

# Credit Rating Transition and Default Study 2021



This report is an 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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## 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) and Project Finance. Credit ratings are counted and tracked at the issuer level apart from Structured 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.

Rating coverage has grown by around 47% on average p.a. since 2014

The report covers Scope Ratings' nine years of credit rating history (from 31.12.2012 to 31.12.2021) and includes credit ratings assigned by Scope Ratings GmbH<sup>1</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	2021	2020	2019	2018	2017	2016	2015	2014	2013
Financial Institutions	149	146	135	115	58	55	57	52	0
Corporates (non-financial)	664	587	356	232	46	35	23	9	9
Covered Bonds	40	39	40	39	26	23	21	0	0
Structured Finance	217	180	163	127	64	44	31	4	3
Public Finance <sup>2</sup>	160	146	126	116	69	58	60	59	59
Project Finance	2	2	1	1	1	0	0	0	0
<b>Total</b>	<b>1232</b>	<b>1100</b>	<b>821</b>	<b>630</b>	<b>264</b>	<b>215</b>	<b>192</b>	<b>124</b>	<b>71</b>

**Table 2: Credit rating distribution**

Rating categories	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Long-term ratings:</b>									
AAA	135	123	114	102	51	45	37	9	9
AA	72	73	63	50	31	24	18	16	14
A	210	191	164	123	47	42	42	29	11
BBB	280	241	154	116	26	17	14	22	18
BB	64	52	45	21	16	31	28	13	15
B	62	48	28	19	11	10	12	4	3
CCC	13	7	3	2	0	2	3	3	1
CC	3	6	2	2	2	4	3	1	0
C	4	2	2	2	3	4	4	0	0
D	0	1	0	0	2	2	3	1	0
<b>Total long-term rating</b>	<b>843</b>	<b>744</b>	<b>575</b>	<b>437</b>	<b>189</b>	<b>181</b>	<b>164</b>	<b>98</b>	<b>71</b>
<b>Short-term ratings:</b>									
S-1+	113	106	90	83	43	4	2	1	0
S-1	89	80	62	40	14	26	23	21	0
S-2	179	163	89	66	14	4	3	4	0
S-3	7	6	5	3	3	0	0	0	0
S-4	1	1	0	1	1	0	0	0	0
<b>Total short-term rating</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>1</sup> Note that as of 01.01.2021, credit ratings are also issued by Scope Ratings UK Limited.

<sup>2</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 '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 (31.12.2020 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	92%	0%	0%	0%	0%	0%	0%	0%	0%	1%	7%	0%	123
	AA	11%	81%	5%	0%	0%	0%	0%	0%	0%	1%	1%	0%	73
	A	1%	3%	90%	3%	0%	0%	0%	0%	0%	3%	2%	0%	191
	BBB	0%	0%	5%	89%	2%	0%	0%	0%	0%	3%	2%	0%	241
	BB	0%	0%	0%	4%	87%	6%	0%	0%	0%	4%	0%	0%	52
	B	0%	0%	0%	0%	6%	77%	6%	0%	0%	10%	0%	0%	48
	CCC	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	7
	CC	0%	0%	0%	0%	0%	0%	17%	50%	33%	0%	0%	0%	6
	C	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	2

**Table 4: Three-year transition matrix (31.12.2018 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2018	AAA	79%	0%	0%	0%	0%	0%	0%	0%	0%	4%	17%	0%	102
	AA	12%	70%	6%	0%	0%	0%	0%	0%	0%	2%	10%	0%	50
	A	4%	3%	79%	3%	1%	0%	0%	0%	0%	7%	3%	0%	123
	BBB	0%	1%	7%	66%	5%	3%	0%	0%	0%	9%	9%	0%	116
	BB	0%	0%	5%	19%	38%	10%	0%	0%	0%	14%	14%	0%	21
	B	0%	0%	0%	0%	11%	32%	21%	5%	11%	16%	0%	5%	19
	CCC	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	2
	CC	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	2
	C	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	2

