

# Credit Rating Transition and Default Study 2023



This report is the annual update of the transition and default study for Scope Ratings GmbH and Scope Ratings UK Limited (both referred to as 'Scope Ratings'), presenting credit rating transition matrices and default rates for Scope Ratings' rated universe.

Transition and default rates are presented on an aggregated basis in the report (all sectors combined) and broken down by sectors in the appendices.

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<sup>1</sup> Editorial note: The document was republished on 28/02/2024 with typos fixed in the five-year default rate.

## Scope Ratings' credit rating universe

This report covers issuer credit ratings from the following categories: Corporates, Financial Institutions, Covered Bonds, Structured Finance, the Sovereign and Public Sector (sovereigns, sub-sovereigns, supranational entities, and government related entities<sup>2</sup>) and Project Finance. Credit ratings are counted and tracked at the issuer level apart from Structured Finance and Project Finance, for which Scope Ratings includes all the tranche credit ratings from a given financial structure. Scope Ratings includes long-term and short-term credit ratings, both public and subscription. For Covered Bonds, Scope Ratings includes the credit rating of the covered bonds programme.

The study includes Scope Ratings' rating universe across all countries. Geographically, 97% of the universe is in Europe (not only EU) as at 31.12.2023.

Rating coverage has grown by around 39% on average p.a. since 2014

The report covers Scope Ratings' ten years of credit rating history (from 31.12.2012 to 31.12.2023) and includes credit ratings assigned by Scope Ratings<sup>3</sup>. Prior to 2017, statistics also reflect sovereign credit ratings assigned by Feri Euro Ratings (Feri) acquired in August 2016.

**Table 1: Scope Ratings' credit rating universe by sectors (long-term and short-term credit ratings)**

Ratings	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Financial Institutions	147	156	149	146	134	114	57	55	57	52	0
Corporates (non-financial)	671	701	665	587	356	231	42	23	10	9	9
Covered Bonds	40	40	40	39	40	39	26	23	21	0	0
Structured Finance	227	240	217	180	163	127	64	44	31	4	3
Public Finance <sup>4</sup>	205	195	160	146	126	116	69	60	60	59	59
Project Finance	117	40	8	2	1	1	1	0	0	0	0
<b>Total</b>	<b>1,407</b>	<b>1,372</b>	<b>1,239</b>	<b>1,100</b>	<b>820</b>	<b>628</b>	<b>259</b>	<b>205</b>	<b>179</b>	<b>124</b>	<b>71</b>

**Table 2: Credit rating distribution**

Rating categories	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Long-term ratings:</b>											
AAA	130	133	135	123	114	102	51	45	37	9	9
AA	84	80	72	73	63	50	31	24	18	16	14
A	274	256	213	191	163	122	45	41	41	29	11
BBB	337	322	282	241	154	116	26	17	14	22	18
BB	80	72	64	52	45	21	14	22	17	13	15
B	64	71	63	48	28	18	10	9	11	4	3
CCC	12	10	13	7	3	2	0	3	3	3	1
CC	6	6	4	6	2	2	2	4	3	1	0
C	8	3	4	2	2	2	3	4	4	0	0
D	1	0	0	1	0	0	2	2	3	1	0
<b>Total long-term rating</b>	<b>996</b>	<b>953</b>	<b>850</b>	<b>744</b>	<b>574</b>	<b>435</b>	<b>184</b>	<b>171</b>	<b>151</b>	<b>98</b>	<b>71</b>
<b>Short-term ratings:</b>											
S-1+	129	127	113	106	90	83	43	4	2	1	0
S-1	123	104	89	80	62	40	14	26	23	21	0
S-2	148	174	179	163	89	66	14	4	3	4	0
S-3	6	11	7	6	5	3	3	0	0	0	0
S-4	5	3	1	1	0	1	1	0	0	0	0
<b>Total short-term rating</b>	<b>411</b>	<b>419</b>	<b>389</b>	<b>356</b>	<b>246</b>	<b>193</b>	<b>75</b>	<b>34</b>	<b>28</b>	<b>26</b>	<b>0</b>

<sup>2</sup> GREs rated top-down as per our Government Related Entities Rating Methodology

<sup>3</sup> Note that as of 01.01.2021, in addition to Scope Ratings GmbH, credit ratings are issued by Scope Ratings UK Limited.

