Creditreform Covered Bond Rating
Banco de Sabadell S.A.
Mortgage Covered Bond Program

Creditreform Rating
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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 LT Issuer Rating: BBB (Banco de Sabadell) ST Issuer Rating: L3 Outlook Issuer: Stable	Rating / Outlook : **AA- / Stable**	Type: Initial Rating (unsolicited)
	Rating Date : 28.01.2019 Rating Renewal : Withdrawal of the rating Rating Methodology : CRA „Covered Bond Ratings"	

Program Overview

Nominal value	EUR 19.403 m.	WAL maturity covered bonds	3,04 (Years)
Cover pool value	EUR 44.427 m.	WAL maturity cover pool	6,89 (Years)
Cover pool asset class	Mortgages	Overcollateralization (nominal/committed)	129%/ 25,00%
Repayment method	Hard Bullet	Min. overcollateralization	25%
Legal framework	Spanish mortgage market law	Covered bonds coupon type	Fix (48,55%), Floating (51,45%)

Cut-off date Cover Pool information: 30.09.2018.

Content

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Summary

This rating report covers our analysis of the mortgage covered bond ("Cedulas Hipotecarias") program issued under Spanish law by the Banco de Sabadell S.A. („Banco de Sabadell"). The total covered bond issuance at the cut-off date (30.09.2018) had a nominal value of EUR 19.402,54 m, backed by a cover pool with a current value of EUR 44.426,94 m. This corresponds to a nominal overcollateralization of 129%. The cover assets mainly 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") has assigned the covered bond program an AA- rating. The AA- rating represents a very high level of credit quality and very low investment risk.

Key Rating Findings

+ Covered Bonds are subject to strict legal requirements
+ Covered bonds are backed by the appropriate cover asset class
+ Covered bond holders have recourse to the issuer
- Legal framework does not stipulate a special cover pool monitor independent from the issuer.
- Relative high stock of NPLs

Table1: Overview results

Risk Factor	Result
Issuer rating	BBB (rating as of 29.05.2018)
+ Legal and regulatory framework	+4 Notches
+ Liquidity and refinancing risk	+1 Notch
= Rating after 1st uplift	AA-
Cover pool & cash flow analysis	BBB-

+ 2nd rating uplift	+/-0
= Rating covered bond program	**AA-**

Issuer Risk

Issuer

Banco de Sabadell S.A. (hereinafter: Sabadell or BS) is a banking group whose roots go back to 1881. Sabadell decided in October 2017 to relocate its registered headquarters from Barcelona to Alicante as a result of the independence ambitions of Catalonia; the operational headquarters, however, remained in Catalonia. With 26,171 employees (average of 2017) SB serves approximately 12.1 million customers and had total assets of EUR 221 billion in 2017. Sabadell acts as a universal bank (focus on individuals and SME) with activities in the insurance business, and operates primarily in Spain and the United Kingdom. In addition, SB has 13 representative offices worldwide and a noteworthy business in America, in particular in Mexico.

Sabadell is currently pursuing its business plan 2018-2020. According to the plan SB will focus on growing business in its priority markets Spain, United Kingdom and Mexico, and will further strengthen its commercial and digital capabilities, allowing the Bank to continue working towards its main priorities: the improvement of profitability and the reduction of non-performing assets.

In 2017 Banco de Sabadell SA recorded a year of consolidation; however, SB still has some legacy issues in relation to its high stock of NPL's. Due to the relatively high stock of NPL's and correspondingly high amounts of asset write-downs, SB struggles to remain profitable. However, SB counteracted this issue in 2017 through various non-recurring revenues, which ultimately led to an improved net profit in comparison to the previous year. In addition, despite strong improvements, SB struggles to keep up with its competitors regarding its regulatory capital ratios. However, the liquidity situation of the bank is satisfactory.

