

Covered Bonds follow-up Rating

Banco de Sabadell, S.A.

Mortgage Covered Bond Program

Creditreform 
Rating

Rating Object	Rating Information
Banco de Sabadell, S.A. Mortgage Covered Bond Program Type of Issuance : Mortgage Covered Bond under Spanish law Issuer : Banco de Sabadell, S.A. LT Issuer Rating : BBB (Banco de Sabadell) ST Issuer Rating : L3 Outlook Issuer : Stable	Rating / Outlook : AAA / Stable Type: Rating Update (unsolicited) Rating Date : 17.02.2023 Rating Renewal until : Withdrawal of the rating Maximum Validity: 01.01.2050 Rating Methodology : CRA „Covered Bond Ratings“

Program Overview			
Nominal value	EUR 16,114 m.	WAL maturity covered bonds	3.47 Years
Cover pool value	EUR 24,187 m.	WAL maturity cover pool	9.71 Years
Cover pool asset class	Mortgages	Overcollateralization (nominal/committed)	50.10%/ 5.00%
Repayment method	Soft Bullet	Min. overcollateralization	5.00%
Legal framework	Spanish law on covered bonds	Covered bonds coupon type	Fix (41.43%), Floating (58.57%)

Cut-off date Cover Pool information: 31.12.2022.

Rating Action

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This follow-up report covers our analysis of the mortgages covered bond program issued under Spanish law by Banco de Sabadell, S.A. („Banco de Sabadell“). The total covered bond issuance at the cut-off date (31.12.2022) had a nominal value of EUR 16,114.41 m., backed by a cover pool with a current value of EUR 24,186.94 m. This corresponds to a nominal overcollateralization of 50.10%. The cover assets include Spanish mortgages obligations in Spain.

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 an 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 strict Spanish legal framework
- + Covered bonds holders have full recourse to the issuer
- + Covered bonds are backed by appropriate cover asset class
- + Improved profitability of the issuer in 2021 and in the first half of 2022, but still below pre-Covid levels
- The issuer' NPL – and Stage 2 ratio has worsened with Stage 2 above pre-Covid level

Table1: Overview results

Risk Factor	Result
Issuer rating	BBB (rating as of 15.12.2022)
+ Legal and regulatory framework	+4 Notches
+ Liquidity and refinancing risk	+1 Notch
= Rating after 1 st uplift	AA-
Cover pool & cash flow analysis	AAA
+ 2 nd rating uplift	+3 Notches
= Rating covered bond program	AAA

Issuer Risk

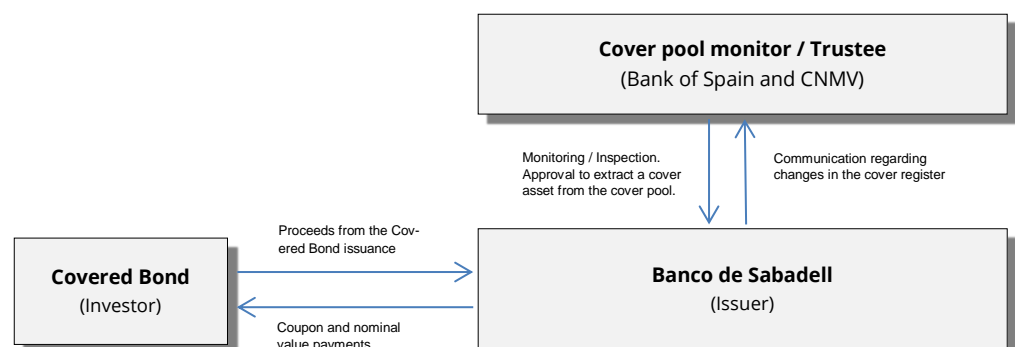
Issuer

Our rating of Banco de Sabadell is reflected by our issuer rating opinion of Banco de Sabadell S.A. (Group). CRA has upgraded the long-term rating of Banco de Sabadell to BBB from BBB- in a Rating Update dated 15 December 2022. The outlook was set stable. Banco de Sabadell's credit rating upgrade was primarily due to improved profitability in 2021 and in the first half of 2022, recovering from the Corona crisis. However, the bank was not able to achieve the pre-crisis earnings level from 2019 yet. In addition, the rating of Banco de Sabadell benefits from a stronger regulatory capitalization. Overall, all sub-scores of the quantitative analysis have improved compared to the previous year. While earnings ratios, in particular ROE and RORWA, and capital ratios strongly improved, asset write-down and RWA-ratio noticeably decreased. The issuer's NPL-ratio (stage 3 loans over net loans to customer) rose slightly from 3.6% to 3.65% in 2021, which is mainly due to methodology changes, as well as the repurchase of non-performing portfolios. Furthermore, the potential problem loan ratio in 2021 (stage 2 loans over net loans to customers) increased moderately from 7.56% to 7.82% while the ratio of reserves over NPL stayed stable at 57.95%. For a more detailed overview of the issuer rating, please refer to the webpage of Creditreform rating AG.

