

### CREDIT OPINION

27 November 2018

### New Issue

### **Closing Date**

27 November 2017

#### TABLE OF CONTENTS

Capital Structure	1
Summary Rating Rationale	1
Credit Strengths	1
Credit Challenges	2
Key Characteristics	3
Asset Description	5
Assets Analysis	11
Securitization Structure Description	16
Securitization Structure Analysis	18
Methodology and Monitoring	22
Appendix 2: Originator and Servicer Detail	23
Appendix 3: Eligibility Criteria and Waterfall	24
Appendix 4: Management Company main responsibilities	25

#### Contacts

Luis Mozos +34.91.768.8228 VP-Sr Credit Officer luis.mozos@moodys.com

Daliya Nureeva +44.20.7772.1432 Associate Lead Analyst daliya.nureeva@moodys.com

#### **CLIENT SERVICES**

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
FMFA	44-20-7772-5454

# CAIXABANK PYMES 10, FONDO DE TITULIZACIÓN

New Issue Report

### **Capital Structure**

#### Exhibit 1

#### Capital Structure

Series	Original Rating	Amount (€ Million)	% of Notes	Legal Final Maturity	Coupon	Subordination*	Reserve Fund*	Total Credit Enhancement**
Series A	Aa2(sf)	2,793.0	84.00%	Oct-51	3mEurib+1.00%	16.00%	4.75%	20.75%
Series B	Caa2(sf)	532.0	16.00%	Oct-51	3mEurib+1.25%	0%	4.75%	4.75%
Total		3.325.0	100.00%					

<sup>\*</sup> As percentage of the initial pool of assets

# **Summary Rating Rationale**

The subject transaction is a cash securitisation of a EUR 3,325 million static pool comprising loans and drawdowns under mortgage lines of credit originated by CaixaBank, S.A. ("CaixaBank", Long Term Deposit Rating: Baa1 Not on Watch /Short Term Deposit Rating: P-2 Not on Watch) and extended to small and medium-sized enterprises (SME) and self-employed individuals located in Spain. The portfolio consists of standard loans as well as drawdowns under lines of credit, some being secured by real estate and some unsecured. Our quantitative, structural and legal analysis of this transaction supports the ratings assigned to the notes.

# **Credit Strengths**

### » Portfolio characteristics:

- Granular portfolio: The effective number of obligors is more than 2,000 and thetop obligor group represents 0.65% of the pool balance.
- Absence of refinanced and restructured assets: refinanced and restructured loans/ credit lines (as defined by the Bank of Spain) have been excluded from the pool (See the Appendix 3).

<sup>\*\*</sup> As percentage of the initial pool of assets. No benefit attributed to excess spread for this calculation Source: Moody's Investors Service

#### » Transaction structure:

 Simple structure: The transaction structure includes a single waterfall and a relatively simple reserve fund mechanism, among other features (see section Detailed Description of the Structure).

#### » Other features:

 Good performance of the Originator previous transactions: performance of CaixaBank originated transactions has been better than the average observed in the Spanish market (see section Primary Asset Analysis).

## **Credit Challenges**

#### » Portfolio characteristics:

- Exposure to the real estate sector: 23.2% of the pool balance is exposed to the Construction and Building sector (according
  to our industry classification), which includes 12.2% corresponding to loans granted to real estate developers. This feature
  has been taken into account in our quantitative analysis (see section Primary Asset Analysis).
- Holiday Payments: some contracts can allow future principal (4.1% of pool balance) or interest and principal (1.5% of pool balance) holiday payments. (see section Primary Asset Analysis).
- Region Concentrations: 30.4% of the pool is concentrated in Catalonia (see section Primary Asset Analysis).

#### » Transaction structure:

- High degree of linkage to the originator: Besides acting as servicer, the Originator holds the accounts receiving the pool collections and the account holding the reserve fund (commingling risk). This feature has been taken into account in our analysis (see section Additional Structural Analysis).
- Interest rate risk: 65.6% of the pool balance consist of floating rate loans and 34.4% consist of fixed rate loans, whereas
  the notes are floating liabilities. Therefore, the transaction is exposed to interest rate and basis risk as the transaction is
  not protected by an interest rate swap. This feature has been taken into account in our analysis (see section Additional
  Structural Analysis).

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.

# **Key Characteristics**

Exhibit 2
Asset Summary (provisional pool as of October 2018) and Related Key Party Characteristics

Asset Characteristics	
Receivables	Loans and drawdowns under lines of credit extended to small and medium-sized enterprises (SMEs) and self-employed individuals located in Spain
Total Amount (EUR)	3,466 million
Number of Borrowers	57,930
Number of Borrower Groups	n.a.
Number of Assets	65,807
Effective Number	Over 2,000
WA Remaining Term (in years)	6,7
WA Seasoning (in years)	2.6
WAL of the Portfolio (in years)	3,82 (with 0% CPR)
Interest Basis	34.4% fixed rate assets, 65.6% floating rate assets
WA Interest Rate (total pool)	2.29%
% collateralised by first lien mortgage	16.6%(24.4% of the portfolio is secured by real estate mortgages)
WALTV	48.3%
Delinquency Status	1.2% of pool balance relates to contracts that are delinquent for less than 60 days (0.17% of these loans are delinquent between 30 to 60 days)
Historical Portfolio Performance Data	· · · · · · · · · · · · · · · · · · ·
Default Rate:	Based on extrapolated historical vintage analysis, 4.1% over a time horizon of around 7.5 years (90+ definition of defaults)
Recovery Rate:	Based on extrapolated historical vintage analysis, 58.4% over a time horizon of around 7.5 years (90+ definition of defaults)
Transaction Parties	
Seller/Originator:	Caixabank (Long Term Deposit Rating: Baa1 Not on Watch /Short Term Deposit Rating: P-2 Not on Watch; Long Term Counterparty Risk Assessment: A3(cr) Not on Watch /Short Term Counterparty Risk Assessment: P-2(cr) Not on Watch; Outlook: Stable)
Servicer	CaixaBank
Back-Up Servicer	N/A
Back-Up Servicer Facilitator	CaixaBank Titulización, S.G.F.T.,S.A.(Not Rated) plays this role (as well as other roles) as part of its functions as Management Company

Source: Moody's Investors Service

Exhibit 3
Securitization Structural Features and Related Key Party Characteristics

