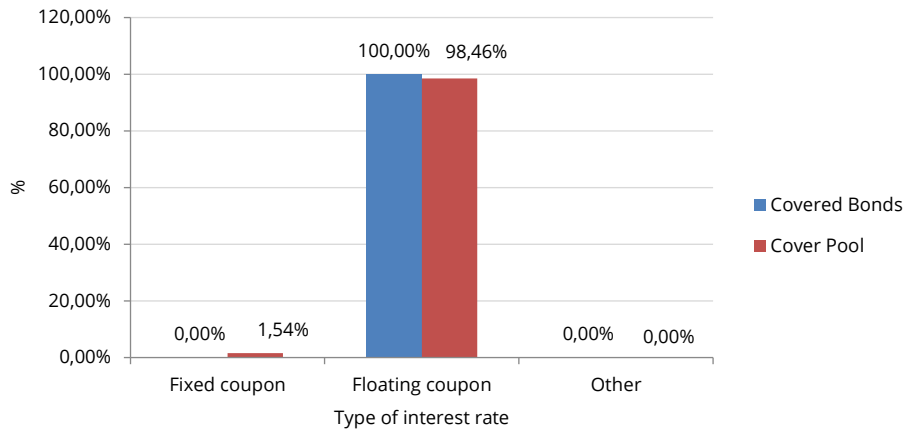
This covered bond program uses derivatives to hedge interest rate- and currency risk. The legal framework provides for quarterly stress tests to be conducted on interest rate- and currency risks to maintain the mandatory OC. Therefore, interest rate risk could be mitigated by the 5% OC requirement. Currency risk, on the other hand, is also limited for this program as 100.00% of the cover pool assets and 100.00% of the cover bonds are denominated in euros. In our Cash flow analysis we assume that the interest rate mismatches and open currency positions of this program are fully hedged in the form of swap agreements; therefore, CRA did not apply any interest rate and foreign exchange stresses for the cash flows.

Table 4: Program distribution by currency | Source: Luminor Bank

Currency	Volume	Share (%)
Cover Pool		
EUR	2,547 m	100.00%
Covered Bond		
EUR	500 m	100.00%

Figure 5 shows the types of interest rate used in this program

Figure 5: Type of interest rate | Source: Luminor Bank



Credit Risk

The credit risk assessment for Mortgage Covered Bond have been determined in accordance with CRA rating methodology for Covered Bonds by means of historical data and particular parameters from the Covered Bonds.

Due to the high granularity of mortgage pools we have characterized these portfolios as big enough and with a homogeneous composition i.e. ("Large Homogeneous Portfolio", LHP). Furthermore under that premise we have assumed that it is possible to derive a loss distribution. CRA has used the historical issuer's NPL ratio to derivate a conservative default rate proxy for the approximation through the LHP distribution. For the Luminor Bank, it has been assumed an expected default rate of 2.07% for the LHP. Furthermore CRA has considered a 15.00% correlation to define the LHP distribution. Table 5 disclosed the expected default rate for each relevant rating level.

In order to derive recovery and loss-severity base case assumption CRA has used historical data from mortgage price indexes. To determine loan-level recovery assumptions the resulting stressed recoveries assumptions were compared with the portfolio's existing loan-to-value ratios (LTVs).

Based on the default rates and taking into account the recovery assumptions, the following loss assumptions were determined for the current cover pool (see Table 5).

Table 5: Cover Pool Base case assumptions | Source: CRA

Rating	Default Rate (%)	Recoveries (%)	Expected Loss (%)
AAA	**44.38%**	**26.03%**	**32.83%**
AA+	40.93%	28.76%	29.16%
AA	36.22%	32.74%	24.36%
AA-	31.87%	37.18%	20.02%
A+	30.18%	39.15%	18.36%
A	30.09%	39.25%	18.28%
A-	28.83%	40.85%	17.05%

Cash-Flow Analysis

Model Assumptions

Based on public information and using the base case loss assumptions, we implement a scenario-based cash flow model. This model aims to test the ability of the structure to service all covered bonds according to their payment profile in diverse stress scenarios. The CRA cash flow analysis assumes that the Issuer has defaulted, i.e. all obligations will be met using cash flows from the cover pool assets only. We also assume that no additional assets will be added to the cover pool during the wind-down phase.

