

Covered Bonds follow-up Rating

ING Bank N.V.

Mortgage Covered Bond (Hard & Soft Bullet) Program

Creditreform 
Rating

Rating Object	Rating Information	
ING Bank N.V., Mortgage Covered Bond (Hard & Soft Bullet) Program	Rating / Outlook : AAA / Stable	Type: Rating Update (unsolicited)
Type of Issuance : Mortgage Covered Bond under Dutch law Issuer : ING Bank N.V.	Rating Date : 15.12.2022 Rating Renewal until : Withdrawal of the rating Maximum validity: 01.01.2050 Rating Methodology : CRA „Covered Bond Ratings“	
LT Issuer Rating : A (ING Bank) ST Issuer Rating : L2 Outlook Issuer : Positive		

Program Overview			
Nominal value	EUR 17,417 m.	WAL maturity covered bonds	5.47 Years
Cover pool value	EUR 22,420 m.	WAL maturity cover pool	14.31 Years
Cover pool asset class	Mortgages	Overcollateralization (nominal/committed)	28.73%/ 2.50%
Repayment method	Soft and Hard Bullet	Min. overcollateralization	5.00%
Legal framework	Dutch covered bonds legislation	Covered bonds coupon type	Fix (91.39%), Floating (8.61%)

Cut-off date Cover Pool information: 30.09.2022

Rating Action

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This follow-up report covers our analysis of the mortgages covered bond program issued under Dutch law by ING Bank N.V. („ING Bank“). The total covered bond issuance at the cut-off date (30.09.2022) had a nominal value of EUR 17,416.56 m, backed by a cover pool with a current value of EUR 22,420.29 m. This corresponds to a nominal overcollateralization of 28.73%. The cover assets include Dutch mortgages obligations in the Netherlands.

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”) affirms the covered bond program with a AAA rating. The AAA rating represents the highest level of credit quality and the lowest investment risk.

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Key Rating Findings

- + Covered Bonds are subject to Dutch strict legal framework
- + Full recourse of the covered bond holders to the issuer
- + Covered bonds are backed by the appropriate cover asset class
- + Continuously improving asset-quality of the issuer despite high inflation and lingering supply chain problems
- High maturity mismatch between cover assets and covered bonds

Table1: Overview results

Risk Factor	Result
Issuer rating	A (rating as of 15.12.2022)
+ Legal and regulatory framework	+4 Notches
+ Liquidity and refinancing risk	+1 Notch
= Rating after 1 st uplift	AAA
Cover pool & cash flow analysis	AA
+ 2 nd rating uplift	+/-0 Notch
= Rating covered bond program	AAA

Issuer Risk

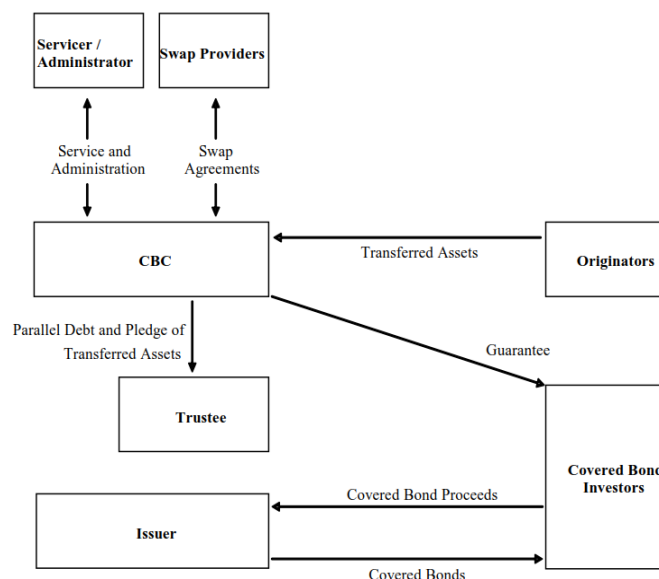
Issuer

Our rating of ING Bank N.V. covered bond program is reflected by our issuer rating opinion of ING Groep N.V. due to its group structure. CRA has affirmed the Long-term rating of ING Bank at A with positive outlook in a Rating Update dated 15.12.2022. The upgraded Outlook was primarily driven by a significant improvement of earnings throughout 2021, marred in 2022 by several, exogenous one-off factors. ING managed to continuously improve its asset quality amidst a difficult market environment. Good profitability allows the generous distribution policy, yet erodes the still comfortable capital buffers, which nevertheless is in line with long-term strategic planning. For a more detailed overview of the issuer rating, please refer to the issuer rating report published on the webpage of Creditreform Rating AG.