Structural Characteristics	
Excess Spread at Closing:	The transaction has no hedging mechanism. At closing the difference between WA interest on the pool and WA interest on the notes is 1.57%
Credit Enhancement/Reserves:	Subordination of the notes and excess spread
	Reserve fund: 4.75% (as percentage of the initial pool of assets)
Form of Liquidity:	Reserve fund, principal to pay interest and excess spread
Number of Interest Payments Covered by Liquidity:	As per the amount funded at closing, the reserve fund would cover more than four quarterly payments of interest and senior fees, even considering three-month EURIBOR equal to 4% and 0.5% of stressed senior fees
Interest Payments:	Quarterly in arrears on each payment date
Principal Payments:	Pass-through on each payment date
Payment Dates:	25 April 2019, thereafter The 25th of January, April, July and October
Hedging Arrangements:	None
Transaction Parties	
Issuer:	CAIXABANK PYMES 10, FONDO DE TITULIZACIÓN
Computational agent:	Caixabank Titulización S.G.F.T., S.A.
Back-up Calculation/Computational Agent:	N/A
Swap Counterparty:	N/A
Issuer Account Bank:	CaixaBank
Collection Account Bank:	CaixaBank
Paying Agent:	CaixaBank
Corporate Service Provider:	N/A
Representative of the Noteholders:	Caixabank Titulización S.G.F.T., S.A.
Arranger/Lead Manager:	Caixabank Titulización S.G.F.T., S.A./ Caixabank
Cash Manager:	Caixabank Titulización S.G.F.T., S.A.
Back-Up Cash Manager:	N/A

Source: Moody's Investors Service

# **Asset Description**

The securitised portfolio consists of loan contracts and drawn amounts under lines of credit entered into by the Originator with SMEs and self-employed individuals in Spain, most of them granted to fund the acquisition of fixed assets (23.3% of the pool balance) and machinery and vehicles (15.12% of the pool balance).

The balance of the audited provisional portfolio is approximately EUR 3,466 million, 24.4% of which is secured by real estate mortgages (16.8% is secured by first lien mortgages), with a weighted average loan to value of 48.3%. The vast majority of the portfolio are assets with a monthly payment frequency (82.38% of the pool balance). In terms of borrower type, 77.8% of the pool balance consists of loans and drawn amounts under lines of credit granted to SMEs and 22.2% consists of assets granted to self-employed individuals. The assets were originated mainly between 2014 and 2018 (83.35% of the pool balance), and have a weighted average seasoning of 2.6 years and a weighted average remaining term of 6.7 years. The longest asset matures in 2048. Geographically, the pool is concentrated in Catalonia (28.2% of the pool balance). Most assets are subject to French or lineal amortisation (96.56% of the pool balance) and 3.29% are subject to bullet amortisation.

Around 4.1% of the portfolio can allow future principal payment holidays, and around 1.5% of the portfolio can allow future payment holidays on interest and principal.

27 November 2018

STRUCTURED FINANCE MOODY'S INVESTORS SERVICE

### **POOL CHARACTERISTICS**

The below table and exhibits show some basic characteristics of the pool of assets.

### **Pool Details**

Pool Details	
Type of Assets	Secured and unsecured loan contracts and secured and unsecured drawdowns under lines of credi
Total Amount (EUR)	3,466 million
Average Asset Balance (EUR)	52,930
Number of Assets	65,807
Number of Borrowers	57,930
Number of Borrower Groups	n.a.
Effective Number	Over 2,000
WA Seasoning (in years)	2.6
WA Remaining Term (in years)	6,7
WAL of the Portfolio (in years)	3,82 (with 0% CPR)
Minimum Maturity	January 2019
Maximum Maturity	February 2048
Interest Basis	34.4% fixed rate assets, 65.6% floating rate assets
WA Interest Rate (total pool)	2.29%
WA Spread (floating rate subpool)	1.88%
Contract Amortisation Type	Most of the contracts have french or linear (96.56%) amortization
% Bullet Loans	3,29%
% Large Corporates	0%
% Real Estate Developers*	12.2%
WA Moody's Equivalent Rating**	Ba2/Ba3
% collateralised by first lien mortgage	16.6%(24.4% of the portfolio is secured by real estate mortgages)
WALTV	48.3%
Delinquency Status	1.2% of pool balance relates to contracts that are delinquent for less than 60 days (0.17% of these loans are delinquent between 30 to 60 days)

 $<sup>^{\</sup>ast}$  Real Estate Developers include NACE codes 41.10, 68.10 and 68.20

<sup>\*\*</sup> Moody's Equivalent Ratings are based on internal PDs provided by the Originator Source: The Originator and Moody's Investors Service

The following exhibits show portfolio concentrations according to obligor size, industry and region.

Exhibit 5

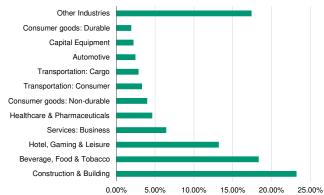
### **Pool Concentration Levels**

Pool Details		
Top Debtor Concentration	0.65%	
Top 10 Debtors	4.43%	
Top 20 Debtors	7.33%	
Effective Number	Over 2,000	
Name 1st largest industry	Construction & Building	
Size % 1st largest industry	23.20%	
Name 1st largest region	Catalonia	
Size % 1st largest region	30.4%	

Source: The Originator and Moody's Investors Service

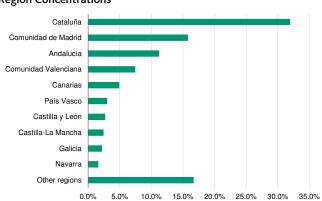
Exhibit 6

### **Industry Concentrations**



Source: The Originator and Moody's Investors Service

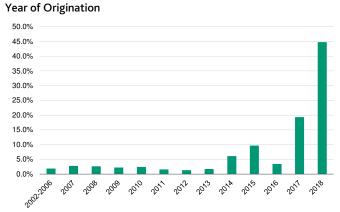
Exhibit 7
Region Concentrations



Source: The Originator and Moody's Investors Service

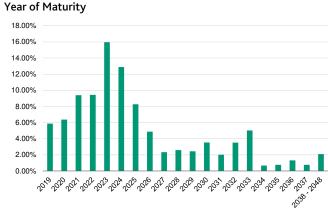
The charts below show the portfolio concentrations by year of origination and maturity date.

Exhibit 8



Source: The Originator and Moody's Investors Service

Exhibit 9



Source: The Originator and Moody's Investors Service

The charts below show portfolio concentration by rating and interest rate basis.