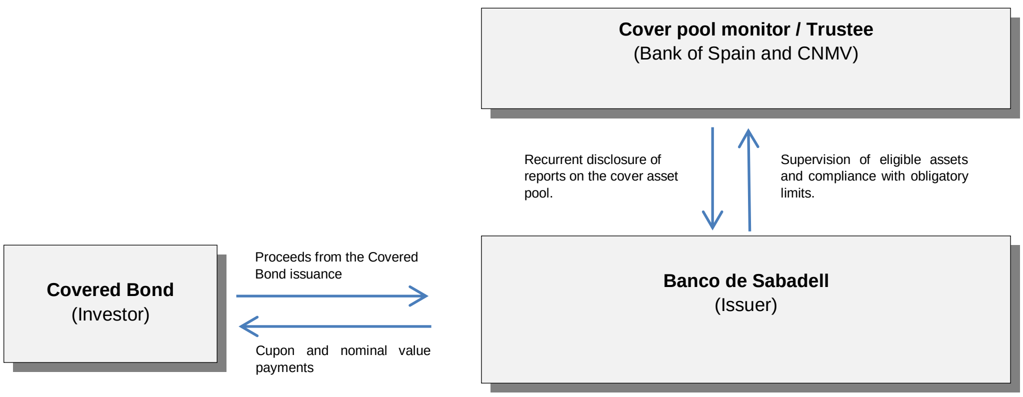
Structural Risk

Transaction structure

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

Role	Name
Issuer	Banco de Sabadell, Spain
Cover pool monitor / Trustee	Executed by the Bank of Spain and the Spanish National Securities Market Commission
Cover pool administrator	Regular insolvency administrator

Figure1: Overview of Covered Bond emission | Source: CRA



Legal and Regulatory Framework

In Spain, the most common type of covered bonds outstanding are "Cédulas Hipotecarias" (CH). The legal framework for CH is constituted by the Law 2/1981 of 3/25/1981 on the regulation of the mortgage market. Law 2/1981 was modified several times since then.

Law 2/1981 contains an Article about bankruptcy regulation that governs the special treatment of the covered bond holders in the case of an issuer default. Covered bond holders are granted particular privileged claims against the issuer´s insolvency estate. All principal and interest payments, as well as payments to any existing substitution assets supporting the covered bonds, have to be settled on time, whatever the state of the insolvency proceedings is. In doing so, the volume and interest of the covered bonds have to be covered by the complete, registered mortgage debt of the issuer.

The Spanish legal framework complies with the criteria of Article 129 of the Capital Requirements Regulation (CRR) and the criteria of Article 52(4) UCITS. Listed covered bonds are applicable for the investment by insurance companies of their technical provisions obligations, the investment by mutual guarantee companies and the investment by Pensions Funds. Moreover, listed covered bonds are eligible in repo transactions with the national central bank.

Regarding the implementation of the BRRD, which features resolution authorities with several particular resolution tools, Spain translated the directive into national law by passing the law 'Ley 11/2015 de recuperación y resolución de entidades de crédito y empresas de servicios de inversión', which is in effect since 6/20/2015. This framework guarantees that in case of issuer insolvency covered bonds will be not used as bail-in capital and guarantees the preferential status of covered bonds in the event of issuer default.

Spain not merely implemented this directive, but also is among one of the few countries that already applied the law in praxis. On 6/6/2017, the ECB decreed that Banco Popular was "failing or likely to fail" and apprised the Single Resolution Board (SRB). The SRB and the Spanish national resolution authority FROB agreed on the disposal of Banco Popular to Banco Santander. Prior to the handover, all existing shares (Common Equity Tier 1), and the Additional Tier 1 instruments were written down and the Tier 2 instruments were transformed into new shares, which were assigned to Santander at a price of 1 Euro. In contrast, senior unsecured debt, deposits, covered bonds and other non-capital instrument liabilities were excluded and not involved in the resolution.

Insolvency Remoteness and Asset Segregation

Cover assets remain on the issuer's consolidated balance sheet and are not delivered to an independent legal representative. In case of issuer default, covered bond holders enjoy legal privilege over the bankruptcy estate of the issuer and their claims have to be secured by the insolvency administrators on time without any deferral. Thus, covered bond holders can make use of the dual recourse and secure their claims against the general insolvency estate *pari passu* to other unsecured bond holders, which is in line with EBA Best Practices.

A special accounting register has to be established, on the one hand to guarantee the privileged credit right and the enforceability of mortgage loans, and on the other hand to pursue adequacy in order to confine the amount of issuance. The particular accounting register requires the issuer to register collateral, substitute assets and derivative contracts and facilitates the isolation of the cover assets from the general bankruptcy estate for the covered bond holders' preferential claim in the event of insolvency. Overall, Spain's legal framework is considered partially aligned with EBA Best Practices regarding the segregation of cover assets.

Mortgage covered bonds are covered by the issuer's complete mortgage loan book and not just by a relevant percentage of it, i.e. the investor is granted a privileged credit right on the entire mortgage loan book (excluding securitizations or loans securing mortgage bonds), substitute assets and economic flows caused by financial instruments used in the issuance. Furthermore, all mortgage loans serving as collateral for a covered bond have to be incorporated in the Land Registry.