Structural Risk

Transaction structure

Figure1: Overview of Covered Bond emission | Source: ING Bank N.V.



Legal and Regulatory Framework

In the Netherlands, the covered bond legislation was initially came into force on July 1, 2008, which was amended in 2014 and implemented into national law. However, the Dutch covered bond legislation has recently been amended again to be in line with the EU Covered Bond Directive. The EU Directive has been transposed into Dutch law via the Implementation Act Covered Bond Directive of 15 December 2021, and the Implementation Decree Covered Bond Directive of 24 May 2022. Although the new regulatory frameworks significantly overlap with the old framework, some provisions of the old covered bond law will no longer apply under the new law. The new Dutch law came into force on 8 July 2022.

A comprehensive overview of the old legislation with previous amendments can be found in our initial and follow-up rating reports of ING Bank NV Mortgage Covered Bonds. The following major provisions describe the current status of the Dutch covered bond legislation.

Any universal bank based in the Netherlands with a special license can issue Dutch covered bonds. The Dutch Central Bank, which grants the license, registers the issuing credit institution and the class of covered bonds in a public register. Prior to registration, the issuing credit institution has to submit a detailed report on the planned covered bond program to the Dutch Central Bank and confirm that all regulatory and legal requirements are satisfied. After the registration, the Dutch Central Bank is in charge of the regulatory monitoring of covered bond programs in line with Article 129 CRR, both off-site as well as on-site. On a regular basis, the Dutch Central Bank checks the overcollateralization ratios and examines the compliance with relevant eligibility criteria and their documentation. In case of any violation with respect to regulatory and legal requirements, the Dutch Central Bank can impose a penalty, deregister an existing issuer and proscribe the issuer from issuing new covered bonds, or deny a new issuer its registration.

Insolvency Remoteness and Asset Segregation

In the Netherlands, the issuer has to guarantee that the cover assets will be transferred and sold to a separate, non-affiliated, independent legal entity -- the Covered Bond Company (CBC). In case of issuer default, the CBC ensures the payment of both interest and principal to the covered bond holders (covered bond guarantee). The CBC is set up for one single covered bond program and is usually managed by a Security Trustee. The CBC can provide a right of retention of the cover assets to the Security Trustee. Furthermore, the CBC can negotiate about the organization and management of cover assets with different involved parties, like derivative counterparties, the servicer of the asset monitor and so on. However, the CBC has no banking licence and is not allowed to handle claims that rank *pari passu* or senior to covered bond holders, except it affects management, risk management, liquidity, payment and treatment of corresponding covered bonds and eligible cover assets.

Consequently, covered bond holders have direct, unsubordinated and unsecured claim against the issuer, which is guaranteed by the CBC, and a claim against the CBC secured by the right of pledge on the cover assets. In case of issuer default, the Security Trustee can, if commissioned by the covered bond holders, accelerate the covered bonds against the issuer after an issuer default, but not against the CBC. Revenues from the outstanding debts will be added to the cover pool and used by the CBC to ensure the interest and principal payments to the covered bond holders in a timely manner.

Cover Pool Monitor

In the Netherlands, the issuer requires to appoint an internal or external cover pool monitor before the first covered bonds issuance under a covered bond program. The external cover pool monitor has to be fully independent and has no links with the bank or the external accountant of the bank. However, the internal cover pool monitor can have ties with the issuing bank, including the external accountant of the bank, but has to be independent from the credit decision process of the bank. The cover pool monitor has to check, at least annually that the issuing banks meet the regulatory requirements of the covered bond programs such as asset segregation, cover assets, derivative contracts, maturity extension, asset coverage and liquidity coverage. In both cases, the issuing bank ensure that the monitoring of the asset coverage and liquidity coverage requirements will continue to take place in the event of a resolution or bankruptcy of the bank.

