Covered Bonds follow-up Rating

DZ HYP AG

Public Sector Covered Bond Program

Creditreform Rating

Rating Object	Rating Information
DZ HYP AG, Public Sector Covered Bond Program	Rating / Outlook : **AAA / Stable** — Type: Rating Update (unsolicited)

DZ HYP AG, Public Sector Covered Bond Program

Type of Issuance : Public Sector Covered Bond under German law
Issuer : DZ HYP AG

LT Issuer Rating : AA- (DZ HYP)
ST Issuer Rating : L1
Outlook Issuer : Stable

Rating / Outlook : **AAA / Stable**

Type: Rating Update (unsolicited)

Rating Date : 10.11.2023
Rating Renewal until : Withdrawal of the rating
Maximum Validity: 01.01.2050
Rating Methodology : CRA „Covered Bond Ratings"

Program Overview

Bonds nominal value	EUR 9.581 m.	WAL maturity covered bonds	7,20 Years
Cover pool value	EUR 11.922 m.	WAL maturity cover pool	7,70 Years
Cover pool asset class	Public Sector	Overcollateralization (nominal/committed)	24,43%/ 2,00%
Repayment method	Soft Bullet	Min. overcollateralization	2,00%
Legal framework	German Pfandbriefe Act	Covered bonds coupon type	Fix (95,48%), Floating (4,52%)

Cut-off date Cover Pool information: 30.09.2023

Content

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Rating Action

This follow-up report covers our analysis of the public sector covered bond program issued under German law by DZ HYP AG („DZ HYP"). The total covered bond issuance at the cut-off date (30.09.2023) had a nominal value of EUR 9.581,38 m, backed by a cover pool with a current value of EUR 11.921,94 m. This corresponds to a nominal overcollateralization of 24,43%. The cover assets mainly include German public sector assets as well as obligations of regional and local authorities in Germany.

Taking into consideration the issuer rating, our analysis of the regulatory framework, liquidity- and refinancing risks, as well as our cover pool assessment and results of the cash flow analysis, Creditreform Rating AG ("Creditreform Rating" or "CRA") affirms the covered bond program with a AAA rating. The AAA rating represents the highest level of credit quality and the lowest investment risk.

Key Rating Findings

- \+ Covered Bonds are subject to strict German legal framework for covered bonds (PfandBG)
- \+ Covered Bond holders have full recourse to the issuer
- \+ Current high nominal overcollateralization (OC) of 24,43% as of 30.09.2023
- \+ Continued excellent asset quality of the issuer
- \+ Being a part of DZ Bank Group, DZ HYP benefits from the institutional protection system of Genossenschaftliche FinanzGruppe und Haftungsverbund

Table1: Overview results

Risk Factor	Result
Issuer rating	AA- (rating as of 07.12.2022)
+ Legal and regulatory framework	+4 Notches
+ Liquidity and refinancing risk	+1 Notch
= Rating after 1st uplift	AAA
Cover pool & cash flow analysis	AAA
+ 2nd rating uplift	+/-0 Notch
= Rating covered bond program	**AAA**

Issuer Risk

Issuer

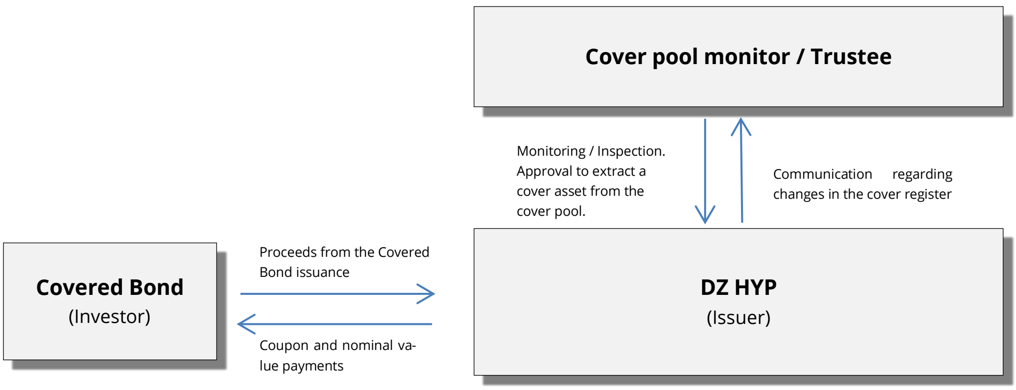
Our rating of DZ HYP covered bond program is reflected by our issuer rating opinion of DZ Bank AG (Group) due to its group structure. CRA has affirmed the Long-term rating of DZ HYP at AA- in a Rating Update dated 07.12.2022.