Respective claims have to be settled by using the revenues from the issuer's cover assets. The insolvency administrators are bound to disburse the principle and interest payments whilst the cash receipts generated by the collateral are enough. If they are not enough to settle the covered bond payments, the outstanding debits of the covered bond investors will be paid on a pro rata basis, whatever the date of issue of their securities. A deferment of payment (moratorium) with respect to the bankruptcy's estate may not defer the revenues from the cover assets and, thus, put the duly settlement of principle and interest of the covered bonds at risk. If the cash flows of the cover assets are not obtained on time, substitute cover assets can be dissolved to ensure timely settlements regarding the bond holders' claims. If this does not suffice, subrogation of the debtor should remedy the money squeeze.

In case of an issuer default, no automatic acceleration of the covered bond takes place. Covered bonds will continue to exist and they will be reimbursed at the time of their contractual maturity. Spain still sticks to the issuance of hard-bullet covered bonds. Nevertheless, also soft-bullet covered bonds have been introduced. Regarding bankruptcy remoteness, Spain fully complies with EBA's best practice and provides compulsory structural and operational features to guarantee the remoteness of the covered bond from the insolvency estate of the issuer and a preferential treatment of the covered bond holders regarding the cover assets.

Trustee

The Spanish legal framework does not stipulate a special cover pool monitor independent from the issuer. Nevertheless, such an employment is anticipated to be established for the future. By now, the regular inspection by the Bank of Spain involves the recurrent disclosure of reports on the cover asset pool by the issuer. The issuer is in charge of the supervision of the eligible cover asset pool and has to make sure that the obligatory limits are always met. In doing this, the risk management and auditing division of the issuer have to supervise the individual covered bond program on a regular basis. A particular monitoring in the context of the general supervision of the issuer involving the adherence of the individual covered bond programs to statutory rules and thresholds is further executed by the competent authority – the Spanish National Securities Market Commission (Comisión Nacional del Mercado de Valores). Spain fully conforms to the EBA requirement of appointing the cover pool monitor.

Special Administrator

In the event of bankruptcy, the usual insolvency administrator is responsible for the superintendence of the cover assets and the administration of the covered bond program. While the insolvency is regulated by the commercial court and its jurisdiction and conducted by a particular bankruptcy authority, there is no special administrator in place. The usual insolvency administrator is responsible for reimbursing the covered bond holders' claims on time. Thus, he or she is allowed to sell substitution assets or to draw accessory financing to reduce possible temporary illiquidity and to warrant timely payments. Furthermore, in the event of assets sale, the insolvency administrator has to assure the insolvency court of the maintenance of the mortgage loans that are accredited with a preferential claim. Overall, Spain merely partially complies with EBA's best practice in terms of the administration of the covered bond program after an issuer's insolvency resolution.

Eligibility Criteria

CH are Spanish mortgage covered bonds. There exist no definite legal requisitions for mortgage loans to be eligible cover assets. Nevertheless, for issuance reasons and corresponding thresholds to be considered for the calculation of the maximum amount of mortgage covered bonds, eligible cover assets have to meet some standards. For instance, the mortgage must be a first-ranked mortgage and must be insured against harm and damage. The loan may not exceed 60% of the mortgage lending value and 80% in case of residential loans. The aim of the loan has to be the funding of the construction, reconstruction or acquirement of real estates and residential buildings whatever their function is. Finally, residential loans may not exceed a maturity of 30 years.

Another type of Spanish covered bonds are "Cédulas Territoriales" (CT), public sector covered bonds, involving a similar privileged credit right like mortgage covered bonds. Cover assets are composed of the full public sector book of the issuer containing loans to the Spanish government, communities and local authorities, as well as government agencies in the European Economic

Area. The amount of public sector covered bonds may not exceed 70% of the applicable public debt yielding a minimum over-collateralization of 43%.

Under the Spanish legal framework the separation between mortgage and public sector covered bonds is obliged, i.e. CH include the issuer's entire mortgage loans and CT comprise public sector loans. However, with respect to mortgage covered bonds, it is not compulsory to distinguish residential from commercial mortgage loans within the cover pool over time and thus, EBA's best practice recommendations are only partially satisfied.