The issuer has to ascertain that all requirements are achieved and has to report it to the Dutch Central Bank on a regular basis. Regarding investor information, it is obligatory to quarterly disclose information that is sufficiently detailed to allow investors to assess the profile and risk of covered bond programs and carry out due diligence. Furthermore, the issuer has to publish the nominal value of the issued covered bonds, the amount and structure of cover assets, the various coverage ratios, the ratio with respect to the liquidity buffer, the retention period of covered bonds and the cover pools, the amount of non-performing cover assets and derivative counterparties, etc. In practice, Dutch covered bond issuers disclose each month investor reports on their website, while they also have elaborated the Harmonized Transparency Template.

Special Administrator

In case of issuer default or any other crisis with respect to covered bonds, the Dutch covered bond legislation does not provide for the appointment of a special administrator; the Security Trustee and the CBC guarantee the ongoing management of the cover pool. However, the Dutch law ensures the co-operation and exchange of data and intelligence between the Dutch supervisor with EU, the European Supervisory Authorities (i.e., EBA, ESMA, EIOPA), the Single Resolution Board (SRB) and the European Systemic Risk Board (ESRB), if necessary for the performance of their duties.

Eligibility Criteria

The Dutch Covered Bond law requires that at least 80% of the cover assets shall consist of one type of the primary cover assets as set out in CRR Article 129, paragraph 1(a)-(g). Eligible cover assets are residential mortgage loans with a maximum LTV of 80%, commercial mortgage loans with a maximum LTV of 60%, or ship loans with a maximum LTV of 60%. Claims owed or guaranteed by the public sector, central banks, multilateral development banks or international organisations in line with Article 129 CRR are also eligible cover assets. Furthermore, assets that can be made eligible under a Ministerial Regulation can be included in the cover pool as well. Substitution assets are permitted up to a limit of 20% of the cover pool. Eligible for substitution assets are one or more of the types of eligible cover assets under CRR Article 129(1)(a-g).

The geographical scope of legitimate cover assets as well as collateral related to cover assets are confined to EEA countries. In practice, the primary cover assets backing the Dutch covered bond programs consist of only Dutch mortgage loans.

Under the new law, covered bonds have to be secured by only one type of primary asset classes in the cover pool, i.e. mixed cover pools comprised of both residential and commercial mortgage loans in one single covered bond program is not allowed anymore. In practice, all the Dutch covered bond programs are currently secured solely by residential mortgage loans.

The Dutch law requires that assets have to be valued at or below the market value or the mortgage lending value. In practice, the value of Dutch properties are based on the market value. Residential mortgages with an LTV exceeding 80% will only be recognised up to an 80% LTV in order to comply with the CRR requirements. In case the mortgages with an LTV higher than 80% are included in the cover pool, these mortgage loans will only count for a maximum of 80% in the asset cover test. The difference between the actual (higher) LTV and the 80% maximum will serve as additional credit enhancement.

Summary Structural Risk

In general, the Dutch covered bond legislation defines the legal basis for covered bond programs in the Netherlands, it defines clear rules to mitigate risks in particular regarding: insolvency remoteness, asset segregation, investor's special claim vis-à-vis other creditors, post issuer insolvency or resolution, among other provisions.

We consider the structural framework in the Netherlands as positive, accomplishing an adequate set of rules for Dutch covered bonds. Due to those reasons, we set a rating uplift of (+4) notches.

Liquidity and Refinancing Risk

Minimum Overcollateralization

Regarding OC, the new law provides for two coverage requirements to be fulfilled as follows:

1. A 100% coverage requirement related to all liabilities, where the total nominal value of all payment claims arising from the cover assets is at least equal to the total nominal value of the liabilities (which includes interest and principal amounts due on the outstanding covered bonds, the payment obligations related to derivative contracts in the cover pool and expected costs related to maintenance and management for the potential winding-down of the covered bond program).
2. A 105% coverage requirement related to the outstanding covered bonds, where the nominal value of the cover assets has to be equal to at least 100% of the total nominal value of the outstanding covered bonds ('nominal principle'). Furthermore, the total nominal value of the cover assets should be at least 5% higher than the total amount of outstanding covered bonds. When calculating the 105% overcollateralization requirement – Article 129 (1) a-g has to be taken into account, which means that the 80% LTV cut-off will need to be applied.