<sup>4</sup> Encompasses sovereigns, sub-sovereigns, supranational and government related entities.

## Transition matrices – long-term credit ratings – all sectors

The credit ratings transition matrices presented in this section combine all sectors and track ratings as of 31 December of each year. The credit rating transition matrices presented by individual sectors are provided in the appendices.

Credit ratings which were in default intra-period are kept at default at the end of the period. Further, once defaulted, the credit rating is maintained as default throughout the remaining periods. If the rating was subsequently upgraded, the record is duplicated, and a “dummy” identifier is assigned to it in order to further track its performance post default status. The original record is kept in default status.

**Table 3: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2022	AAA	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	133
	AA	3%	85%	9%	0%	0%	0%	0%	0%	0%	0%	4%	0%	80
	A	0%	2%	86%	1%	0%	0%	0%	0%	0%	5%	5%	0%	256
	BBB	0%	0%	7%	76%	3%	0%	1%	0%	0%	11%	1%	0%	322
	BB	0%	0%	0%	6%	69%	10%	1%	0%	0%	8%	6%	0%	72
	B	0%	0%	0%	0%	11%	69%	6%	1%	0%	7%	4%	1%	71
	CCC	0%	0%	0%	0%	0%	0%	50%	20%	30%	0%	0%	0%	10
	CC	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	6
C	0%	0%	0%	0%	0%	0%	0%	0%	67%	33%	0%	0%	3	

**Table 4: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	75%	0%	0%	0%	0%	0%	0%	0%	0%	1%	24%	0%	123
	AA	4%	67%	15%	0%	0%	0%	0%	0%	0%	1%	12%	0%	73
	A	1%	4%	77%	3%	0%	0%	0%	0%	0%	9%	5%	0%	191
	BBB	0%	0%	11%	60%	4%	1%	1%	0%	0%	17%	6%	0%	241
	BB	0%	0%	2%	8%	58%	10%	2%	0%	2%	6%	13%	0%	52
	B	0%	0%	0%	0%	8%	48%	8%	4%	4%	19%	4%	4%	48
	CCC	0%	0%	0%	0%	0%	0%	14%	14%	29%	0%	43%	0%	7
	CC	0%	0%	0%	0%	0%	0%	0%	33%	50%	0%	17%	0%	6
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	2	

**Table 5: Five-year transition matrix (31.12.2018 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2018	AAA	68%	0%	0%	0%	0%	0%	0%	0%	0%	4%	28%	0%	102
	AA	0%	66%	10%	0%	0%	0%	0%	0%	0%	2%	22%	0%	50
	A	0%	5%	72%	2%	1%	0%	0%	0%	0%	11%	9%	0%	122
	BBB	2%	0%	10%	47%	2%	3%	3%	1%	1%	19%	11%	0%	116
	BB	0%	0%	0%	5%	19%	10%	5%	0%	0%	24%	38%	0%	21
	B	0%	0%	0%	6%	6%	11%	6%	6%	33%	11%	11%	11%	18
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	2
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	2
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	2

**Table 6: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	91%	0%	0%	0%	0%	0%	0%	0%	0%	1%	8%	0%	758
AA	6%	85%	3%	0%	0%	0%	0%	0%	0%	2%	2%	0%	441
A	0%	3%	88%	3%	0%	0%	0%	0%	0%	3%	2%	0%	1,112
BBB	0%	0%	6%	84%	3%	0%	0%	0%	0%	5%	2%	0%	1,212
BB	0%	0%	0%	6%	74%	7%	1%	0%	0%	9%	4%	0%	335
B	0%	0%	0%	0%	8%	72%	5%	2%	0%	9%	2%	2%	265
CCC	0%	0%	0%	0%	0%	0%	64%	11%	7%	4%	11%	2%	45
CC	0%	0%	0%	0%	0%	3%	10%	63%	17%	3%	0%	3%	30
C	0%	0%	0%	0%	0%	0%	0%	0%	79%	4%	17%	0%	24

