

Exhibit 1 – Transition/Default Rates

Form NRSRO – Annual Certification

March 2023



This Exhibit includes the 2022 transition and default rates for the DBRS Morningstar Group of Companies¹ (DBRS Morningstar) for a 1-year, 3-year, and 10-year time period in each class of ratings for which DBRS Morningstar was registered as an NRSRO through the most recent calendar year end.

Following the transition and default rates are: (1) descriptions of each symbol, number, or score in the rating scale used to denote a credit rating category and notches within a category for each class and subclass of credit ratings in the DBRS Morningstar transition/default matrices, as applicable, (2) an explanation of the conditions under which DBRS Morningstar classifies obligors, securities, or money market instruments as being in default, and (3) the uniform resource locator (URL) of DBRS Morningstar's corporate Internet website where DBRS Morningstar's credit rating history is required to be disclosed pursuant to 17 CFR 17g-7(b).

¹ The DBRS Morningstar Group of Companies is comprised of DBRS, Inc., DBRS Limited, DBRS Ratings Limited and DBRS Ratings GmbH.

Financial Institutions - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)

DBRS Morningstar		Credit Ratings as of 12/31/2021										Credit Ratings as of 12/31/2022 (Percent)										Other Outcomes During 12/31/2021-12/31/2022 (Percent)							
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	7		100.00%																										
AA	15		6.67%	93.33%																									
AA (low)	26			7.69%	92.31%																								2.86%
A (high)	35			11.43%		85.71%																							3.23%
A	15						100.00%	83.87%	6.45%																				
A (low)	31						6.45%	4.17%		4.17%																			
BBB (high)	24								80.00%																				
BBB	20								20.00%																				
BBB (low)	27								18.52%	81.48%																			
BB (high)	11								9.09%	72.73%																			18.18%
BB	2										100.00%																		60.00%
BB (low)	5												40.00%	25.00%	25.00%														100.00%
B (high)	4																												
B	5																												
B (low)	3																												
CCC (high)	0																												
CCC	1																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	231																												

Financial Institutions - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)

Financial Institutions - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																													
Credit Ratings as of 12/31/2019				Credit Ratings as of 12/31/2022 (Percent)															Other Outcomes During 12/31/2019-12/31/2022 (Percent)										
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	6		100.00%																										
AA	16			93.75%	6.25%																								
AA (low)	22			90.91%	9.09%																								
A (high)	30			13.33%		83.33%																							3.33%
A	19					31.58%	57.89%	5.26%	5.26%																				
A (low)	27					11.11%	70.37%	14.81%	5.88%																				3.70%
BBB (high)	17								88.24%	5.88%																			5.88%
BBB	11								27.27%	54.55%		9.09%																	9.09%
BBB (low)	23									26.09%	39.13%	8.70%																	26.09%
BB (high)	7						71.43%					71.43%																	28.57%
BB	10								10.00%	10.00%		10.00%	20.00%	66.67%		30.00%													30.00%
BB (low)	3													66.67%															33.33%
B (high)	3														66.67%														33.33%
B	1																												100.00%
B (low)	0																												
CCC (high)	0																												
CCC	1																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	196																												

Financial Institutions - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)

DBRS Morningstar

Credit Ratings as of 12/31/2012			Credit Ratings as of 12/31/2022 (Percent)																	Other Outcomes During 12/31/2012-12/31/2022 (Percent)									
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	1		100.00%		100.00%																								
AA (high)	1		100.00%																										10.00%
AA	20		25.00%	45.00%	10.00%		5.00%																						5.26%
AA (low)	19			31.58%	47.37%	15.79%																							10.00%
A (high)	20				25.00%	50.00%	5.00%	5.00%																				5.00%	4.35%
A	23				8.70%	30.43%	8.70%	4.35%	4.35%																				39.13%
A (low)	19					5.26%	21.05%	26.32%	8.33%	10.53%																			36.84%
BBB (high)	12						33.33%	33.33%	8.33%	9.33%																			41.67%
BBB	7								14.29%	14.29%																			42.86%
BBB (low)	9						28.57%	33.33%		11.11%	50.00%				11.11%														33.33%
BB (high)	2																												
BB	2																												
BB (low)	3																												
B (high)	3																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	1																												100.00%
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	142																												

Insurance Companies - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)

DBRS Morningstar		Insurance Companies - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																											
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																			Other Outcomes During 12/31/2021 -12/31/2022 (Percent)								
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	3																												
AA (high)	0																												
AA	4			100.00%																									
AA (low)	3			33.33%	66.67%																								
A (high)	9					100.00%																							
A	10						100.00%																						
A (low)	4					25.00%	75.00%																						
BBB (high)	2						50.00%																						
BBB	5						20.00%			80.00%																			
BBB (low)	1									100.00%																			
BB (high)	0																												
BB	0																												
BB (low)	0																												
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	41																												