DZ BANK Group was able to achieve a record result in 2021, leaving the corona crisis behind. The asset quality can still be described as excellent, the capital situation is also above average and the regulatory minimum ratios are comfortably met. Opportunities and risks will arise as interest rates in the Eurozone begin to turn around, while extremely high inflation and the uncertainties caused by the war in Ukraine are likely to continue to weigh on the European economy in the medium term. The half-year results already indicate a significant slowdown in business momentum, while capitalization is also temporarily impacted by accounting effects. For a more detailed overview of the issuer rating, please refer to the webpage of Creditreform Rating AG.

Structural Risk

Transaction structure

Figure1: Overview of Covered Bond emission | Source: CRA



Legal and Regulatory Framework

The legal basis of covered bond („Pfandbriefe“) programs in Germany is the German Covered Bond Act (Pfandbriefgesetz, "PfandBG") dated 22 May 2005 and the relevant secondary legislations. The PfandBG was last amended in two steps on 1 July 2021 and 08 July 2022. Under this framework, banks can issue covered bonds backed by pool of mortgages, public sector assets, registered ship mortgages or registered liens on registered aircrafts.

The European Commission on November 2019 has adopted the legislative package to provide for enhanced harmonisation of the EU covered bond market. Each of the Member States was to transpose the Covered Bond Directive (CBD) by 8 July 2021 and the national measures were to apply at the latest from 8 July 2022.

Subsequently, the German Bundestag (German parliament) passed the German CBD Implementation Act on 15 April 2021, followed by the approval of the Bundesrat (Federal Council of Germany) on 7 May 2021. The changes to the law provide for adjustments to the PfandBG with a view to harmonize the national legislation with the EU covered bond harmonization measures.

The measures implemented have been included in the rating analysis. A comprehensive overview of the initial PfandBG with previous amendments can be found in our initial and follow-up rating reports of DZ HYP Public Sector Covered Bonds. Subsequently, the following major provisions describe the status of PfandBG as of 08 July 2022.

The covered bondholders have direct recourse to the issuer and a preferential claim over the cover pool assets secured by its cover asset class. For public sector covered bonds (“Öffentliche Pfandbriefe”) the cover assets comprise of public sector exposures to sovereigns, regional and local authorities confined to EU/EEA countries, Switzerland, USA, Canada, Japan and explicitly widened to UK due to Brexit.

Up to a total of 15% of the nominal volume of covered bonds outstanding may consist of monetary claims against the European Central Bank, central banks in the European Union or against suitable credit institutions, that meet the requirements of credit quality step 1 in accordance with CRR provisions, have an external rating and do not belong to the same banking group. Derivatives are permitted for cover pools under certain conditions.

An independent trustee (Treuhänder) ensures that the cover assets are correctly recorded in the relevant cover register and that their inclusion meets eligibility criteria. In the event of issuers insolvency, a special administrator („Sachwalter“) will be appointed by the regulatory authority BaFin to manage the cover pool. The amended PfandBG foresees a strengthening of the dual recourse, whereby the insolvency administrator must keep reserves for the claims of the covered bond holders during the insolvency proceedings of the issuer. Furthermore, on a regular basis BaFin audits cover pool assets usually every three years.

In general, we consider the structural framework for covered bonds in Germany as positive, as the PfandBG defines clear rules to mitigate risks, in particular regarding insolvency remoteness, asset segregation, investor's special claim vis-à-vis other creditors, the roll and appointment of a special administrator, among other provisions. Due to those reasons, with regard to the regulatory and structural framework for German covered bond programs, we have set a rating uplift of four (+4) notches.

