# MOODY'S

### CREDIT OPINION

15 December 2017

# New Issue

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# **Closing Date**

15 December 2017

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# New Issue - CAIXABANK RMBS 3, Fondo de Titulización

RMBS / Prime / Spain

# **Capital Structure**

Exhibit 1

**Definitive Ratings** 

Series	Rating	Amount (Million)	% Of Notes	Legal Final Maturity	Coupon	Subordi- nation*	Reserve Fund**	Total Credit Enhancem ent***
A	A3 (sf)	2,295.00	90.0%	Sep 2062	3mE+0.5%	10.0%	4.50%	14.50%
В	Caa3 (sf)	255.00	10.0%	Sep 2062	3mE+0.65%	0.0%	0.0%	0.0%
Total		2,550.00	100.0%					

The definitive ratings address the expected loss posed to investors by legal final maturity. In Moody's opinion, the structure allows for the timely payment of interest and the ultimate payment of principal for the class A notes by legal final maturity. Moody's ratings address only the credit risks associated with the transaction. Other non-credit risks have not been addressed, but may have a significant effect on yield to investors.

#### **Summary**

The subject transaction is a static cash securitisation of prime mortgages granted mainly to Spanish individuals. The portfolio consists of mortgage loans secured by residential properties in Spain. 54.35% of the pool are first-ranking mortgages and 45.65% are second-ranking mortgages (where CaixaBank holds the first-ranking security). This transaction is the third transaction in the CaixaBank RMBS programme (the fifteenth considering also the RMBS originated by CaixaBank under the Foncaixa Hipotecario series). The portfolio consists of 88,895 loans extended to 62,451 prime borrowers, and the current pool balance is approximately equal to €2,750 million. Our credit opinion is the result of our analysis of a wide array of quantitative and qualitative factors, including the pool characteristic and the originator and servicer reviews. The credit opinion of the transaction also considers the structural features such as credit enhancement and liquidity available for the notes and the mitigants to servicer disruption risk.

Moody's has assigned definitive ratings to the Class A and Class B Notes based on the final pool which has been sold to the SPV on December 13, 2017. However, all pool characteristics

<sup>\*</sup> At close.

<sup>\*\*</sup> As a % of total notes

<sup>\*\*\*</sup> No benefit attributed to excess spread. Source: Moody's Investors Service

and amounts mentioned in this report refer to the provisional pool as of the cut-off date November 20, 2017.

# **Credit Strengths**

» Historical performance: Good track record of previous RMBS deals originated by Caixabank, S.A. ("CaixaBank") (in particular, the Foncaixa Hipotecario series). Performance of Foncaixa Hipotecario series' RMBS transactions is better than the average delinquency reported in the Moody's Spanish RMBS index, although arrears of CaixaBank most recent RMBS transactions are steadily increasing.

- » **Asset quality:** Prime mortgage loans to mainly Spanish individuals, secured by properties located in Spain. Particular strengths related to the portfolio include:
  - Weighted-average LTV: Current weighted-average loan-to-value (LTV) ratio of 64.19% (calculated taking into account the latest full property valuation) is lower than the average for Spanish transactions; however, the indexed LTV is not that low due to the seasoning of the portfolio (Moody's calculated WA indexed LTV is equal to 71.61%). More than 45% of the portfolio was originated between 2005 and 2008 and has experienced significant house depreciation.
  - Seasoning: The portfolio is well seasoned, with a weighted-average seasoning of 7.2 years. The pool has gone through a
    severe economic situation and most of the pool has never been in arrears for more than 90 days.
  - Only 3.65% of the borrowers in the pool are non-Spanish nationals and only 0.98% are non-Spanish residents. In Moody's view new residents and non-residents have a riskier profile than residents with a longer stay in Spain.
  - No broker origination.
- » Interest and principal on Class B fully subordinated to Class A, sequential amortisation of the notes and the reserve fund: The transaction has a reserve fund of 4.5% and a sequential amortisation structure. Both factors contribute to strong protection levels for Class A.

# **Credit Challenges**

- » Second-ranking mortgages: 45.65% of the loans in the pool are secured by second-ranking mortgages. Moody's considers these mortgages riskier than first ranking mortgages. These mortgages lead to a higher expected default frequency and more severe losses than first lien mortgage loans. Please see "Securitisation structure analysis" "Additional structural analysis" "Second-ranking mortgages" section for details.
- » **Exposure to restructured loans**: 8.36% of the loans in the pool are restructured loans. Moody's believes that restructured loans are more likely to default in the future than those that have never been restructured. Please see "Securitisation structure analysis" "Additional structural analysis" "Restructured loans" section for details.
- » Geographical concentration: The portfolio shows regional concentration in Catalonia (37.01% of the pool).
- » Interest rate mismatch: No interest rate swap is in place to cover interest rate risk. Moreover, 33.93% of the pool has the option of an automatic discount on the loan margin based on the future cross selling of other products. These risks have been taken into account when assessing the subordination levels and limited value was given to the available spread. Please see "Asset analysis" "Primary asset analysis" "Interest Rate Mismatch" section for details and an explanation of how Moody's has stressed the yield.
- » Drawdowns of flexible mortgages (credito abierto): 52.28% consists of drawdowns of flexible mortgage products, which are structured like a line of credit. This was CaixaBank's flagship product. Under this product, borrowers are allowed to make additional drawdowns up to a certain LTV ratio limit and for an amount equal to the amortised principal. Flexible mortgages lead to a higher expected default frequency and more severe losses than for a traditional mortgage loan. Please see "Securitisation structure analysis" "Additional structural analysis" "Drawdowns of Flexible mortgages (Credito Abierto)" section for details.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

» Payment holidays and grace periods: 41.30% of the borrowers have the option to use payment holiday periods, where principal is not paid. Each borrower has the option to request 36-month payment holiday, during which interest must be paid, but not principal. Moreover, 24.75% of the pool can use principal and interest grace periods. Each borrower has the option to request a maximum 12-month grace period. However, CaixaBank has full control over whether or not to grant these payment holidays or grace periods. Please see "Securitisation Structure Analysis" - "Additional Structural Analysis" - "Payment holidays and grace periods" section for details.

» Renegotiations: The servicer is allowed to renegotiate with the borrowers some loan terms and conditions. The transaction documentation however provides for certain caps that would limit the servicer capability to significantly change the securitised portfolio profile. Please see "Securitisation Structure Analysis" - "Additional Structural Analysis" - "Renegotiations" section for details.

# **Key characteristics**

# **Asset characteristics**

#### Exhibit 2

#### Asset characteristics

(Preliminary pool, cut-off date as of 20/11/2017)

locuer:	CAIXABANK RMBS 3, FONDO DE TITULIZACIÓN (NR)
Issuer:	,
Seller/Originator:	CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Servicer:	CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Receivables:	First-lien and second-lien prime conforming mortgage loans granted mainly to Spanish residents, secured by properties located in Spain
Methodology Used:	Moody's Approach to Rating RMBS Using the MILAN Framework, September 2017
Total Amount:	EUR 2,811,992,209.28
Number of Borrowers:	62,451
Borrower concentration:	Top 20 borrowers make up 0.90% of the pool
WA Remaining Term:	20.06 years
WA Seasoning:	7.18 years
Interest Basis:	81.83% Floating, 18.17% Fixed
WA Current LTV:	64.19%
WA Original LTV:	71.50%
Moody's calculated WA indexed LTV:	71.61%
Borrower credit profile:	Prime Borrowers
Delinquency Status:	4.37% loans in arrears up to 30 days and 0.63% between 30 and 60 days, as of cut-off date