Insurance Companies - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)

DBRS Morningstar		Insurance Companies - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																										
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)										
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Withdrawn (other)
AAA	0																											
AA (high)	0																											
AA	3			100.00%																								
AA (low)	3			66.67%	33.33%																							
A (high)	7				14.29%	85.71%																						
A	8					25.00%	75.00%																					
A (low)	4					50.00%	50.00%																					
BBB (high)	1						100.00%																					
BBB	2						50.00%	50.00%																				
BBB (low)	0																											
BB (high)	0																											
BB	0																											
BB (low)	0																											
B (high)	0																											
B	0																											
B (low)	0																											
CCC (high)	0																											
CCC	0																											
CCC (low)	0																											
CC (high)	0																											
CC	0																											
CC (low)	0																											
C (high)	0																											
C	0																											
C (low)	0																											
Total	28																											

DBRS Morningstar Insurance Companies - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)

Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																	Other Outcomes During 12/31/2012-12/31/2022 (Percent)										
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	0																												
AA	3			100.00%																									
AA (low)	5			40.00%																									
A (high)	2			50.00%		60.00%																							
A	1						100.00%																						
A (low)	1						100.00%																						
BBB (high)	0																												
BBB	2																												
BBB (low)	0																												
BB (high)	0																												
BB	0																												
BB (low)	0																												
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	14																												

DBRS Morningstar Corporate Issuers - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)

Credit Ratings as of 12/31/2021													Credit Ratings as of 12/31/2022 (Percent)													Other Outcomes During 12/31/2021-12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	0																												
AA	3			100.00%																									
AA (low)	11				100.00%																								
A (high)	12					91.67%																							8.33%
A	26						100.00%																						1.96%
A (low)	51						94.12%	1.96%																					2.04%
BBB (high)	49						6.12%	81.63%	10.20%																				4.88%
BBB	82							85.02%	8.47%	85.02%	2.44%																		1.69%
BBB (low)	59																												
BB (high)	11																												
BB	7																												
BB (low)	6																												
B (high)	52																												
B	85																												
B (low)	32																												
CCC (high)	6																												
CCC	4																												
CCC (low)	3																												
CC (high)	0																												
CC	0																												
CC (low)	1																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	500																												

DBRS Morningstar Corporate Issuers - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)

Credit Ratings as of 12/31/2019													Credit Ratings as of 12/31/2022 (Percent)													Other Outcomes During 12/31/2019-12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	0																												
AA	4			75.00%	25.00%																								
AA (low)	6			100.00%																									
A (high)	12			83.33%																									8.33%
A	26			3.85%																									7.69%
A (low)	50						76.92%	11.54%																					6.00%
BBB (high)	40						4.00%																						2.00%
BBB	64							12.50%	57.50%	22.50%	7.81%	4.69%	2.50%																5.00%
BBB (low)	55								15.63%	18.18%	47.27%	9.09%	5.45%																3.13%
BB (high)	4											100.00%																	20.00%
BB	5											20.00%	80.00%																
BB (low)	6													16.67%	16.67%		33.33%												33.33%
B (high)	22													4.55%	36.36%	9.09%													50.00%
B	29														10.34%	31.03%	10.34%		3.45%										41.38%
B (low)	14															7.14%	21.43%												64.29%
CCC (high)	5															20.00%	20.00%	20.00%											20.00%
CCC	1																												100.00%
CCC (low)	0																												
CC (high)	1																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	344																												

DBRS Morningstar

Credit Ratings as of 12/31/2021		RMBS One Year Transition December 31, 2021 – December 31, 2022																	Other Outcomes										
Credit Rating	Number of Outstandings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC	CC(high)	CC(low)	C	C(high)	C (low)	Default	Withdrawn	Other
AAA	5712	100%																											
AA (high)	389	22%	77%																										1%
AA	586	17%	28%	54%																									1%
AA (low)	208	12%	9%	21%	56%																								2%
A (high)	334	5%	5%	22%	18%	46%																							4%
A	595		6%	16%	9%	13%	52%																						4%
A (low)	284	1%	4%	14%	13%	10%	9%	45%																					4%
BBB (high)	369		6%	2%	5%	18%	12%	37%	47%																				6%
BBB	700		4%	2%	2%	6%	16%	9%	10%	47%																			4%
BBB (low)	458						12%	4%	11%	3%	44%																		6%
BBB (high)	457				6%		10%	15%	6%	14%	10%	39%	10%	41%															6%
BB	548				5%			2%	4%	16%	11%	6%	10%	7%	10%	63%													5%
BB (low)	241									10%	6%	4%	11%	7%	10%	50%													5%
B (high)	245												1%	11%	10%	10%	62%												4%
B	420												1%	11%	10%	10%	62%												4%
B (low)	130												1%	12%	3%	13%	66%												5%
CCC (high)	3																												4%
CCC	9												33%																1%
CCC (low)	1																												1%
CC (high)																													
CC	3																												
CC (low)																													
C (high)																													
C	3661																												
C (low)																													
Total	15353																												