**Table 5: Five-year transition matrix (31.12.2016 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2016	AAA	64%	2%	0%	0%	0%	0%	0%	0%	0%	9%	24%	0%	45
	AA	4%	33%	13%	0%	0%	0%	0%	0%	0%	38%	13%	0%	24
	A	2%	21%	48%	5%	0%	0%	0%	0%	0%	14%	10%	0%	42
	BBB	0%	0%	18%	29%	0%	0%	0%	0%	0%	29%	24%	0%	17
	BB	0%	0%	0%	10%	3%	3%	0%	0%	0%	74%	10%	0%	31
	B	0%	0%	0%	0%	0%	10%	0%	0%	0%	40%	50%	0%	10
	CCC	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	2
	CC	0%	0%	0%	0%	25%	0%	50%	0%	0%	0%	0%	25%	4
	C	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	4

**Table 6: Average annual transition matrix (31.12.2012 to 31.12.2021 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	93%	0%	0%	0%	0%	0%	0%	0%	0%	1%	5%	0%	490
AA	7%	84%	2%	0%	0%	0%	0%	0%	0%	4%	3%	0%	289
A	1%	4%	88%	3%	0%	0%	0%	0%	0%	3%	1%	0%	649
BBB	0%	0%	5%	86%	3%	0%	0%	0%	0%	3%	2%	0%	608
BB	0%	0%	0%	6%	70%	5%	0%	0%	0%	15%	4%	0%	221
B	0%	0%	0%	1%	8%	69%	5%	2%	0%	11%	1%	3%	135
CCC	0%	0%	0%	0%	0%	0%	76%	10%	0%	5%	5%	5%	21
CC	0%	0%	0%	0%	0%	5%	15%	65%	10%	0%	0%	5%	20
C	0%	0%	0%	0%	0%	0%	0%	0%	88%	0%	12%	0%	17

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

**Table 7: One-year transition matrix (31.12.2020 to 31.12.2021 stock basis)**

		2021								No. of ratings
		S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	
2020	S-1+	95%	1%	0%	0%	0%	4%	0%	0%	106
	S-1	0%	96%	1%	0%	0%	3%	0%	0%	80
	S-2	0%	3%	93%	1%	0%	4%	0%	0%	163
	S-3	0%	0%	0%	83%	0%	17%	0%	0%	6
	S-4	0%	0%	0%	0%	100%	0%	0%	0%	1

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

**Table 8: Three-year transition matrix (31.12.2018 to 31.12.2021 stock basis)**

		2021								No. of ratings
		S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	
2018	S-1+	94%	1%	0%	0%	0%	5%	0%	0%	83
	S-1	0%	88%	8%	0%	0%	5%	0%	0%	40
	S-2	0%	2%	85%	2%	0%	12%	0%	0%	66
	S-3	0%	0%	33%	33%	33%	0%	0%	0%	3
	S-4	0%	0%	0%	100%	0%	0%	0%	0%	1

**Table 9: Average annual transition matrix (31.12.2012 to 31.12.2021 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	98%	0%	0%	0%	0%	2%	0%	0%	329
S-1	7%	86%	4%	0%	0%	2%	0%	0%	266
S-2	0%	3%	93%	1%	0%	3%	0%	0%	343
S-3	0%	0%	12%	76%	6%	6%	0%	0%	17
S-4	0%	0%	0%	33%	67%	0%	0%	0%	3

## 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, and three years before.

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

	One-year (31.12.2020 – 31.12.2021)			Three-year (31.12.2018 – 31.12.2021)		
	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	628	0%	0	391
BB	0%	0	52	0%	0	21
B	0%	0	48	5%	1	19
CCC	0%	0	7	0%	0	2
CC	0%	0	6	0%	0	2
C	0%	0	2	0%	0	2
Short-term ratings	0%	0	356	0%	0	193

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

	Nine-year (31.12.2012 – 31.12.2021)		
	Nine-year default rate %	No. of defaults	Total no. of ratings
Investment grade ratings (AAA to BBB)	0%	0	2036
BB	0%	0	221
B	3%	4	135
CCC	5%	1	21
CC	5%	1	20
C	0%	0	17
Short-term ratings	0%	0	958

In Table 11 above, one-year default rates are calculated on a static pool basis for the nine-year period from 31.12.2012 to 31.12.2021. Six issuers were in default (D), four corporates and two sovereigns.