Source: Moody's Investors Service

# **Securitization structure characteristics**

# Exhibit 3

# Structure summary

Issuer:	CAIXABANK RMBS 3, FONDO DE TITULIZACIÓN (NR)
Issuer Administrator / Corporate Service Provider:	CaixaBank Titulización, S.G.F.T., S.A. (NR)
Models Used:	MILAN (Spanish Settings) and ABSROM
Excess Spread at Closing:	The weighted-average interest rate of the pool is 176 bps, which will be reduced by the weighted average interest rate of the notes, plus the senior fees and the interest-rate mismatch
Length of Revolving Period:	Static
Back-up Servicer:	None at closing
Back-up Servicer Facilitator:	CaixaBank Titulización, S.G.F.T., S.A. (NR)
Cash Manager:	CaixaBank Titulización, S.G.F.T., S.A. (NR)
Back-up Calculation/Computational Agent:	None at closing
Currency Swap Counterparty:	N/A
Rate Swap Counterparty:	N/A
Issuer Account Bank:	CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Collection Account Bank:	CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Principal Paying Agent:	CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Management Company:	CaixaBank Titulización, S.G.F.T., S.A. (NR)
Arranger:	CaixaBank Titulización, S.G.F.T., S.A. (NR) / CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Lead Manager:	CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr))
Credit Enhancements/Reserves:	Excess spread, 4.5% reserve fund (decreasing to 4.0% after 2 years), subordination
Form of Liquidity:	Excess spread, reserve fund, principal to pay interest mechanism
Number of Interest Payments Covered by Liquidity:	Reserve fund provides liquidity for approximately 9 payment dates
Interest Payments:	Pass-through in arrears on each payment date
Principal Payments:	Pass-through in arrears on each payment date
Payment Dates:	20th of March, June, September and December
First Payment Date:	20th March 2018
Hedging Arrangements:	None

Source: Moody's Investors Service

# **Assets description**

The assets backing the notes are first-ranking and second-ranking prime mortgage loans originated by CaixaBank, S.A. (Baa2/P-2/Baa1(cr)/P-2(cr)). All the loans in the pool are secured on residential properties located in Spain; Exhibits 4-7 detail additional high-level information regarding the assets in the pool.

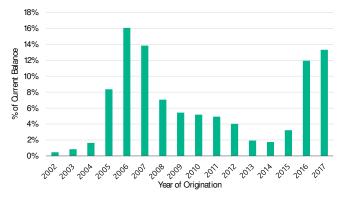
# Asset description at preliminary cut-off date

The preliminary pool cut-off date is as of 20 November 2017.

#### Pool characteristics

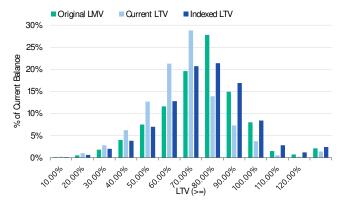
Exhibit 4

#### Portfolio breakdown by Year of Origination



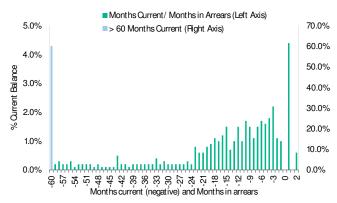
Source: CaixaBank S.A.

Exhibit 6
Portfolio Breakdown by LTV (current/indexed/original)



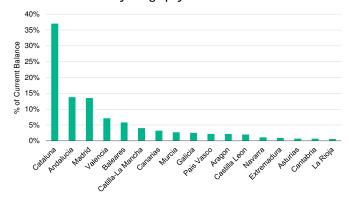
Source: CaixaBank S.A.

Exhibit 5
Arrears / Months Current



Months current proportions include Neve in Arrears loans with the given seasoning. Source: CaixaBank S.A.

Exhibit 7
Portfolio Breakdown by Geography



Source: CaixaBank S.A.

#### Originator and Servicer

CaixaBank is Spain's third-largest banking group by total assets and second-largest player in the domestic market closely following BBVA. Although it has a nationwide franchise, the group is particularly strong in Catalonia and Navarra, where it holds leading market shares. Catalonia is one of Spain's wealthiest regions and has a diversified economy. Nationwide, CaixaBank enjoys a 14% share of deposits and 16% of loans at end-December 2016 and holds the largest branch network (about 18% market share).

In terms of retail banking, CaixaBank has over 13.8M clients in Spain and 2M clients in Portugal (through BPI).

As at end-September 2017, the group serviced €225.2 billion loans and had 37,304 employees in 5,397 branches. Lending to individuals represented 57% of the group's total loan book at end-September 2017, of which 42% of the total loan book corresponded to housing loans, which shows the historical importance of this segment to the entity. In Spain, CaixaBank serviced €201.9 billion loans, of which 42% of the total corresponded to housing loans.

At end-September 2017, CaixaBank's NPL ratio stood at 6.4% (down from 6.9% at end-2016) which compares favourably to the system average of 8.3%. The NPL coverage ratio stood at 50% (up from from 47% at end-2016), which is below the system's average at 60%. The decline in coverage is the result of higher write offs and foreclosures.

CaixaBank was created in 2011 through the reorganisation of the "la caixa" Group ("La Caixa"). The bank's competitive position in Spain has been reinforced by acquisitions, including Banca Cívica in 2012, Banco de Valencia in 2013 and Barclays Bank SAU in 2015. In February 2017, CaixaBank completed the acquisition of a majority 84.5% stake in Portugal's Banco BPI S.A. (BPI, (P)Ba3/(P)NP Senior Unsecured; Ba1(cr)/NP(cr))

CaixaBank's retail banking division mainly offers consumer loans, mortgages, credit cards and non-banking financial products (i.e. insurance services and mutual funds) to private individuals and corporates through their branch network and online platform.

CaixaBank originated the loans that will be sold to CAIXABANK RMBS 3, FONDO DE TITULIZACIÓN and it will continue to act as servicer for the loans after they have been sold to the Issuer. Further information regarding the servicer and originator, including the summary of our originator and servicer reviews can be found in Appendix 3.

This is the originator's third RMBS transaction in the CaixaBank RMBS series (although they also originated the FonCaixa RMBS series in the past).

The exhibits below show cumulative defaults (more than 90 days in arrears) since origination for CaixaBank's first-ranking and second-ranking standard mortgages and first-ranking and second-ranking mortgage credit lines subportfolios, covering 2010-2017 YTD.

Exhibit 8
Cumulative 90+ days vintage data from CaixaBank's standard mortgage loans first-ranking subpool

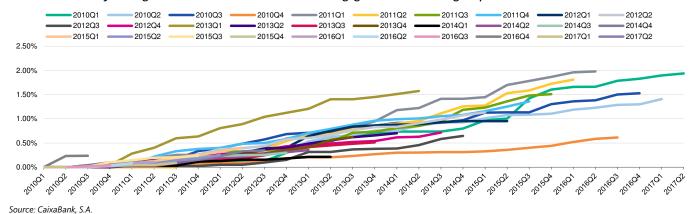
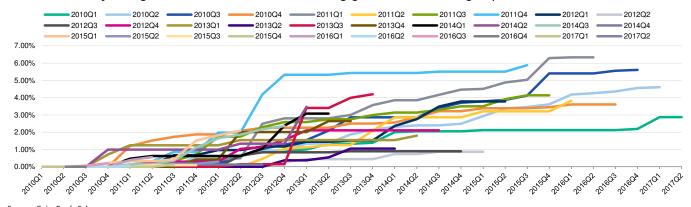


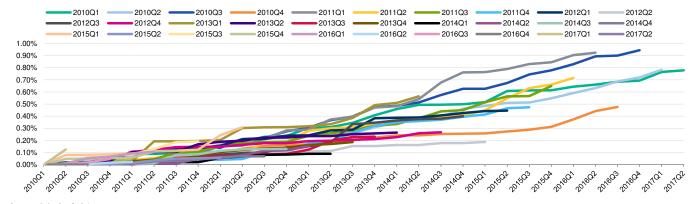
Exhibit 9
Cumulative 90+ days vintage data from CaixaBank's standard mortgage loans second-ranking subpool



Source: CaixaBank, S.A.

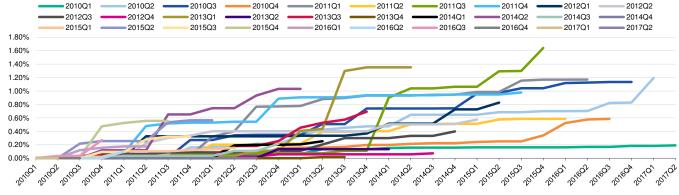
Exhibit 10

Cumulative 90+ days vintage data from CaixaBank's flexible product "Credito Abierto" first-ranking subpool



Source: CaixaBank, S.A.