In Spain, the legal framework differentiates between cover assets and eligible assets. Cover assets entail the entire mortgage loan book, and no LTV limits are in place. A fraction of the cover assets constitutes eligible assets in order to define the maximum volume of mortgage covered bonds that can be issued. Regarding eligible assets hard LTV limits exist, while the limits do not apply to the cover pool but to issuance limits. For commercial mortgages the LTV limit is 60% of the property's mortgage lending value. For residential loans a LTV limit of 80% of the property's mortgage lending value is in place. The latter limit can be transcended by a maximum of 15 percentage points, if the mortgage loan disposes of a bank guarantee provided by another credit institution or is collateralized by a credit insurance. Both the guarantee and the insurance have to be direct and backup at least the volume of the ensured loan. If mortgage loans primary exceed the respective limits they can be included as cover assets after the loan volume has been adapted to the limit by means of principal repayments or by adjustments of the market value of the corresponding property. Besides, there exists neither a LTV cap which makes the whole loan ineligible for the cover pool nor a LTV cap which would call for a removal of the loan. However, the LTV caps for eligible loans apply to the complete loan and thus, no amount beyond the cap is eligible. Overall, due to the partition into cover assets and eligible assets, a LTV threshold of 100% is possible. In terms of LTV limits, Spain partially conforms to EBA's best practice. The legal framework stipulates that the mortgage property has to be evaluated before the issuance of the covered bonds by particular companies. The evaluation procedures as well as the companies themselves are regulated and monitored by the Bank of Spain and among others have to fulfill the minimum corporate capital requirements and an appropriate registration at the Bank of Spain. Moreover, the issuer is not allowed to possess more than 10% of the respective valuation company's capital. The obligation of at least an annual revaluation of the residential and commercial properties and the independence and transparency of the valuation process fully align to EBA's best practice.

The geographical scope of legitimate mortgage assets and public sector assets is not confined to EEA countries. Nevertheless, cover assets for mortgage covered bonds outside the EU have to be equivalent to Spanish mortgage loan assets, i.e. their legal feasibility should be equivalent to that of Spanish assets. To guarantee this, the legal framework of the respective jurisdiction will be appraised in advance. This conforms fully to EBA's best practice.

Substitute cover assets are allowed to be in the cover pool only in the case of mortgage covered bonds, but must not exceed the limit of 5% of the issued capital. Neither asset backed securities nor mortgage backed securities are allowed as part of the cover pool.

According to the regulatory framework, derivative contracts are eligible cover assets as long as they are used to hedge market risks like interest rate risk. Derivative hedge instruments are typically applied when covered bonds are issued or when assets recorded into the cover pool. An issuer default does not automatically cause a liquidation of the derivative contracts, though their ranking is subordinated to covered bond holders, as the latter have a preferential credit right over the issuer's bankruptcy estate. With respect to mortgage covered bonds, they are allowed to be part of the cover pool, with respect to public sector covered bonds no rules regarding derivative contracts exist. Overall Spain fulfils the EBA requirements with respect to the usage of derivatives.

Systemic Relevance and External Support

After the 2007/2008 financial crisis, Spanish covered bonds outstanding increased from around EUR 284bn in 2007[1], to around EUR 440bn in 2012. Since then the amount has been decreasing and hit a new low-point at around EUR 242bn in 2017. The changing volume is mainly attributed to mortgage covered bonds outstanding, which reached with EUR 406bn a high in 2012 an with EUR 216bn a bottom in 2017, while public sector covered bonds increased from about EUR 17bn in 2007 to EUR 34bn in 2012 and slightly declined to EUR 25bn in 2017. The development of mortgage covered bonds outstanding can also be seen in issuance activity, which grew from EUR 52bn in 2007 to EUR 99bn in 2012 and dropped by more than two-thirds to EUR 30bn in 2017. In contrast, about EUR 6bn public sector covered bonds were issued in 2007, this amount increased to EUR 20bn in 2011 and declined considerably to about EUR 350 Mio in 2017. New covered bonds were issued to generate liquidity for banks. The eligibility of covered bonds in repo transactions with the ECB at times when public debt markets were unwilling to approve new debt by Spanish issuers emphasized the significance of covered bonds to the Spanish financial system.

With a market share of approx. 9% outstanding covered bonds in the mortgage covered bonds segment as of 2017, Banco de Sabadell is one of the largest covered bonds issuer. Likewise, the positioning of Banco de Sabadell in the Spanish banking sector is also classified as important financial institution in Spain.