Credit Ratings as of 12/31/2019		RMBS Three Year Transition December 31, 2019 – December 31, 2022																	Other Outcomes										
Credit Rating	Number of Outstandings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC (low)	CCC	CC (high)	CC (low)	C	C (high)	C (low)	Default	Paid Off	Withdrawn	Other
AAA	3080	100%																											
AA(high)	286	42%	57%																										1%
AA	379	35%	29%	35%																									1%
AA(low)	110	23%	10%	30%	32%																								1%
A(high)	185	10%	7%	31%	38%	41%																							3%
A	344	5%	2%	6%	13%	8%	38%																						3%
A(low)	98	7%	2%	15%	1%	5%	17%	48%			2%				1%														2%
BBB(high)	185	7%	2%	1%	3%	8%	20%	14%	8%	35%	1%			1%	1%					1%									5%
BBB	323	6%	2%	5%	13%	17%	5%	37%	8%	37%	1%			1%						1%									6%
BBB(low)	130	3%	6%	1%	8%	2%	10%	10%	2%	9%	8%			3%						1%									8%
BB(high)	211	1%	13%	9%	3%	1%	4%	2%	2%	8%	11%	7%	34%							1%									7%
BB	300		13%	6%	1%	11%	37%	2%	2%	9%	12%	2%	30%			1%				3%									5%
BB(low)	108																8%			3%									5%
B(high)	205																5%	14%	7%	7%									8%
B	271						9%	9%	9%	1%	4%	1%	8%	9%	7%	9%	51%	61%	2%	2%					4%				4%
B(low)	64			1%					1%	1%	1%	1%	1%	1%	1%	1%	6%	78%			3%				3%				4%
CCC(high)																													
CCC	9						11%						11%			11%													1%
CCC(low)																													
CC(high)																													
CC	1																												
CC(low)																													
C(high)																													
C	3717																												
C (low)																													
C																													
Total	10006																												

DBRS Morningstar

Credit Ratings as of 12/31/2012		RMBS Ten Year Transition December 31, 2012 – December 31, 2022																				Other Outcomes							
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	54	94%	3%	1%																									2%
AA(high)	20	10%	90%																										3%
AA	38	18%	2%	68%		7%		2%																					1%
AA(low)	23			26%	73%																								1%
A(high)	19	21%				78%																							7%
A	53	18%	1%	7%			54%																						1%
A(low)	27							96%																					1%
BBB(high)	28								3%																				1%
BBB	64	1%	1%			1%	1%	1%	96%	67%	1%	3%	3%	1%	3%	4%	1%								3%				1%
BBB(low)	39					2%		2%	3%		92%					2%									1%				7%
BB(high)	31											96%													2%				2%
BB	61	4%		4%			3%	3%	1%			1%			1%										11%				1%
BB(low)	24													100%															7%
B(high)	28												3%	4%	96%	73%	100%												1%
B	97	5%	1%	1%	2%		4%	1%																	8%				1%
B(low)	39																												1%
CCC(high)																													
CCC																													
CCC(low)																													
CC(high)																													
CC																													
CC(low)																													
C(high)																													
C	3909																												7%
C(low)																													
Total	4554																												

Credit Ratings as of 12/31/2021		CMBS One Year Transition December 31,2021 -- December 31,2022																	Other Outcomes										
Credit Rating	Number of Outstandings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC(low)	C (high)	C	C (low)	Default	Withdrawn	Other
AAA	2361	99%																											1%
AA (high)	204	8%	88%	1%																									3%
AA	329	10%	5%	82%																									3%
AA (low)	306	1%	2%	7%	86%																								4%
A (high)	216	1%	1%	4%	1%	89%																							4%
A	237	1%	2%	6%	2%	82%	1%																						4%
A (low)	378	1%	1%	1%	5%	83%	1%																						6%
BBB (high)	169	1%	1%	1%	1%	5%	6%	3%	81%	3%	1%																	3%	
BBB	276	1%	1%	1%	1%	1%	2%	3%	5%	86%	2%																	4%	
BBB (low)	436							1%	1%	2%	89%	1%																	6%
BB (high)	134																												5%
BB	184																												5%
BB (low)	263	1%																											6%
B (high)	145																												5%
B	167	1%																											4%
B (low)	205																												5%
CCC (high)																													
CCC	73																												2%
CCC (low)																													
CC (high)																													
CC																													
CC (low)																													
C (high)																													
C	80																												
C (low)																													
Total	6163																												