Exhibit 11
Cumulative 90+ days vintage data from CaixaBank's flexible product "Credito Abierto" second-ranking subpool



Source: CaixaBank, S.A.

## Changes to the asset pool after issuance

Although the pool is generally fixed, some changes can occur after issuance that affect pool composition.

#### Eligibility criteria

The transaction's key eligibility criteria are as follows:

- » The final maturity date is not later than 1 January 2059.
- » The mortgage certificates exist and are valid and enforceable.
- » The mortgage certificates are secured with a first-ranking or second-ranking residential real estate mortgage granted to individuals.
- » The mortgage certificates are all denominated and payable exclusively in euros.
- » The mortgaged properties are all finished and located in Spain and have been appraised by duly qualified institutions approved by the Bank of Spain.
- » At closing, no more than 1% of the pool will be in arrears of between 31 and 90 days and no more than 5% of the pool will be in arrears up to 30 days.
- » The originator has strictly adhered to the policies in force for granting credit at the time of granting each and every one of the mortgage certificates.

#### **Product description**

The transaction is a securitization of standard mortgage loans (47.72%) and drawdowns of flexible mortgage loans (52.28%). Flexible mortgages are structured like a line of credit and was CaixaBank's star product. This product is called Credit Abierto, and it offers advantages to the debtor, including:

- 1. The possibility to withdraw additional funds as soon as the funds have been amortised (the first redraw cannot exceed an 80% LTV limit, with additional redraws capped at 60%/70% LTV levels or at the original LTV, if lower).
- 2. The possibility to use payment holidays (principal grace periods) and grace periods (interest and principal).

#### Additional drawdowns

Although the possibility for additional drawdowns is available throughout the life of the deal, the following two points apply:

- 1. Subsequent redraws are not automatic, with CaixaBank having full discretion as to whether or not it allows them (based on factors such as borrower's payment history and loan purpose).
- 2. CaixaBank will not allow subsequent redraws during the last four years of the life of the loan.
- » Each additional redraw on the line of credit will be treated as an independent loan, however the different loans will have pari passu treatment among them.
- » Each client will receive a single monthly payment bill, although each different redraw will be stated separately.
- » The first redraw cannot exceed an 80% LTV limit, with additional redraws capped at 60%/70% LTV levels. In any case, the combination of both first and second drawdowns on the line of credit will not exceed the 80% LTV limit (subject to certain exceptions).

Any further drawdowns made by a debtor under a flexible product as from the closing date will be funded and retained by CaixaBank. Therefore, no additional liquidity is required by the fund.

#### Renegotiations

Any renegotiation of the terms and conditions of the loans is subject to the management company's approval. The management company authorises CaixaBank to renegotiate the interest rate or maturity of the loans without requiring its approval subject to certain limitations:

- » CaixaBank is not allowed to renegotiate the interest rate of any loan if the WA interest rate of the loans goes below the three-month Euribor on the notes, with a floor at 0%, plus 1%.
- » CaixaBank will not be able to extend the maturity of any loan beyond 1 January 2059. The renegotiation of the maturity of the loans is also subject to various conditions, of which the following are the most significant:

- The total amount of loans on which the maturity has been extended cannot be greater than 5% of the initial pool balance.

- The frequency of payments cannot be decreased (unless this is made in compliance with the Code of Good Practices approved by Law 1/2013)
- The amortisation profile cannot be modified (unless this is made in compliance with the Code of Good Practices approved by Law 1/2013).

### Payment holidays

These payment holidays periods are principal grace periods. Each borrower has the option to request a maximum of 36-month grace period. 41.30% of the pool to be securitised has the possibility to use this payment holidays.

#### Grace periods

These grace periods are principal and interest grace periods. Each borrower has the option to request a maximum of 12-month grace period. 24.75% of the pool to be securitised has the possibility to use this grace period.

The liquidity risk due to this optionality is mitigated by the Reserve Fund amount, which provides liquidity for approximately 9 payment dates, as well as through the principal to pay interest mechanism.

# **Asset analysis**

# **Primary asset analysis**

The first step in the analysis of the credit quality of the pool is to determine a loss distribution of the mortgages to be securitised. In order to determine the shape of the curve, two parameters are needed: the expected loss and the volatility around this expected loss. These parameters are derived from two important sources: historical loss data and the MILAN loan-by-loan model.

#### **Expected loss**

We use performance data provided by the originator in addition to other relevant data in order to extrapolate expected losses for the loan pool. Examples of data include market and sector wide performance data, the performance of other securitisations, and other originators' data.<sup>1</sup>

The key drivers for the portfolio's expected loss of 6.0% are (i) the 45.65% exposure to second-lien mortgages which Moody's considers riskier than first ranking mortgages and lead to a higher expected default frequency and more severe losses than first-ranking mortgages; (ii) benchmarking with comparable transactions in the Spanish market through the analysis data in CaixaBank, S.A.'s (Baa2/(P)P-2/Baa1(cr)/P-2(cr)) book; (iii) very good track record of previous Residential Mortgage-Backed Securities ("RMBS") originated by CaixaBank, S.A. (Baa2/P-2/Baa1(cr)/P-2(cr)) (the Foncaixa Hipotecarios series) although arrears are steadily increasing in recent CaixaBank RMBS transactions; (iv) Moody's outlook on Spanish RMBS in combination with the seller's historic recovery data; and (v) the fact that 4.37% loans in the pool are less than 30 days in arrears and 0.63% are more than 30 days but less than 60 days in arrears, although most of the pool has never been in arrears more than 90 days.

#### MILAN model

To obtain the volatility under "stressed" scenarios, we take into account historical data. However, historical volatility may not be significant (given insufficient data points, or incomplete data), and in addition may not be representative for the future as it is based on the previous economic environments experienced.

Consequently, we determine a number representing the enhancement that would be required for a pool of mortgages to obtain a rating consistent with Aa2 under highly stressed conditions. This enhancement number (the "MILAN CE" number) is produced by using a loan-by-loan model, which looks at each loan in the pool individually and based on its individual characteristics such as LTV or other identified drivers of risk, will produce a benchmark CE number. This assumes stressed recovery rates (through house price decline), time to recovery, interest rates and costs to foreclosure. The weighted-average benchmark CE number will then be adjusted according to positive and negative characteristics of each loan or of the pool as a whole to produce the MILAN CE number.

The key drivers for the 21.0% MILAN CE number are (i) the current weighted-average loan-to-value ("LTV") ratio of 64.19% (calculated taking into account the latest full property valuation, although Moody's calculated WA indexed LTV is equal to 71.61%); (ii) the well-seasoned portfolio, which has a weighted-average seasoning of 7.18 years; (iii) the fact that only 3.65% of the borrowers in the pool are non-Spanish nationals and only 0.98% are non-Spanish residents; (iv) the absence of broker-originated loans in the pool; (v) the 37.0% concentration in the Catalonia region; and (vi) the 8.36% exposure to restructured loans in the pool.

The MILAN CE number has been qualitatively adjusted in order to generate a loss distribution with a certain level of volatility, or to account for a higher probability of "fat tail" events with respect to the expected loss.

#### Lognormal distribution

The MILAN CE number and the expected loss number are based on Rating Committee discussions and are used to derive the lognormal distribution of the pool losses. Due to the large number of loans and supporting historical data, we use a continuous distribution to approximate the loss distribution.

The standard deviation of the distribution is found by setting the expected loss of the area of the lognormal distribution beyond the MILAN CE equal to the expected loss that is consistent with the idealised expected loss of an Aa2 tranche.

#### Interest rate mismatch

18.17% of the loans in the pool are fixed-rate loans and the remainder are floating-rate loans linked to 12-month Euribor mainly. The notes are linked to 3-month Euribor. Moody's has haircut the spread by 50 bps to take into account this interest rate mismatch.

There is also the risk of spread compression over time due to higher yielding loans prepaying, which would lead to the average spread of the loans decreasing over time in the absence of a swap. Also, 33.93% of the pool has the option of an automatic discount on the loan spread as a result of the future cross selling of other products. As a result Moody's gave only partial value to excess spread.

#### Comparables

## Other originators' transactions compared with the CaixaBank transactions

Exhibit 10 shows the collateral characteristics of the CAIXABANK RMBS 3 transaction and previous CaixaBank transactions (CAIXABANK RMBS 1 and 2) compared with those of its peers that were considered in our rating committee.