Structural Risk

Transaction structure

Figure1: Overview of Covered Bond emission | Source: CRA



Legal and Regulatory Framework

On November 02, 2021 Spain ruled the Royal Decree Law 24/2021 ("RDL"), in accordance with the Covered Bonds Supervision Directive 2019/2162/EU ("CBD") as well as other directives, communicating the full transposition measures for Spanish covered bonds, or "bonos garantizados".

While the framework constitutes a law, the Parliament is introducing further technical improvements. The secondary legislation may regulate the assessment of underlying assets and the procedure of approval and supervision by the Bank of Spain ("BE"). Nonetheless, it has not prevented the immediate application of the "RDL" 24/2021.

All classes of Covered Bonds in Spain are regulated by the RDL 24/2021, regardless the nature of the assets that constitute the collateral. Previously, there were different legal arrangements for each mortgages, public and internationalization covered bonds. These arrangements have been unified by the current legislation.

The RDL 24/2021 came into force on July 08, 2022, with directives applicable to both covered bonds issued before and after its promulgation. Therefore, it has made easier to manage the Covered Bonds without any grandfathering-like solution. This analysis take into consideration the current legal and regulatory framework. A comprehensive overview of the previous legal and regulatory framework can be found in our initial rating report of Banco de Sabadell Mortgage Covered Bonds.

The transition settlements include the conception of the initial polls of assets, the nomination of the covered pool monitor and the authorisation by the Bank of Spain. Additionally, the legislation prevents any claims of bondholders affected by the decree.

Insolvency Remoteness and Asset Segregation

Before the RDL came into force, the Spanish legislation did not provide a segregated pool of assets in the event of insolvency state. In such cases, the covered bond investors had preferential rights against all the loans constituted as collateral, regardless of its characteristics. The RDL introduced the concept of a segregated pool of assets in the Spanish covered bond legislation. As result, the Spanish framework converged to the same arrangement that was adopted by other jurisdictions in light of the requirements from Covered Bonds Supervision Directive 2019/2162/EU.

From RDL forth, the pool of assets (conjunto de cobertura) – which is appropriately segregated from the other assets of the credit institution – is bind to the covered bond program and serves as collateral for all its obligations. The assets in the covered pool are registered and monitored in an ongoing basis in the covered register. The assets must be individually identified by the credit institutions for compliance purposes. The relevant information of each asset are specified by the RDL.

In the event of insolvency, the pool assets are incorporated into a separate state (patrimonio separado), which is independent of the bankruptcy state and remains in the credit institution's balance sheet – not in a special vehicle purpose.

Trustee

The RDL has introduced the “Órgano de Control del Conjunto de Cobertura”, or cover pool monitor, in the Spanish regulatory framework. Despite the adoption of this figure being non-compulsory by the Directive, the Spanish legislation presented it to meet the same feature presented in most of European frameworks.

RDL stipulates the role of the cover pool monitor in the monitoring of the covered bonds issuers, detailing the terms for fulfilment of the legal requirements and boundaries. The legislation provides two options for implementing the cover pool monitor, which shall be either an external or an internal entity.

In the first case, auditors that acted on behalf of the issuer – or a company of its group – for the last three years are not allowed to be cover pool monitor. An external cover pool monitor must be appointed for a period between 3 and 10 years, with intervals of 3 years among engagements. It is on the issuer discretion to dismiss the external cover pool monitor when the scope of work is not fulfilled accordingly. Nonetheless, the Bank of Spain must be notified and a new cover pool monitor must be submitted for approval.

In the case of an internal cover pool monitor, the RDL demands its independence, authority and sufficient resources. Additionally, it shall be granted the direct access to the issuer’s Board of Directors.

The issuer must indicate the cover pool monitor (external or internal) in the occasion of the application for the covered bond program. It is under the issuer responsibility to prove that all the requirements for eligibility are met. The cover pool monitor is recorded in a special register upon approval by the Bank of Spain.