Credit Ratings as of 12/31/2019		CMBS Three Year Transition December 31, 2019 – December 31, 2022																				Other Outcomes								
Number of Outstandings		AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	1582	99%																												1%
AA	237	11%	8%	75%	2%																									3%
AA(low)	191	7%	3%	14%	61%	6%	2%	2%			1%													1%						4%
A	157	4%	2%	3%	5%	76%	3%	1%					1%																	3%
A(low)	239	4%	1%	1%	3%	4%	71%	5%	1%				1%							1%										5%
BBB	122	4%	4%	4%	1%	1%	8%	68%	4%	2%	1%																			7%
BBB (high)	199	3%	2%	2%	1%	1%	1%	4%	65%	5%	2%	1%																		9%
BBB (low)	262	1%			1%	1%	1%	3%	67%	6%	4%	1%																		7%
BB	156	1%		1%					2%	3%	59%	9%	5%	7%	4%	1%				3%										6%
BB (low)	146								1%	1%	55%	4%	2%	7%	6%	3%				2%										7%
B	122																			4%										6%
B (low)	107																			5%										3%
CCC	10																													
CCC (low)																														
CC																														
CC (low)																														
C	11	9%																												
C (low)																														
Total	3968																													

DBRS Morningstar

Credit Ratings as of 12/31/2012		CMBS Ten Year Transition December 31, 2012 – December 31, 2022																				Other Outcomes								
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	67	88%					1%	2%																						4%
AA(high)	8	37%	12%	25%																										2%
AA	6	50%		16%	33%	12%																								1%
AA(low)	1				100%																									4%
A(high)	13	30%	7%	7%	15%	15%											7%													4%
A	5		20%			20%	40%	15%																						4%
A(low)	6																16%													4%
BBB(high)	2	100%				16%																								3%
BBB	24	4%																												3%
BBB(low)																														
BB(high)	1																													
BB	10																													
BB(low)	1																													20%
B(high)	1																													
B	10																													
B(low)	4																													
CCC(high)																														
CCC	6	16%																												2%
CCC(low)																														
CC																														
CC(low)																														
C(high)																														
C	2																													
C(low)																														
Total	167																													

Credit Ratings as of 12/31/2021		CLO One Year Transition December 31, 2021 – December 31, 2022																	Other Outcomes									
Credit Rating	Number of Outstandings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC (low)	C (high)	C (low)	Default	Paid Off	Withdrawn	Other
AAA	178	99%																										1%
AA(high)	18	16%	83%																									1%
AA	55	3%	9%	87%																								1%
AA(low)	75	16%	10%	6%	10%																							2%
A(high)	20		10%	3%	15%	73%																						2%
A	31		3%	3%	3%	6%	83%																					2%
A(low)	68		1%	11%		8%	13%	64%																				2%
BBB(high)	22					9%	13%	9%	63%																			2%
BBB	64					1%	1%	3%	6%	87%																		2%
BBB(low)	77							3%	3%	9%	71%																	2%
BB(high)	11										9%																	1%
BB	18							5%	11%	5%	77%																	2%
BB(low)	73							1%	1%	4%	1%						80%											2%
B(high)	7																71%											3%
B	10																10%											3%
B(low)	66																3%											3%
CCC(high)	2																4%											3%
CCC	1																75%											3%
CCC(low)	3																4%											3%
CC(high)																	50%											1%
CC	1																33%											1%
CC(low)																	33%											
C(high)																	100%											
C	1																100%											
C(low)																	100%											
Total	801																											

Credit Ratings as of 12/31/2019		CLO Three Year Transition December 31, 2019 -- December 31, 2022																Other Outcomes												
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn Other
AAA	62	96%	3%																											1%
AA(high)	3	66%	33%																											1%
AA	20	5%	35%	55%	5%																									2%
AA(low)	24	41%	8%	12%	37%																									
A(high)	10	10%	30%	10%	10%	50%																								2%
A	12		8%	16%	8%	25%	41%																							2%
A(low)	23	4%	4%	34%	4%	8%	13%	30%	36%																					3%
BBB(high)	11																													1%
BBB	14																													2%
BBB(low)	27	3%																												4%
BB(high)	1																													
BB	6																													2%
BB(low)	23																													4%
B(high)																														
B	7																													
B(low)	20																													
CCC(high)	2																													
CCC																														
CCC(low)	2																													
CC(high)																														
CC	1																													
CC(low)																														
C(high)																														
C	1																													
C (low)																														
Total	269																									100%				