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Exhibit 12 Benchmark table with other transactions by the same originator and comparable transactions

Deal name	CAIXABANK RMBS 3	BBVA RMBS 18	CAIXABANK RMBS 2	CAIXABANK RMBS 1	IM BCC CAJAMAR 1	IM GBP MBS 3	FT RMBS Santander 5
Closing date	Dec-17	Nov-17	Mar-17	Feb-16	Jan-16	Dec-15	Dec-15
Information from	Preliminary pool	Closing pool	Preliminary pool	Preliminary Pool	Preliminary Pool	Preliminary Pool	Preliminary Pool
Originator	CaixaBank, S.A.	BBVA, CX, UNNIM	CaixaBank, S.A.	CaixaBank, S.A.	Cajamar (100%)	Banco Popular (92.8%) Banco Pastor (7.2%)	Banco Santander (68%) Banesto (29%) Banif (3%)
Servicer	CaixaBank, S.A.	BBVA	CaixaBank, S.A.	CaixaBank, S.A.	Cajamar	Banco Popular and Banco Pastor	Banco Santander
MILAN CE	21.00%	19.25%	12.30%	15.80%	25.00%	31.00%	27.00%
Expected Loss	6.00%	5.50%	3.50%	4.50%	7.50%	8.00%	10.50%
PORTFOLIO STRATIFICATION							
Avg. Current LTV	64.19% (considering latest full property valuation)	70.28% (considering original appraisal)	68.68%	66.40%	68.70%	93.80%	72.20%
% Current LTV > 70%	26.96%	43.76%	43.09%	33.10%	53.30%	90.90%	47.60%
% Current LTV > 80%	13.08%	18.80%	15.62%	15.30%	36.40%	84.90%	32.90%
% Current LTV > 90%	5.79%	5.10%	5.43%	3.30%	19.80%	61.00%	19.20%
Avg. Current LTV indexed*	71.61%	83.21%	75.47%	85.30%	89.80%	102.60%	85.40%
% Self Employed	18.00%	15.53%	18.50%	19.40%	10.00%	29.60%	12.60%
% Brokers	0.00%	6.50%	0.00%	0%	0%	0%	1.20%
% New Residents	3.65%	4.30%	2.49%	3.87%	4.10%	19.40%	4.30%
% Temp Workers	N/A	N/A	N/A	N/A	N/A	N/A	N/A
% Non-owner Occupied (Includes: Partial Owner)	5.90%	5.59%	3.90%	4.90%	6.60%	27.00%	3.60%
% Fixed interest	18.17%	0.00%	33.50%	8.5%%	0%		0.30%
Max regional concentration	Catalonia (37.0%)	Madrid (49.4%)	Andalusia (20.60%)	Cataluna (28.15%)	Andalusia (39.5%)	Andalusia (21.3%)	Madrid (24.4%)
% in arrears at closing	5.00% <60 days delinquency	2.25% <30 days delinquency	2.27% <60 days delinquency	1.62% <60 days delinquency	8.45% (at closing 4.0% loans >30+)	6.16% (at closing <1% loans >30+)	5.7% <30 days delinquency
% of Renegotiations	8.36%	0.00%	0.00%	0%	6.60%	0%	29.50%
% of Second Rank Mortgages	45.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PORTFOLIO DATA							
Current Balance	€2,812 million	€ 1,800 million	€ 2,742 million	€14,415 million	€815 million	€917 million	€1,369.3 million
Average Loan (Borrower)	€ 45,027	€ 149,203	€ 95,196	€ 121,247	€ 103,405	€ 152,130	€ 146,232
Borrower top 20 (as % of pool)	0.90%	0.68%	0.86%	0.20%	1.50%	2.40%	2.50%
WA interest rate	1.76%	1.03%	1.70%	1.50%	2.00%	1.80%	1.40%
Average seasoning in years	7.2	7.0	4.2	7.5	5.3	3.2	6.3
Average time to maturity in years	20.66	27.41	25.1	24.1	25.7	29.2	25.3
Maximum maturity date	Jan-2059	Aug-60	Jun-57	Sep-59	Mar-59	Apr-55	Aug-61
Average House Price stress rate**	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%
Average House Price change*	-12.35%	-14.72%	-10.59%	-20.90%	-16.50%	-7.80%	-13.90%

<sup>\*</sup> As per Moody's calculation

15 December 2017

<sup>\*\*</sup>As per Moody's MILAN methodology for Aa2 scenario for a benchmark loan. Source: Moody's Investors Service

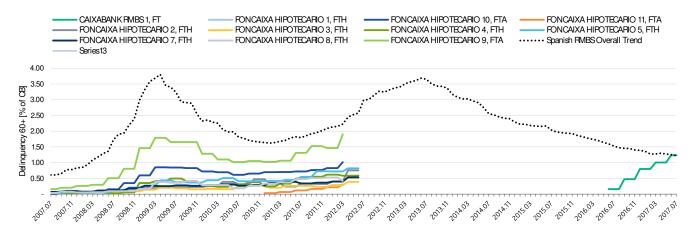
#### Performance of prior transactions of CaixaBank and other originators

Delinquency for CaixaBank's preceding transactions (in particular those of the FonCaixa Hipotecario series) is better than the average reported in the Spanish RMBS indices.

In particular, Exhibit 11 shows that the historical performance of 60+ delinquencies of Foncaixa Hipotecario transactions compare positively to other recent transactions in the Spanish RMBS market, although CAIXABANK RMBS 1, FT 60+ delinquencies are steadily increasing.

Exhibit 13

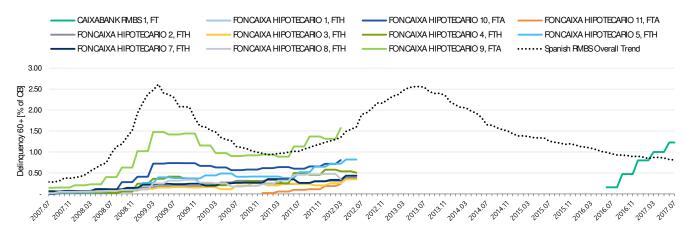
Foncaixa Hipotecario RMBS and CAIXABANK RMBS 1, FT 60+ days delinquency trend



Source: Moody's Investors Service, Moody's Performance Data Service, periodic investor/servicer reports

Exhibit 12 shows that the Foncaixa Hipotecario transactions are also performing better than the Spanish Prime Index in terms of 90+ days delinquencies, although CAIXABANK RMBS 1, FT 90+ delinquencies are steadily increasing.

Foncaixa Hipotecario RMBS and CAIXABANK RMBS 1, FT 90+ days delinquency trend



Source: Moody's Investors Service, Moody's Performance Data Service, periodic investor/servicer reports

# **Additional analysis**

#### Data quantity and content

CaixaBank has provided static vintage data on the performance of its book of mortgage loans. Moody's has received data from Q1 2010 to Q2 2017 on cumulative arrears over 90 days and recoveries for CaixaBank's book, split by credits and mortgage loans, and each of these split by first-ranking and second-ranking.

In Moody's view, the quantity of data received from the former securitisation deals, for as long as CaixaBank is a recurrent issuer in the Spanish RMBS market, is adequate compared with transactions which have achieved high investment-grade ratings in the Spanish RMBS sector.

# Originator quality

We believe that CaixaBank has adequate controls and procedures in place to generate high quality loans and according to our Originator Review the overall origination ability and stability of CaixaBank has been classified as average. For more information, see Appendix 3 which contains a summary of the Originator Review.

CaixaBank has at the end of September 2017 a strong commercial network with 5,397 branches. Lending to individuals represented 57% of the group's total loan book at end-September 2017, of which 42% of the total loan book corresponded to housing loans, which shows the historical importance of this segment to the entity.

#### Servicer quality

We have reviewed CaixaBank's procedures and practices and found CaixaBank acceptable in the role as servicer. According to our Servicer Review the overall servicing ability and stability has been classified as average. For more information, see Appendix 3 which contains a summary of the Servicer Review.