### 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 2016-2021 simply shows the credit ratings which were outstanding as of 31.12.2016 and their final position as of 31.12.2021. Under this method, the 2016-2021 five-year default rate for the B credit rating category is the ratio between issuers in default on 31.12.2021 and the number of issuers rated B on 31.12.2016.
- 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 2012-2021 (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 (31.12.2020 to 31.12.2021 stock basis)**

		2021												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%	94%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	18
	A	0%	0%	91%	5%	0%	0%	0%	0%	0%	4%	0%	0%	105
	BBB	0%	0%	3%	94%	1%	0%	0%	0%	0%	2%	0%	0%	152
	BB	0%	0%	0%	0%	90%	3%	0%	0%	0%	7%	0%	0%	29
	B	0%	0%	0%	0%	6%	78%	0%	0%	0%	16%	0%	0%	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 13: Three-year transition matrix (31.12.2018 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2018	AAA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
	AA	0%	88%	0%	0%	0%	0%	0%	0%	0%	13%	0%	0%	8
	A	0%	0%	85%	6%	0%	0%	0%	0%	0%	9%	0%	0%	54
	BBB	0%	0%	2%	85%	0%	0%	0%	0%	0%	13%	0%	0%	53
	BB	0%	0%	0%	0%	40%	0%	0%	0%	0%	60%	0%	0%	5
	B	0%	0%	0%	0%	0%	43%	0%	0%	0%	43%	0%	14%	7
	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 31.12.2021 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%	97%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	38
A	0%	0%	91%	5%	0%	0%	0%	0%	0%	3%	0%	0%	258
BBB	0%	0%	2%	94%	1%	0%	0%	0%	0%	3%	0%	0%	292
BB	0%	0%	0%	1%	69%	6%	1%	0%	0%	23%	0%	0%	107
B	0%	0%	0%	0%	3%	75%	0%	0%	0%	19%	0%	3%	64
CCC	0%	0%	0%	0%	0%	0%	33%	33%	0%	0%	0%	33%	3
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



## Covered Bonds

**Table 15: One-year transition matrix (31.12.2020 to 31.12.2021 stock basis)**

		2021												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 16: Three-year transition matrix (31.12.2018 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2018	AAA	92%	0%	0%	0%	0%	0%	0%	0%	0%	5%	3%	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 31.12.2021 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%	2%	1%	0%	184
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 (31.12.2020 to 31.12.2021 stock basis)**

		2021												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%	4%	95%	0%	0%	0%	0%	0%	0%	2%	0%	0%	55
	BBB	0%	0%	8%	80%	0%	0%	0%	0%	0%	12%	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 (31.12.2018 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2018	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1
	AA	0%	86%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22
	A	0%	2%	93%	0%	0%	0%	0%	0%	0%	5%	0%	0%	41
	BBB	0%	0%	26%	58%	0%	0%	0%	0%	0%	16%	0%	0%	19
	BB	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	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 20: Average annual transition matrix (31.12.2012 to 31.12.2021 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%	8
AA	0%	94%	4%	0%	0%	0%	0%	0%	0%	1%	1%	0%	96
A	0%	5%	91%	1%	0%	0%	0%	0%	0%	3%	0%	0%	233
BBB	0%	0%	14%	81%	0%	0%	0%	0%	0%	5%	0%	0%	74
BB	0%	0%	0%	67%	33%	0%	0%	0%	0%	0%	0%	0%	3
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

## Sovereign and Public Sector

**Table 21: One-year transition matrix (31.12.2020 to 31.12.2021 stock basis)**

		2021												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%	85%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	13
	BBB	0%	0%	0%	94%	0%	0%	0%	0%	0%	0%	6%	0%	0%	16
	BB	0%	0%	0%	0%	100%	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 22: Three-year transition matrix (31.12.2018 to 31.12.2021 stock basis)**

		2021												No. of ratings	
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default		
2018	AAA	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	24
	AA	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6
	A	0%	17%	75%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	12
	BBB	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12
	BB	0%	0%	0%	33%	33%	33%	0%	0%	0%	0%	0%	0%	0%	3
	B	0%	0%	0%	0%	100%	0%	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 31.12.2021 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	98%	2%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	130
AA	1%	87%	2%	0%	0%	0%	0%	0%	0%	10%	0%	0%	83
A	0%	3%	87%	6%	0%	0%	0%	0%	0%	3%	0%	0%	87
BBB	0%	0%	7%	82%	5%	0%	0%	0%	0%	5%	0%	0%	95
BB	0%	0%	0%	8%	72%	4%	0%	0%	0%	16%	0%	0%	50
B	0%	0%	0%	0%	9%	55%	9%	0%	0%	9%	0%	18%	11
CCC	0%	0%	0%	0%	0%	0%	50%	25%	0%	25%	0%	0%	4
CC	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	2
C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0