DBRS Morningstar		CLO Ten Year Transition December 31, 2012 – December 31, 2022																										Other Outcomes		
Credit Rating as of 12/31/2012	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC(high)	CC	CC(low)	C(high)	C	C(low)	Default	Paid Off	Withdrawn	Other
AAA																														
AA(high)																														
AA																														
AA(low)	1				100%																									
A																														
A(low)																														
BBB(high)																														
BBB	1								100%																					
BBB(low)																														
BB(high)																														
BB																														
BB(low)																														
B(high)																														
B																														
B(low)																														
CCC(high)																														
CCC																														
CCC(low)																														
CC(high)																														
CC																														
CC(low)																														
C(high)																														
C																														
C(low)																														
Total	2																													

DBRS Morningstar		CDO One Year Transition December 31, 2021 – December 31, 2022																								Other Outcomes				
Credit Ratings as of 12/31/2021		Number of Outstanding Ratings																												
Credit Rating		AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC(high)	CC	CC(low)	C(high)	C	C(low)	Default	Paid Off	Withdrawn	Other
AAA																														
AA(high)																														
AA	47			40%	59%																									
AA(low)																														
A(high)	3					100%																								
A																														
A(low)																														
BBB(high)																														
BBB	5																													
BBB(low)	1																													
BB(high)	7												100%																	
BB																														
BB(low)																														
B(high)	2															100%														
B																														
B(low)																														
CCC(high)	2																													
CCC																														
CCC(low)																														
CC(high)																														
CC																														
CC(low)																														
C(high)																														
C																														
C(low)																														
Total	67																													

Credit Ratings as of 12/31/2019		CDO Three Year Transition December 31,2019 – December 31,2022																				Other Outcomes								
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC(high)	CC	CC(low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA																														
AA(high)																														
AA	38			39%	60%																									
AA(low)																														
A(high)	3					100%																								
A																														
A(low)																														
BBB(high)																														
BBB	5									100%																				
BBB(low)	1										100%																			
BB(high)	7											100%																		
BB																														
BB(low)																														
B(high)	2															100%														
B																														
B(low)																														
CCC(high)	2																		100%											
CCC																														
CCC(low)																														
CC(high)																														
CC																														
CC(low)																														
C(high)																														
C																														
C(low)																														
Total	58																													

DBRS Morningstar

Credit Ratings as of 12/31/2012		CDO Ten Year Transition December 31, 2012 – December 31, 2022																				Other Outcomes								
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA		100%																												
AA (high)			100%																											
AA	1			100%																										
AA (low)					100%																									
A (high)	3					100%																								
A																														
A (low)	5																													
BBB (high)																														
BBB	5																													
BBB (low)																														
BB (high)	7																													
BB																														
BB (low)																														
B (high)	2																													
B																														
B (low)																														
CCC (high)	2																													
CCC																														
CCC (low)																														
CC (high)																														
CC																														
CC (low)																														
C (high)																														
C																														
C (low)																														
Total	25																													

DBRS Morningstar		ABCP Long Term Ratings - One Year Transition December 31, 2021 -- December 31, 2022																											
Credit Ratings as of 12/31/2021																													
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC(high)	CC	CC(low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn/Other
AAA	8	100%																											
AA(high)																													
AA	16		100%																										
AA(low)																													
A(high)	1					100%																							
A	16						87%	12%																					
A (low)																													
BBB(high)																													
BBB	1								100%																				
BBB (low)																													
BB (high)																													
BB	1												100%																
BB (low)																													
B (high)																													
B	1															100%													
B (low)																													
CCC (high)																													
CCC																													
CCC (low)																													
CC (high)																													
CC																													
CC (low)																													
C (high)																													
C																													
C (low)																													
Total	44																												

DBRS Morningstar		ASCP Long Term Ratings : Three Year Transition December 31,2019 – December 31,2022																								Other Outcomes			
Credit Rating	Number of Outstanding Ratings as of 12/31/2019	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn/Other
AAA	7	100%																											
AA(high)	7		100%																										
AA				100%																									
AA(low)	1					100%																							
A(high)							100%																						
A	6							83%																					
A(low)									16%																				
BBB(high)																													
BBB	1									100%																			
BBB(low)																													
BB(high)																													
BB	1												100%																
BB(low)																													
B(high)																													
B	1															100%													
B (low)																													
CC(high)																													
CCC																													
CCC(low)																													
CC(high)																													
CC																													
Cc(low)																													
C(low)																													
C(high)																													
C																													
C (low)																													
Total	24																												