## Transition matrices – short-term credit ratings, all sectors

**Table 7: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023								No. of ratings
		S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	
2022	S-1+	94%	6%	0%	0%	0%	1%	0%	0%	127
	S-1	3%	88%	2%	0%	0%	6%	1%	0%	104
	S-2	0%	9%	76%	1%	1%	14%	0%	0%	174
	S-3	0%	0%	36%	36%	0%	27%	0%	0%	11
	S-4	0%	0%	0%	0%	67%	33%	0%	0%	3

Data for the three-year transition matrix (on a stock basis) below mainly relates to sovereign and public sector credit ratings as well as financial institution and corporate credit ratings.

**Table 8: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023								No. of ratings
		S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	
2020	S-1+	89%	6%	0%	0%	0%	6%	0%	0%	106
	S-1	6%	79%	4%	0%	0%	10%	1%	0%	80
	S-2	0%	13%	69%	1%	0%	17%	1%	0%	163
	S-3	0%	0%	50%	33%	0%	17%	0%	0%	6
	S-4	0%	0%	0%	0%	100%	0%	0%	0%	1

**Table 9: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	97%	2%	0%	0%	0%	2%	0%	0%	569
S-1	5%	87%	3%	0%	0%	3%	0%	0%	459
S-2	0%	5%	89%	1%	0%	5%	0%	0%	696
S-3	0%	0%	20%	63%	3%	14%	0%	0%	35
S-4	0%	0%	0%	14%	71%	14%	0%	0%	7

## Default rates – all sectors

Default rates presented in this section combine credit ratings from all sectors.

In Table 10 below, default rates are calculated on a stock basis as the ratio between the stock of defaulted credit ratings outstanding as of 31.12.2021 and the stock of credit ratings that were not in the default category of 31 December one year, three, and five years before.

**Table 10: Default rates (stock basis)**

	One-year (31.12.2022 – 31.12.2023)			Three-year (31.12.2020 – 31.12.2023)			Five-year <sup>5</sup> (31.12.2018 – 31.12.2023)		
	One-year default rate %	No. of defaults	Total no. of ratings	Three-year default rate %	No. of defaults	Total no. of ratings	Five-year <sup>5</sup> default rate %	No. of defaults	Total no. of ratings
<b>Investment grade ratings (AAA to BBB)</b>	0%	0	791	0%	0	628	0%	0	390
<b>BB</b>	0%	0	72	0%	0	52	0%	0	21
<b>B</b>	1%	1	71	4%	2	48	11%	2	18
<b>CCC</b>	0%	0	10	0%	0	7	0%	0	2
<b>CC</b>	0%	0	6	0%	0	6	0%	0	2
<b>C</b>	0%	0	3	0%	0	2	0%	0	2
<b>Short-term ratings</b>	0%	0	791	0%	0	628	0%	0	390

**Table 11: Average one-year default rate (static pool basis)**

	Eleven-year (31.12.2012 – 31.12.2023)		
	Default rate %	No. of defaults	Total no. of ratings
<b>Investment grade ratings (AAA to BBB)</b>	0%	0	3,532
<b>BB</b>	0%	0	335
<b>B</b>	2%	6	265
<b>CCC</b>	2%	1	45
<b>CC</b>	3%	1	30
<b>C</b>	0%	0	24
<b>Short-term ratings</b>	0%	0	1,766

In Table 11 above, one-year default rates are calculated on a static pool basis for the ten-year period from 31.12.2012 to 31.12.2023. Seven issuers were in default (D), six corporates and two sovereigns.

<sup>5</sup> Editorial note: The document was republished on 28/02/2024 with typos fixed in the five-year default rate.

