

# Creditreform Covered Bond Rating

DZ HYP AG

Public Sector Covered Bond Program



## Rating Object

Country Issuer	Germany	Repayment method	Hard Bullet
Cover pool asset class	Public Sector		Min (2,00%)
Legal framework	German Pfandbrief Act	Overcollateralization	Current (19,46%)
Nominal value	EUR 14.518,75 m.		Committed (NA)
Cover pool value	EUR 17.343,91 m.		Fix (95,29%)
WAL maturity covered bonds	7,60 (Years)	Covered bonds coupon type	Floating (4,71%)
WAL maturity cover pool	8,80 (Years)		Other (0,00%)
Cut-off date Covered Pool Information:		30.06.2019	

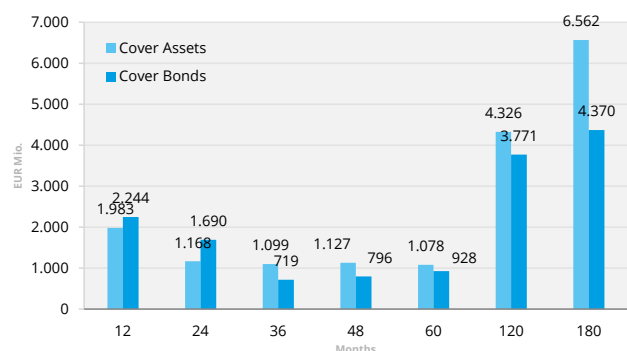
## Rating Overview

Rating Summary		Credit Risk Metrics	
Issuer	DZ HYP AG	Metrics date	10.12.2018
LT Issuer Rating	AA-	Rating Case Default Rate	20,18%
ST Issuer Rating	L1	Rating Case Recovery Rate	40,39%
+Legal and regulatory framework analysis	+4 Notches	Expected Loss	12,03%
+Liquidity and refinancing risk	+1 Notch	Rating Case Breakeven OC	12,71%
= Rating after 1st uplift	AAA	<b>Program Key Counterparties</b>	
Cover Pool & cash flow analysis	AAA	Servicer	NA
+ 2nd rating uplift	+3 Notches	Account Bank	NA
Rating covered bond program / Outlook	<b>AAA / Stable</b>	Sponsor	NA

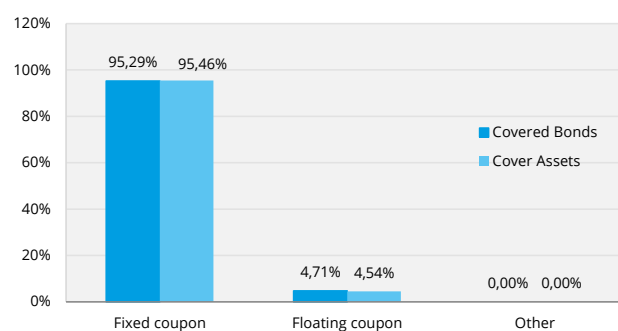
## Cover Assets Composition

General Information		Breakdown by type of Assets	
Cover Pool Balance	EUR 17.343,91 m.	Loans	EUR 14.376,23 m.
Average Seasoning	75,60 Months	Bonds	EUR 2.930,76 m.
Total number of exposures	19.246	Other	EUR 0,00 m.
Distribution by type of asset		Distribution by Debtor size	
Mortgages	EUR 0,00 m.	Average Size Loans (EUR k.)	899
Public Sector	EUR 17.306,99 m.	Sovereigns (EUR m.)	1.676
Shipping	EUR 0,00 m.	Regional/federal authorities (EUR m.)	3.691
Substitute Assets	EUR 36,92 m.	Local/municipal authorities (EUR m.)	10.872
Other (Derivates)	EUR 0,00 m.	Others (EUR m.)	1.068