DBRS Morningstar		ASCP Long Term Ratings - Ten Year Transition December 31, 2012 -- December 31, 2022																				Other Outcomes								
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	1	100%																												
AA(high)																														
AA	4		100%																											
AA(low)																														
A(high)																														
A	1						100%																							
A(low)																														
BBB(high)																														
BBB	1								100%																					
BBB(low)																														
BB(high)																														
BB	1												100%																	
BB(low)																														
B(high)																														
B	1															100%														
B(low)																														
CCC(high)																														
CCC																														
CCC(low)																														
CC(high)																														
CC																														
CC(low)																														
C(high)																														
C																														
C(low)																														
Total	9																													

Credit Ratings as of 12/31/2021		Other ABS One Year Transition December 31, 2021 -- December 31, 2022																				Other Outcomes								
Credit Rating	Number of Outstandings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	882	99%																												1%
AA	113	26%	72%																											2%
AA	291	16%																												3%
AA(low)	70		71%																											2%
A	132	9%	5%		62%		1%																						3%	
A	305	4%	5%		6%																									3%
A(low)	99	2%	1%																											1%
BBB	75	8%		2%		3%																							2%	
BBB	241	1%				2%	8%																						4%	
BBB(low)	59																													2%
BB	107	2%		2%																									2%	
BB(low)	25						2%																						5%	
B	17																												2%	
B	30																												2%	
B(low)	15																												3%	
CCC	1																													
CCC(low)																														
CC	1																													
CC(low)																														
C	18																													
Total	2523																													

Credit Ratings as of 12/31/2019		Other ABS Three Year Transition December 31,2019 -- December 31,2022																			Other Outcomes								
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC (low)	C	C (high)	C (low)	Default	Paid Off	Withdrawn	Other
AAA	359	98%		1%																									1%
AA (high)	71	32%	61%	2%			2%																						3%
AA	139	30%	9%																										1%
AA (low)	34	23%	5%	23%	47%																								2%
A (high)	54	29%	11%	7%	12%	38%																							3%
A	174	26%	2%	7%		2%	58%	1%	1%																				4%
A (low)	35	5%	8%	5%		5%	22%	51%																					4%
BBB (high)	42	35%	7%	2%		11%	4%	2%	33%	2%																			5%
BBB	134	17%	3%	3%	3%	3%	5%	2%	5%	50%	2%																		4%
BBB (low)	24	4%	4%	8%			12%	4%			66%																		2%
BB (high)	23	30%	8%			4%		8%				43%																	3%
BB	73	20%		4%		4%	12%	1%	6%	6%		6%	34%	2%															5%
BB (low)	9	11%						11%	11%	11%	11%	11%	11%	33%															1%
B (high)	12					8%		8%	8%	8%		8%	8%	50%															2%
B	20	10%					10%				5%	5%	5%	10%		40%	14%	71%											1%
B (low)	7								14%																				1%
CCC (high)																													100%
CCC																													100%
CCC (low)																													100%
CC (high)																													100%
CC	1																												100%
CC (low)																													100%
C (high)																													100%
C	18																												100%
C (low)																													100%
Total	1229																												100%

DBRS Morningstar

Credit Ratings as of 12/31/2012		Other ABS Ten Year Transition December 31,2012 --December 31,2022																			Other Outcomes								
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB (low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC(high)	CC	CC(low)	C(high)	C	C(low)	Default	Paid Off	Withdrawn	Other
AAA	22	100%																											
AA(high)	1		100%																										
AA	5			100%																									
AA(low)	1				100%																								
A(high)																													
A	4						100%																						
A(low)	6						33%	66%																					
BBB(high)	1								100%																				
BBB	6									100%																			
BBB(low)	1										100%																		
BB(high)	2											100%																	1%
BB	2												100%																
BB(low)																													
B(high)																													
B	3																												
B(low)	5																												
CCC(high)																													
CCC																													
CCC(low)																													
CC(high)																													
CC																													
CC(low)																													
C(high)																													
C	15																												
C(low)																													
Total	74																												