Short-term Liquidity Coverage

In order to sustain liquidity, the issuer has to guarantee by law that the CBC can pay any coupon and redemption obligations (interest and principal coverage) on the covered bonds and any claim of other involved parties that rank senior to covered bond holders for the next 180 days. Considering soft-bullet or conditional pass-through covered bonds with a maturity extension of

more than six months, the liquidity buffer has not to be employed for principal payments, for which the extended maturity date will be taken into account.

Stress Tests and Matching

Under the new law, there are no regulatory obligations that require issuers to perform regular stress tests on their covered bond programs since the healthy ratio requirements for a specific covered bond program has been removed. Derivatives contracts (such as currency swaps, interest rate swaps and total return swaps) can be added in the cover pool exclusively for the risk hedging purposes if the contracts meet certain conditions.

Asset-Liability Mismatch

Asset-liability mismatches ("ALM") arise with different maturities of cover assets and covered bonds. Depending on the issuer and currency of issuance, 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.

Under the new legislation, in order to mitigate liquidity risks, banks may issue covered bonds with an extendable maturities if, prior to the first issuance, the contractual terms of the covered bond program provide that extension of the maturity may not be made at the discretion of the issuing bank and shall only take place in the event of i) an issuer event of default and ii) a failure by the CBC to meet its obligations. The legislation however does not provide details about the length of maturity extensions and neither specifies the role of covered bondholders and/or the CBC. Banks can determine this contractually. However, the bank issuing covered bonds with extended maturities must provide various information on maturity extension and shall ensure that the maturity date of the covered bond can be determined at all times. A maturity extension shall also not affect the dual recourse and bankruptcy remoteness principles.

Refinancing Costs

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

Summary Liquidity and Refinancing Risk

Compared to other jurisdictions, the Dutch covered bonds legislation and the stipulated risk management processes for liquidity risks constitute a comparatively strict framework by which they can be effectively reduced. Refinancing risks, however, cannot be structurally reduced under the hard bullet repayment structure, which can only be cushioned by sufficiently high over-collateralization or short-term cash availability or other liquid funds to bridge the asset-liability mismatches in the portfolio. Nevertheless, we assess the overall legal provisions on liquidity management for the Dutch covered bond programs as positive which ensures 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 Dutch covered bond legislation defines clear rules to mitigate risks in particular regarding: insolvency remoteness, asset segregation, investor's special claim vis-à-vis other creditors, post issuer insolvency or resolution, 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 30.09.2022, the pool of cover assets consisted of 110,450 debt receivables, of which 100% are domiciled in the Netherlands. The total cover pool volume amounted to EUR 22,420.29 m in residential (100.00%), commercial (0.00%) and others (0.00%) loans.

The residential cover pool consists of 110,450 mortgage loans having an Unindexed weighted average LTV of 49.61%. The cover pool does not have any non-residential loans. The ten largest debtors of the portfolio total to 0.05%. Table 2 displays additional characteristics of the cover pool:

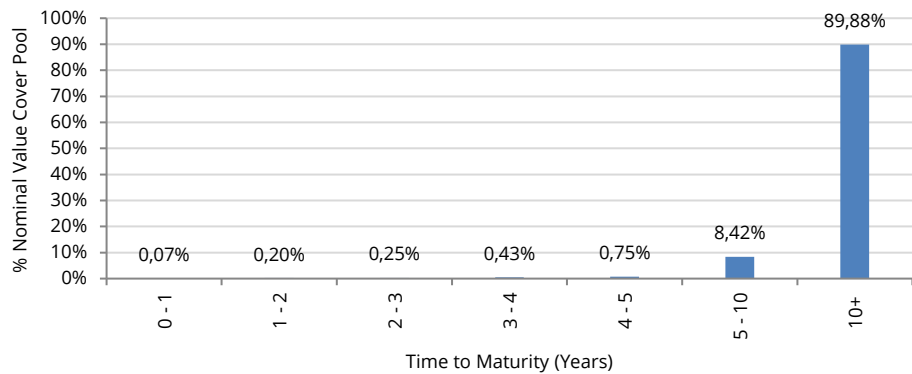
Table 2: Cover pool characteristics | Source: ING Bank