Special Administrator

The RDL arranges for general provisions and procedural regulation in case of insolvency or resolution, supplanting the previous bankruptcy law. The issuer bank retains its credit institution status when insolvency or resolution procedures are open, therefore maintaining the specific nature of the outstanding covered bonds. Additionally, the RDL introduced the concept of special administrator for insolvency and resolution events, which acts on behalf of the covered bonds holders. The Spanish directive guarantees coordination amongst the special administrator, Bank of Spain and the resolution authority.

In the case of need to liquidate the pool of assets that served as collateral for the covered bonds, the special administrator has the right to sell the assets. If the outstanding pool is insufficient to serve the bond holders, the payments must be held in a pro rata basis, regardless the issuance date. In the occasion that the bonds holders are not duly repaid they have rights over the issuer’s bankruptcy state, ranking together with other unsecured creditors. In other hand, ordinary creditors can claim rights against the remaining secured assets if the repayments to the covered bonds holders were fully addressed.

Eligibility Criteria

The Spanish legal framework has four types of covered assets with different nature of collateral such as (i) Mortgage (cédulas y bonos hipotecarios), (ii) Public Sector (cédulas y bonos territoriales), (iii) Internationalization (cédulas y bonos de internacionalización), and (iv) Other covered bonds. The three first classifications of covered bonds are regulated by the EU Regulation

575/2013 amended by Regulation 2019 /2160, and are compliant with the Capital Requirement Regulation (“CRR”) since all requirements are met, particularly the loan to value (“LTV”) and minimum overcollateralization ratios.

The bonds are issued as cédulas – open-ended pools – and bonos – close-ended pools, preserving the former legislation arrangements and providing flexibility for the issuers. The Spanish law permits allocation in assets from the European Union and abroad (art.7 of the CBD) to be incorporated into the pools. Nevertheless, the assets are normally located in Spain.

The most complete legislation stands for Mortgages covered bonds (cédulas hipotecarias), which has been the most relevant in Spain. The loans in the pool must (i) be a first-ranked mortgage, (ii) hold a valid record on the public register, (iii) respect LTV limits, (iv) hold a valuation certificate by the “Sociedades de Tasación” issued within no more than 6 months and revised in a yearly basis, (v) be insured against damage claims, and (vi) not exceed 30 years.

In respect with the valuation of the assets in the covered pool, the evaluators shall record all the documentation used in the valuation process and make them available to the cover pool monitor and Bank of Spain. The mortgage landing value serves as basis for mortgage loans, which is the sole type of covered bonds subjected to LTV constraints in the Spanish legal framework. Such arrangement preserves the previous solution adopted in the Spanish legislation.

The LTV limits for residential mortgage loans is up to 80%, while other types of mortgage loans may not exceed 60% of the lending value. The loans exceeding the LTV limits are not eligible to the covered pool (hard limits). Nonetheless, if the LTV value of a mortgage loan come down to permitted values upon principal repayments, the respective loan can be used as covered asset. Furthermore, the mortgage loan will be considered eligible only if the LTV value does not exceed the limit of the upper threshold due a decrease in the property's market value.

The incorporation of substitution assets is allowed for the three types of regulated covered bonds. Substitution assets must consist of public debt or short-term deposits to credit institutions. There is a cap of 10% of the total assets that can be incorporated in substitution assets. If that limit is exceeded, the issuers shall buy back the covered bonds or replace it by additional primary assets. The RDL also provides for joint pools and intragroup arrangements in the same conditions as in the arts. 8 and 9 of the CBD.

Summary Structural Risk

In general, the RDL 24/2021 transposed the Covered Bonds Directive 2019/2162 of 27 November 2019, as well as other different directives. The Spanish legal framework defines clear rules to mitigate risks including insolvency remoteness, investor's special claim vis-à-vis other creditors, among other provisions. Furthermore, it foresees clear asset eligibility criteria for the covered assets, liquidity buffers and LTV limits for mortgage assets. One important improvement addressed by the RDL was the implementation of a special cover pool monitor independent from the issuer.

We assess the structural framework in Spain as positive, accomplishing an adequate set of rules for Spanish covered bonds. Due to those reasons we have set a rating uplift of four (+4) notches.