Asset-Sale Discount

In our model, short-term liquidity needs and liquidity needs due to asset-liability mismatches will be met with a sale of cover assets or by necessary arrangements of funds against cover assets available for monetization. CRA assumes that this funds will be arranged with discounts to the nominal value in a distressed refinancing scenarios. Based on secondary market data, CRA assumes a rating-level haircut on the asset value („Asset-Sale Discount“) which represents additional costs of disposal and market risks during the sale of cover assets. (see Table 6).

Yield Spread

Since cover assets often have a positive yield spread against the covered bonds issued, CRA uses available public information (i.e. issuers´ annual accounts) to size this assumed spread („Yield Spread“) (see table 6):

Table 6: Cash-Flow Model assumptions | Source: CRA

Rating level	Asset-Sale Discount	Yield Spread
AAA	**71.71%**	**0.77%**
AA+	66.09%	0.83%
AA	62.48%	0.88%
AA-	59.03%	0.92%
A+	56.38%	0.95%
A	54.21%	0.98%
A-	51.37%	1.01%

Rating Scenarios

Scenarios that have been tested in our cash flow model rely on the variation of several central input parameters, such as:

- Portfolio composition (diversification, concentration, granularity)
- Probability of default of cover assets
- Correlations of cover assets and systematic risk factors
- Recoveries
- Maturity profile of covered bonds and cover assets (ALM)

Within an **AAA** rating scenario, the cash flow model showed that obligations can be paid fully and in a timely manner. In total, the cash flow analysis revealed that the portfolio, given all information available as of 31.12.2021, could be sufficient to repay bond nominal capital notwithstanding the occurrence of any extraordinary events. On this basis, the rating of the cover pool within our covered bond program rating has been set at AAA.

Overcollateralization Break-Even Analysis

CRA also performed a break-even OC analysis. Such OC levels should bear the corresponding losses for a given rating scenario. Main drivers of the analysis are:

- ALM
- Loss level
- Interest rate spreads
- Foreign currency mismatches
- Recoveries.

Performing the break-even OC analysis, we took rating-level specific stressed outcomes into account. Based on these analyses, the maximum OC required for each relevant rating level during the whole period has been presented inTable 7.

Table 7: Breakeven Analysis | Source: CRA

Rating Level	Break-Even OC
AAA	**136.63%**
AA+	116.97%
AA	98.99%
AA-	84.37%
A+	77.63%
A	74.91%
A-	69.15%

Sensitivity Analysis

CRA also evaluates the sensitivity of the structure and program with respect to important input parameters. In particular, the following factors have been varied:

- Credit quality of cover assets
- Recoveries

The following table presents the rating impact of a decline in recoveries and an increase in the credit risk of single debtor. Starting from the best-case, which is represented by our base case assumptions, the analysis reveals the sensitivity of the rating with respect to recovery rates and credit risk. The worst-case scenario, in which we reduce recoveries by 50% and increase credit risk by 50%, the base case rating remained unchanged at AAA (see Table 8):

Table 8: Covered Bond Program Sensitivity: Credit Quality und Recovery Rates | Source: CRA

Defaults \ Recovery	Base Case	-25%	-50%
Base Case	**AAA**	AAA	AAA
+25%	AAA	AAA	AAA
+50%	AAA	AAA	AAA

Summary Cash-Flow Analysis

Based on public information and using the base case loss assumptions, the analysis showed that obligations can be paid in full and in a timely manner. Overall, the cash flow analysis revealed that the portfolio, given the used information, may ensure the repayment of bonds' nominal capital notwithstanding the occurrence of the presented stressed scenarios. Therefore, the rating of the cover pool within our covered bond program rating has been set at AAA. Consequently, the secondary rating uplift was set at one (+1) notch.