Characteristics	Value
Cover assets	EUR 22,420 m.
Covered bonds outstanding	EUR 17,417 m.
Substitute assets	EUR 1541.50 m.
Cover pool composition	
<i>Mortgages</i>	93.12%
<i>Substitute assets</i>	6.88%
<i>Other / Derivative</i>	0.00%
Number of debtors	Not relevant
Mortgages Composition	
<i>Residential</i>	100.00%
<i>Commercial</i>	0.00%
<i>Other</i>	0.00%

Average asset value (Residential)	EUR 189.03 k.
Average asset value (Commercial)	EUR 0.00 k.
Non-performing loans	0.0%
10 biggest debtors	0.05%
WA seasoning	143.88 Months
WA maturity cover pool (WAL)	14.31 Years
WA maturity covered bonds (WAL)	5.47 Years

We have listed an extended view of the composition of the cover pool in the appendix section “Cover pool details”. The following chart displays the maturity profile of the cover assets at the cut-off date 30.09.2022 (see figure 2):

Figure 2: Distribution by remaining time to maturity | Source: ING 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: ING Bank

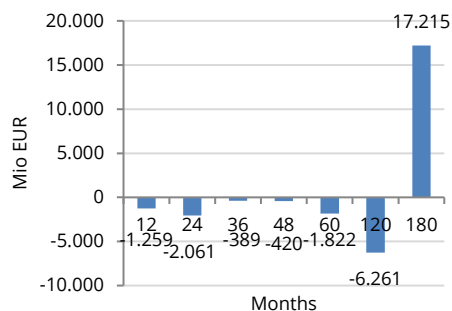
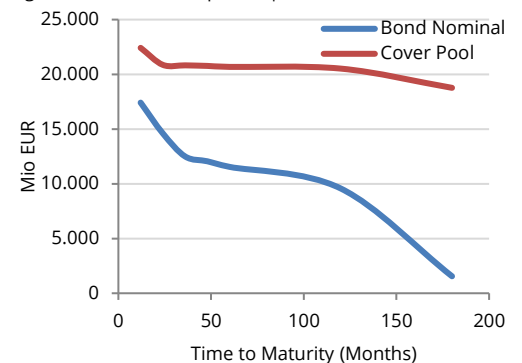


Figure 4: Amortization profile | Source: ING Bank



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

The Dutch legal framework allows issuing banks to use derivative instruments in the cover pool to hedge interest rate- and currency risk. Currency risk, regardless that is limited for this program as the cover pool assets and cover bonds are denominated in euros. In our cash flow

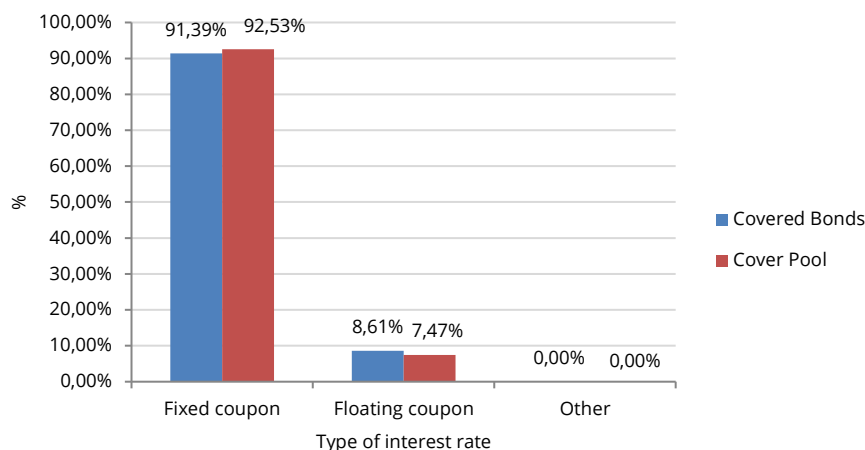
analysis we assume that the interest rate mismatches are fully hedged in the form of swap agreements; therefore, CRA did not apply any interest rate stress during the cash flow analysis.