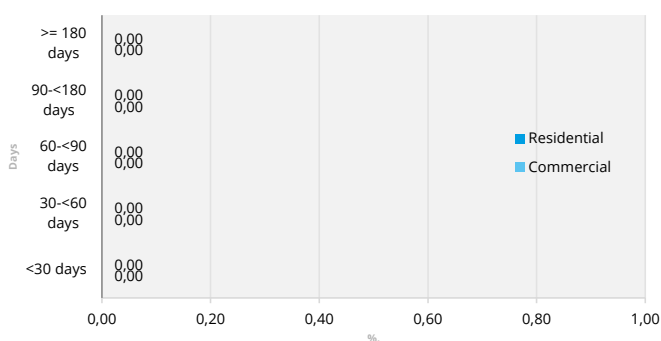
Asset-liability Profile



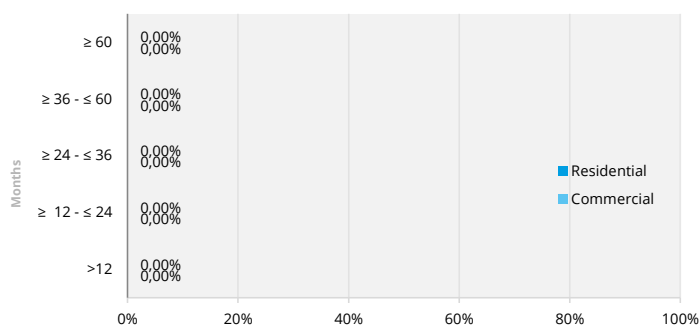
Interest Rate



Arrears Distribution



Seasoning Distribution



LTV Distribution Commercial Loans			LTV Distribution Residential Loans		
LTV	Nominal	% Loans	LTV	Nominal	% Loans
>0 - <=40 %	NA	NA	>0 - <=40 %	NA	NA
>40 - <=50 %	NA	NA	>40 - <=50 %	NA	NA
>50 - <=60 %	NA	NA	>50 - <=60 %	NA	NA
>60 - <=70 %	NA	NA	>60 - <=70 %	NA	NA
>70 - <=80 %	NA	NA	>70 - <=80 %	NA	NA
>80 - <=90 %	NA	NA	>80 - <=90 %	NA	NA
>90 - <=100 %	NA	NA	>90 - <=100 %	NA	NA
>100%	NA	NA	>100%	NA	NA

Currency Distribution			Loan Distribution by Regions (as % of total Public Sector assets)		
Currency	Covered Bonds	Cover Assets	Region	% of Public Sector assets	
EUR	13.938,05 m.	16.587,22 m.	Baden-Württemberg	12,28%	
AUD	0,00 m.	0,00 m.	Bayern	10,61%	
BRL	0,00 m.	0,00 m.	Berlin	1,42%	
CAD	0,00 m.	31,63 m.	Brandenburg	0,40%	
CHF	198,11 m.	269,77 m.	Bremen	0,77%	
CZK	0,00 m.	0,00 m.	Hamburg	0,58%	
DKK	0,00 m.	0,00 m.	Hessen	16,37%	
GBP	22,31 m.	22,31 m.	Mecklenburg-Vorpommern	1,74%	
HKD	0,00 m.	0,00 m.	Niedersachsen	12,68%	
JPY	0,00 m.	32,63 m.	Nordrhein-Westfalen	26,09%	
KRW	0,00 m.	0,00 m.	Rheinland-Pfalz	8,28%	
NOK	0,00 m.	0,00 m.	Saarland	3,42%	
PLN	0,00 m.	0,00 m.	Sachsen-Anhalt	0,40%	
SEK	0,00 m.	0,00 m.	Sachsen	0,69%	
SGD	0,00 m.	0,00 m.	Schleswig-Holstein	2,73%	
USD	360,28 m.	400,35 m.	Thüringen	1,55%	
Other	0,00 m.	0,00 m.			

Swap Counterparties		
Name	Type of arrangement	LEI
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