Summary Structural Risk

In general, the Spanish legal framework defines clear rules to mitigate risks in particular regarding: insolvency remoteness, investor's special claim vis-à-vis other creditors, among other provisions. Furthermore, it foresees clear asset eligibility criteria as the mortgage covered bonds are covered by the issuer's complete mortgage loan book. On the other hand, the Spanish legal framework does not stipulate a special cover pool monitor independent from the issuer. Such regular inspection procedures are executed at the moment by the Bank of Spain. It involves the recurrent disclosure of reports on the cover asset pool by the issuer

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

Liquidity- and Refinancing Risk

Minimum Overcollateralization

Overall, the Spanish legal framework demands overcollateralization levels of 25% for mortgage covered bonds and 43% for public sector covered bonds. This is a result of the of the issuing threshold ratio by which the amount of issuance should not exceed the 80% (70% for public sector covered bonds) limit of the outstanding eligible mortgage loans and credits in their portfolios.

Calculations are based on the nominal value, while the total nominal amount of all assets in the cover pool should be leastwise as high as the total nominal amount of outstanding covered bonds at any time. Regarding mortgage covered bonds, the overcollateralization generally exceeds the 25% limit, as both eligible and non-eligible loans are comprised in the cover pool and thus, remain on the issuer's balance sheet.

[1] Source: EMF-ECBC (2018), ECBC: European Covered Bond Fact Book 2018, EMF-ECBC

Amounts above the mandatory overcollateralization are secured as well. Considering the coverage principles and legal/ regulatory overcollateralization the Spanish legal framework fully complies with EBA's best practice provisions.

Short-term Liquidity Coverage

There exists no requirement for the implementation of a particular liquidity buffer and thus Spain is considered to be partially aligned with EBA's best practice.

Stress Tests and Matching

While coverage tests have to be conducted, the legal framework does not stipulate any prescription to do stress tests. It is not obligatory to do stress tests to anticipate interest rate and currency discrepancies, nor to do stress tests regarding the calculation of the coverage requirement per se due to the high level of overcollateralization. This does not satisfy the EBA guidelines.

Asset-Liability Mismatch

The legal framework prescribes that issuers should prevent disequilibria between the cash flows resulting from the cover assets and those from the payments of the corresponding issued covered bonds. In doing so, natural matching like cash flow matching without the employment of off-balance sheet instruments and stress testing techniques are applied to minimize liquidity risk on interest and principal payments, while daily coverage tests are calculated and monitored by the supervisory authority. In case of a violation of the coverage test the term of payment is extended by 10 days.

Repayment Method

This covered bond program issues covered bonds with hard bullet maturity, i.e. a final repayment without extension optionality at the end of the term. Maturity mismatches between cover assets and liabilities thus cannot be mitigated by extension of the legal final maturity. This feature of Spanish covered bond programs is considered both qualitatively and within our cash flow analysis.

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

There is no demand to mitigate foreign exchange risk. For instance, there are no requirements about the handling of currencies of covered bonds, about the reduction of foreign exchange risks between cover asset and the covered bonds, or about potential hedging transactions to lower exchange risk. Though, debtors are usually not extremely agglomerated and most covered bonds primarily contain floating rate mortgages with little cross currency risk, which can be suppressed by hedging instruments.

Summary Liquidity and Refinancing Risk

In comparison to other jurisdictions, the regulatory requirements for liquidity and risk management are relatively weak and barely in line with the requirements of EBA Best Practices. Overall, sufficient structural safeguards are not established due to the absence of compulsory liquidity buffers and no obligation to conduct stress tests for interest rate and currency risks. In addition, Refinancing risks, cannot be structurally reduced due to the hard bullet repayment structure, which can only be cushioned by sufficiently high overcollateralization, short-term cash availability, or other liquid funds to bridge the asset-liability mismatches in the portfolio. Is our understanding that the main attenuator for such risk is the high level of overcollateralization.

Nevertheless, we assess the overall legal provisions on liquidity management for covered bonds programs issued in Spain and set a rating uplift of only one (+1) notch.

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 30.09.2018, the pool of cover assets consisted of 458.743,00 debt receivables, of which 100,00% are domiciled in Spain. The total cover pool volume amounted to EUR 44.426,94 m in residential (63,26%), commercial (36,74%) and others (0,00%) loans.