Early arrears is monitored at branch level on a daily basis while late arrears management is carried out by a dedicated CaixaBank central functions team. CaixaBank also has a different team for recoveries of written-off loans and its strategies range from outsourcing to third parties to a case-by-case approach.

#### Set-off

100% of obligors have accounts with the seller (CaixaBank). However, set off is very limited as only unpaid installments that are considered as fully due and payable prior to the declaration of insolvency might be offset against the deposits held by the originator.

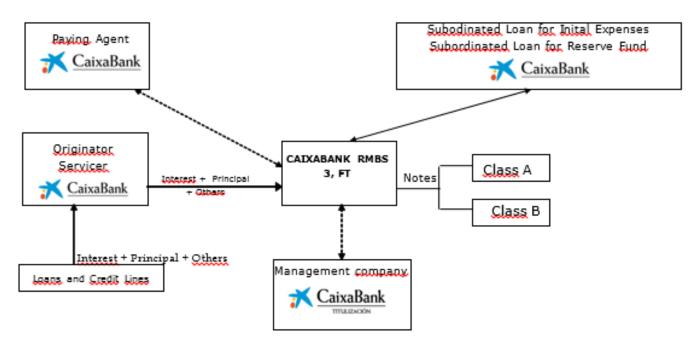
Additionally, the portfolio consists of granular assets to retail obligors and deposit insurance protects retail deposits. The uncovered deposit balance is so small that upon a default of the bank, it is not a credit driver in our analysis. Therefore, we have not factored any incremental loss into our analysis.

# **Securitization structure description**

The originator/seller, CaixaBank, sells a portfolio of residential mortgage loans to the Issuer, CAIXABANK RMBS 3, FONDO DE TITULIZACIÓN, who issues the RMBS notes in order to finance the purchase of the asset pool. The servicer, CaixaBank, will continue to service the assets sold to CAIXABANK RMBS 3, FONDO DE TITULIZACIÓN. Exhibit 13 also illustrate other parties and their respective roles.

# Structural diagram

#### Exhibit 15



Source: Offering Circular

# **Detailed description of the transaction**

#### Credit enhancement

The transaction structure includes a subordinated tranche and an amortising reserve fund of 4.5% at closing. At closing the weighted average spread of the pool is around 176 bps.

#### Flow of funds

Allocation of payments/pre-accelerated waterfall: On each quarterly payment date, the issuer's available funds (i.e. amounts received from the portfolio, the reserve fund, and interest earned on the Issuer account) will be applied in the following simplified order of priority:

- 1. Cost and fees, including servicing fee in case of replacement of the servicer;
- 2. Interest payment to the Class A;
- 3. Principal payment on Class A;
- 4. Replenishment of the reserve fund;
- 5. Interest payment to the Class B;
- 6. Principal payment on Class B;

- 7. Replenishment of the reserve fund, which deferred when Class A is fully amortised;
- 8. Interest and principal payments to the subordinated loans;
- 9. Junior fees and cost.

#### Allocation of payments/PDL-like mechanism

PDL is based on defaults. A defaulted loan is defined as one with any amount due but unpaid for more than 18 months or one written off according to management's discretion.

#### Performance triggers

- » After the first two years from closing, the reserve fund may amortise over the life of the transaction subject to the reserve fund amortisation trigger, as per below:
  - Reserve fund is not funded at its required level on the previous payment date.

#### Reserve fund

The reserve fund amounting to 4.5% of the initial balance of Classes A and B is fully funded upfront with a subordinated loan provided by CaixaBank. The reserve fund will be available for shortfalls in interest and principal for Class A during the life of the deal and for interest and principal shortfalls for Class B, when Class A is fully amortised.

After the first two years from closing, the reserve fund may amortise over the life of the transaction, subject to the reserve fund amortisation triggers (see "Performance Triggers" section above), so that it amounts to 4.0% of the outstanding balance of Classes A and B.

### Liquidity

Through the principal to pay interest mechanism principal is always available to pay interest on the Notes. The reserve fund is a further source of liquidity, covering 9 payment dates. Given its senior position in the waterfall, payable just after the principal of the Class A notes, the reserve fund should be available as a source of liquidity in all but the most extreme loss scenarios for the Class A.

#### Asset transfer

True Sale: According to the legal opinion received, the securitisation of assets will be carried out in compliance with the Spanish Securitisation Law.

Bankruptcy Remoteness: Under the Spanish Securitisation Law, a Spanish SPV (Fondo de Titulización) is not subject to the Spanish Insolvency Law. It is only the management company, acting in the best interest of the noteholders, which can decide to liquidate the Fondo.

#### Cash manager

The cash manager is the management company CaixaBank Titulización, S.G.F.T., S.A. ("CaixaBank Titulización"), which is not rated. Its main responsibilities are:

- » Complying with its formal, documentary and reporting duties to the Spanish stock market regulator (Comisión Nacional del Mercado de Valores or CNMV), the rating agencies and any other supervisory body.
- » Complying with the calculation duties (including calculation of available funds, withholding obligations) provided for, and taking the actions laid down in the Deed of Constitution and the Prospectus.
- » Calculating and determining on each determination date the principal to be amortised and repaid on the Notes on the relevant payment date.
- » Instructing transfers of funds between the various borrowing and lending accounts, and issuing all relevant payment instructions.
- » The management company may extend or amend the agreements entered into on behalf of the Issuer, and substitute, as the case may be, each of the Issuer service providers on the terms provided for in each agreement.

The management company CaixaBank Titulización also acts as Back-up Servicer Facilitator, and has committed to use its best efforts to, within 60 days, appoint a back-up Servicer in the event of breach of the Servicer's obligations, or should the Servicer's financial condition be affected in a manner which is detrimental or causes a risk to the financial condition of the Issuer or the noteholder's interests and rights.

# Securitisation structure analysis

Our ratings are based upon the quality of the asset pool, the levels of credit enhancement and liquidity furnished by the Class B and the reserve fund, and also the structural and legal integrity of the transaction. The ratings on the notes address the likelihood of receipt by note holders of timely payment of interest and of all distributions of principal by the final legal maturity date. Our ratings address only the credit risks associated with the transaction.

# **Primary structural analysis**

We consider the probability of default under the notes as well as the estimated severity of loss when assigning a rating.

#### Tranching of the notes

Once the loss distribution of the pool under consideration has been computed, a cash flow model is used to assess the impact of structural features of the transaction. It calculates the average lives and the losses experienced by the notes for every loss scenario for the portfolio. Based on these numbers, the expected loss and the weighted-average lives for the notes are calculated as weighted averages based on the probabilities of the respective scenarios. The expected loss on each tranche together with the notes' weighted-average life determines the rating, which is consistent with our target losses for each rating category.

#### Spread compression

In our cash flow modelling, we took into account the decline in the average coupon on the pool over time, described in Asset Analysis – Primary Asset Analysis - Risk of Interest Rate Mismatch, above.

#### Reserve fund

Moody's considers that the reserve fund amortisation mechanisms are weaker than other comparable Spanish RMBS transactions. There are no performance triggers to stop the amortisation of the reserve fund and there is no floor in terms of the initial balance of the notes

#### **Comparables**

Exhibit 14 shows the main structural features of previous CaixaBank RMBS transactions compared with peers.

Exhibit 16

Benchmark Table for Structural Features

Deal name	CAIXABANK RMBS 3, FT	BBVA RMBS 18 F	CAIXABANK RMBS 2, FT2	CAIXABANK RMBS 1	IM BCC CAJAMAR 1	IM GBP MBS 3	FT RMBS Santander 5
Notes Payment Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly
Replenishment Periods	No	No	No	No	No	No	No
Total senior notes size	90.00%	81.00%	90.00%	90.50%	82.00%	78.00%	79.50%
RF at Closing§	4.50%	4.90%	4.75%	4.00%	3.00%	3.00%	5.00%
RF Fully Funded at Closing?§	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RF Floor <sup>§</sup>	0.00%	2.45%	0.00%	2.00%	3.00%	3.00%	2.50%
Hedge in place	No	No	No	No	No	No	No
Principal to pay interest?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

<sup>§</sup> Of original note balance Source: Moody's Investors Service

# Additional structural analysis

#### Interest rate mismatch

18.17% of the loans in the pool are fixed-rate loans and the remainder are floating-rate loans linked to 12-month Euribor mainly. The notes are linked to 3-month Euribor. Moody's has haircut the spread by 50 bps to take into account this interest rate mismatch.