However, it is worth mentioning that, the ongoing Covid-19 crisis could have a potential impact on the cover pool. It remains to be seen how serious the effects of the lockdown, among other things, will be. Should there be any changes to the cover pool and the issuer rating in the future, we will include them during our monitoring process.

Counterparty Risk

Transaction parties

Table 9: Participant counterparties | Source: Luminor Bank

Role	Name	Legal Entity Identifier
Issuer	Luminor Bank	213800JD2L89GGG7LF07

Table 10: Interest rate and Swap counterparties | Source: Luminor Bank

Name	Legal Entity Identifier	Agreement Type
Nordea Bank Abp	529900ODI3047E2LIV03	Interest rate

Derivatives

Based on the available information, the issuer has entered into derivative agreements with Nordea Bank Abp in the form of Interest rate swaps.

Commingling

Incoming cash flows generated from the cover pool will normally be transferred to the Issuer and will be forwarded to the covered bond holders according to the payment terms and conditions. Should the issuer become bankrupt, there is a risk ("commingling risk") that funds may not be returned and commingled with the insolvency estate of the issuer. In order to avoid such risk, the Estonian covered bonds legislation stipulates that the cover assets should be isolated from the general bankruptcy estate (insolvency-free assets) and the ongoing management of

the cover pool will be guaranteed by a special cover pool administrator appointed by EFSA. Under that mandate, the cover pool administrator will have the first priority on the up-coming cash flows from the cover pool assets. These cash flows in turn should be used to cover interest and principal payments of the covered bond holders in the event of the Issuer's insolvency.

Appendix

Rating History

Event	Initial Rating
Result	AAA
Rating Date	27.04.2022
Publication Date	03.05.2022

Details Cover Pool

Table 11: Characteristics of Cover Pool | Source: Luminor Bank

Characteristics	Value
Cover Pool Volume	EUR 2546.86 m.
Covered Bonds Outstanding	EUR 500.00 m.
Substitute Assets	EUR 75.8 m.
Share Derivatives	0.00%
Share Other	100.00%
Substitute Assets breakdown by asset type	
Cash	0.00%
Guaranteed by Supranational/Sovereign agency	0.00%
Central bank	0.00%
Credit institutions	0.00%
Other	100.00%
Substitute Assets breakdown by country	
Issuer country	0.00%
Eurozone	0.00%
Rest European Union	0.00%
European Economic Area	100.00%
Switzerland	0.00%
Australia	0.00%
Brazil	0.00%
Canada	0.00%
Japan	0.00%
Korea	0.00%
New Zealand	0.00%
Singapore	0.00%
US	0.00%
Other	0.00%
Cover Pool Composition	
Mortgages	97.02%

Total Substitute Assets	2.98%
Other / Derivatives	0.00%
Number of Debtors	49,654
Distribution by property use	
Residential	100.00%
Commercial	0.00%
Other	0.00%
Distribution by Residential type	
Occupied (main home)	93.00%
Second home	5.00%
Non-owner occupied	2.00%
Agricultural	0.00%
Multi family	0.00%
Other	0.00%
Distribution by Commercial type	
Retail	0.00%
Office	0.00%
Hotel	0.00%
Shopping center	0.00%
Industry	0.00%
Land	0.00%
Other	100.00%
Average asset value (Residential)	47.01
Average asset value (Commercial)	NR
Share Non-Performing Loans	0.00%
Share of 10 biggest debtors	0.17%
WA Maturity (months)	241.67
WAL (months)	132.00
Distribution by Country (%)	
Estonia	28.33
Latvia	31.20
Lithuania	40.47
Distribution by Region (%)	
Tallinn	12.10
Other Estonia	16.22
Riga	15.11
Other Latvia	16.09
Vilnius	17.94
Other Lithuania	22.53