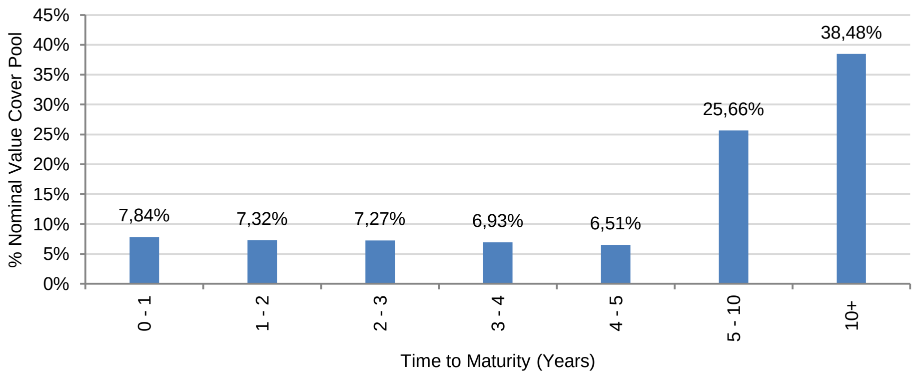
The residential cover pool consists of 373.016 mortgage loans having an UNINDEXED weighted average LTV of 63,86%. However, 16,10% of loans have a LTV over 80% which are not considered as eligible assets as per legislation. The non-residential cover pool consists of 85.727 mortgage loans having an UNINDEXED weighted average LTV of 59,77%. Along with other conditions, 40,07% of commercial loans have a LTV higher than 60% which again do not qualify as eligible assets. The ten largest debtors of the portfolio total 3,69%. Table 3 displays additional characteristics of the cover pool:

Table 3: Cover pool characteristics | Source: Banco de Sabadell

Characteristics	Value
Cover assets	EUR 44.427 m.
Covered bonds outstanding	EUR 19.403 m.
Substitute assets	EUR 0,00 m.
Cover pool composition	
Mortgages	100,00%
Substitute assets	0,00%
Other / Derivative	0,00%
Number of debtors	NA
Mortgages Composition	
Residential	63,26%
Commercial	36,74%
Other	0,00%
Average asset value (Residential)	EUR 75,35 k.
Average asset value (Commercial)	EUR 190,39 k.
Non-performing loans	3,90%
10 biggest debtors	3,69%
WA seasoning	NA
WA maturity cover pool (WAL)	6,89 Years
WA maturity covered bonds (WAL)	3,04 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 30.09.2018 (see figure 2):

Figure 2: Distribution by remaining time to maturity I 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

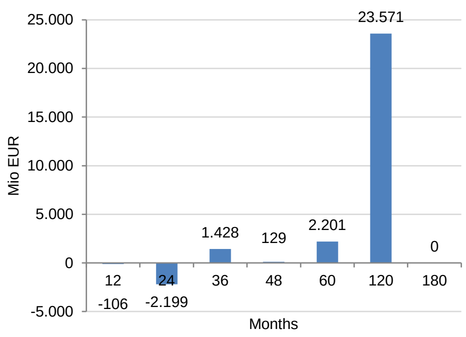
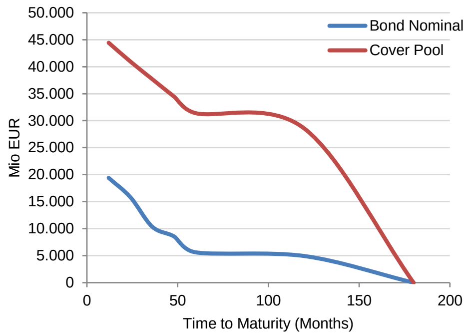


Figure 4: Amortization profile | Source: Banco de Sabadell



During its cash flow modelling, CRA has taken into consideration the maturity structure of cover assets and liabilities. 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 25% obligatory OC requirement. The program enjoys of a 129% nominal OC and an eligible OC of approx. 28%. Currency risk, on the other hand, is also limited for this program as 99,80% of the cover pool assets and 100,00% of the cover bonds are denominated in euro. Nevertheless, we have applied interest rate and foreign exchange stresses on the cash flows for each rating level according to our methodology. The overall rating impact of interest rate and currency mismatches was negligible for this program, which has been presented in our 'Overcollateralization Break-Even Analysis' segment.

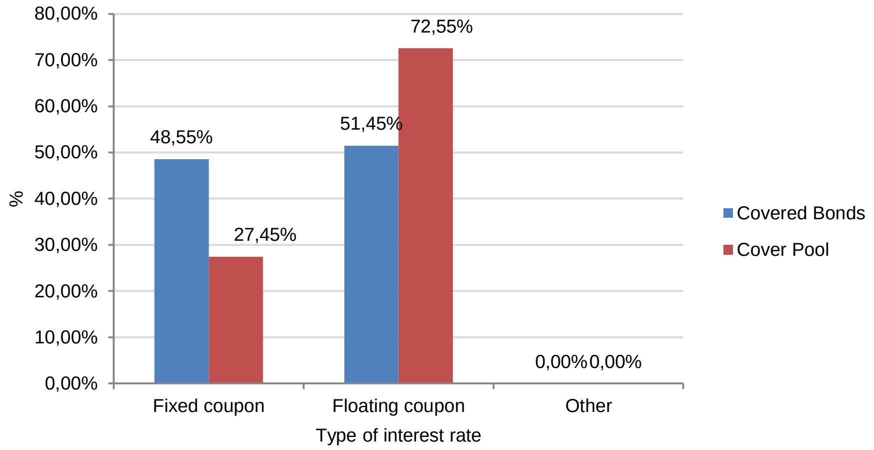
Table 4: Program distribution by currency | Source: Banco de Sabadell