DBRS Morningstar

Credit Ratings as of 12/31/2021		Other One Year Transition December 31,2021 – December 31,2022																	Other Outcomes											
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	22	100%																												
AA(high)	9		100%																											
AA	27			100%																										
AA(low)	6				100%																									
A(high)	18			5%		94%																								1%
A	29			13%			86%																							1%
A(low)	10					20%		60%																						
BBB(high)	15						20%		100%																					
BBB	56			3%	1%	3%		33%	46%	10%																				4%
BBB(low)	15							13%			86%																			1%
BB(high)	9							11%	22%			66%																		1%
BB	6												100%																	
BB(low)	1													100%																
B(high)	2												50%																	
B	3																													
B(low)	2																	100%												
CCC(high)	1																		100%											
CCC																														100%
CCC(low)																														100%
CC(high)																														
CC																														
CC(low)																														
C(high)																														
C																														
C(low)																														
Total	231																													

Other Structured Finance contains: Insurance Premium Finance, Structured Settlements, Timeshare Loans, Healthcare Receivables, Marine Container Leases, Film Rights, Property Assessed Clean Energy (PACE) Assessments and Aircraft Leases

DBRS Morningstar

Credit Ratings as of 12/31/2019		Other Three Year Transition December 31, 2019 – December 31, 2022																	Other Outcomes											
Credit Rating	Number of Outstandings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	18	100%																												
AA(high)	7	14%	85%																											1%
AA	11		18%	81%																									1%	
AA(low)	6		16%	16%	66%																								2%	
A(high)	19			10%	25%	84%	5%																						1%	
A	16			10%	17%	12%	62%																						1%	
A(low)	20			10%	10%		70%	20%																					1%	
BBB(high)	16			12%	12%				87%																				1%	
BBB	54			5%	5%			35%	48%	11%																			1%	
BBB(low)	14			7%	7%			14%	14%	57%																			1%	
BB(high)	8			12%	12%							75%	9%																1%	
BB	11				9%						36%	9%	45%																1%	
BB(low)	1													100%																
B(high)	1														100%															
B	3															100%														
B(low)	2																100%													
CCC(high)	1																	100%												
CCC																			100%											
CCC(low)																														
CC(high)																														
CC																														
CC(low)																														
C(high)																														
C																														
C(low)																														
Total	208																													

Other Structured Finance contains: Insurance Premium Finance, Structured Settlements, Timeshare Loans, Healthcare Receivables, Marine Container Leases, Film Rights, Property Assessed Clean Energy (PACE) Assessments and Aircraft Leases

DBRS Morningstar

Credit Ratings as of 12/31/2012		Other Ten Year Transition December 31, 2012 – December 31, 2022																							Other Outcomes					
Credit Rating	Number of Outstanding Ratings	AAA	AA(high)	AA	AA(low)	A(high)	A	A(low)	BBB (high)	BBB	BBB (low)	BB(high)	BB	BB(low)	B(high)	B	B(low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn	Other
AAA	9	100%																												
AA(high)	4		100%																											
AA	5			100%																										
AA(low)	4				100%																									
A(high)	1					100%																								
A	3						100%																							
A(low)	2							100%																						
BBB(high)	5								100%																					
BBB	6									100%																				
BBB(low)	8										100%																			
BB(high)	4											100%																		
BB	5												100%																	
BB(low)	1													100%																
B(high)	1														100%															
B	3															100%														
B(low)	2																100%													
CCC(high)	1																	100%												
CCC																			100%											
CCC(low)																				100%										
CC(high)																					100%									
CC																						100%								
CC(low)																							100%							
C(high)																								100%						
C																									100%					
C(low)																										100%				
Total	64																													

Other Structured Finance contains: Insurance Premium Finance, Structured Settlements, Timeshare Loans, Healthcare Receivables, Marine Container Leases, Film Rights, Property Assessed Clean Energy (PACE) Assessments and Aircraft Leases

Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																	Other Outcomes During 12/31/2012-12/31/2022 (Percent)										
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	1				100.00%																								
AA	6			33.33%	33.33%																								
AA (low)	3				66.67%		33.33%																						
A (high)	15					53.33%	6.67%																						
A	26					7.69%	38.46%	15.38%																					
A (low)	54						5.56%	33.33%	14.81%	9.26%																			
BBB (high)	29							10.34%	6.90%	13.79%	10.34%	6.90%																	
BBB	50							2.00%	20.00%	22.00%	8.00%	2.00%																	
BBB (low)	27								3.70%	14.81%	3.70%	11.11%	3.70%																
BB (high)	12								16.67%	12.50%		16.67%				8.33%													
BB	8																												
BB (low)	3																												
B (high)	4																												
B	5																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	243																												

Sovereign Issuers - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)