Liquidity- and Refinancing Risk

Minimum Overcollateralization

The art. 15 of the CBD – Coverage requirements – was incorporated by the RDL, asserting the aggregate value of the principal of the covered assets in the covered pool must be equal or exceed the aggregate principal of the outstanding covered bonds. Features under national discretions were incorporated by the RDL, such as considerations on the future interests, and determination of a fixed cost related to the maintenance and administration of the “CB” program.

There are two types of overcollateralization (“OC”) – legal (mandatory) and voluntary. The legal (mandatory) “OC” is valid for three types of covered bonds – mortgage, public and internationalization covered bonds – amounting 5%. For the fourth category – other covered bonds – the mandatory OC is not defined. The voluntary OC in a higher level than the stipulated by the regulation must be respected once it is reflected on the issuance prospectus (or other contractual documentation).

Short-term Liquidity Coverage

Conventionally, Spanish issuers mitigate market and interest risks by natural matching. The RDL implements tools transposed from the CBD, firstly establishing the cover pool’s liquidity buffer – reflecting the art. 16 of the CBD provisions – as main instrument to address liquidity risk. The liquidity buffer is aimed to offset the maximum cumulative net liquidity outflow over the next 180 days. The RDL does not restrict the list of liquid assets admitted as buffer in the art. 16.3 of the CBD. In case of extended maturity, the final maturity date is taken in consideration for the calculation of the principal.

Stress Tests and Matching

The Spanish legal framework specifies the regulatory obligation requiring the issuers to perform stress tests in order to monitor the cover pool for interest rate, currency, maturity mismatch and other risks. The RDL also support derivatives as an additional measure to hedge interest rate and currency risks.

Regarding the valuation of the assets in the covered pool, the rule is compatible with the application of statistical models and methods substituting the requirement of individual assessments.

Asset-Liability Mismatch

An asset-liability mismatch (“ALM”) arises in the case of different maturities between cover assets and covered bonds. The RDL introduced the extended maturity into the Spanish legislation. It reproduces the art. 17.1 from CBD, and take place normally in form of soft bullets, aiming to reduce potential liquidity risks. The triggers for maturity extension are listed as (i) liquidity problems, (ii) insolvency or resolution, (iii) unviability of the issuer in the terms of the Recovery and Resolution Directive, or (iv) severe market turmoil. It is important to notice the RDL requires that the extension must be solicited and approved by the Bank of Spain. As of the reporting date, the issuer has issued mortgage covered bonds with a soft bullet redemption method, therefore CRA considers this transaction feature in its analysis quantitatively.

Refinancing Costs

In the event of the issuer's insolvency, the legal framework stipulates that the special administrator can sell assets of the cover pool or use them as a guarantee for liquidity operations if liquidity shortfalls are foreseeable.

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.

Other liquidity risks

Derivatives can be an additional measure such as derivatives to hedge especially interest rate risks. The legal framework provides for hedging counterparties being credit institutions with the specific credit quality according to art 129 1 c) of the CRR. The claims of the hedging counterparties have the same rank as covered bond holders in case of an insolvency of the issuer. During such a process, derivative contracts cannot be terminated prematurely.

Summary Liquidity and Refinancing Risk

The Spanish legal framework and the stipulated risk management processes for liquidity risks constitute, in general, a comparatively strict framework by which they can be effectively reduced. The option to defer maturity can mitigate existing refinancing risks, but is limited to specific triggers and the approval of the Bank of Spain. Remaining risks can only be cushioned by sufficiently high overcollateralization or other liquid funds to bridge the asset-liability mismatches.

We assess the statutory regulations on risk and liquidity management for covered bond programs under the RDL 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 Spanish legal framework defines clear rules to mitigate risks including insolvency remoteness, investor's special claim vis-à-vis other creditors, among other provisions. Furthermore, it foresees clear asset eligibility criteria for the covered assets, liquidity buffers and LTV limits for mortgage assets. One important improvement addressed by the RDL was the implementation of a special cover pool monitor independent from the issuer. Additionally, risk management and internal controls as well as 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 31.12.2022, the pool of cover assets consisted of 266,826 debt receivables, of which 100.00% are domiciled in Spain. The total cover pool volume amounted to EUR 24,186.94 m. in residential (85.57%), commercial (14.43%) and others (0.00%) loans.