Liquidity and Refinancing Risk

According to PfandBG, it is compulsory for the mortgage and public covered bond issuers to maintain an overcollateralization (OC) of at least 2.00% of the net present value of the liabilities (net present value of statutory overcollateralization) after stress tests. Furthermore, the Issuer is required to maintain a liquidity buffer to cover, for the next 180 days, all debt service outflows (interest and principal) and derivative transactions, calculated each day.

The underlying cover pool must be subjected to a stress test at least weekly to ensure the present value coverage, and that the OC is maintained in case of changes in interest rates and exchange rates. The stress scenarios can be done by either static or dynamic approaches. Derivatives can be an additional measure to hedge interest rate and currency risks.

In the event of issuer's insolvency, the PfandBG stipulates that the special administrator can sell covered pool assets or use them as a guarantee for liquidity operations if liquidity shortfalls are foreseeable. Furthermore, the special administrator has the legal option of extending the maturity for covered bonds by up to 12 months, if this action is necessary, not over indebted and subsequent solvency of the issuer can be assumed. In addition, the cover pool administrator is allowed to extend maturities of interest and principal within the first month after his appointment to the end of this month. However, the original maturity schedule of the covered bonds must be kept. This feature of German covered bond programs is considered quantitatively within our rating analysis.

According to the PfandBG, derivatives are only eligible as forward transactions. The provisions on derivative transactions that can be included in the cover pool provide for a limit for liabilities from cover pool derivatives of maximum 12% of the sum of outstanding covered bonds and liabilities from cover pool derivatives, calculated on a net present value basis.

The German PfandBG and the stipulated risk management processes for liquidity risks constitute, in general, a comparatively strict framework by which they can be effectively reduced. The option to defer maturity can mitigate existing refinancing risks, but is limited to the actions of the cover pool administrator. Remaining risks can only be cushioned by sufficiently high overcollateralization or other liquid funds to bridge the asset-liability mismatches. We assess the overall legal provisions on liquidity management for German Covered Bond programs as positive and set a rating uplift of one (+1) notch.

ESG Criteria

CRA generally takes ESG-relevant factors (environmental, social and governance) into account when assessing Covered Bond ratings. Overall, ESG factors have a significant impact on the current rating of this Covered Bond program. CRA identifies governance factors, in particular, to have a highly significant impact on Covered Bond ratings. Since Covered Bonds are subject to strict legal requirements, regulatory risk plays an important role in assessing the credit rating.

The German covered bond legislation (PfandBG) defines clear rules to mitigate risks in particular regarding: insolvency remoteness, asset segregation, investor's special claim vis-à-vis other creditors, the role and appointment of a special administrator, among other provisions. Additionally, Risk management and internal controls as well as the macroeconomic factors such as hedging strategies, interest rates and yield curve are considered to have a highly significant impact on the assessment of the credit rating. Other individual factors with a potential key rating influence were not identified, and therefore did not affect the final rating.

Credit and Portfolio Risk

Cover pool analysis

The analysis of the cover pool is based on public information which has been made available by the Issuer, in particular the Harmonised Transparency Template („HTT“) as per regulatory requirements. This information was sufficient according to CRA´s rating methodology “Covered Bond Ratings”.

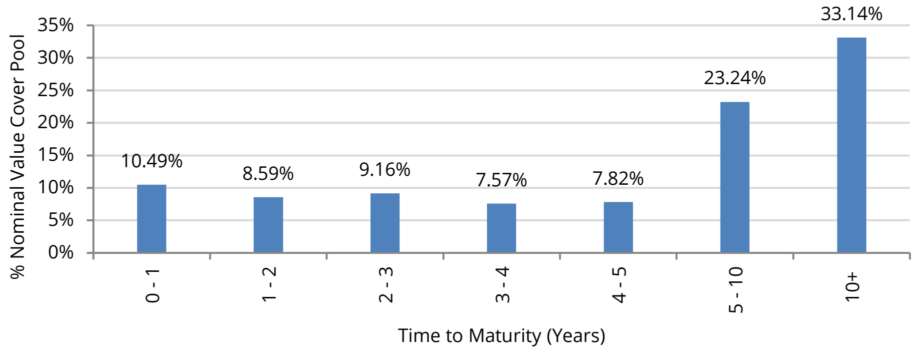
At the cut-off-date 30.09.2023, the pool of cover assets consisted of 16.236 debt receivables from 4.832 debtors, of which 88% are domiciled in Germany. The total cover pool volume amounted to EUR 11.921,94 m in bonds (8,40%), loans (91,60%) and others (0,00%) which have been lent to the central government, regional authorities and entities, and other debtors. The ten largest debtors of the portfolio total to 16,01%. Table 2 displays additional characteristics of the cover pool:

Table 2: Cover pool characteristics | Source: DZ HYP

Characteristics	Value
Cover assets	EUR 11.922 m.
Covered bonds outstanding	EUR 9.581 m.
Substitute assets	EUR 0,00 m.
Cover pool composition	
Public Sector	100,00%
Substitute assets	0,00%
Other / Derivative	0,00%
Number of debtors	4.832
Bonds	8,40%
Loans	91,60%
Other	0,00%
Average asset value	EUR 734,29 k.
Non-performing loans	0,0%
10 biggest debtors	16,01%
WA seasoning	124,4 Months
WA maturity cover pool (WAL)	7,70 Years
WA maturity covered bonds (WAL)	7,20 Years

We have listed an extended view of the composition of the cover pool in the appendix section “Cover pool details”. The following chart displays the maturity profile of the cover assets at the cut-off date 30.09.2023 (see figure 2):

Figure 2: Distribution by remaining time to maturity I Source: DZ HYP



Maturity profile

The following charts present the cash flow profile of the Issuer (see figure 3 and figure 4):

Figure 3: Cover asset congruence | Source: DZ HYP

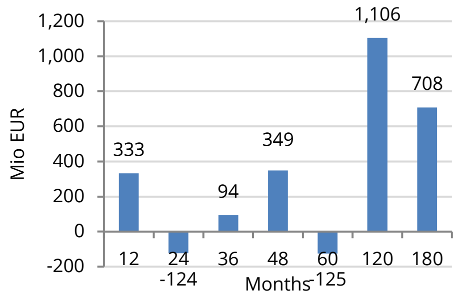
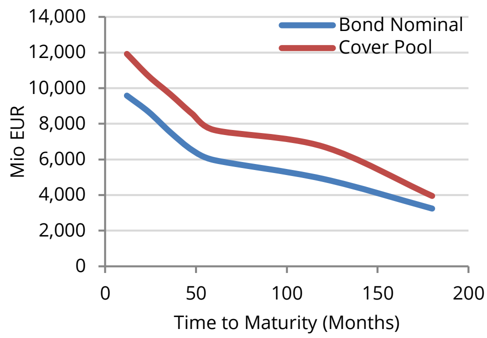


Figure 4: Amortization profile | Source: DZ HYP



During its cash flow modelling, CRA has taken into consideration the maturity structure of cover assets and liabilities. This structure was an integral part of the cash flow analysis.

Interest rate and currency risk

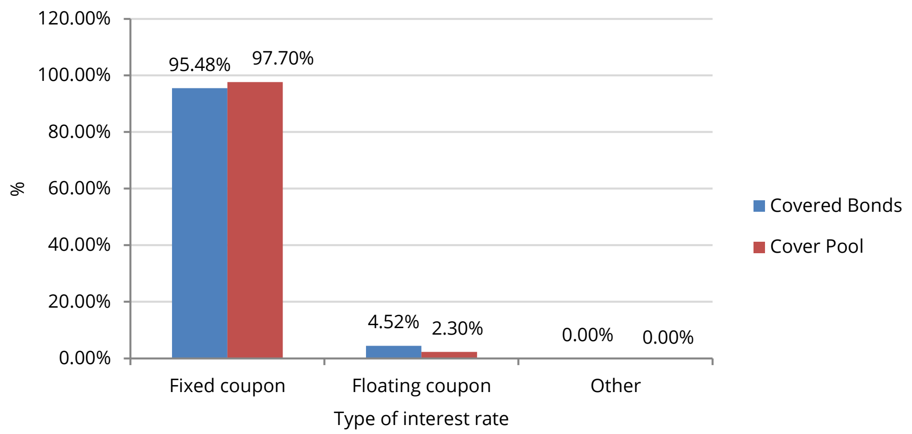
The legal framework provides for weekly stress tests to be conducted on interest rate- and currency risks. Therefore, interest rate risk could be mitigated by the 2% OC requirement. Currency risk, on the other hand, is also limited for this program as 95,91% of the cover pool assets and 95,87% of the cover bonds are denominated mainly in euro. Nevertheless, we have applied interest rate and foreign exchange stresses on the cash flows for each rating level according to our methodology.