Currency	Volume	Share (%)
Cover Pool		
EUR	44.337 m	99,80%
USD	54 m	0,12%

GBP	0,06 m	0,00%
CHF	15 m	0,03%
Other	21 m	0,05%
Covered Bond		
EUR	19.403 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 historical issuer’s NPL ratio 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 4,35% 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 (%)
BBB+	39,92%	70,35%	11,84%
BBB	37,87%	71,66%	10,73%
BBB-	35,94%	72,73%	9,80%
BB+	35,95%	74,47%	8,41%
BB	30,18%	75,90%	7,27%
BB-	26,81%	77,79%	5,95%
B+	24,21%	79,40%	4,99%

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. Finally, CRA has only considered the committed overcollateralization level in Spain i.e. 25% in the analysis to count for possible fluctuations in the issuance volume and in the whole bank's mortgage book. Nevertheless, it is our understanding that the covered bond programs may have overcollateralization levels above that minimum requirement i.e. uncommitted levels.

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 available for monetization. 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
BBB+	45,97%	0,95%
BBB	43,07%	0,99%
BBB-	40,03%	1,03%
BB+	36,74%	1,08%
BB	33,12%	1,14%
BB-	29,38%	1,19%
B+	25,77%	1,24%

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 a **BBB-** 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 30.09.2018, could be sufficient to repay bond nominal capital notwithstanding the occurrence of extraordinary events. On this basis, the rating of the cover pool within our covered bond program rating has been set at BBB- .

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 in table 7Table 7.

Table 7: Breakeven Analysis | Source: CRA

Rating Level	Break-Even OC
BBB+	30,19%
BBB	27,39%
BBB-	24,77%
BB+	21,52%
BB	18,44%
BB-	15,15%
B+	12,36%

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. Based on the base case, there is a high sensitivity of rating in terms of decreased recovery rates and increased defaults (rating reduced by up to 4 notches). In the worst-case scenario, i.e. a 50% decrease in the base case assumptions leads to a reduction in the base-case rating by 6 notches (see Table 8):

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

Recovery / Defaults	Base Case	-25%	-50%
Base Case	**BBB-**	BB-	B+
+25%	BB+	BB-	B
+50%	BB	B+	B-

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 BBB-. This, however, did not ensure any secondary rating uplift which has been set at zero (0) notch.

Counterparty Risk

Transaction parties

Table 9: Participant counterparties | Source: Banco de Sabadell

Role	Name	Legal Entity Identifier
Issuer	Banco de Sabadell	SI5RG2M0WQQLZCXKRM20
Servicer	Not available at the present time	Not available at the present time
Account Bank	Not available at the present time	Not available at the present time
Sponsor	Not available at the present time	Not available at the present time

Derivatives

No derivatives in use at present.

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. Covered bond holders have a privilege claim over the issuer's complete mortgage loan book and not just by a relevant percentage of it. 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 law that regulates covered bonds ("Cédulas Hipotecarias") in Spain stipulates that covered bond holders enjoy legal privilege over the bankruptcy estate of the issuer. Furthermore, an insolvency administrator (no special covered pool administrator) will be as well responsible for the reimbursement of the covered bond holders' claims on time. Under that mandate the usual insolvency administrator will have 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 event of the Issuer's insolvency.

Appendix

Rating History

Event	Initial Rating
Result	AA-
Rating Date	28.01.2019
Publication Date	30.01.2019

Details Cover Pool

Table 10: Characteristics of Cover Pool | Source: Banco de Sabadell

Characteristics	Value
Cover Pool Volume	EUR 44.427 m
Covered Bond Outstanding	EUR 19.403 m
Substitute Assets	EUR 0 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	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%
New Zealand	0,00%
Singapore	0,00%
US	0,00%
Other	0,00%
Cover Pools' Composition	
Mortgages	100,00%
Total Substitution Assets	0,00%
Other / Derivatives	0,00%
Number of Debtors	NA
Distribution by property use	
Residential	63,26%
Commercial	36,74%