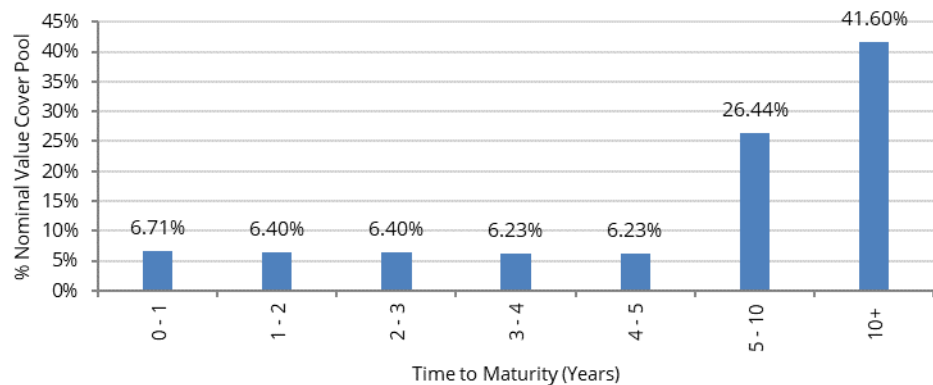
The residential cover pool consists of 244,039 mortgage loans having an unindexed weighted average LTV of 52.33%. The non-residential cover pool consists of 22,787 mortgage loans having an unindexed weighted average LTV of 38.17%. Along with other conditions, a higher percentage (6.02%) of commercial loans have a LTV higher than 60% which might only partially qualify as eligible assets. The ten largest debtors of the portfolio total to 0.85%. Table 2 displays additional characteristics of the cover pool:

Table 2: Cover pool characteristics | Source: Banco de Sabadell

Characteristics	Value
Cover assets	EUR 24,187 m.
Covered bonds outstanding	EUR 16,114 m.
Substitute assets	EUR 0.00 m.
Cover pool composition	
<i>Mortgages</i>	100.00%
<i>Substitute assets</i>	0.00%
<i>Other / Derivative</i>	0.00%
Number of debtors	NR
Mortgages Composition	
<i>Residential</i>	85.57%
<i>Commercial</i>	14.43%
<i>Other</i>	0.00%
Average asset value (Residential)	EUR 84.81 k.
Average asset value (Commercial)	EUR 153.16 k.
Non-performing loans	0.00%
10 biggest debtors	0.85%
WA seasoning	79.13 Months
WA maturity cover pool (WAL)	9.71 Years
WA maturity covered bonds (WAL)	3.47 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 31.12.2022 (see figure 2):

Figure 2: Distribution by remaining time to maturity | Source: Banco de Sabadell



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: Banco de Sabadell

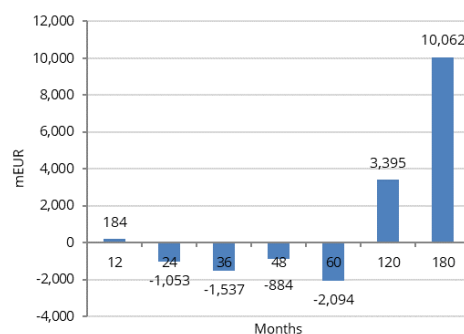
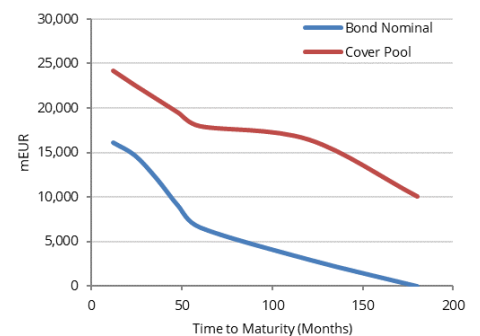


Figure 4: Amortization profile | Source: Banco de Sabadell



During its cash flow modelling, CRA has taken into consideration the maturity structure of cover assets and liabilities and applied the extended maturities according to the outstanding covered bonds as at the reporting date. This structure was an integral part of the cash flow analysis.