Table 3: Program distribution by currency | Source: DZ HYP

Currency	Volume	Share (%)
Cover Pool		
EUR	11.435 m.	95,91%
CAD	25 m.	0,21%
CHF	155 m.	1,30%
GBP	23 m.	0,19%
JPY	25 m.	0,21%
USD	259 m.	2,17%
Covered Bond		
EUR	9.185 m.	95,87%
CHF	103 m.	1,08%
USD	293 m.	3,05%

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

Figure 5: Type of interest rate | Source: DZ HYP



Credit Risk

In Covered Bond Public Sector programs, CRA assesses the credit risk of the cover assets primarily through an assessment of the creditworthiness of the obligors and their future ability to meet all payment obligations. In order to derive a base case assumption for credit risk, CRA uses the CRA Sovereign Ratings of all obligors in the portfolio, which will be taken into account pro-rata. The rating reports of relevant sovereigns can be accessed at www.creditreform-rating.de. Using all portfolio information available (number of debtors, sovereign – sub-sovereign, maturity profile, regional diversification etc.), CRA has modelled the cover asset portfolio and, using Monte Carlo simulations, derived a distribution of defaults which can be used to elicit rating-level dependent default assumptions.

Recovery and loss-severity assumptions have been determined in accordance with CRA rating methodology. This includes a differentiation of sovereign- and sub-sovereign credits in terms of loss severities, which is included using the current portfolio composition to determine a weighted average recovery rate.

Using both rating-level dependent default and recovery assumptions, the following loss assumptions have been derived for the current cover pool (see Table 4)

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

Rating	Default Rate (%)	Recoveries (%)	Expected Loss (%)
AAA	**14,92%**	**42,53%**	**8,57%**
AA+	12,89%	45,03%	7,09%
AA	11,76%	47,53%	6,17%
AA-	9,95%	49,20%	5,06%
A+	9,25%	50,87%	4,55%
A	8,77%	52,53%	4,16%
A-	7,95%	54,20%	3,64%

Cash-Flow Analysis

Model Assumptions

Based on public information and using the base case loss assumptions, we implement a scenario-based cash flow model. This model aims to test the ability of the structure to service all covered bonds according to their payment profile in diverse stress scenarios. The CRA cash flow analysis assumes that the Issuer has defaulted, i.e. all obligations will be met using cash flows from the cover pool assets only. We also assume that no additional assets will be added to the cover pool during the wind-down phase.

The cash-flow analysis considers, among other factors, asset value haircuts ("asset-sale discount"), and the possible positive yield spread between covered assets and covered bonds ("yield spreads"). To derive the asset-sale discount, CRA assumes, based on secondary market data, a rating level haircut on the asset value. Furthermore, CRA, using available public information (i.e. issuer's annual accounts), has derived estimations for yield spreads (see table 5):

Table 5: Cash-Flow Model assumptions | Source: CRA

Rating level	Asset-Sale Discount	Yield Spread
AAA	**17,01%**	**0,55%**
AA+	15,59%	0,57%
AA	14,67%	0,58%
AA-	13,80%	0,58%
A+	13,12%	0,59%
A	12,57%	0,60%
A-	11,85%	0,60%

Rating Scenarios

In our cash flow model rating scenarios have been tested considering several central input parameters, such as:

- Portfolio composition (diversification, concentration, granularity)
- Probability of default of cover assets

- Correlations of cover assets and systematic risk factors
- Recoveries
- Maturity profile of covered bonds and cover assets (ALM)

Within a AAA rating scenario, the cash flow model showed that obligations can be paid fully and in a timely manner. Overall, the cash flow analysis revealed that the portfolio, given all available information as of 30.09.2023, may ensure the repayment of bonds' nominal capital notwithstanding the occurrence of the presented stressed scenarios.