Swap Agreements		
Interest Rate Swap		NA
Currency Swap		NA

#### ISIN Lists

Issuer	ISIN	Coupon Type	Coupon Rate (%)	Issue date	Maturity date
DZ HYP AG	DE000A2GSMB6	Fix	3,59	20.10.2017	07.10.2022
DZ HYP AG	DE000A1MLZW9	Fix	2,25	04.05.2012	04.05.2020
DZ HYP AG	DE000A1YC8G2	Fix	1,78	28.02.2014	25.10.2023
DZ HYP AG	DE000A2BPJ11	Fix	1,13	22.11.2016	22.11.2034
DZ HYP AG	DE000A1H3GG4	Fix	3,50	28.01.2011	28.01.2021
DZ HYP AG	DE000A14J5B1	Fix	0,34	24.02.2015	24.02.2022
DZ HYP AG	DE000A0EUPG3	Fix	3,80	30.11.2005	30.11.2020
DZ HYP AG	DE000A1X3M28	Fix	1,50	20.08.2013	20.12.2019
DZ HYP AG	DE000A2BPJ52	Fix	1,30	28.02.2017	27.02.2037
DZ HYP AG	DE000A0EUPP4	Fix	3,65	28.12.2005	28.12.2020
DZ HYP AG	DE000A14KK40	Fix	0,64	13.08.2015	15.08.2022
DZ HYP AG	DE000A1CSDK7	Fix	3,84	21.01.2010	21.01.2022
DZ HYP AG	DE000A12UGJ6	Fix	0,88	12.11.2014	29.05.2020
DZ HYP AG	DE000A1E8WS8	Fix	3,25	30.11.2010	30.11.2020
DZ HYP AG	DE000A13SR87	Fix	0,30	16.02.2015	16.02.2022
DZ HYP AG	DE000A2GSP23	Floating	EIEUR3M + 0.2	27.02.2018	27.02.2023
DZ HYP AG	DE000A2GSMC4	Fix	1,54	24.10.2017	24.10.2039
DZ HYP AG	DE000A1MLZX7	Fix	2,38	03.05.2012	03.05.2021
DZ HYP AG	DE000A1YC8K4	Fix	1,88	18.03.2014	18.03.2024
DZ HYP AG	DE000A2BPJ29	Fix	1,00	29.11.2016	29.11.2032
DZ HYP AG	DE000A14J5C9	Fix	0,63	26.02.2015	26.02.2025
DZ HYP AG	DE000A0EUPJ7	Fix	3,82	08.12.2005	08.12.2025
DZ HYP AG	DE000A1X3M36	Fix	1,50	22.08.2013	22.08.2019
DZ HYP AG	DE000A12TY05	Floating	EIEUR3M + 0.08	08.07.2014	08.07.2019
DZ HYP AG	DE000A2BPJ60	Fix	1,38	23.03.2017	23.03.2037
DZ HYP AG	DE000A13SR53	Fix	0,13	03.02.2015	03.02.2020
DZ HYP AG	DE000A1TM6A4	Fix	2,00	26.04.2013	26.04.2028
DZ HYP AG	DE000A1YC8E7	Fix	1,63	18.02.2014	18.02.2022
DZ HYP AG	DE000A1A6CW0	Fix	3,75	04.11.2009	04.11.2019
DZ HYP AG	DE000A12UGK4	Fix	0,25	04.12.2014	20.11.2019
DZ HYP AG	DE000A1TNB20	Fix	1,63	17.06.2013	17.06.2021
DZ HYP AG	DE000A0EUPPE8	Fix	3,84	30.11.2005	30.11.2020
DZ HYP AG	DE000A0Z2KH5	Fix	3,88	19.08.2009	19.08.2019
DZ HYP AG	DE000A1TM342	Fix	1,50	26.02.2013	02.03.2020
DZ HYP AG	DE000A0EUPM1	Fix	3,70	16.12.2005	16.12.2020
DZ HYP AG	DE000A161ZP5	Fix	1,23	27.01.2016	27.01.2031
DZ HYP AG	DE000A12TYS2	Floating	0.7175 * EURSWE10Y	19.02.2014	19.02.2029
DZ HYP AG	DE000A0XFAE1	Floating	EIEUR6M + 0.55	23.02.2009	23.02.2024

#### Data Definitions

The data is presented with a cut-off date. Following the clarification regarding the source of information:  
 Issuer: Issuer source of information are all available public information, i.e. Investor Reports, Harmonised Transparency Templates "HTT", National Transparency Templates "NTT", Prospectus etc. Not reported or non available information will be labeled as "NA".