Figure 6: Arrears Distribution | Source:: Luminor Bank

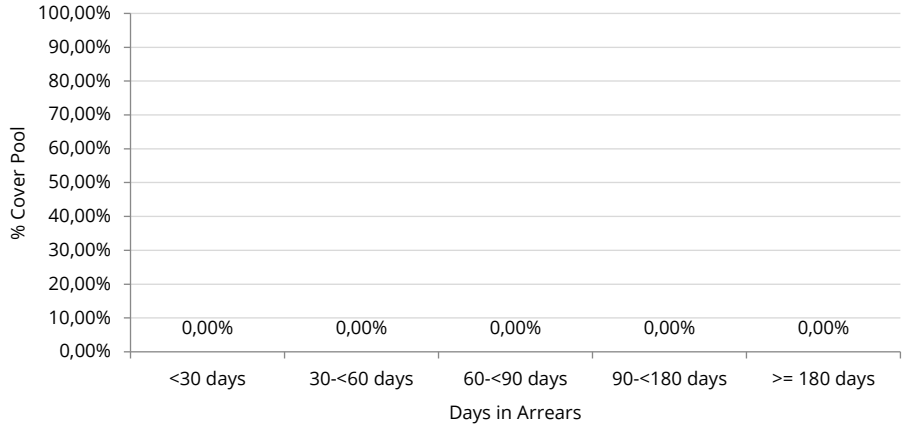


Figure 7: Program currency mismatches | Source: Luminor Bank

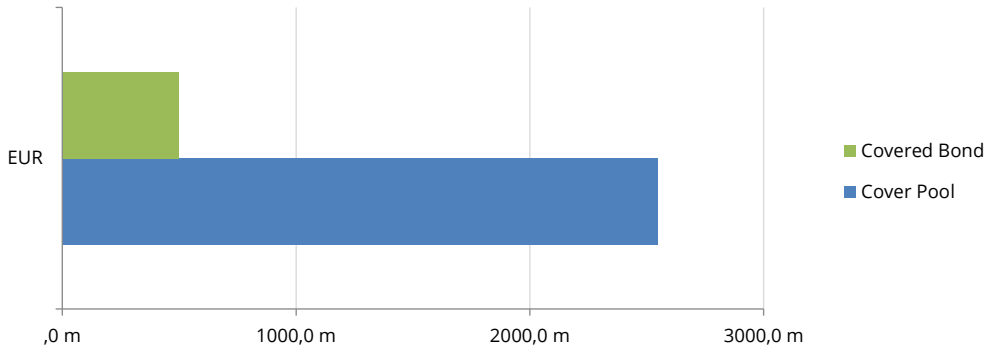
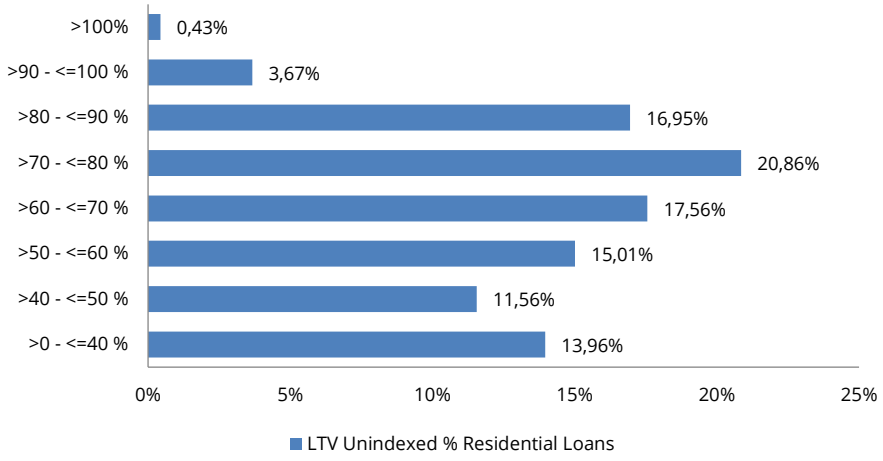