Interest rate and currency risk

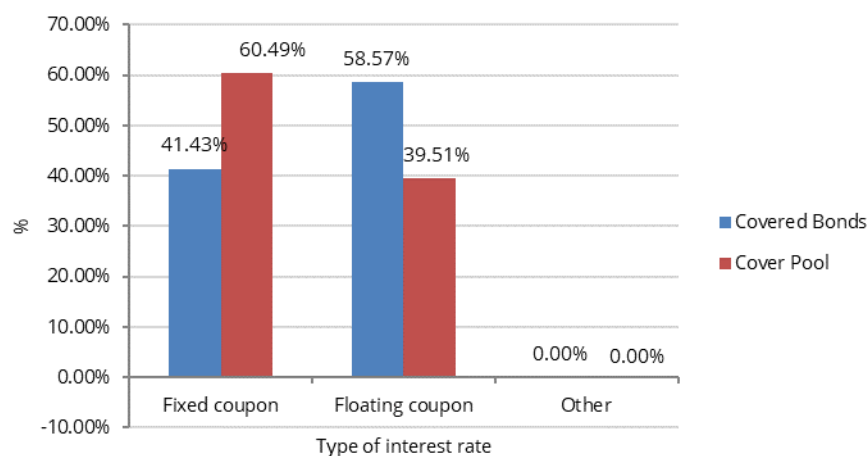
This covered bond program does not use derivatives to hedge interest rate- and currency risk. In addition, there are no regulatory obligations that require issuers to perform specific stress tests to monitor interest rate- and currency risks. However, interest rate risk could be mitigated by the 5.00% obligatory 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 mainly in euro. Nevertheless, we have applied interest rate stresses on the cash flows for each rating level according to our methodology.

Table 3: Program distribution by currency | Source: Banco de Sabadell

Currency	Volume	Share (%)
Cover Pool		
EUR	24,187 m.	100.00%
Covered Bond		
EUR	16,114 m.	100.00%

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

Figure 5: Type of interest rate | Source: Banco de Sabadell



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 Banco de Sabadell it has been assumed an expected default rate of 0.47% 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 (see Table 4):

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

Rating	Default Rate (%)	Recoveries (%)	Expected Loss (%)
AAA	21.14%	65.65%	7.47%
AA+	18.69%	68.08%	5.97%
AA	15.56%	73.10%	4.19%
AA-	12.90%	76.85%	2.99%
A+	11.91%	78.50%	2.56%
A	11.86%	78.60%	2.54%
A-	11.15%	79.89%	2.24%

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.

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%	0.98%
AA+	67.35%	1.02%
AA	63.75%	1.05%
AA-	60.33%	1.08%
A+	57.70%	1.10%
A	55.54%	1.12%
A-	52.72%	1.14%

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 an AAA 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 31.12.2022, 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
AAA	42.24%
AA+	38.28%
AA	34.74%
AA-	31.89%
A+	30.29%
A	29.36%
A-	27.80%

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 change in the implied rating of two notches to AA (see Table 7):

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

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

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 AAA. Consequently, the secondary rating uplift was set at one (+3) notches.

Counterparty Risk

Derivatives

No derivatives in use at present.

Commingling

In the event of issuer's bankruptcy, in order to avoid commingling of funds, the Spanish legal framework stipulates that the specific cover assets (conjunto de cobertura) should be isolated from the general bankruptcy estate (insolvency-free assets) and incorporated to a separate estate (patrimonio separado). A special cover pool administrator will be appointed to manage the cover pool. Under that mandate the cover pool administrator will have first priority on the upcoming cash flows from the cover pool assets, which in turn should be used to cover interest and principal payments of the covered bond holders in event of the Issuer's insolvency.

Appendix

Rating History

Event	Rating Date	Publication Date	Result
Initial Rating	28.01.2019	30.01.2019	AA-/ stable
Rating Update	27.01.2020	31.01.2020	AA-/ stable
Monitoring	24.03.2020	28.03.2020	AA- / watch negative
Rating Update	27.10.2020	02.11.2020	A+ / stable
Monitoring	05.07.2021	06.07.2021	A+/ watch unknown
Rating Update	26.10.2021	02.11.2021	A+/ positive
Rating Update	21.11.2022	24.11.2022	AA+/ positive
Monitoring	06.01.2023	12.01.2023	AAA/ stable
Rating Update	17.02.2023	24.02.2023	AAA/ stable

Details Cover Pool

Table 8: Characteristics of Cover Pool | Source: Banco de Sabadell

Characteristics	Value
Cover Pool Volume	EUR 24,187 m.
Covered Bonds Outstanding	EUR 16,114 m.
Substitute Assets	EUR 0 m.
Share Derivatives	0.00%
Share Other	0.00%
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	0.00%
Substitute Assets breakdown by country	
Issuer country	0.00%
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%

Creditreform Covered Bond Rating

Banco de Sabadell, S.A.