There is also the risk of spread compression over time due to higher yielding loans prepaying, which would lead to the average spread of the loans decreasing over time in the absence of a swap. Also, 33.93% of the pool has the option of an automatic discount on the loan spread as a result of the future cross selling of other products. As a result Moody's gave only partial value to excess spread.

#### Stressed excess spread

Additionally, there is the risk of spread compression over time due to higher yield loans prepaying, which would lead to the average spread of the loans decreasing over time in the absence of a swap. Also, 33.93% of the pool has the option of an automatic discount on the loan spread as a result of future cross selling of other products. In terms of permitted variations, CaixaBank is allowed to renegotiate the interest rate of the loans provided that the WA interest rate of the securitised pool does not fall below the 3-month Euribor on the notes plus 1.0%. Limited spread resulting from all these factors has been taken into account in our analysis.

# Second-ranking mortgages

There are 45.65% loans in the pool secured by a second-ranking mortgage (with CaixaBank holding the first-ranking mortgage). Moody's considers these mortgages riskier than first ranking mortgages. These mortgages lead to a higher expected default frequency and more severe losses than first ranking mortgages. To determine the LTV in MILAN, all prior and equal ranking claims on the property, regardless of whether they are securitized or not, have been taken into account.

#### Restructured loans

8.36% of the loans in the provisional pool correspond to restructured or refinanced loans. Moody's believes that restructured loans are more likely to default in the future than those that have never been restructured. To account for this risk, Moody's has assumed an increased probability of default for loans that were restructured in the past in its MILAN analysis and expected loss analysis. The two factors that most strongly influence the likelihood that a re-performing mortgage loan will re-default are how long the loan has performed since its last modification. The longer a borrower has been current on a re-performing loan, the lower the likelihood of re-default.

#### Drawdowns of flexible mortgages (Credito Abierto)

Of the pool, 52.28% consists of drawdowns of flexible mortgage products. Flexible mortgages lead to a higher expected default frequency and more severe losses than for traditional mortgage loans. Under this product, borrowers are allowed to make additional

drawdowns up to a certain LTV limit and for an amount equal to the amortised principal. Generally, such additional drawdowns are subject to CaixaBank's credit review and approval.

Moody's determines the default frequency and the severity based on all withdrawn amounts (securitised or not securitised in this pool) and potential maximum drawable amount, rather than the current withdrawn amounts. The withdrawn amounts that are not securitised in this pool are modeled as pari passu ranking loans, while the additional drawdowns to be securitised in this pool are modelled as the outstanding amount, and the potential additional drawdowns are modelled as the flexible amount of the loan. Therefore, all equal ranking claims on the property (regardless of whether they are securitised or not) are taken into account in the analysis.

Any further drawdowns made by a debtor under a flexible product as from the closing date will be funded and retained by CaixaBank. Therefore, no additional liquidity is required by the fund.

#### Renegotiations

CaixaBank will retain the right to renegotiate the interest rate and term of the loans subject to the limits described below both in terms of loan maturity and loan minimum interest rate as well as affected portfolio amount. These restrictions will limit the potential difference between the resulting portfolio and the portfolio originally analysed.

- » CaixaBank is not allowed to renegotiate any interest rate of the loans if the WA interest rate of the loans goes below the three-month Euribor on the notes, with a floor at 0%, plus 1%.
- » CaixaBank will not be able to extend the maturity of any loan beyond 1 January 2059. The renegotiation of the maturity of the loans is also subject to various conditions, of which the following are the most significant:
  - The total amount of loans on which the maturity has been extended cannot be greater than 5% of the initial pool balance.
  - The frequency of payments cannot be decreased (unless this is made in compliance with the Code of Good Practices approved by Law 1/2013).
  - The amortisation profile cannot be modified (unless this is made in compliance with the Code of Good Practices approved by Law 1/2013).

Moody's has accounted for a decrease of the portfolio yield as a result from the potential renegotiations described above.

#### Payment holidays and grace periods

41.30% of the borrowers have the possibility to enjoy payment holidays periods where principal is not paid. Each borrower has the option to request 36-month payment holiday, during which interest must be paid, but not principal. Moreover, 24.75% of the pool can use principal and interest grace periods. Each borrower has the option to request a maximum of 12-month grace period CaixaBank has full control over whether or not to grant these grace periods.

From a credit standpoint, Moody's views payment holidays as neutral if the principal grace period is short, but more negative when the period is long, as it delays the amortisation of the loan balance. Hence, the adjustments are a function of the length of the grace period, to the extent that the option for grace period has not yet expired for the borrower.

Loans where the borrower has the option to stop paying principal and interest for some time are riskier. The maturity of the loan remains unchanged while the accrued interest is added to the loan balance. At the end of the grace period, the installment is recalculated using the new loan balance. Moody's views this feature as negative for the following reasons. Firstly, it results in a "negative amortisation" of the loan, as the pending accrued interest is added to the loan balance. Secondly, this flexibility also exposes borrowers to payment shock at the end of the payment holiday; this payment shock may be aggravated if interest rates have also risen during this period. It is likely that the installment owed by the borrower would be higher after the holiday period than before.

Moody's included additional stresses on the MILAN calculations to account for this risk.

Additionally, the liquidity risk due to this optionality is mitigated by the Reserve Fund amount, which provides liquidity for approximately 9 payment dates, as well as through the principal to pay interest mechanism.

# Commingling and account bank

All of the payments under the loans in this pool are collected by the servicer under a direct debit scheme into the collection account. Consequently, in the event of insolvency of CaixaBank, S.A. (Baa2/P-2/ Baa1(cr)/P-2(cr)) and until notification is delivered to the relevant debtors to redirect their payments, payments by the underlying debtors will continue to be collected by the servicer and may become commingled with other funds belonging to CaixaBank.

Payments are transferred on a daily basis to the Issuer Account Bank in the name of the SPV held by CaixaBank, S.A. (Baa2/P-2/Baa1(cr)/P-2(cr)).

CaixaBank will be replaced as Issuer Account Bank if its deposit rating falls below Ba2.

Given the aforementioned mitigant and the CRA of CaixaBank, we have not modelled commingling risk.

#### Mitigating servicing disruptions

The fact that the management company acts as back-up servicer facilitator is a positive feature. CaixaBank Titulización (NR) has committed to use its best efforts to appoint a back-up Servicer in the event of breach of the Servicer's obligations, or should the rating of the Servicer be downgraded or withdrawn or the Servicer's financial condition affected in a manner which is detrimental or causes a risk to the financial condition of the Issuer or the noteholder's interests and rights.

The management company CaixaBank Titulización is also an independent cash manager.

# Methodology and monitoring

#### **Overview**

The principal methodology used in this rating was "Moody's Approach to Rating RMBS Using the MILAN Framework" published in September 2017: Moody's Approach to Rating RMBS Using the MILAN Framework, September 2017 (1073832).

We will monitor the transaction on an ongoing basis to ensure that it continues to perform in the manner expected, including checking all supporting ratings and reviewing periodic servicing reports. Any subsequent changes in the rating will be publicly announced and disseminated through Moody's Client Service Desk.

Servicer Disruption: CaixaBank acts as originator, servicer, issuer account bank, collection account bank, paying agent and subordinated loan provider. There is no back-up servicing agreement, but there are triggers in place for both issuer account bank and paying agent functions.

Due to the fact that there is a back-up servicer facilitator and an independent cash manager (the management company CaixaBank Titulización) and particularly due to the Baa level of the counterparty risk assessment for CaixaBank and the high transferability of the securitised assets, it is compliant with Moody's recently published guidelines on operational risk.

Significant Influences: In addition to the counterparty issues noted, further deterioration in the housing market beyond that modelled may have an impact on the subject transaction's ratings.

# Factors which could lead to a downgrade

- » Worse than expected collateral performance in terms of delinquency and loss rates
- » Significant deterioration of CaixaBank's credit quality
- » Sovereign risk might increase performance volatility

# **Monitoring triggers**

Issuer account bank triggers:2

» Loss of Ba2, remedy is to Replace.