Figure 8: Unindexed LTV breakdown - residential pool | Source: Luminor Bank



Key Source of Information

Documents (Date: 31.12.2021)
Issuer ▪ Audited consolidated annual reports of Luminor Bank (Group) 2018-2021 ▪ Issuer rating report dated 22.04.2022 ▪ Miscellaneous Investor Relations Information and Press releases ▪ Other rating relevant data from eValueRate/CRA databank
Covered Bond and Cover Pool ▪ HTT Reporting from Luminor Bank (31.12.2021) ▪ Base prospectus of Luminor Bank mortgage covered bond program dated 09.04.2019 ▪ Market data Mortgage Covered Bond Program

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Creditreform Rating AG was neither commissioned by the rating object nor by any other third parties for the rating. The analysis took place on a voluntary basis by Creditreform Rating AG and is to be described in the regulatory sense as an unsolicited rating. The rating was conducted on the basis of Creditreform Rating´s "Covered Bond Ratings" methodology (v1.1, April 2022) and "Technical Documentation Portfolio Loss Distributions" (v.1.0, July 2018) in conjunction with Creditreform`s basic document "Rating Criteria and Definitions" (v1.3, January 2018). On the subject of ESG (environment, social and governance), Creditreform Rating AG has published the basic document "The Impact of ESG Factors on Credit Ratings" (March 2020).

Unsolicited Credit Rating	
With Rated Entity or Related Third Party Participation	NO
With Access to Internal Documents	NO
With Access to Management	NO

The rating is based on publicly available information and internal evaluation methods for the rated bank and program. The issuer's quantitative analysis is based mainly on the latest annual accounts, interim reports, other information of the bank pertaining to investor relations, and key figures from CRA/eValueRate database. The cover pool's quantitative analysis for the rated Covered Bond Program was based on the "Harmonised Transparency Template" (HTT) published by the Luminor Bank.

Information on the meaning of a rating category, definition of default and sensitivity analysis of relevant key rating assumptions can be found at "Creditreform Rating AG, Rating Criteria and Definitions":

https://www.creditreform-rating.de/en/about-us/regulatory-requirements.html

This rating was carried out by analysts Aaron Kamruzzaman (Analyst) und Bruno Passos (Analyst) both based in Neuss/Germany. On 27.04.2022, the rating was presented to the rating committee by the analysts and adopted in a resolution. The function of Person Approving Credit Ratings (PAC) was performed by Artur Kapica (Senior Analyst).

On 27.04.2022, the rating result was communicated to Luminor Bank, and the preliminary rating report was made available. The Issuer and all relevant parties examined the rating report

prior to publication and were given at least one full working day to appeal the rating committee decision and provide additional information. The rating decision was not amended following this examination.

The rating is subject to one-year monitoring from the creation date (see cover sheet). Within this period, the rating can be updated. After one year at the latest, a follow-up is required to maintain the validity of the rating.

In 2011 Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on the registration Creditreform Rating AG (CRA) is permitted to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

Endorsement

Creditreform Rating did not endorse the rating according Article 4 (3), CRA-Regulation.

Conflict of Interests

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The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our policy "Rating Committee," all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, CRA has used following substantially material sources:

1. Transaction structure and participants
2. Transaction documents
3. Issuing documents
4. Other rating relevant documentation

There are no other attributes and limitations of the credit rating or rating outlook other than displayed on the CRA website. Furthermore, CRA considers satisfactory the quality and extent of information available on the rated entity. In regard to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the disclosure of the credit rating to the rated entity and the public disclosure no amendments were made to the credit rating.

The rating report and/or the press release indicate the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology, or where reference only to the principal methodology might cause investors to overlook other important aspects of the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating and indicates how the different methodologies and other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery, and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions, such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings as well as best-case scenario credit ratings, are explained.

The date at which the credit rating was released for distribution for the first time and when it was last updated including any rating outlooks, is indicated clearly and prominently in the rating report and/or the press release as a “Rating action”; first release is indicated as “initial rating”, other updates are indicated as an “update”, “upgrade or downgrade”, “not rated”, “confirmed”, “selective default” or “default”.

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the rating report and/or the press release.

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