25.00%

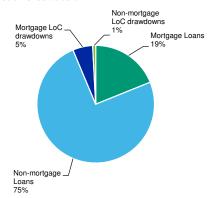
20.00%

15.00%

A3 B1 B2 B3 Ba1 Ba2 Ba3 Baa1 Baa2 Baa3 Ca Caa1 Caa2 Caa3 No Data

\* Moody's Equivalent Ratings are based on internal PDs provided by the Originator Source: The Originator and Moody's Investors Service

# Type of Contract and Collateral



Source: The Originator and Moody's Investors Service

### **LINES OF CREDIT**

6.3% of the portfolio comprises drawdown amounts under a product structured as a line of credit, some of them secured by mortgages and some of them unsecured. This product gives the borrower the opportunity to obtain additional financing easily as well as payback flexibility.

Borrowers are allowed to withdraw for an amount equal to the already amortised amount, or up to an established credit limit. The credit lines are typically used for the purpose of acquiring assets and working capital.

The main characteristics of the line of credits are the following:

- » The subsequent redraws rank pari-passu with the first draw in case of foreclosure
- » CaixaBank may impose clauses that allow the bank to deny subsequent redraws when they are not feasible (based on the borrower's payment history, etc.)
- » The lines of credit might have the option of enjoying principal grace periods and holiday payments

#### ORIGINATOR AND SERVICER

CaixaBank is the transaction's originator and servicer. The table below provides details about CaixaBank (for more information on the Originator and Servicer please see Appendix 2).

Exhibit 12
Originator and Servicer Background: CaixaBank

Originator and Servicer Background	
Rating:	Caixabank (Long Term Deposit Rating: Baa1 Not on Watch /Short Term Deposit Rating: P-2 Not on Watch; Long Term Counterparty Risk Assessment: A3(cr) Not on Watch /Short Term Counterparty Risk Assessment: P-2(cr) Not on Watch; Outlook: Stable)
Financial Institution Group Outlook for Sector:	Stable
Ownership Structure:	Listed Company
Asset Size:	EUR 383.1 billion (as of December 2017)
% of Total Book Securitised:	N/A
Transaction as % of Total Book:	N/A
% of Transaction Retained:	100%

Source: The Originator and Moody's Investors Service

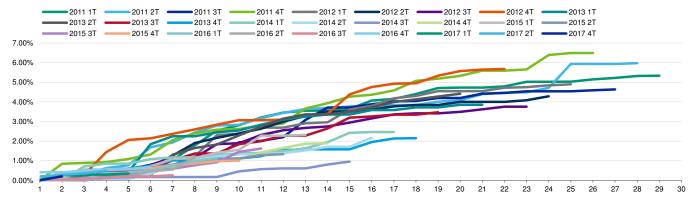
The exhibits below show the historical performance data of CaixaBank originations.

» Moody's received static default (more than 90 days in arrears) and recovery data on a pool similar to the pool securitised in this transaction, broken down by subpools depending on the type of collateral of the loans (mortgage subpool and non-mortgage subpool).

» The information provided covers the period from Q1 2011 to Q4 2017.

Exhibit 13

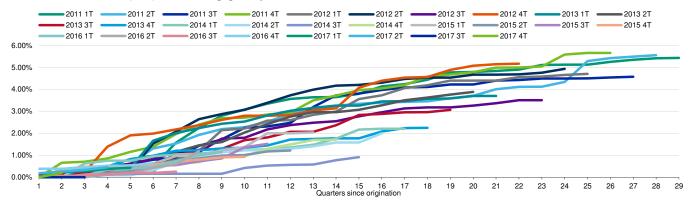
Cumulative Default Rate (90+) - Mortgage subpool



Source: The Originator and Moody's Investors Service

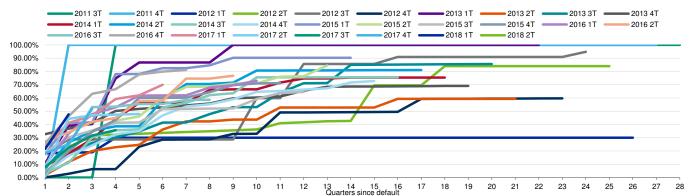
Exhibit 14

Cumulative Default Rate (90+) - Non-mortgage subpool



Source: The Originator and Moody's Investors Service

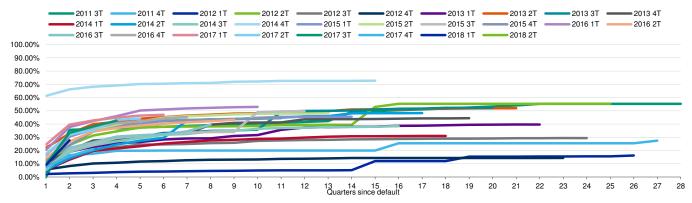
Exhibit 15 **Cumulative Recoveries - Mortgage subpool** 



Source: The Originator and Moody's Investors Service

Exhibit 16

Cumulative Recoveries - Non-mortgage subpool



Source: The Originator and Moody's Investors Service

The table below shows our assessment of CaixaBank as an originator and servicer as a result of the analysis of the information provided by the bank, data on performance of past transactions originated by CaixaBank and the operations review carried out in July 2015 (for more information on the Originator and Servicer please see Appendix 2).

Exhibit 17

Originator and Servicer Quality

Originator and Servicer Quality	
Date of Last Operations Review	July 2015
Originator Quality	Good
Servicer Quality	In line with the market

Source: Moody's Investors Service

#### **ELIGIBILITY CRITERIA**

While the transaction does not establish an eligibility criteria per se, the Originator's Representations and Warranties regarding the assets define which asset the SPV can purchase. See the Appendix 3 for a list of the transaction's key eligibility criteria.

### ABSENCE OF REVOLVING PERIOD

The securitization does not include a revolving period during which the SPV could purchase additional loans. This limits the portfolio performance volatility caused by additional loan purchases.

## **Assets Analysis**

### **Primary Asset Analysis**

We based our analysis of the transaction assets on factors including historical performance data, originator and servicer quality and pool characteristics.

#### PROBABILITY OF DEFAULT

We use the originator's historical performance data to help determine the mean probability of default of the securitised pool.

Derivation of default rate assumption: We analysed the available historical performance data the Originator provided and the performance of previous transactions originated by CaixaBank. We extrapolated the default vintage data to define the cumulative default curve for each of the origination vintages.