## Appendix I – Methodology used for rating transitions and default rates

Credit rating transition tracks the evolution of credit ratings between two different dates and will not track intra-period credit rating changes. A credit rating that is 'A' at the beginning of the period and 'BBB' at the end of the period will be displayed as a credit rating change. Consequently, a credit rating that was 'A' at the beginning of the period, changed to 'BBB' and changed back to 'A' during the same period will not be displayed as a credit rating change. Two separate credit rating changes within one period (e.g. from 'A' to 'BBB' and later on from 'BBB' to 'BB') will be displayed only as one credit rating change, i.e. from 'A' to 'BB'. The exception is the treatment of defaults and selective defaults. If the credit rating was in default or selective default intra-period, it will be kept as defaulted at the end of the period. Further, once defaulted, the credit rating will be kept as defaulted throughout the remaining periods. If the rating was subsequently upgraded, the record is duplicated, and a "dummy" identifier is assigned to it in order to further track its performance.

Credit rating transitions and default rates are calculated under **two distinct methodologies**:

- The first method is based on a **stock concept**, i.e. a comparison of credit ratings between two different dates. Hence the five-year transition matrix 2018-2023 simply shows the credit ratings which were outstanding as of 31.12.2018 and their final position as of 31.12.2023. Under this method, the 2018-2023 five-year default rate for the B credit rating category is the ratio between issuers in default on 31.12.2023 and the number of issuers rated B on 31.12.2018.
- The second method is by **static pools or cohorts**. This is done by creating static pools of credit ratings that are outstanding at the beginning of a period and by tracking the evolution of credit ratings through multiple time horizons. For example, all credit ratings outstanding as of 31.12.2012 form the 2013 static pool, all surviving credit ratings of the 2013 static pool as of 31.12.2013, together with all new credit ratings assigned in 2014 from the 2014 static pool. The evolution of the credit ratings from the 2013, 2014 and 2015 static pools are combined in the average annual transition 2012-2023 (Table 6).

Issuers may be placed in multiple static pools as their credit ratings are outstanding over several years. For example, an issuer rated during 2013 and withdrawn during 2016, will be included in the 2014, 2015 and 2016 static pool.

Similarly, for the calculation of default rates on a static pool basis, when an issuer defaults, the default is assigned back to all the static pools to which the issuer belonged. This allows defaults to be calculated across a multi-year horizon.

## Appendix II – Credit rating transition matrices by sectors: long-term credit ratings

### Corporates

**Table 12: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2022	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	74%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19
	A	0%	2%	89%	2%	0%	0%	0%	0%	0%	7%	1%	0%	123
	BBB	0%	0%	8%	76%	1%	0%	1%	0%	0%	14%	1%	0%	180
	BB	0%	0%	0%	2%	80%	7%	0%	0%	0%	11%	0%	0%	45
	B	0%	0%	0%	0%	11%	82%	0%	0%	0%	5%	0%	2%	44
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	1

**Table 13: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	78%	17%	0%	0%	0%	0%	0%	0%	6%	0%	0%	18
	A	0%	2%	78%	6%	0%	0%	0%	0%	0%	12%	2%	0%	105
	BBB	0%	0%	13%	70%	1%	0%	0%	0%	0%	16%	1%	0%	152
	BB	0%	0%	0%	3%	79%	10%	0%	0%	0%	7%	0%	0%	29
	B	0%	0%	0%	0%	13%	59%	0%	0%	0%	22%	0%	6%	32
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 14: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
AA	0%	92%	7%	0%	0%	0%	0%	0%	0%	1%	0%	0%	74
A	0%	0%	91%	3%	0%	0%	0%	0%	0%	4%	0%	0%	490
BBB	0%	0%	4%	89%	1%	0%	0%	0%	0%	6%	0%	0%	650
BB	0%	0%	0%	1%	81%	5%	1%	0%	0%	12%	0%	0%	169
B	0%	0%	0%	0%	6%	79%	0%	0%	0%	12%	0%	3%	146
CCC	0%	0%	0%	0%	0%	0%	33%	33%	0%	0%	0%	33%	3
CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	2
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	1