Table 3: Program distribution by currency | Source: ING Bank

Currency	Volume	Share (%)
<i>Cover Pool</i>		
EUR	22,420 m.	100.00%
<i>Covered Bond</i>		
EUR	17,417 m.	100.00%

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

Figure 5: Type of interest rate | Source: ING 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 issuer's historical NPL ratios to derivate a conservative default rate proxy for the approximation through the LHP distribution. For the ING Bank it has been assumed an expected default rate of 0.036% for the LHP. Furthermore, CRA has considered a 15.00% correlation to define the LHP distribution. Table 4 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. Compare with last rating update, expected loss decreased significantly due to reduction in default rate and improved stressed recovery assumptions. The latter is caused by the general improvements of the residential real estate market. (see Table 4)

Table 4: Cover Pool Base case assumptions | Source: CRA

Rating	Default Rate (%)	Recoveries (%)	Expected Loss (%)
AAA	12.05%	90.41%	1.16%
AA+	10.54%	92.63%	0.78%
AA	8.38%	95.50%	0.38%
AA-	6.75%	97.43%	0.17%
A+	6.15%	98.24%	0.11%
A	6.13%	98.26%	0.11%
A-	5.75%	98.51%	0.09%

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.

This program issues covered bonds with soft- and hard bullet maturity structure. Due to insufficient information on the extended maturities, CRA did not consider any maturity extensions of the soft bullet covered bonds during its cash-flow analysis.

The cash-flow analysis considers, among other factors, asset value haircuts ("asset-sale discount"), and the possible positive yield spread between covered assets and covered bonds ("yield spreads"). To derive the asset-sale discount, CRA assumes, based on secondary market data, a rating level haircut on the asset value. Furthermore, CRA, using available public information (i.e. issuer's annual accounts), has derived estimations for yield spreads (see table 5):

Table 5: Cash-Flow Model assumptions | Source: CRA

Rating level	Asset-Sale Discount	Yield Spread
AAA	72.93%	1.31%
AA+	67.35%	1.34%
AA	63.75%	1.36%
AA-	60.33%	1.37%
A+	57.70%	1.38%
A	55.54%	1.39%
A-	52.72%	1.41%

Rating Scenarios

In our cash flow model rating scenarios have been tested considering 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 a AA rating scenario, the cash flow model showed that obligations can be paid fully and in a timely manner. Overall, the cash flow analysis revealed that the portfolio, given all used information as of 30.09.2022, may ensure the repayment of bonds' nominal capital notwithstanding the occurrence of the presented stressed scenarios.

Overcollateralization Break-Even Analysis

CRA also performed a break-even OC analysis taking into considerations the following drivers: ALM, Loss level, Interest rate spreads, foreign currency mismatches and 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 in table 6.

Table 6: Breakeven Analysis | Source: CRA

Rating Level	Break-Even OC
AA	26.68%
AA-	24.84%
A+	23.50%
A	22.45%
A-	21.05%
BBB+	19.55%
BBB	18.07%

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 debtors. 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 impact can be seen by a reduction in the base case rating by 2 notches to A+ (see Table 7):

Table 7: Covered Bond Program Sensitivity: Credit Quality und Recovery Rates | Source: CRA

Defaults \ Recovery	Base Case	-25%	-50%
Base Case	AA	AA	AA-
+25%	AA	AA-	A+
+50%	AA	AA-	A+

In general, based on the presented cash flow analysis results, the rating of the cover pool within our covered bond program rating has been set at AA. Consequently, the secondary rating uplift was set at zero (0) notch.