Mortgage Covered Bond Program

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Rating

New Zealand	0.00%
Singapore	0.00%
US	0.00%
Other	0.00%
Cover Pool Composition	
Mortgages	100.00%
Total Substitute Assets	0.00%
Other / Derivatives	0.00%
Number of Debtors	266,826
Distribution by property use	
Residential	85.57%
Commercial	14.43%
Other	0.00%
Distribution by Residential type	
Occupied (main home)	82.02%
Second home	15.59%
Non-owner occupied	1.14%
Agricultural	0.00%
Multi family	0.00%
Other	1.25%
Distribution by Commercial type	
Retail	18.95%
Office	10.99%
Hotel	9.66%
Shopping center	1.46%
Industry	17.98%
Land	0.00%
Other commercially used	6.19%
Hospital	1.78%
School	1.97%
Other RE with a social relevant purpose	0.76%
Other	30.26%
Average asset value (Residential)	EUR 85 k.
Average asset value (Commercial)	EUR 153 k.
Share Non-Performing Loans	0.00%
Share of 10 biggest debtors	0.85%
WA Maturity (months)	209.90
WAL (months)	116.47
Distribution by Country (%)	
Spain	100.00

Distribution by Region (%)	
Andalusia	10.00
Aragon	1.31
Asturias	2.80
Balearic Islands	5.29
Basque Country	3.62
Canary Islands	1.58
Cantabria	0.43
Castile La Mancha	0.90
Castile León	1.76
Catalonia	36.86
Ceuta	0.07
Extremadura	0.25
Galicia	2.17
La Rioja	0.20
Madrid	13.49
Melilla	0.10
Murcia	4.06
Navarra	0.45
Valencia	14.66