We complemented the historical data analysis with a top-down approach, as we typically apply when rating SME loan transactions, and as described in more detail in our methodology report, Moody's Global Approach to Rating SME Balance Sheet Securitizations, August 2017. Starting from a base rating proxy of Ba2 for a SME based in Spain (Baa1/(P)P-2), we evaluate the portfolio based on several features, including:

- 1. The size of the companies (we assume one notch penalty for micro-SMEs and self-employed individuals, representing approximately 51.1% of the pool balance).
- 2. The borrowers' sector of activity. For example, we applied a one-notch penalty to assets whose underlying borrower was active in the construction sector (11% of the pool balance, i.e. 23.2% plus 12.2% corresponding to real estate developers) and a two-notch penalty for borrowers classified as real estate developers (12.2% of the pool balance).
- 3. The holiday payments. We applied a penalty on the default probability of the assets for which it is allowed future principal (4.1% of the pool) or interest and principal (1.5% of the pool) payment holidays, considering the number of payment holiday periods allowed.

We adjusted our assumption to take into account the current economic environment and its potential impact on the portfolio's future performance (zero notch penalty), as well as industry outlooks or past observed cyclicality of sector-specific delinquency and default rates. We also evaluated and benchmarked the originator's underwriting capabilities against other Spanish originators (¼-notch benefit).

As a result, we expect an average portfolio credit quality equivalent to a probability of default corresponding to a Ba3 proxy rating for an average life of approximately 3.8 years for the portfolio. This translates into a gross cumulative default rate of 10%.

### SEVERITY

We analyzed the historical recovery data as provided by the originator.

Derivation of recovery rate assumption: assumptions for recoveries were made on the basis of (i) historical recovery information provided specifically for this deal and data available from previous deals of the Originator; (ii) statistical information on the Spanish SME market; and (iii) collateral-specific loan-by-loan portfolio information. With regard to the credit lines, given that the subsequent redraws rank pari-passu with the securitised drawdowns in case of execution, we have stressed the recovery rate by assuming that the current undrawn amounts under the credit line contracts are fully redrawn by the borrowers (until the credit limit is reached).

Based on this analysis we assumed a stochastic mean recovery rate of 42% and a standard deviation of 20%. We assumed the base case recovery timing as follows: 50% in second year after default and 50% in third year.

#### **DEFAULT DISTRIBUTION**

Owing to the high granularity of the pool, we used a normal inverse default distribution. Two basic parameters needed to be assessed as main inputs to generate the default distribution:

- » The mean default probability for the portfolio (10% over an average life of approximately 3.8 years, as explained above), and
- » The standard deviation of the normal inverse distribution.

Standard deviation: To define the standard deviation for the normal inverse default distribution, we ran a Monte Carlo simulation (using the Moody's CDOROM™) based on the securitised portfolio's actual loan-by-loan information to capture the pool concentrations in terms of single obligors and industry segments. We used, inter alia, the loan-by-loan default probabilities (i.e. outcome of the analysis carried out in section Primary Asset Analysis), the borrower industry sectors, the weighted average life and a probabilistic correlation framework. Finally, we performed a benchmark analysis against other recent Spanish SME deals and took into account the Aa1 country's local currency country risk ceiling (LCC) to calibrate the curve.

As a result, we assume a normal inverse default distribution with a coefficient of variation (ratio between standard deviation and mean default rate) of 43.2%, resulting in a Porfolio Credit Enhancement (PCE) of 20%, that takes into account sovereign risk as well.

Timing of default: We assumed a flat default timing curve as base case, spread over the portfolio's WAL (rounded up to 4.0 years) starting after the default definition.

#### **PREPAYMENTS**

Based on the performance of previous deals originated by CaixaBank and the benchmark analysis against recent similar transactions we assumed a CPR at a level of 5% per annum.

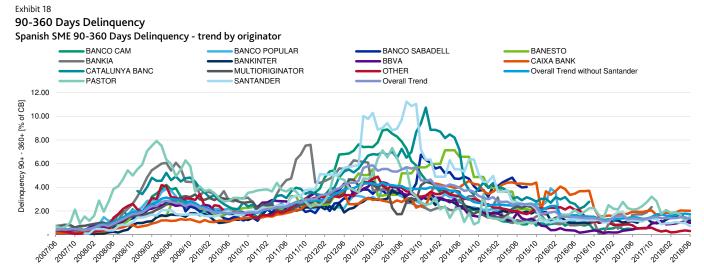
### DATA QUALITY

The quantity and quality of the originator's historical default data we received is in line with other transactions which have achieved investment grade ratings in this sector.

### Comparables

### PRIOR TRANSACTIONS OF THE SPONSOR

The performance of the Originator's previous transaction has been better than that of the remaining Spanish originators in the SME segment (see details in exhibits below).

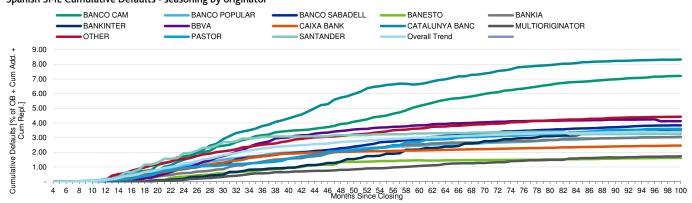


Source: Moody's Investors Service, Moody's Performance Data Service, periodic investor/servicer reports