Field Name	Source	Definition
Cover pool asset class	Issuer	The asset type in the cover pool (public sector assets or mortgage assets)
Legal framework	CRA	The set of legislative and regulatory rules of the respective jurisdiction that regulates the covered bonds (CB) program
Nominal value	Issuer	The total amount of outstanding covered bonds as of cut-off date expressed in millions
Cover pool value	Issuer	Aggregate value of all assets in the cover pool as of cut-off date expressed in millions
WAL maturity covered bonds	Issuer	The weighted average remaining maturity of all outstanding covered bonds in years
WAL maturity cover pool	Issuer	The weighted average remaining maturity of all outstanding covered assets in years
Repayment method	Issuer	Hard Bullet: Covered bonds are repaid on the maturity date which cannot be extended Soft Bullet: The maturity date of the covered bonds can be extended by a fixed period Conditional pass-through (CPT): Covered bonds with a scheduled maturity date, and an extension mechanism defined by certain conditions
Overcollateralization	Issuer	Current OC: The proportion of cover assets that exceeds the proportion of currently outstanding covered bonds, calculated as $(\text{Cover pool value} / \text{outstanding covered bonds} - 1) * 100$ Min OC: The OC level that the issuer must maintain according to the respective CB legislation Committed OC: The minimum OC level that the issuer has committed to maintain
Covered bonds coupon type	Issuer	Type of interest rate paid on covered bonds, expressed as a percentage of bond's face value
LT Issuer Rating	CRA	Long-term ratings assess the default risks for each category of a bank's financial instruments with a residual term-to-maturity of more than one year
ST Issuer Rating	CRA	Short-term ratings assess the default risks for each category of a bank's financial instruments with a residual term-to-maturity of less than one year
Legal and regulatory framework analysis	CRA	A qualitative assessment of legislative and regulatory rules of the covered bonds program
Liquidity and refinancing risk	CRA	A qualitative assessment of regulatory requirements for liquidity and refinancing risk of the covered bonds program
First rating uplift	CRA	The rating after adding up the notches from Legal and regulatory framework analysis and Liquidity and refinancing risk with LT Issuer rating
Cover pool and cash flow analysis	CRA	The quantitative assessment of the cover assets and covered bonds at different rating-level stressed scenarios
Second rating uplift	CRA	The rating after adding up the notches from cash-flow analysis with 1st rating uplift (only effective if the rating from cash-flow analysis is higher than the 1st rating uplift)
Metrics date	CRA	The date on which CRA assigned the initial / follow-up rating of the covered bond program
Rating Case Default Rate (RDR)	CRA	Stressed default rate of the cover assets represented by the base case stressed scenario
Rating Case Recovery Rate (RRR)	CRA	Stressed recovery rate of the defaulted assets represented by the base case stressed scenario
Expected Loss	CRA	Stressed loss rate of the cover assets represented by the base case stressed scenario. The expected loss rate has been calculated as $[\text{RDR} * (1 - \text{RRR})]$ [%]
Rating Case Breakeven OC	CRA	The required stressed OC level compatible with the base case rating
Average Seasoning	Issuer	Average length of the loans from the origination date to the cut-off date in months
Loan Size	Issuer	Average size of the loans (i.e. Total value of cover assets / Number of loans)
LTV	Issuer	The loan-to-value (LTV) is the ratio of a loan to the value of the property securing the loan
LEI	CRA	Legal Entity Identifier (LEI) enables unique identification of legal entities in financial transactions
Arrears Distribution	Issuer	The distribution of arrears of the cover assets with respect to each asset class
Seasoning Distribution	Issuer	The distribution of seasoning of the cover assets with respect to each asset class
Asset liability Profile	CRA	The maturity structure of the cover assets and liabilities
% Residential Loans	Issuer	Outstanding value of loans that are secured by the residential property expressed as % of total outstanding loans in the cover pool
% Commercial Loans	Issuer	Outstanding value of loans that are secured by the commercial property expressed as % of total outstanding loans in the cover pool
Fixed Coupon	Issuer	All assets and liabilities in the covered bond program that yield a fixed interest rate
Floating Coupon	Issuer	All assets and liabilities in the covered bond program that have variable interest rates
EIEURxM	Reuters	Euro x Month EURIBOR
EURSWExY	Reuters	Euro x Year Interest Rate Swap Fixing

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