Other	0,00%
Distribution by Residential type	
Occupied (main home)	85,33%
Second home	14,67%
Non-owner occupied	0,00%
Agricultural	0,00%
Multi family	0,00%
Other	0,00%
Distribution by Commercial type	
Retail	13,86%
Office	8,28%
Hotel	9,95%
Shopping center	1,65%
Industry	11,52%
Land	7,20%
Other	47,54%
Average asset value (Residential)	EUR 75 k
Average asset value (Commercial)	EUR 190 k
Share Non-Performing Loans	3,90%
Share of 10 biggest debtors	3,69%
WA Maturity (months)	NA
WAL (months)	82,69
Distribution by Country (%)	
Spain	100,00
Distribution by Region (%)	
Andalusia	10,06
Aragon	1,21
Asturias	2,83
Balearic Islands	4,75
Basque Country	2,53
Canary Islands	2,18
Cantabria	0,33
Castile La Mancha	1,32
Castile León	1,63
Catalonia	34,92
Ceuta	0,04
Extremadura	0,31
Galicia	2,27
La Rioja	0,22
Madrid	12,00
Melilla	0,05
Murcia	5,49
Navarra	0,49
Valencia	17,36

Figure 6: Program currency mismatches | Source: Banco de Sabadell

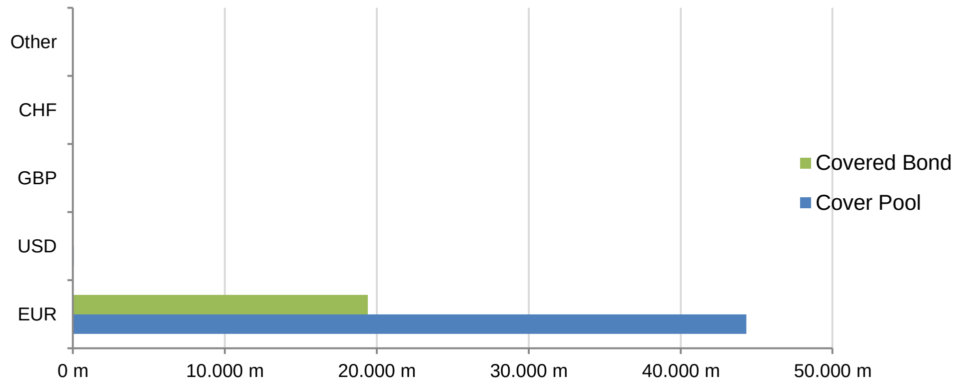


Figure 7: Unindexed LTV breakdown - residential pool | Source: Banco de Sabadell

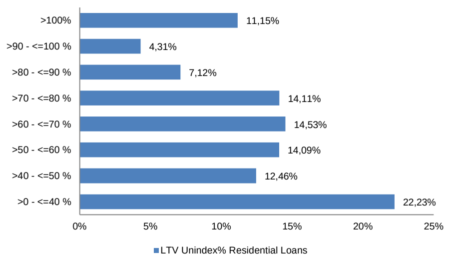
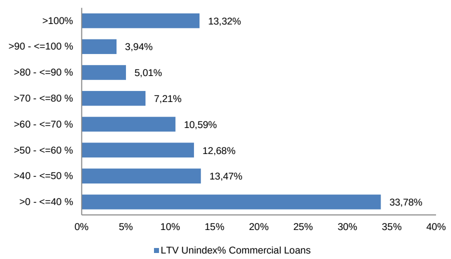


Figure 8: Unindexed LTV breakdown - commercial pool | Source: Banco de Sabadell



Key Source of Information

Documents (Date: 30.09.2018)
Issuer ▪ Audited consolidated annual reports of the Banco de Sabadell S.A. (Group) 2013-2017 ▪ Final Rating report as of 29.05.2018 ▪ Rating file 2018 ▪ Miscellaneous Investor Relations Information and Press releases ▪ Peergroup-Data and other data from the S&P Global Market Intelligence Database
Covered Bond and Cover Pool ▪ HTT Reporting from Banco de Sabadell (30.09.2018) ▪ 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 in conjunction with Creditreform`s basic document "Rating Criteria and Definitions".

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 S&P Global Market Intelligence subject to a peer group analysis of 42 competing institutes. 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 Edsson Rodriguez und AFM Kamruzzaman both based in Neuss/Germany. On 28.01.2019, the rating was presented to the rating committee by the analysts and adopted in a resolution.

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.

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1. Transaction structure and participants
2. Transaction documents
3. Issuing documents

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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 "Basic data" card 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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