Overcollateralization Break-Even Analysis

CRA also performed a break-even OC analysis taking into considerations the following drivers: ALM, Loss level, Interest rate spreads, foreign currency mismatches and Recoveries. Performing the break-even OC analysis, we took rating-level specific stressed outcomes into account. Based on these analyses, the maximum OC required for each relevant rating level during the whole period has been presented in table 6.

Table 6: Breakeven Analysis | Source: CRA

Rating Level	Break-Even OC
AAA	**10,52%**
AA+	8,59%
AA	7,32%
AA-	5,90%
A+	5,24%
A	4,79%
A-	4,15%

Sensitivity Analysis

CRA also evaluates the sensitivity of the structure and program with respect to important input parameters. In particular, the following factors have been varied:

- Credit quality of cover assets
- Recoveries

The following table presents the rating impact of a decline in recoveries and an increase in the credit risk of single debtors (sovereigns). Starting from the best-case, which is represented by our base case assumptions, the analysis reveals the sensitivity of the rating with respect to recovery rates and credit risk. The worst-case scenario, in which we reduce recoveries by 50% and increase credit risk by 50%, the impact can be seen by an unchanged base case rating at AAA (see Table 7):

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

Recovery / Defaults	Base Case	-25%	-50%
Base Case	**AAA**	AAA	AAA
+25%	AAA	AAA	AAA
+50%	AAA	AAA	AAA

In general, based on the presented cash flow analysis results, the rating of the cover pool within our covered bond program rating has been set at AAA. This would have entailed a potential rating uplift by +3 notches, however the secondary rating uplift was set at zero (0) notch since the maximum possible final rating AAA has already been achieved.

Counterparty Risk

Derivatives

No derivatives in use at present

Commingling

In the event of issuer's bankruptcy, in order to avoid commingling of funds, the PfandBG stipulates that the cover assets should be isolated from the general bankruptcy estate (insolvency-free assets) and a special cover pool administrator will be appointed to manage the cover pool. Under that mandate the cover pool administrator will have first priority on the up-coming cash flows from the cover pool assets, which in turn should be used to cover interest and principal payments of the covered bond holders in event of the Issuer's insolvency.

Appendix

Rating History

Event	Rating Date	Publication Date	Result
Initial Rating	10.12.2018	19.12.2018	AAA / stable
Rating Update	20.12.2019	02.01.2020	AAA / stable
Monitoring	24.03.2020	28.03.2020	AAA / watch negative
Rating Update	16.12.2020	22.12.2020	AAA / stable
Monitoring	05.07.2021	06.07.2021	AAA / Watch Unknown
Rating Update	07.12.2021	13.12.2021	AAA / stable
Rating Update	28.10.2022	04.11.2022	AAA / stable
Rating Update	10.11.2023	16.11.2023	AAA / stable

Details Cover Pool

Table 8: Characteristics of Cover Pool | Source: DZ HYP

Characteristics	Value
Cover Pool Volume	EUR 11.922 m
Covered Bonds Outstanding	EUR 9.581 m
Substitute Assets	EUR 0 m
Share Derivatives	0,00%
Share Other	100,00%
Substitute Assets breakdown by asset type	
Cash	0,00%
Guaranteed by Supranational/Sovereign agency	0,00%
Central bank	0,00%
Credit institutions	0,00%
Other	0,00%
Substitute Assets breakdown by country	
Issuers country	0,00%
Eurozone	0,00%
Rest European Union	0,00%
European Economic Area	0,00%
Switzerland	0,00%
Australia	0,00%
Brazil	0,00%
Canada	0,00%
Japan	0,00%
Korea	0,00%
New Zealand	0,00%
Singapore	0,00%