Table 9: Participant counterparties | Source: Banco de Sabadell

Role	Name	Legal Entity Identifier
Issuer	Banco de Sabadell	SI5RG2M0WQQLZCCKRM20

Figure 6: Arrears Distribution | Source: Banco de Sabadell

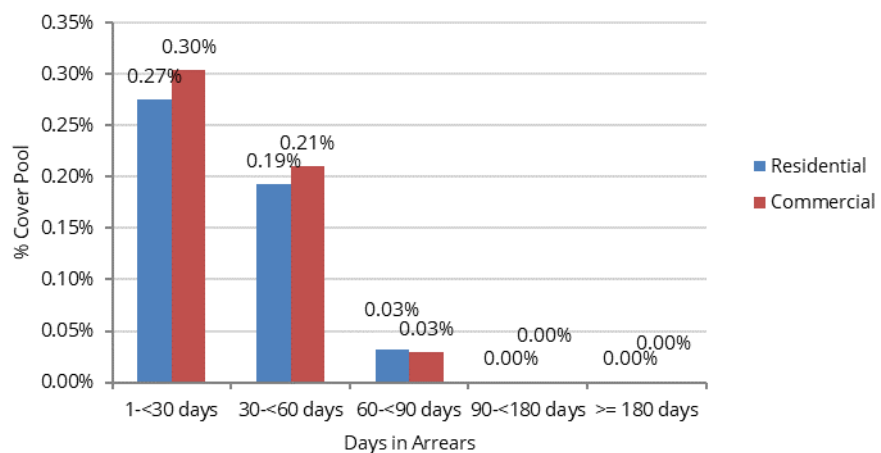


Figure 7: Program currency mismatches | Source: Banco de Sabadell

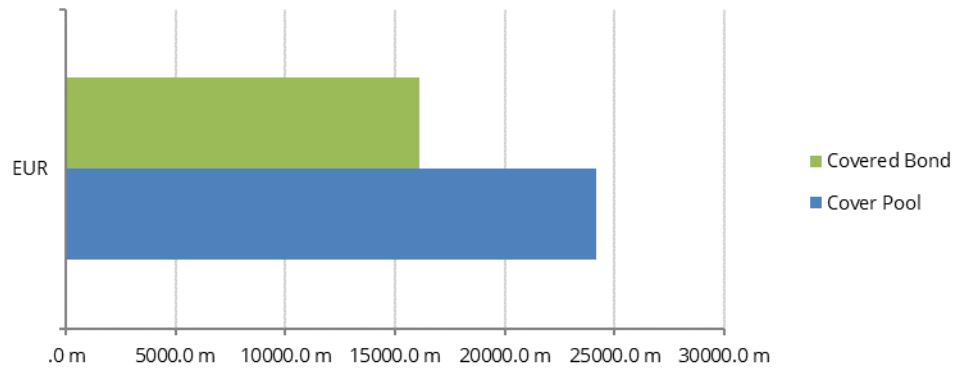


Figure 8: Unindexed LTV breakdown - residential pool | Source: Banco de Sabadell

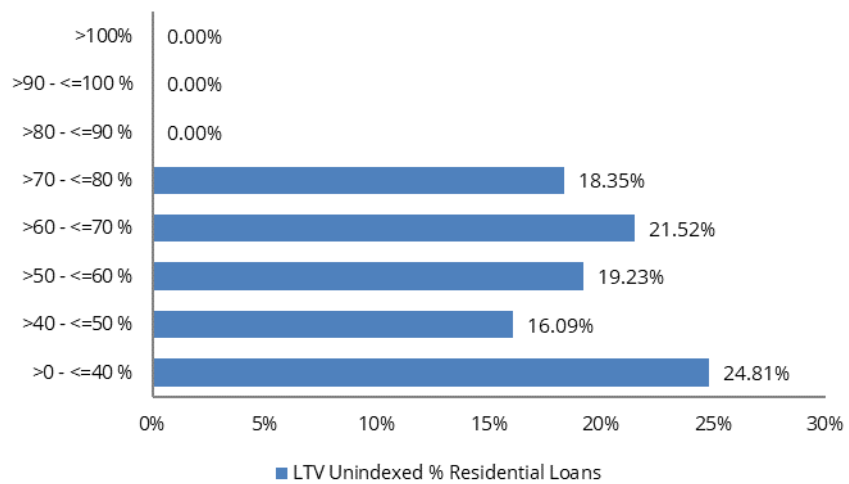
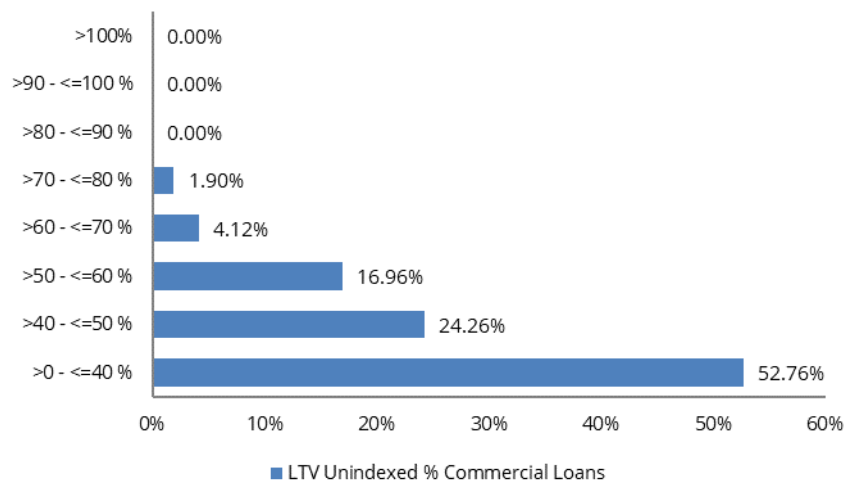


Figure 9: Unindexed LTV breakdown - commercial pool | Source: Banco de Sabadell



Key Source of Information

Documents (Date: 31.12.2022)

Issuer

- Audited consolidated annual reports of the Banco de Sabadell (Group) 2017-2021
- Final Rating report as of 15.12.2022
- Miscellaneous Investor Relations Information and Press releases
- Data from CRA eValueRate databank

Covered Bond and Cover Pool

- HTT Reporting from Banco de Sabadell as of 31.12.2022
- Market data Mortgage Cover Bond Program

Regulatory and Legal Disclosures

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 calculated by CRA/ eValueRate. The cover pool's quantitative analysis for the rated Covered Bond Program was based on the "Harmonised Transparency Template" (HTT) published by the Banco de Sabadell.

A complete description of Creditreform Rating's rating methodologies and Creditreform's basic document "Rating Criteria and Definitions" is published on the following internet page:

www.creditreform-rating.de/en/regulatory-requirements/

This rating was carried out by analysts Philip Michaelis (Senior Analyst) and Bruno Passos (Analyst) both based in Neuss/Germany. On 17.02.2023, 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 17.02.2023, the rating result was communicated to Banco de Sabadell, 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

No conflicts of interest were identified during the rating process that might influence the analyses and judgements of the rating analysts involved or any other natural person whose services are placed at the disposal or under the control of Creditreform Rating AG and who are directly involved in credit rating activities or approving credit ratings and rating outlooks.

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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 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".

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