Exhibit 19

Cumulative Defaults

Spanish SME Cumulative Defaults - seasoning by originator



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

### PREVIOUS TRANSACTIONS FROM CAIXABANK

Exhibit 20

### Benchmark Table

Deal Name	CAIXABANK PYMES 10, FONDO DE TITULIZACION*	CAIXABANK PYMES 9, FONDO DE TITULIZACION2	FONCAIXA PYMES 7, FTA	FONCAIXA PYMES 6, FTA
Country	Spain	Spain	Spain	Spain
Closing Date	Nov-18	Nov-17	Nov-15	Oct-15
Currency of Rated Issuance	Euro	Euro	Euro	Euro
Rated Notes Volume (excluding NR and	3,466,025,645	1,850,000,000	2,530,000,000	1,120,000,000
Equity) - EUR Originator	Caixabank	Caixabank	Caixabank	Caixabank
Long-term Rating (*)	Baa1/ A3(cr)	Baa2 / Baa1(cr)	Baa2 (Stable outlook)	Baa2 (Stable outlook)
Short-term Rating (*)	P-2	P-2	P-2	P-2
Servicer (*)	Caixabank	Caixabank	Caixabank	Caixabank
Long-term Rating (*)	Baa1/ A3(cr)	Baa2 / Baa1(cr)	Baa2 (Stable outlook)	Baa2 (Stable outlook)
Short-term Rating (*)	P-2	P-2	P-2	P-2
Contract Information (as % Total Pool)				
(Fully) amortising contracts %	96.71%	96.80%	95.80%	98.50%
Bullet / balloon contracts %	3.29%	3.2% bullet contracts	4.20%	1.50%
Method of payment - Direct Debit (minimum payment)	100%	100%	100%	100%
Floating rate contracts %	65.6%	58.70%	74.0%	81.1%
Fixed rate contracts %	34.4%	41.30%	26.0%	18.9%
WA initial yield (Total Pool)	2.29%	2.4%	3.46%	2.67%
WAL of Total Pool (in years)	3,82 (with 0% CPR)	3.7 (with 0% CPR)	2.6	4.8
WA seasoning (in years)	2.6	0.9	1.3	6
WA remaining term (in years)	6,7	7.6	4.6	8.4
Portfolio share in arrears > 30 days %	0%	0%	0%	0%
No. of contracts	65,807	36,785	60,281	32,613
Obligor Information (as % Total Pool)				
No. of obligors	57,930	32,901	53,272 (incl. groups)	28,734 (incl. groups)
Name 1st largest industry	Construction & Building	Beverage, Food & Tobacco	Beverage, Food & Tobacco	Beverage, Food & Tobacco
2nd largest industry	Beverage, Food & Tobacco	Construction & Building	Construction & Building	Construction & Building
3rd largest industry		Hotel, Gaming & Leisure	Hotel, Gaming & Leisure	Services: Business
Size % 1st largest industry	23.23%	25.00%	23.70%	15.80%
2nd largest industry	18.35%	17.20%	11.60%	15.60%
3rd largest industry	13.20%	10.60%	10.10%	13.80%
Effective Number	Over 2,000	1,147	3,805	1,425
Single obligor concentration %	0.65%	1.7%	0.40%	1.50%
Top 10 obligor concentration %	4.43%	5.50%	2.50%	5.60%
Collateral Information (as % Total Pool)				
WA LTV	48.3%	60.10%	40.40%	41.00%
Collateralised by first lien mortgage	16.6%	11.2%	4.50%	44.60%
Geographical Stratification (as % Total Pool)				
Name 1st largest region	Catalonia	Catalonia	Catalonia	Catalonia
2nd largest region	Madrid	Valencia	Valencia	Madrid
Size % 1st largest region	30.40%	26.20%	30.60%	27.50%
2nd largest region	15.80%	13.70%	11.80%	14.30%

STRUCTURED FINANCE MOODY'S INVESTORS SERVICE

Deal Name		CAIXABANK PYMES 10, FONDO DE TITULIZACION*	CAIXABANK PYMES 9, FONDO DE TITULIZACION2	FONCAIXA PYMES 7, FTA	FONCAIXA PYMES 6, FTA
Asset Assu	mptions				
Gross defa	ult / Net loss definition in this deal	12 months	12 months	12 months	12 months
Type of defa	ault / loss distribution	Inverse Normal	Inverse Normal	Inverse Normal	Inverse Normal
Mean gross	default rate - initial pool	10.00%	9.40%	7%	13%
Stdev.		4.32%	4.25%	4.10%	5.60%
CoV		43.20%	45.30%	54.70%	42.80%
Stochastic I	Recoveries modelled?	Yes	Yes	Yes	Yes
Mean recov	ery rate	42.00%	38.00%	35.00%	50.00%
Stdev. reco	very rate (if any)	20.00%	20.00%	20.00%	20.00%
Correlation severity / default		10.00%	10.00%	10.00%	10.00%
Correlation	severity	10.00%	10.00%	10.00%	10.00%
Prepaymen	t Rate(s)	5.00%	5.00%	5.00%	5.00%
PCE		20.00%	18.70%	n.a	n.a
Capital stru	cture (as % Total Pool) (*)				
Size of	Aaa-rated class				
	Aa-rated class	84% (Aa2)			82% (Aa3)
	A-rated class		88% (A1)	85% (A1)	
	Baa-rated class				
	Ba-rated class				
	B-rated class or below	16% (Caa2)	12% (Caa3)	15% (Caa1)	18% (Caa2)
Equity					
Reserve fur	nd	4.75%	4.55%	4%	4%

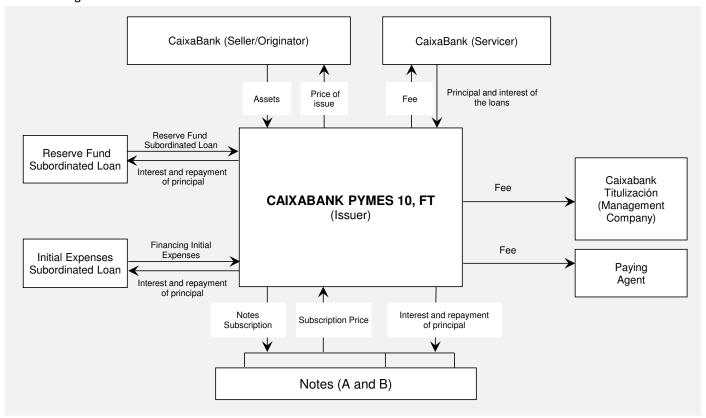
<sup>\*</sup> as of the date of assigning the rating to the transaction Source: Moody's Investors Service.

# **Securitization Structure Description**

The proceeds of the notes will be used to finance the acquisition of the portfolio, the original amount of which equals EUR 3,325 million (as of closing). The interest and principal priorities of payment are combined in a single waterfall. The amortization period will start on the first interest payment date.

### **Structural Diagram**

Exhibit 21 **Structural Diagram** 



Source: Moody's Investors Service based on transaction documents

#### **Detailed Description of the Structure**

#### CREDIT ENHANCEMENT

The main sources of credit enhancement are the subordination (16.0% in the case of Class A notes, as a percentage of the initial pool of assets), the reserve fund and the excess spread.

Reserve fund: At closing the transaction will have a reserve fund equivalent to 4.75% of the principal outstanding amount of Series A and B notes, i.e. EUR 157,937,500. The reserve fund will be used on an ongoing basis to cover potential shortfalls on interest or principal on Series A notes, for as long as these are outstanding. Only after Series A notes have been fully redeemed, the reserve fund will be available to cover any interest or principal shortfalls on Series B notes.