Counterparty Risk

Derivatives

The covered bond program uses intra group derivatives in the form of interest rate swaps and total return 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 Dutch 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 the Security Trustee and the CBC. Under that mandate, the CBC 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	Rating Date	Publication Date	Result
Initial Rating	18.02.2019	25.02.2019	AAA/ Stable
Rating update	13.02.2020	19.02.2020	AAA/ Stable
Rating Update	24.03.2020	28.03.2020	AAA/ Watch Negative
Rating Update	08.12.2020	14.12.2020	AAA/ Negative
Rating Update	05.07.2021	06.07.2021	AAA/ Watch
Rating Update	07.12.2021	13.12.2021	AAA/ Stable
Rating Update	15.12.2022	20.12.2022	AAA/ Stable

Details Cover Pool

Table 8: Characteristics of Cover Pool | Source: ING Bank

Characteristics	Value
Cover Pool Volume	EUR 22,420 m
Covered Bonds Outstanding	EUR 17,417 m
Substitute Assets	EUR 1,542 m
Share Derivatives	0.00%
Share Other	100.00%
Substitute Assets breakdown by asset type	
Cash	100.00%
Guaranteed by Supranational/Sovereign agency	0.00%
Central bank	0.00%
Credit institutions	0.00%
Other	0.00%
Substitute Assets breakdown by country	
Issuer country	100.00%
Eurozone	0.00%
Rest European Union	0.00%
European Economic Area	0.00%
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	93.12%

Creditreform Covered Bond Rating

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Total Substitute Assets	6.88%
Other / Derivatives	0.00%
Number of Debtors	NR
Distribution by property use	
Residential	100.00%
Commercial	0.00%
Other	0.00%
Distribution by Residential type	
Occupied (main home)	100.00%
Second home	0.00%
Non-owner occupied	0.00%
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	0.00%
Average asset value (Residential)	EUR 189 k
Average asset value (Commercial)	EUR 0 k
Share Non-Performing Loans	0.00%
Share of 10 biggest debtors	0.05%
WA Maturity (months)	213.24
WAL (months)	171.76
Distribution by Country (%)	
<i>Netherlands</i>	100
Distribution by Region (%)	
<i>Groningen</i>	2.21
<i>Friesland</i>	2.67
<i>Drenthe</i>	2.44
<i>Overijssel</i>	5.74
<i>Gelderland</i>	11.79
<i>Noord-Holland</i>	20.38
<i>Zuid-Holland</i>	23.26
<i>Zeeland</i>	1.34
<i>Brabant</i>	12.55
<i>Utrecht</i>	9.72
<i>Limburg</i>	2.72
<i>Flevoland</i>	5.18

Table 9: Participant counterparties | Source: ING Bank

Role	Name	Legal Entity Identifier
Issuer	ING Bank N.V.	3TK20IVIUIJ8J3ZU0QE75
Servicer	ING Bank N.V.	3TK20IVIUIJ8J3ZU0QE75
Account Bank	ING Bank N.V.	3TK20IVIUIJ8J3ZU0QE75

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

Name	Legal Entity Identifier	Agreement Type
ING Bank N.V.	3TK20IVIUIJ8J3ZU0QE75	FX
ING Bank N.V.	3TK20IVIUIJ8J3ZU0QE75	IRS
ING Bank N.V.	3TK20IVIUIJ8J3ZU0QE75	TRS

