Credit Rating Transition and Default Study 2022

This report is an update of the transition and default study for Scope Hamburg GmbH (referred to as 'Scope Hamburg'), presenting credit rating transition matrices and default rates for Scope Hamburg's 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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Scope Hamburg's credit rating universe

This report covers issuer credit ratings from the following categories: Corporates, Project Finance, Financial Institutions, and Structured Finance. Credit ratings are counted and tracked at the issuer level apart from Project Finance and Structured Finance, for which Scope Hamburg includes all the tranche credit ratings from a given financial structure. Scope Ratings includes long-term credit ratings, both public and subscription.

The report covers Scope Hamburg's seven years of credit rating history (from 31.12.2015 to 31.12.2022).

Ratings	2022	2021	2020	2019	2018	2017	2016	2015
Financial Institutions	0	1	1	1	1	1	1	1
Corporates (non-financial)	18	29	34	35	32	32	31	17
Structured Finance	0	0	0	0	0	4	2	2
Project Finance	0	4	9	12	12	12	9	1
Total	18	34	44	48	45	49	43	21
Rating categories	2022	2021	2020	2019	2018	2017	2016	2015
Long-term ratings:								
AAA	0	0	0	0	0	0	0	0
AA	0	2	2	2	2	1	1	1
A	3	8	10	13	12	13	11	8
BBB	9	13	17	18	19	22	18	8
BB	5	9	10	7	9	10	10	3
B	1	2	2	5	3	2	1	0
CCC	0	0	0	3	0	0	0	1
CC	0	0	1	0	0	0	0	0
C	0	0	0	0	0	0	0	0
D	0	0	2	0	0	1	2	0
Total long-term rating	18	34	44	48	45	49	43	21

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 with sufficient number of ratings are provided in the appendices.

Credit ratings which were 'D' or 'SD' intra-period are kept at 'D' at the end of the period. Further, once defaulted, the credit rating is maintained as 'D' throughout the remaining periods, even if it was subsequently upgraded or withdrawn.

Table 3: One-year transition matrix (31.12.2021 to 31.12.2022 stock basis)

		2022												
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
2021	**AAA**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	0%	50%	0%	0%	0%	0%	0%	0%	50%	0%	0%	2
	A	0%	0%	25%	13%	0%	0%	0%	0%	0%	63%	0%	0%	8
	BBB	0%	0%	0%	54%	8%	0%	0%	0%	0%	38%	0%	0%	13
	BB	0%	0%	0%	11%	44%	0%	0%	0%	0%	44%	0%	0%	9
	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 4: Three-year transition matrix (31.12.2019 to 31.12.2022 stock basis)

		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
							2022							
2019	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	0%	50%	0%	0%	0%	0%	0%	0%	50%	0%	0%	2
	A	0%	0%	15%	15%	0%	0%	0%	0%	0%	69%	0%	0%	13
	BBB	0%	0%	0%	33%	11%	0%	0%	0%	0%	56%	0%	0%	18
	BB	0%	0%	0%	14%	14%	0%	0%	0%	0%	71%	0%	0%	7
	B	0%	0%	0%	0%	0%	20%	0%	0%	0%	40%	0%	40%	5
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	33%	3
	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 5: Five-year transition matrix (31.12.2017 to 31.12.2022 stock basis)

		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
							2022							
2017	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	1
	A	0%	0%	23%	15%	0%	0%	0%	0%	0%	62%	0%	0%	13
	BBB	0%	0%	0%	23%	5%	0%	0%	0%	0%	73%	0%	0%	22
	BB	0%	0%	0%	0%	10%	0%	0%	0%	0%	80%	0%	10%	10
	B	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	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 6: Average annual transition matrix (31.12.2015 to 31.12.2022 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%	82%	9%	0%	0%	0%	0%	0%	0%	9%	0%	0%	11
A	0%	1%	84%	4%	0%	0%	0%	0%	0%	11%	0%	0%	75
BBB	0%	0%	0%	76%	4%	1%	0%	0%	0%	19%	0%	0%	115
BB	0%	0%	0%	3%	60%	9%	3%	0%	0%	22%	0%	2%	58
B	0%	0%	0%	0%	7%	43%	7%	0%	0%	29%	0%	14%	14
CCC	0%	0%	0%	0%	0%	0%	0%	25%	0%	50%	0%	25%	4
CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

Default rates – all sectors

Default rates presented in this section combine credit ratings from all sectors, although all of the defaults are in Corporate sector.