US	0,00%
Other	0,00%
Cover Pool Composition	
Public Sector	100,00%
Total Substitute Assets	0,00%
Other / Derivatives	0,00%
Number of Debtors	4.832
Distribution by debtor type	
Central Government	6,22%
Regional authorities	18,51%
Municipal authorities	70,13%
Other	5,15%
Distribution by asset type	
Loans	91,60%
Bonds	8,40%
Other	0,00%
Average asset value	EUR 734 k
Share of Non-Performing Loans	0,00%
Share of 10 biggest debtors	16,01%
WA Maturity (months)	92,40
WAL (months)	92,40
Distribution by Country (%)	
Austria	3,71
Belgium	1,13
France	0,34
Germany	87,75
Italy	0,90
Luxembourg	0,06
Spain	2,59
Switzerland	1,30
Canada	2,23
Distribution by Region (%)	
Baden-Württemberg	13,82
Bavaria	14,44
Berlin	2,33
Brandenburg	0,16
Bremen	0,81
Hamburg	0,60
Hesse	13,94
Lower Saxony	12,10
Mecklenburg-Western Pomerania	0,84
North Rhine-Westphalia	24,20

Rhineland-Palatinate	8,16
Saarland	3,54
Saxony	0,73
Saxony-Anhalt	0,33
Schleswig-Holstein	2,10
Thuringia	1,89

Table 9: Participant counterparties | Source: DZ HYP

Role	Name	Legal Entity Identifier
Issuer	DZ HYP	5299004TE2DYMKEAM814

Figure 6: Arrears Distribution | Source: DZ HYP

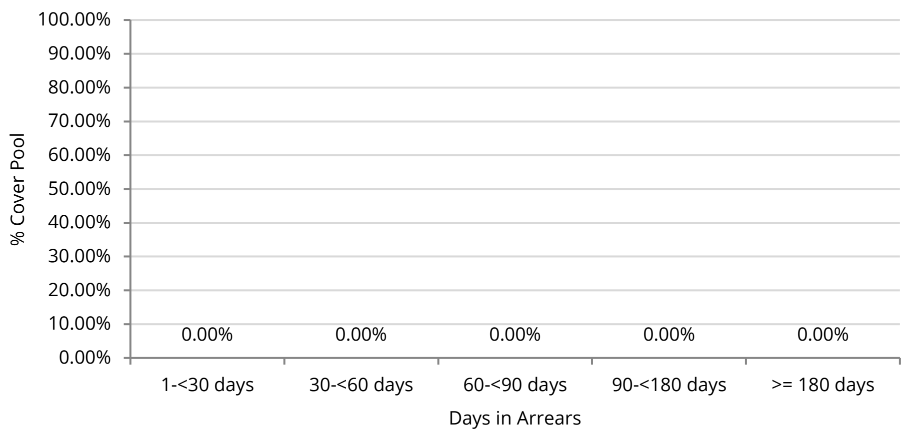
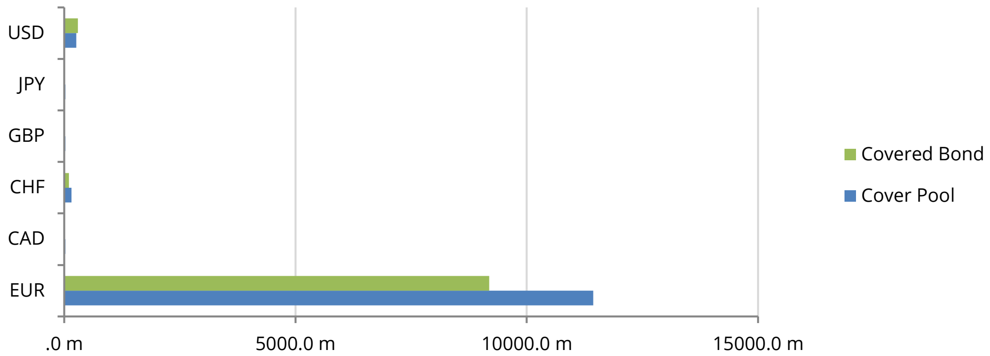