## Structured Finance

**Table 24: One-year transition matrix (31.12.2020 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2020	AAA	81%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	0%	48
	AA	42%	53%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	19
	A	6%	11%	67%	0%	0%	0%	0%	0%	0%	0%	17%	0%	18
	BBB	0%	0%	9%	74%	6%	0%	0%	0%	0%	0%	11%	0%	47
	BB	0%	0%	0%	10%	80%	10%	0%	0%	0%	0%	0%	0%	20
	B	0%	0%	0%	0%	8%	69%	23%	0%	0%	0%	0%	0%	13
	CCC	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	7
	CC	0%	0%	0%	0%	0%	0%	17%	50%	33%	0%	0%	0%	6
C	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	2	

**Table 25: Three-year transition matrix (31.12.2018 to 31.12.2021 stock basis)**

		2021												No. of ratings
		AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	
2018	AAA	53%	0%	0%	0%	0%	0%	0%	0%	0%	5%	42%	0%	38
	AA	43%	21%	0%	0%	0%	0%	0%	0%	0%	0%	36%	0%	14
	A	33%	7%	27%	7%	0%	0%	0%	0%	0%	0%	27%	0%	15
	BBB	0%	3%	6%	28%	19%	13%	0%	0%	0%	0%	31%	0%	32
	BB	0%	0%	9%	9%	45%	9%	0%	0%	0%	0%	27%	0%	11
	B	0%	0%	0%	0%	9%	27%	36%	9%	18%	0%	0%	0%	11
	CCC	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	2
	CC	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	2
C	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	2	

**Table 26: Average annual transition matrix (31.12.2020 to 31.12.2021 static pool)**

	AAA	AA	A	BBB	BB	B	CCC	CC	C	WR	Paid-off	Default	No. of ratings
AAA	84%	0%	0%	0%	0%	0%	0%	0%	0%	1%	15%	0%	168
AA	26%	63%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	68
A	6%	13%	66%	1%	0%	0%	0%	0%	0%	3%	10%	0%	68
BBB	0%	0%	7%	75%	7%	1%	0%	0%	0%	1%	10%	0%	146
BB	0%	0%	0%	10%	70%	7%	0%	0%	0%	0%	13%	0%	60
B	0%	0%	0%	2%	14%	64%	10%	5%	0%	3%	2%	0%	58
CCC	0%	0%	0%	0%	0%	0%	93%	0%	0%	0%	7%	0%	14
CC	0%	0%	0%	0%	0%	0%	18%	71%	12%	0%	0%	0%	17
C	0%	0%	0%	0%	0%	0%	0%	0%	88%	0%	12%	0%	17

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

### Corporates

**Table 27: One-year transition matrix (31.12.2020 to 31.12.2021 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	91%	0%	0%	0%	0%	9%	0%	0%	35
S-1	0%	96%	1%	0%	0%	3%	0%	0%	70
S-2	0%	4%	94%	1%	0%	2%	0%	0%	141
S-3	0%	0%	0%	75%	0%	25%	0%	0%	4
S-4	0%	0%	0%	0%	0%	0%	0%	0%	0

### Financial Institutions

**Table 28: One-year transition matrix (31.12.2020 to 31.12.2021 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%	0%	67%	0%	0%	33%	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

**Table 29: Three-year transition matrix (31.12.2018 to 31.12.2021 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%	0%	67%	0%	0%	33%	0%	0%	3
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 30: One-year transition matrix (31.12.2020 to 31.12.2021 static pool)**

	S-1+	S-1	S-2	S-3	S-4	WR	Paid-off	Default	No. of ratings
S-1+	96%	2%	0%	0%	0%	2%	0%	0%	48
S-1	0%	100%	0%	0%	0%	0%	0%	0%	6
S-2	0%	0%	94%	0%	0%	6%	0%	0%	16
S-3	0%	0%	0%	100%	0%	0%	0%	0%	2
S-4	0%	0%	0%	0%	100%	0%	0%	0%	1



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