In Table 7 below, default rates are calculated on a stock basis as the ratio between the stock of defaulted credit ratings outstanding as of 31.12.2022 and the stock of credit ratings that were not in the default category of 31 December one year, and three years before.

Table 7: Default rates (stock basis)

	One-year (31.12.2021 – 31.12.2022)			Three-year (31.12.2019 – 31.12.2022)		
	One-year default rate %	No. of defaults	Total no. of ratings	Three-year default rate %	No. of defaults	Total no. of ratings
Investment grade ratings (AAA to BBB)	0%	0	23	0%	0	33
BB	0%	0	9	0%	0	7
B	0%	0	2	40%	2	5
CCC	0%	0	0	33%	1	3
CC	0%	0	0	0%	0	0
C	0%	0	0	0%	0	0

Table 8: Average one-year default rate (static pool basis)

	Seven-year (31.12.2015 – 31.12.2022)		
	Six-year default rate %	No. of defaults	Total no. of ratings
Investment grade ratings (AAA to BBB)	0%	0	201
BB	2%	1	58
B	14%	2	14
CCC	25%	1	4
CC	100%	1	1
C	0%	0	0

In Table 8 above, one-year default rates are calculated on a static pool basis for the seven-year period from 31.12.2015 to 31.12.2022.

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 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, even if it was subsequently upgraded or withdrawn.

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 2017-2022 simply shows the credit ratings which were outstanding as of 31.12.2017 and their final position as of 31.12.2022. Under this method, the 2017-2022 five-year default rate for the B credit rating category is the ratio between issuers in default on 31.12.2022 and the number of issuers rated B on 31.12.2017.

- 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 31.12.2015 form the 2016 static pool, all surviving credit ratings of the 2016 static pool as of 31.12.2016, together with all new credit ratings assigned in 2017 from the 2017 static pool. The evolution of the credit ratings from the 2016, 2017 and 2018 static pools are combined in the average annual transition 2015-2022 (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 2015 and withdrawn during 2018, will be included in the 2016, 2017 and 2018 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 9: One-year transition matrix (31.12.2021 to 31.12.2022 stock basis)

		2022												
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
2021	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	0%	50%	0%	0%	0%	0%	0%	0%	50%	0%	0%	2
	A	0%	0%	29%	14%	0%	0%	0%	0%	0%	57%	0%	0%	7
	BBB	0%	0%	0%	64%	9%	0%	0%	0%	0%	27%	0%	0%	11
	BB	0%	0%	0%	14%	57%	0%	0%	0%	0%	29%	0%	0%	7
	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 10: Three-year transition matrix (31.12.2019 to 31.12.2022 stock basis)

		2022												
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
2019	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	0%	50%	0%	0%	0%	0%	0%	0%	50%	0%	0%	2
	A	0%	0%	20%	20%	0%	0%	0%	0%	0%	60%	0%	0%	10
	BBB	0%	0%	0%	50%	17%	0%	0%	0%	0%	33%	0%	0%	12
	BB	0%	0%	0%	17%	17%	0%	0%	0%	0%	67%	0%	0%	6
	B	0%	0%	0%	0%	0%	25%	0%	0%	0%	25%	0%	50%	4
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1
	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 11: Average annual transition matrix (31.12.2015 to 31.12.2022 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%	82%	9%	0%	0%	0%	0%	0%	0%	9%	0%	0%	11
A	0%	2%	85%	3%	0%	0%	0%	0%	0%	10%	0%	0%	59
BBB	0%	0%	0%	82%	4%	0%	0%	0%	0%	14%	0%	0%	77
BB	0%	0%	0%	5%	60%	9%	0%	0%	0%	23%	0%	2%	43
B	0%	0%	0%	0%	8%	50%	8%	0%	0%	17%	0%	17%	12
CCC	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	50%	2
CC	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

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Project Finance

Table 12: One-year transition matrix (31.12.2021 to 31.12.2022 stock basis)

		2022											
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
2021	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%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	BBB	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	2
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	2
	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 13: Three-year transition matrix (31.12.2019 to 31.12.2022 stock basis)

		2022											
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
2019	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%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	2
	BBB	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	6
	BB	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	1
	B	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	1
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	2
	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 (31.12.2015 to 31.12.2022 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%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
A	0%	0%	78%	11%	0%	0%	0%	0%	0%	11%	0%	0%	9
BBB	0%	0%	0%	67%	7%	3%	0%	0%	0%	23%	0%	0%	30
BB	0%	0%	0%	0%	60%	7%	13%	0%	0%	20%	0%	0%	15
B	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	2
CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	2
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

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