#### LIQUIDITY

The single waterfall means principal is also available to make interest payments. The reserve fund is a further source of liquidity; it covers more than three quarterly coupon payments on the Class A and B notes and senior fees, assuming a stressed 3 month EURIBOR of 4% and stressed fees.

#### WATERFALL

On each quarterly payment date, the issuer's available funds (i.e. interest and principal amounts received from the portfolio, the reserve fund, and interest earned on the issuer's account) will be applied in the simplified order of priority shown in Appendix 3.

#### **PDL MECHANISM**

A principal deficiency ledger (PDL) is defined as the negative difference between the principal available funds and a target principal amount. A target principal amount is the difference between the notes' outstanding principal and the performing assets. In this transaction, a non-performing asset is defined as (i) one in arrears for a period equal or exceeding 12 months for amounts due; (ii) one classified as non-performing by the Management Company because there is reasonable doubt that it will be repaid in full; or (iii) one in which the debtor has been declared insolvent.

### **TRIGGERS**

Exhibit 22
Originator, Servicer, Cash Manager and Counterparty Triggers

Originator, Servicer, Cash Manager and Counterparty Triggers	
Key Servicer Termination Events:	<ul> <li>Insolvency;</li> <li>Breach of service obligation resulting in being substituted as servicer; or</li> <li>At the request of the management company (acting in the best interest of the noteholders)</li> </ul>
Appointment of Back-up Servicer Upon:	N/A
Key Cash Manager Termination Events:	Insolvency
Notification of Obligors of True Sale:	Following the termination of the appointment of the Servicer
Conversion to Daily Sweep (if original sweep is not daily):	Not applicable (daily sweeping since closing).
Notification of Redirection of Payments to SPVs Account:	Following the termination of the appointment of the Servicer
Accumulation of Set Off Reserve:	N/A
Accumulation of Liquidity Reserve :	N/A
Set up Liquidity Facility:	N/A
Issuer Account Bank/Paying Agent Replacement:	If CaixaBank's long- term rating falls below Ba2 it will have to find a suitably rated guarantor or substitute

Source: Moody's Investors Service based on transaction documents

# Exhibit 23 Performance Triggers

Performance Triggers			
Trigger	Conditions	Remedies / Cure	
Termination of Reserve Fund Amortisation	The reserve fund is not funded at its required level on the previous payment date Less than one year has elapsed since closing	The target amount of the reserve fund will not be reduced on any payment date on which these occur.	

Source: Moody's Investors Service based on transaction documents

#### CASH COMMINGLING RISK AND ACCOUNT BANK RISK

Commingling risk generally arises when cash belonging to the SPV is deposited in an account held in the name of a third party, specifically the servicer. The Servicer collects all of the payments under the loans in its portfolio under a direct debit scheme into its account and transfers them daily to a treasury account in the name of the SPV.

As a result, in the event of insolvency of the Servicer, 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 be commingled with other funds belonging to the Servicer.

Issuer Account Bank trigger is set at the loss of Ba2 (deposit rating), the remedy being to replace the Issuer Account Bank or find a guarantor.

#### **CLAW-BACK RISK**

As per the Spanish legal framework, in the case of the transfer of credit rights claw-back risk is limited to those activities performed during a period of two years prior to the declaration of the bankruptcy state and only in the event of fraud.

#### SET-OFF

100% of obligors have accounts with the Originator. According to the Spanish Law, set-off is very limited because only unpaid instalments prior to the declaration of insolvency might be offset against the deposits held by the debtors (considered as fully due and payable prior to the insolvency).

#### TRUE SALE

According to the legal opinion received, the sale of credit rights has been carried out in compliance with Spanish securitisation law.

#### **BANKRUPTCY REMOTENESS**

Bankruptcy remoteness: Under Spanish securitisation law, a Spanish SPV (Fondo de Titulización) is not subject to the Spanish Insolvency Act. Only the Management Company, acting in the best interest of the noteholders, can decide to liquidate the SPV.

#### RENEGOTIATIONS

Although the servicer can renegotiate the terms of the loans, its ability to do so is limited. For example:

- » The weighted average interest rate of the assets after any renegotiation may not be below the 3-month EURIBOR (minimum of 0%) plus 1%.
- » The maturity date on a loan may be extended (limited to 5% of the initial portfolio), provided that (i) maturities on mortgage assets may not be extended beyond February 2048 and (ii) maturities on non-mortgage assets may not be extended beyond December 2030.

#### MANAGEMENT COMPANY

CaixaBank Titulizacion, S.G.F.T., S.A. is the transaction's Management Company, which, according to the Spanish Law and the transaction legal documentation, is responsible for the organisation, management and legal representation of the SPV and is also responsible for the representation and defence of the interests of the noteholders.

The Management Company main responsibilities are described in Appendix 4.

### **Securitization Structure Analysis**

We modeled the bond structure and cash flow waterfall to assess the amount of credit enhancement supporting the rated securities. We also analyzed the allocation of payment, bankruptcy remoteness and other structural issues.

### **Primary Structure Analysis**

### **EXPECTED LOSS**

We determine expected losses for each tranche based on a number of assumptions, which are listed in the exhibit below.

Exhibit 24

### **Expected Loss Assumptions**

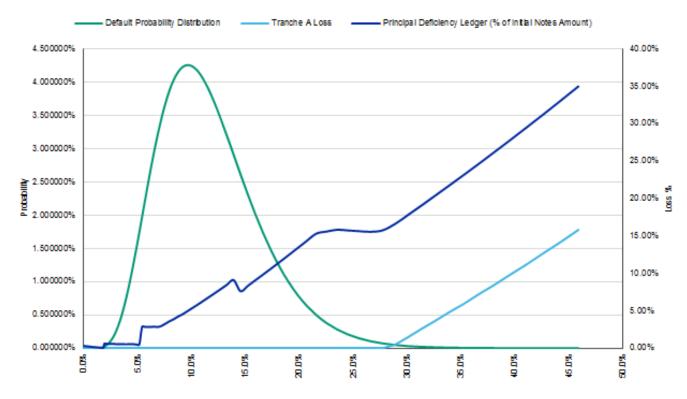
Expected Loss Assumptions	
Default Distribution	Inverse Normal
Default Rate	10.0% over a WAL of 3.86 years (equivalent to the DP of a Ba3 rating)
Default Definition	12 months
COV (Standard Deviation/Mean)	43.20%
Portfolio Credit enhancement (PCE)	20.00%
Timing of Default	Flat over portfolio WAL (rounded to 4.0 years)
Recovery mean	42.00%
Recovery Cov	20.00%
Recovery Lag	50% in second year after default and 50% in third year
Correlation Defaults/Recoveries	10.0%
Conditional Prepayment Rate (CPR)	5.0%
Amortisation Profile	Vector provided by the Originator
Portfolio yield vector	Calculated from the loan-by-loan information
Fees (as modeled)	0.50%
Euribor/Swap Rate	4.0%
PDL Definition	On default

Source: Moodys Investors Service

### TRANCHING OF THE NOTES

To derive the level of losses on the notes, we applied the default distribution and the stochastic recovery distribution explained in Section Primary Asset Analysis to numerous default scenarios on the asset side. The exhibit below shows the default distribution we used to model the transaction's cash flows.