Figure 7: Program currency mismatches | Source: DZ HYP



Key Source of Information

Documents (Date: 30.09.2023)
Issuer ▪ Audited consolidated annual reports of DZ Bank AG (Group) 2018-2021 ▪ Final Rating report as of 07.12.2022 ▪ Miscellaneous Investor Relations Information and Press releases ▪ Data from the CRA/ eValueRate databank
Covered Bond and Cover Pool ▪ HTT Reporting from DZ HYP as of 30.09.2023 ▪ Base Prospectus of DZ HYP AG Covered Bond Program dated 10.05.2023 ▪ Market data of Public Sector Covered Bond Program

Regulatory and Legal Disclosures

Creditreform Rating AG was neither commissioned by the rating object nor by any other third parties for the rating. The analysis took place on a voluntary basis by Creditreform Rating AG and is to be described in the regulatory sense as an unsolicited rating. The rating was conducted on the basis of Creditreform Rating´s "CRAG Rating Methodology Covered Bonds (v1.2, July 2023) and "Technical Documentation Portfolio Loss Distributions" (v.1.0, July 2018) in conjunction with Creditreform`s basic document "Rating Criteria and Definitions" (v1.3, January 2018). On the subject of ESG (environment, social and governance), Creditreform Rating AG has published the basic document "The Impact of ESG Factors on Credit Ratings" (March 2020).

Unsolicited Credit Rating	
With Rated Entity or Related Third Party Participation	NO
With Access to Internal Documents	NO
With Access to Management	NO

The rating is based on publicly available information and internal evaluation methods for the rated bank and program. The issuer's quantitative analysis is based mainly on the latest annual accounts, interim reports, other information of the bank pertaining to investor relations, and key figures calculated by CRA/eValueRate. The cover pool's quantitative analysis for the rated Covered Bond Program was based on the "Harmonised Transparency Template" (HTT) published by the DZ HYP.

Information on the meaning of a rating category, definition of default and sensitivity analysis of relevant key rating assumptions can be found at "Creditreform Rating AG, Rating Criteria and Definitions":

https://www.creditreform-rating.de/en/about-us/regulatory-requirements.html

This rating was carried out by analysts Aaron Kamruzzaman (Senior Analyst) and Bruno Passos (Analyst) both based in Neuss/Germany. On 10.11.2023, the rating was presented to the rating committee by the analysts and adopted in a resolution. The function of Person Approving Credit Ratings (PAC) was performed Christian Conieczny (Senior Analyst).

On 10.11.2023, the rating result was communicated to DZ HYP, and the preliminary rating report was made available. The Issuer and all relevant parties examined the rating report prior to publication and were given at least one full working day to appeal the rating committee decision and provide additional information. The rating decision was not amended following this examination.

The rating is subject to one-year monitoring from the creation date (see cover sheet). Within this period, the rating can be updated. After one year at the latest, a follow-up is required to maintain the validity of the rating.

In 2011 Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on the registration Creditreform Rating AG (CRA) is permitted to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

Endorsement

Creditreform Rating did not endorse the rating according Article 4 (3), CRA-Regulation.

Conflict of Interests

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

In the event of provision of ancillary services to the rated entity, CRA will disclose all ancillary services in the credit rating report of the issuer.

Rules on the Presentation of Credit Ratings and Rating Outlooks

The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our policy "Rating Committee," all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, CRA has used following substantially material sources:

1. Transaction structure and participants

2. Transaction documents

3. Issuing documents

4. Other rating related documentation

There are no other attributes and limitations of the credit rating or rating outlook other than displayed on the CRA website. Furthermore, CRA considers satisfactory the quality and extent of information available on the rated entity. In regard to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the disclosure of the credit rating to the rated entity and the public disclosure no amendments were made to the credit rating.

The rating report and/or press release indicates the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology, or where reference only to the principal methodology might cause investors to overlook other important aspects of the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating and indicates how the different methodologies and other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery, and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions, such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings as well as best-case scenario credit ratings, are explained.

The date at which the credit rating was released for distribution for the first time and when it was last updated including any rating outlooks, is indicated clearly and prominently in the rating report and/or press release as a "Rating action"; first release is indicated as "initial rating", other updates are indicated as an "update", "upgrade or downgrade", "not rated", "confirmed", "selective default" or "default".

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the rating report and/or press release.

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