# **Monitoring report**

Data quality:

- » Investor report format finalised and discussed with Moody's analyst.
- » The report includes all necessary information for Moody's to monitor the transaction.
- » Loan modifications for arrears management: not specifically reported.

#### Data availability:

- » Report provided by: CaixaBank Titulización.
- » The timeline for investor report is provided in the transaction documentation. The priority of payment section is published on the IPD.
- » The frequency of the publication of the investor report is quarterly and the frequency of the IPD is quarterly. Portfolio information is provided monthly.

The analysis undertaken by Moody's at the initial assignment of a rating for an RMBS security may focus on aspects that become less relevant or typically remain unchanged during the surveillance stage. Please see Moody's Approach to Rating RMBS Using the MILAN Framework for further information on Moody's analysis at the initial rating assignment and the on-going surveillance in RMBS.

#### Parameter sensitivities

Parameter Sensitivities provide a quantitative, model-indicated calculation of the number of notches that a Moody's-rated structured finance security may vary if certain input parameters used in the initial rating process differed. The analysis assumes that the deal has not aged. It is not intended to measure how the rating of the security might migrate over time, but rather, how the initial rating of the security might differ as certain key parameters vary.

Parameter sensitivities for this transaction were calculated in the following manner: Moody's assumed 16 loss distributions derived from the combinations of MILAN CE: 21.0% (base case), 25.2% (base  $\times$  1.20), 29.4% (base  $\times$  1.40) and 33.6% (base  $\times$  1.60) and expected loss: 6.0% (base case), 7.5% (base  $\times$  1.25), 9.0% (base  $\times$  1.50) and 10.5% (base  $\times$  1.75). The 6.0% / 21.0% scenario would represent the base case assumptions used in the initial rating process.

Exhibit 15 below shows the parameter sensitivities for this transaction with respect to the Moody's rated tranche.

Exhibit 17
Class A Notes EL/Milan CE sensitivity

	1	MILAN CE Output			
		21.00%	25.20%	29.40%	33.60%
Median Expected Loss	6.00%	A3*	Baa1(1)	Baa1(1)	Baa2(2)
	7.50%	Baa2(2)	Baa2(2)	Baa3(3)	Baa3(3)
	9.00%	Baa3(3)	Ba1(4)	Ba1(4)	Ba1(4)
	10.50%	Ba2(5)	Ba2(5)	Ba3(6)	Ba3(6)

Notes: Results under base case assumptions indicated by asterisk. Change in model-output (# of notches) is noted in parentheses. Source: Moody's Investors Service

Exhibit 18 Class B Notes EL/Milan CE sensitivity

		MILAN CE Output			
		21.00%	25.20%	29.40%	33.60%
Median Expected Loss	6.00%	Caa3*	Caa3(0)	Caa3(0)	Caa3(0)
	7.50%	Ca(1)	Ca(1)	Ca(1)	Ca(1)
	9.00%	Ca(1)	Ca(1)	Ca(1)	Ca(1)
	10.50%	Ca(1)	Ca(1)	Ca(1)	Ca(1)

Notes: Results under base case assumptions indicated by asterisk. Change in model-output (# of notches) is noted in parentheses. Source: Moody's Investors Service

# Moody's related publications

For a more detailed explanation of Moody's approach to this type of transaction as well as similar transactions please refer to the following reports:

# Methodologies used:

- » Moody's Approach to Rating RMBS Using the MILAN Framework, September 2017 (1073832)
- » Moody's Approach to Assessing Counterparty Risks in Structured Finance, July 2017 (1038135)

# **Pre-Sale/New Issue reports:**

- » CAIXABANK RMBS 2, FT, March 2017
- » CAIXABANK RMBS 1, FT, April 2016
- » CAIXABANK CONSUMO 2, FT, July 2016
- » FONCAIXA HIPOTECARIO 11, FTA, July 2010
- » FONCAIXA HIPOTECARIO 10, FTA, May 2007

# **Special reports:**

- » Catalan independence would be credit negative for structured finance transactions, November 2017 (1096363)
- » Catalan independence, while unlikely, would have broadly negative credit impact, October 2017 (1094753)
- » Housing Market Improvement Benefits Banks' Asset Quality and Structured Deal Performance, May 2017 (1070916)
- » Mortgage Moratorium Extension in Spain Is Credit Negative for RMBS, March 2017 (SF449603)
- » <u>Slower, but Solid Economic Growth to Underpin Robust Spanish Securitisation and Covered Bond Performance in 2017, February</u> 2017 (1053774)
- » Recovery Rates Remain Within our Assumptions, Amid Weakened Repossessed Property Prices, February 2017 (1052711)
- » Rulings on Spanish Mortgage Interest Floors Will Likely Have a Limited Negative Effect on RMBS Transactions, January 2017 (SF447048)
- » Full Recourse to Mortgage Borrowers Remains Robust Despite Recent Policy Changes, July 2016 (1021624)
- » Credit Impact of Ruling Against Rate Floors on RMBS Likely Limited, May 2016 (1023530)
- » Recent Catalonian Consumer Law Will Be Credit Negative for New RMBS with Mortgage Assets Transferred Below Par Value, February 2016 (1012745)
- » Recoveries on Repossessed Spanish Properties Will Continue to Improve for Properties Sold Post 2013, November 2015 (1009862)
- » Spanish RMBS Performance Will Benefit From the Stabilisation in Mortgage Foreclosures, June 2015 (1003929)
- » Spain's New Securitisation Law Gives Originators More Flexibility and Improves the Management of Some Credit Risks, April 2015 (1003227)
- » The Increase in Mortgage Origination Could Push Up Spanish House Prices, April 2015 (1003302)
- » Spanish RMBS Performance Is Improving Despite the Still Challenging Economic Landscape, February 2015 (1002552)

#### Index:

» Spanish Prime RMBS Indices - July 2017, October 2017 (SF460712)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

# Appendix 1: Summary of originator's underwriting policies and procedures

Originator Ability	At Closing
Sales and Marketing Practices	-
Origination channels:	
Underwriting Procedures	
Underwriting composition	
Ratio of loans underwritten per FTE* per day:	
Average experience in underwriting:	
Criteria for compensation of underwriters	
Approval rate:	
Percentage of exceptions to underwriting policies:	
Underwriting Policies	
Source of credit history checks:	
Methods used to assess borrowers' repayment capabilities:	
Income taken into account in affordability calculations:	
Other borrower's exposures (i.e. other debts) t taken into account in affordability	
calculations:  Is interest rate stressed to calculate affordability?	
Affordability for I/O/balloon loans:	See Appendix 3 below for part of the information the
Anordability for 1/0/balloof loans.	originator allowed Moody's to disclose
Method used for income verification:	,
Criteria for non income verified:	
Max age at maturity:	
Maximum loan size:	
Valuation types used for purchase & LTV limits:	
Valuation types used for remortgage & LTV limits:	
Valuation types used for further advances & LTV limits:	
Valuation types & procedure for construction loans & LTV limits:	
Valuation types & procedure for new built properties & LTV limits:	
LTV limit for first-time-buyers:	
Collateral Valuation Policies and Procedures	
Value in the LTV calculation/ in the IT system:	
Type, qualification and appointment of valuers:	
Closing Policies and Procedures	
Quality check before releasing funds:	
Credit Risk Management	
Reporting line of Chief Risk Officer :	
Track loan performance by loan characteristics?	