Exhibit 25 **Loss Probability Distribution** 



Source: Moody's Investors Service

We have considered how the cash flows generated by the collateral are allocated to the parties within the transaction, and the extent to which various structural features of the transaction might themselves provide additional protection to investors, or act as a source of risk.

To determine the rating assigned to the notes, we used an expected loss methodology that reflects the probability of default for each series of notes times the severity of the loss expected for the notes. To allocate losses to the notes in accordance with their priority of payment and relative size, we used a cash-flow model (ABSROM) that reproduces many deal-specific characteristics such as the main input parameters of the model described above. Weighting each default scenario's severity result on the notes with its probability of occurrence, we calculated the expected loss level for each series of notes as well as the expected average life. We then compared the quantitative values to the Moody's Idealised Expected Loss table to determine the ratings assigned to each series of notes.

The "Tranche A Loss" line in the exhibit above represents the loss suffered by the Class A notes (in our modeling) for each default scenario on the default distribution curve. For default scenarios up to 18.9%, the line is flat at zero, hence the Class A notes are not suffering any loss. The steepness of the curve then indicates the speed of the increase of losses suffered by the Class A noteholders.

#### **Additional Structural Analysis**

### MARGIN COMPRESSION DUE TO PREPAYMENTS

By assuming 50% margin compression (i.e. 50% of CPR applied to highest interest rate paying loans), we stressed the yield vector derived from the loan-by-loan information haircutting 0.34% from the fixed-rate vector and 0.26% from the floating-rate margin vector.

### INTEREST RATE MISMATCH

34.4% of the pool balance corresponds to fixed-rate assets and 65.6% to floating-rate loans (mainly linked to three-month, six-month and twelve-month EURIBOR), whereas the notes will be floating liabilities (three-month EURIBOR).

As a result, the issuer is subject to (1) base rate mismatches on the floating portion of the portfolio (i.e. the risk that (i) the reference rate used to compute the interest amount payable on the notes will differ from the reference rate used on the underlying receivables; and (ii) the interest rate payable on the notes is determined on a different date than the rate to be paid on the underlying receivables); and (2) fixed/floating mismatch (i.e. the risk that the interest rate on the notes will differ from the interest rate payable on the fixed portion of the portfolio), given that the transaction is not hedged.

Floating portion of the portfolio: Our analysis takes into account the potential interest rate exposure and is based on the observed historical volatility between the interest rate payable on the notes and the respective interest rates payable by the assets. The resulting adjustment to the gross margin on the loans would currently be in the range of 50bps.

Fixed portion of the portfolio: The fixed-floating risk is quantified by making stressed assumptions on the evolution of the three-month EURIBOR over the life of the fixed-rate sub-pool.

#### COMMINGLING RISK

All borrowers pay by direct debit mechanism into the dedicated collection account in the name of the servicer at the beginning of a month. Funds are then swept daily into the issuer's collection account (for more details on commingling risk, see section Detailed Description of the Structure).

# **Methodology and Monitoring**

### Methodology

» Moody's Global Approach to Rating SME Balance Sheet Securitizations, August 2017

To access the reports, click on the entries 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.

### **Monitoring**

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.

The following factors may have a significant impact on the subject transaction's rating: the performance of the underlying assets, the counterparty risk and Spain's country risk.

### Monitoring report:

### Data Quality:

- » The Investor report includes all necessary information for Moody's to monitor the transaction
- » Undertaking to provide Moody's with updated pool cut on a periodical basis

### Data Availability:

- » The frequency of the publication of the investor report is quarterly
- » Investor reports publicly available on the Management Company website
- » The Management Company will provide Moody's with periodic information on the status of the SPV and the performance of the loans