Figure 6: Arrears Distribution | Source: ING Bank

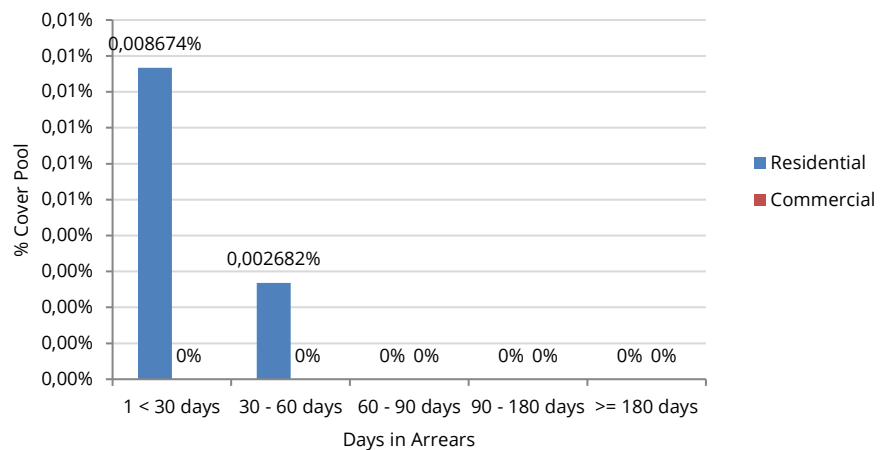


Figure 7: Program currency mismatches | Source: ING Bank

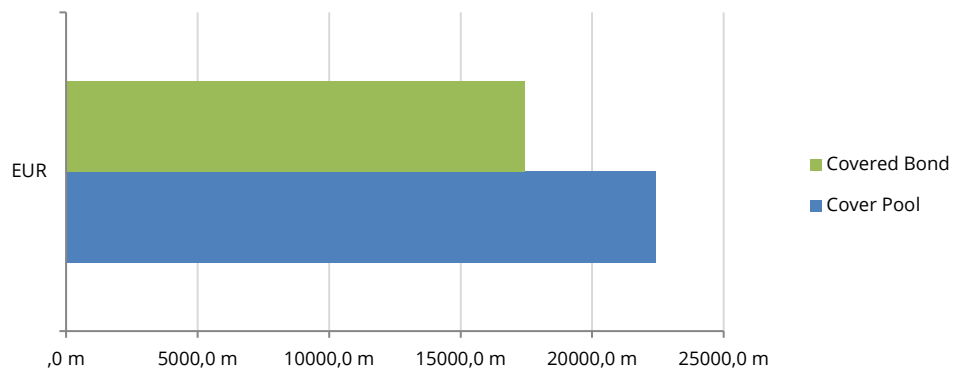
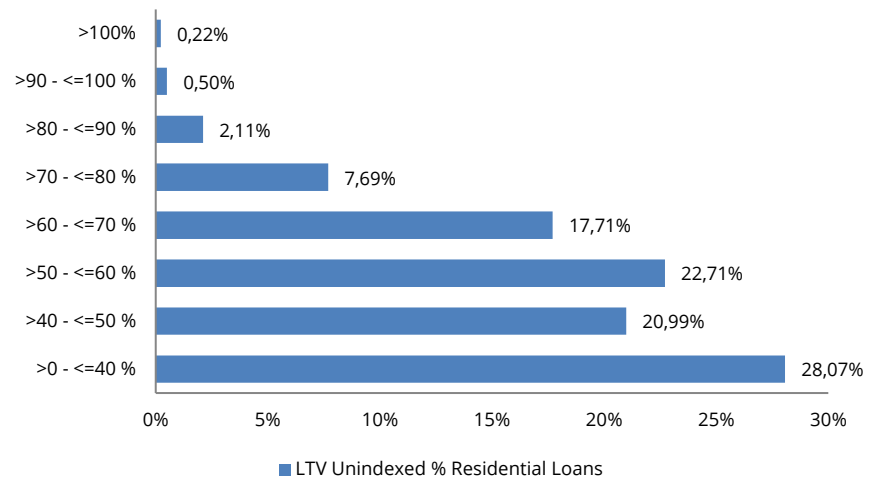


Figure 8: Unindexed LTV breakdown - residential pool | Source: ING Bank



Key Source of Information

Documents (Date: 30.09.2022)

Issuer

- Audited consolidated annual reports of ING Bank (Group) 2018-2021
- Issuer rating update report dated 15.12.2022
- Miscellaneous Investor Relations Information and Press releases
- Other rating relevant data from eValueRate/CRA databank

Covered Bond and Cover Pool

- HTT Reporting from ING Bank as of 30.09.2022
- Base prospectus of ING Bank N.V. Mortgage Covered Bond Program dated 25.03.2022
- Market data Mortgage Cover 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 the 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 ING 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 (Senior Analyst) and Qinghang Lin (Analyst) both based in Neuss/Germany. On 15.12.2022, 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 Christian Konieczny (Senior Analyst).

On 15.12.202, the rating result was communicated to ING 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.

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Endorsement

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

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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

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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 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 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 Press Release.

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