## Covered Bonds

**Table 15: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023												No. of ratings	
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default		
2022	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40
	AA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	BBB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	B	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 16: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	97%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	39
	AA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	BBB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	B	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 17: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	98%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	264
AA	50%	25%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	4
A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
BBB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
B	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

## Financial Institutions

**Table 18: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2022	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3
	AA	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28
	A	0%	2%	94%	0%	0%	0%	0%	0%	0%	5%	0%	0%	65
	BBB	0%	0%	4%	60%	0%	0%	0%	0%	0%	36%	0%	0%	25
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	B	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	2
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 19: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3
	AA	0%	86%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28
	A	0%	5%	89%	0%	0%	0%	0%	0%	0%	5%	0%	0%	55
	BBB	0%	0%	8%	40%	0%	0%	0%	0%	0%	52%	0%	0%	25
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	B	0%	0%	0%	0%	0%	50%	0%	0%	0%	50%	0%	0%	2
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 20: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14
AA	0%	96%	3%	0%	0%	0%	0%	0%	0%	1%	1%	0%	150
A	0%	4%	93%	1%	0%	0%	0%	0%	0%	3%	0%	0%	357
BBB	0%	0%	9%	80%	0%	0%	0%	0%	0%	11%	0%	0%	122
BB	0%	0%	0%	67%	33%	0%	0%	0%	0%	0%	0%	0%	3
B	0%	0%	0%	0%	0%	83%	0%	0%	0%	17%	0%	0%	6
CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

## Sovereign and Public Sector

**Table 21: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023												No. of ratings	
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default		
2022	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	36
	AA	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18
	A	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	24
	BBB	0%	0%	7%	93%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14
	BB	0%	0%	0%	25%	75%	0%	0%	0%	0%	0%	0%	0%	0%	4
	B	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	1
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	1
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	

**Table 22: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023												No. of ratings	
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default		
2020	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33
	AA	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8
	A	0%	8%	77%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	13
	BBB	0%	0%	19%	69%	0%	0%	0%	0%	0%	0%	13%	0%	0%	16
	BB	0%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	2
	B	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	1
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 23: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	99%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	201
AA	1%	90%	2%	0%	0%	0%	0%	0%	0%	7%	0%	0%	113
A	0%	2%	90%	4%	0%	0%	0%	0%	0%	4%	0%	0%	124
BBB	0%	0%	8%	83%	4%	0%	0%	0%	0%	5%	0%	0%	126
BB	0%	0%	0%	9%	73%	4%	0%	0%	0%	14%	0%	0%	56
B	0%	0%	0%	0%	8%	62%	8%	0%	0%	8%	0%	15%	13
CCC	0%	0%	0%	0%	0%	0%	40%	20%	0%	40%	0%	0%	5
CC	0%	0%	0%	0%	0%	33%	0%	67%	0%	0%	0%	0%	3
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

## Structured Finance

**Table 24: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2022	AAA	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	54
	AA	13%	53%	13%	0%	0%	0%	0%	0%	0%	0%	20%	0%	15
	A	0%	9%	54%	0%	0%	0%	0%	0%	0%	3%	34%	0%	35
	BBB	0%	0%	8%	76%	9%	0%	0%	0%	0%	3%	4%	0%	75
	BB	0%	0%	0%	9%	50%	18%	5%	0%	0%	0%	18%	0%	22
	B	0%	0%	0%	0%	9%	41%	18%	5%	0%	14%	14%	0%	22
	CCC	0%	0%	0%	0%	0%	0%	50%	20%	30%	0%	0%	0%	10
	CC	0%	0%	0%	0%	0%	0%	0%	40%	60%	0%	0%	0%	5
	C	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	2