# **Appendix 2: Originator and Servicer Detail**

#### Exhibit 26

# Originator and Servicer Detail

Originator Ability:	Calcad Dayle is Cascada Abided Jarranch Analytica group by tatal groups and Albhough it has a patient of the group in analytical part of the group in analytic	
Originator Overview	CaixaBank is Spain's third-largest banking group by total assets. 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 wealthers regions and has a diversified economy. Nationwide, CaixaBank held around 15% of deposits and 16% of loans as of year-end 2017, and had the largest branch network, with an around 18% market share. CaixaBank's 13.8 million customers as of year-end 2017 (15.7 million including Banco BPI) are serviced by a one-stop distribution model for finance and insurance needs.	
Sales and Marketing Practices:	» Number of employees: Group: 37,511; excluding BPI: 32,613 (as of September 2018)	
	» Number of branches in Spain: 4,681 branches (as of September 2018)	
Underwriting Policies and Procedures:	"CaixaBank's analytical approach is primarily based on the borrower's repayment capacity rather than the nature of the securities pledged Internal rating and credit scoring: The several internal rating and credit scoring systems in place play a key role in CaixaBank's underwriting proces. The entity has several different models, among these: three 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. The same efficiency is detected in the internal rating system for corporates, where the internal ratings are updated annually (when the financial statements are published) but also operational alerts are periodically shown. For SMEs, ratings are updated on a monthly basis. Both systems have already been certified by the Bank of Spain (so the size of regulatory capital needed is estimated with them)	
	» Approval mechanisms to cover specific segments, distinguishing between retail banking, Business Centres, Real Estate Business Centres, Institutional Banking Centres, International Offices and Corporate Banking Centre	
	» System of authorisation limits based on expected loss or nominal amount.	
	» 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: (a) Ratings: essential element in the analysis. Controls are set up to ensure that the rating are used in analysing the risk of each loan. If the rating has not been updated the system rejects the operation; (b) System of risk adjusted prices. This complements the assessment of risk adjusted return at customer level, calculated monthly as benchmark spread (risk cost) versus margin on risk (customer level margin)	
	» Employees have authority to grant small loans to borrowers with high exposure, therefore streamlining processes CaixaBank has an authorization system for approving risks based on the level assigned to the various approving bodies. Loan approval is generally performed at the branch level.	
Collateral Valuation Policies and Procedures:	» Valuation process: In line with standard practise in the market (valuators certified by the Bank of Spain)	
Closing Policies and Procedures:	» In line with the market standards	
	The Board of Directors determines the group's risk policies and delegates the creation of risk management committees	
	» 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	
Credit Risk Management:	» Credit Committee: Analyses and, if appropriate, approves operations within its level of responsibility, referring those outside the bounds of its author to the Board of Directors.	
	» 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	
	» The branches have innovative tools on hand to assist them with global management of all the business they generate	
	» The internal models for measuring credit risk have received approval from the Bank of Spain	
Out-de-to- Ot-billion	The months model of meadering from the material appropriation and paint of optimise	
Originator Stability:		
Originator rating:	Caixabank (Long Term Deposit Rating: Baa1 Not on Watch /Short Term Deposit Rating: P-2 Not on Watch; Long Term Counterparty Risk Assessment: A3(cr) Not on Watch /Short Term Counterparty Risk Assessment: P-2(cr) Not on Watch; Outlook: Stable)	
Regulated by:	» BCE / Bank of Spain	
Management Strength and Staff Quality	» Staff have access to policies via the intranet	
	Employees are trained on a continuous basis to meet area and market needs	
Quality Controls and Audits:	<ul> <li>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</li> <li>CaixaBank carries out annual external audits</li> </ul>	
Arrears Management:	Sandasan sarrios ou arrivar oxionar audito	
Staff Description:	» CaixaBank has a staff of around 340 supervising the recovery process, which is carried out at different levels of the organisation, starting at the branch level. The document preparation tasks (before the judicial process) are outsourced to GDS-CUSA, a company fully owned by CaixaBank	
Forly Stone Arrosse Dreeties	» CaixaBank checks daily the debtors' accounts in case of unpaid positions in order to collect any amount in such accounts	
Early Stage Arrears Practices:	» Early stage arrears includes communication with the borrower through different channels (telephone calls, letters)	
	» 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-	
Late Stane Arreare Practices	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 270-365  "CaixaBank works with a group of external lawyers for litigation matters	
Late Stage Arrears Practices:	(overdrafts, credit cards) the "friendly" recovery phase is exhausted, and legal proceedings starts at around 270-365  "CaixaBank works with a group of external lawyers for litigation matters  "CaixaBank can repossess properties in case of void auctions	
Late Stage Arrears Practices:	(overdrafts, credit cards) the "friendly" recovery phase is exhausted, and legal proceedings starts at around 270-365  » CaixaBank works with a group of external lawyers for litigation matters	

 $Source: Moody's \ Investors \ Service, \ based \ on \ the \ data \ received \ from \ the \ Originator$ 

# Appendix 3: Eligibility Criteria and Waterfall

### **Eligibility Criteria**

The key eligibility criteria are as follows:

- » All the loans/lines of credit have been either formalised under public deed or through a private contract
- » The loans/lines of credit have been granted to SMEs and self-employed individuals located in Spain
- » The pool does not include lease contracts or syndicated loans
- » Euro-denominated contracts pay by direct debit
- » All contracts have been originated by CaixaBank following its underwriting standards
- » 5% of the definitive portfolio may be composed of contracts that are delinquent no more than 30 days. 1% of the definitive portfolio may be composed of contracts that are delinquent between 31 and 90 days
- » All contracts are regulated by Spanish law
- » The principal of all securitised loans and draws/redraws under lines of credits has been 100% disbursed (notwithstanding there can be other separate drawdowns not included in the portfolio)
- » There are no refinanced/restructured contracts (as currently defined by the Bank of Spain)

#### Waterfall

Allocation of payments/pre accelerated waterfall: On each payment date, the Issuer's available funds will be applied in the following simplified order of priority:

- 1. Senior fees and expenses
- 2. Interest on Class A notes
- 3. Principal on Class A notes
- 4. Fill-up of the cash reserve account up to the required level (for as long as Class A bonds are still outstanding)
- 5. Interest on Class B notes
- 6. Principal on Class B notes
- 7. Fill-up of the cash reserve account up to the required level (once Class A bonds have fully amortised)
- 8. Junior fees and expenses

9.

Allocation of payments/post accelerated waterfall:

- 1. Senior fees and expenses
- 2. Interest on Class A notes
- 3. Principal on Class A notes
- 4. Interest on Class B notes
- 5. Principal on Class B notes
- 6. Junior fees and expenses

# **Appendix 4: Management Company main responsibilities**

The main responsibilities of the Management Company are the following:

- » Handling the accounting of the SPV with due separation from that of the Management Company
- » Complying with its formal, documentary and reporting duties to the Spanish Securities Market Commission (Comisión Nacional del Mercado de Valores or CNMV), the rating agencies and any other supervisory bodies
- » Appointing and, if necessary, replacing and dismissing the auditor responsible for reviewing and audit the SPV's annual accounts
- » Validating and controlling the information it receives from the Servicer regarding the loans
- » Complying with the calculation duties provided for and taking the actions laid down in the Deed of Constitution and in the Prospectus
- » Checking that the amounts actually paid to the SPV match the amounts that must be received by the SPV
- » Calculating and determining on each determination date the principal to be amortised and repaid on each bond series on the relevant payment date
- » Verifying that the amounts credited to the treasury account return the yield set in the agreement
- » Instructing the transfer of funds between the various borrowing and lending accounts, and issuing all relevant payment instructions, including those allocated to servicing the bonds
- » Calculating the available funds, the available funds for the notes amortisation, the liquidation available funds and the payment or withholding obligations to be complied with, and applying the same in the priority of payments or, as the case may be, in the liquidation priority of payments
- » The management company may extend or amend the agreements entered into on behalf of the SPV, and substitute, as necessary, each of the SPV's service providers on the terms provided for in each agreement

© 2018 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE. HOLD ING, OR SAIF.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at <a href="https://www.moodys.com">www.moodys.com</a> under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER 1147760

### **CLIENT SERVICES**

 Americas
 1-212-553-1653

 Asia Pacific
 852-3551-3077

 Japan
 81-3-5408-4100

 EMEA
 44-20-7772-5454