<sup>\*</sup> FTE: Full Time Equivalent

Originator Stability:	At Closing
Quality Controls and Audits	
Responsibility of quality assurance:	
Number of files per underwriter per month being i	monitored:
Management Strength and Staff Quality	See Appendix 3 below for part of the information the originator allowed Moody's to disclose
Training of new hires and existing staff:	
Technology	
Tools/infrastructure available:	

# Appendix 2: Summary of servicer's collection procedures

Servicer Ability	At Closing
Loan Administration	
Entities involved in loan administration:	
Operating hours:	
Early Arrears Management	
Entities involved in early stage arrears:	
Ratio of loans per collector (FTE) in early arrears stage:	
Arrears strategy for 1-29 days delinquent	
Arrears strategy for 30 to 59 days delinquent	
Arrears strategy for 60 to 89 days delinquent	
Arrears strategy for 90 days and more delinquent to late stage	
Prioritisation rules for delinquent accounts:	See Appendix 3 below for part of the information the servicer allowed Moody's to disclose
Use of updated information in the collection strategy:	
Loss Mitigation and Asset Management Practices:	
Transfer of a loan to the late stage arrears team/stage:	
Entities involved in late stage arrears:	
Ratio of loans per collector (FTE) in late arrears stage:	
Analysis performed to assess/propose loss mitigation solutions:	
Time from first default to litigation and from litigation to sale	
Average recovery rate (including accrued interest & costs):	
Servicer Stability	At Closing
Management and Staff	At Closing
Average experience in servicing or tenure with company:	
Training of new hires specific to the servicing function (i.e. of training)	excluding the company induction
Quality control and audit	
Responsibility of quality assurance:	See Appendix 3 below for part of the information the servicer allowed Moody's to disclose
Number of files (and calls) per agent per month being moni	tored:
IT and Reporting	
Tools/infrastructure available:	

# Appendix 3: Summary of originator and servicer reviews

Originator Review	Main Strengths and Challenges
Sales & Marketing Practices	Caixabank provides services to its customers through a multi-channel distribution:  » Branch network in Spain and Portugal (September 2017): 5,397 branches, of which 4,697 are retail branches in Spain.  » Employees: 37,304 (as of September 2017).  » 14% share of deposits and 16% of loans at end December 2016.
	» Three international branches and 18 representative offices (as of October 2017).
Underwriting Policies & Procedures	Caixabank's analytical approach is primarily based on the borrower's repayment capacity rather than the nature of the securities pledged.  Risk definitions, analysis criteria and management and control tools are standard across the organization.  Internal knowledge of customer and guarantors: Based on in-house knowledge of the parties, past lending experiences, the customer's asset and liability positions, and the returns on the proposed transaction.  Internal rating and credit scoring: The several internal rating and credit scoring systems in place play a key role in Caixabank's underwriting process. The entity has several different models, among which threare for SMEs depending on the obligor's size, one for real estate developers and one for large corporates. The scoring system for self-employed individuals is a very efficient tool, with scores updated monthly.  Approval mechanisms to cover specific segments, distinguishing between retail banking, property development and corporate banking.  System of authorisation limits based on expected loss.  Electronic file as a procedure for managing applications.  Individual customer segment: risk-adjusted price control systems for mortgage applications through differentiated authorisation limits.  Business segment: Risk metrics in the approval process:  Ratings: essential element in the analysis. Controls are set up to ensure that the ratings are used in analysing the risk of each loan. If the rating has not been updated, the system rejects the operation.  System of risk adjusted prices. This complements the assessment of risk adjusted return at the customer level, calculated monthly as benchmark spread (risk cost) versus margin on risk (customer level margin).  Employees have the authority to grant small loans to borrowers with high exposure, therefore streamlining processes.  22% of approved loans granted at branch level, 28% granted at the Risk Underwriting Centre (CAR), 45% by the business division managers and 5% by the head office and the Board of Directors (as
Property Valuation Policies & Procedures	Caixabank has set up a validation and benchmarking process to ensure the adequate valuation of the collateral assets.  » Based on independent valuations from appraisal firms registered with Bank of Spain. Different levels and committees to authorise the operations.  » CaixaBank S.A. has currently seven appraisal companies (TINSA, ST, VTH, CATSA, VALTECNIC, GESVALT, JLL VALORACIONES, IBERTASA, CBRE, TECNITASA, UVE VALORACIONES, KRATA). There are some compulsory requirements that appraisal companies have to fulfill:  – They have to be a Bank of Spain authorized Appraisal Company.  – They have to reach the whole Spanish territory.  – These companies have to show that they currently have a public liability insurance with the minimum legal amount determined by Bank of Spain.  – They have to be able to adapt their systems (communications) to our requirement
Closing Policies & Procedures	In line with the market standards.
L INCIDIO POLICIDE X. PROCEGUIRAE	III IIIIA WIIII IIIA MARKAT ETANAARAE

Originator Review	Main Strengths and Challenges
Credit Risk Management	CaixaBank's target risk profile is medium-low.  » The risk function is independent from business and operating units, and is subject to decisions made by
	the Board of Directors and general management.
	» The Board of Directors determines the group's risk policies and delegates the creation of risk management committees.
	<ul> <li>Global Risk Committee: In charge of a comprehensive management of the Group's risks, among them credit risk. It establishes a series of triggers whose breach prompts, depending on the type of risk, different alerts, communications, and courses of action at different levels of the organisation.</li> <li>Credit Committee: Analyses and, if appropriate, approves operations within its level of responsibility, referring those outside the bounds of its authority to the Board of Directors. In addition, there are specialised committees including: a committee for deciding on loan refinancing, a committee on property valuations and a committee on risk monitoring.</li> </ul>
	» Risk measurement models: Tools and techniques based on specific needs of each type of risk, including ratings, scorings, probability of default (PD), loss given default (LGD) and exposure at default (EAD). The models are integrated into management and monitoring.
	» Banking Business Management Model implemented throughout the organisation down to the branch level.
	<ul> <li>The branches have innovative tools on hand to assist them with global management of all the business they generate.</li> <li>The internal models for measuring credit risk have received approval from the Bank of Spain.</li> </ul>
Originator Stability	Baa2/P-2/ Baa1(cr)/P-2(cr)
Quality Control & Audit	Caixabank is regulated by the Bank of Spain and carries out annual external audits.
	» Internal Audit Division: continuously monitors internal control systems and checks the accuracy of the risk measurement and control methods employed by the various divisions involved in risk monitoring.
Management Strength & Staff Quality	» The human and technical resources allocated to risk management will be sufficient in terms of both quantity and quality to allow objectives to be reached.
	» Average tenure with company: Not made available.
	<ul> <li>Average Turnover of underwriting staff: Not made available.</li> <li>Length of tenor for head of credit risk management: Not made available.</li> </ul>
	» Compensation structure i.e., incentive for receivables growth: Not made available.
Tachaalagu	·
Technology	Adequate legacy system, back-up and contingency plan.

Servicer Review	Main Strengths And Challenges
Loan Administration	» Caixabank does not out-source any of its residential mortgages servicing activities.
Early Arrears Management	» Caixabank checks daily the debtors' accounts in case of unpaid positions in order to collect any amount in such accounts.
	» Early stage arrears includes communication with the borrower through different channels (telephone calls, letters).
Loss Mitigation and Asset Management	» Pre-litigation process (where legal file for litigation is prepared) can generally begin after 45 days in arrears.
	For loans backed by a mortgage, pre-litigation starts at day 61. For unsecured loans legal proceedings starts at around day 110. In cases where legal procedures have weaker chances (overdrafts, credit cards) the "friendly" recovery phase is exhausted, and legal proceedings starts at around day 200.  » Caixabank works with a group of external lawyers for litigation matters.  » Caixabank can repossess properties in case of void auctions.  » Even after default (formal write-off) of the loan, branches remain responsible of further recovery actions,
	with the help of external specialised companies.  » Dations Committee: It sets out the necessary protocol for each case of payment in kind, i.e. receipt of real estate assets pledged to secure loans to individuals, and the subrogation thereof to BuildingCenter.
Servicer Stability	
Management Strength & Staff Quality	<ul><li>» Large collections staff with a mix of experienced and junior employees.</li><li>» Significant experience within management team.</li></ul>
IT & Reporting	<ul> <li>Well-established systems and reporting. Existing system for daily tracking and reporting.</li> <li>Management system: Alerts, track borrower arrears account, classifies arrears, records negotiation follow ups, automatic letters, record sales activity, property management. Tracking foreclosure costs, work load and progress for each lawyer.</li> </ul>
Quality control & Audit	» Regular external audits and loan book audits at the branch and central risk department levels. In each review, transactions are randomly selected and there is a review of scoring system inputs and supporting documentation.

# **Endnotes**

1 The above mentioned historical information was analysed as described in the report "Historical Default Data Analysis for ABS Transactions in EMEA".

2 See Moody's Approach to Assessing Counterparty Risks in Structured Finance, 26 July 2017.

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