**Table 25: Three-year transition matrix (31.12.2020 to 31.12.2023 stock basis)**

		2023												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	38%	0%	0%	0%	0%	0%	0%	0%	0%	0%	63%	0%	48
	AA	16%	16%	21%	0%	0%	0%	0%	0%	0%	0%	47%	0%	19
	A	6%	11%	39%	0%	0%	0%	0%	0%	0%	0%	44%	0%	18
	BBB	2%	2%	2%	36%	17%	4%	4%	0%	0%	4%	28%	0%	47
	BB	0%	0%	5%	10%	30%	10%	5%	0%	5%	0%	35%	0%	20
	B	0%	0%	0%	0%	0%	15%	31%	15%	15%	8%	15%	0%	13
	CCC	0%	0%	0%	0%	0%	0%	14%	14%	29%	0%	43%	0%	7
	CC	0%	0%	0%	0%	0%	0%	0%	33%	50%	0%	17%	0%	6
	C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	2

**Table 26: Average annual transition matrix (31.12.2012 to 31.12.2023 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	78%	0%	0%	0%	0%	0%	0%	0%	0%	1%	21%	0%	279
AA	24%	62%	4%	0%	0%	0%	0%	0%	0%	0%	10%	0%	100
A	4%	11%	64%	2%	0%	0%	0%	0%	0%	2%	17%	0%	127
BBB	0%	0%	7%	75%	7%	1%	0%	0%	0%	2%	7%	0%	281
BB	0%	0%	0%	10%	64%	11%	1%	0%	0%	0%	14%	0%	104
B	0%	0%	0%	1%	11%	61%	12%	5%	0%	5%	4%	0%	97
CCC	0%	0%	0%	0%	0%	0%	70%	8%	8%	0%	14%	0%	37
CC	0%	0%	0%	0%	0%	0%	12%	68%	20%	0%	0%	0%	25
C	0%	0%	0%	0%	0%	0%	0%	0%	83%	0%	17%	0%	23

## Project Finance

Table 27: One-year transition matrix (31.12.2022 to 31.12.2023 stock basis)

		2023											No. of ratings	
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off		Default
2022	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	A	0%	0%	89%	11%	0%	0%	0%	0%	0%	0%	0%	0%	9
	BBB	0%	0%	7%	89%	4%	0%	0%	0%	0%	0%	0%	0%	28
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	1
	B	0%	0%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	2
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	

## Appendix III – Credit Rating transition matrices by sectors: short-term credit ratings

### Corporates

**Table 28: One-year transition matrix (31.12.2022 to 31.12.2023 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	85%	12%	0%	0%	0%	2%	0%	0%	41
S-1	2%	89%	2%	0%	0%	5%	1%	0%	85
S-2	0%	8%	75%	1%	1%	15%	0%	0%	155
S-3	0%	0%	43%	14%	0%	43%	0%	0%	7
S-4	0%	0%	0%	0%	0%	100%	0%	0%	1

### Financial Institutions

**Table 29: One-year transition matrix (31.12.2022 to 31.12.2023 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	100%	0%	0%	0%	0%	0%	0%	0%	23
S-1	20%	80%	0%	0%	0%	0%	0%	0%	5
S-2	0%	20%	60%	0%	0%	20%	0%	0%	5
S-3	0%	0%	0%	0%	0%	0%	0%	0%	0
S-4	0%	0%	0%	0%	0%	0%	0%	0%	0

**Table 30: Three-year transition matrix (31.12.2020 to 31.12.2023 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	100%	0%	0%	0%	0%	0%	0%	0%	23
S-1	0%	100%	0%	0%	0%	0%	0%	0%	4
S-2	0%	17%	33%	0%	0%	50%	0%	0%	6
S-3	0%	0%	0%	0%	0%	0%	0%	0%	0
S-4	0%	0%	0%	0%	0%	0%	0%	0%	0

### Sovereign and Public Sector

**Table 31: One-year transition matrix (31.12.2022 to 31.12.2023 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	97%	3%	0%	0%	0%	0%	0%	0%	63
S-1	0%	86%	0%	0%	0%	14%	0%	0%	14
S-2	0%	7%	93%	0%	0%	0%	0%	0%	14
S-3	0%	0%	25%	75%	0%	0%	0%	0%	4
S-4	0%	0%	0%	0%	100%	0%	0%	0%	2



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