DBRS Morningstar		Sovereign Issuers - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																											
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																		Other Outcomes During 12/31/2021-12/31/2022 (Percent)									
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	12	100.00%																											
AA (high)	4		75.00%	25.00%																									
AA	0																												
AA (low)	2			50.00%																									50.00%
A (high)	9			11.11%		88.89%																							
A	4					100.00%																							
A (low)	1							66.67%	33.33%																				
BBB (high)	3									100.00%																			
BBB	1								50.00%	50.00%																			
BBB (low)	4										50.00%																		
BB (high)	0											100.00%																	
BB	1												100.00%																
BB (low)	1													100.00%															
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	1																			100.00%									
CCC (low)	0																				100.00%								
CC (high)	0																					100.00%							
CC	0																						100.00%						
CC (low)	0																							100.00%					
C (high)	0																								100.00%				
C	0																									100.00%			
C (low)	0																										100.00%		
Total	43																												

Sovereign Issuers - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)

DBRS Morningstar		Sovereign Issuers - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																											
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																		Other Outcomes During 12/31/2019-12/31/2022 (Percent)									
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	14	85.71%	14.29%	50.00%																									
AA (high)	2		50.00%																										
AA	0																												
AA (low)	1			100.00%																									
A (high)	5			20.00%		80.00%																							
A	4					50.00%																							
A (low)	1					100.00%																							
BBB (high)	4						50.00%		25.00%	25.00%																			
BBB	1									100.00%																			
BBB (low)	2										100.00%																		
BB (high)	0																												
BB	0																												
BB (low)	2													50.00%															
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	36																												

Sovereign Issuers - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)

Sovereign Issuers - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																													
DBRS Morningstar		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012-12/31/2022 (Percent)							
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	12	75.00%																											
AA (high)	1		25.00%	100.00%																									
AA	0																												
AA (low)	0																												
A (high)	1																												
A	1								100.00%																				
A (low)	2				50.00%																								
BBB (high)	0																												
BBB	2								50.00%																				
BBB (low)	2																												
BB (high)	1								100.00%																				
BB	0																												
BB (low)	0																												
B (high)	0																												
B	1																		100.00%										
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	23																												

United States Public Finance - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)

DBRS Morningstar		United States Public Finance - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																									
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																			Other Outcomes During 12/31/2021-12/31/2022 (Percent)						
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Withdrawn (other)
AAA	0	100.00%																									
AA (high)	0		100.00%																								
AA	0			100.00%																							
AA (low)	1				100.00%																						
A (high)	0					100.00%																					
A	0						100.00%																				
A (low)	0							100.00%																			
BBB (high)	1								100.00%																		
BBB	2									100.00%																	
BBB (low)	2										100.00%																
BB (high)	0											100.00%															
BB	0												100.00%														
BB (low)	0													100.00%													
B (high)	0														100.00%												
B	0															100.00%											
B (low)	0																100.00%										
CCC (high)	0																	100.00%									
CCC	0																		100.00%								
CCC (low)	0																			100.00%							
CC (high)	0																				100.00%						
CC	0																					100.00%					
CC (low)	0																						100.00%				
C (high)	0																							100.00%			
C	0																								100.00%		
C (low)	0																									100.00%	
Total	6																										

United States Public Finance - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)

DBRS Morningstar		Credit Ratings as of 12/31/2022 (Percent)																United States Public Finance - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)					Other Outcomes During 12/31/2019-12/31/2022 (Percent)						
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0																												
AA (high)	0																												
AA	0																												
AA (low)	0																												
A (high)	0																												
A	0																												
A (low)	1							100.00%																					
BBB (high)	0																												
BBB	3								66.67%																				
BBB (low)	1								33.33%																				
BB (high)	0								100.00%																				
BB	0																												
BB (low)	0																												
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	5																												

United States Public Finance - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)

DBRS Morningstar		United States Public Finance - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																Other Outcomes During 12/31/2012-12/31/2022 (Percent)											
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																											
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	0	100.00%																											
AA (high)	0		100.00%																										
AA	0			100.00%																									
AA (low)	1				100.00%																								
A (high)	0					100.00%																							
A	0						100.00%																						
A (low)	0							100.00%																					
BBB (high)	1								100.00%																				
BBB	2									100.00%																			
BBB (low)	2										100.00%																		
BB (high)	0											100.00%																	
BB	0												100.00%																
BB (low)	0													100.00%															
B (high)	0														100.00%														
B	0															100.00%													
B (low)	0																100.00%												
CCC (high)	0																	100.00%											
CCC	0																		100.00%										
CCC (low)	0																			100.00%									
CC (high)	0																				100.00%								
CC	0																					100.00%							
CC (low)	0																						100.00%						
C (high)	0																							100.00%					
C	0																								100.00%				
C (low)	0																									100.00%			
Total	6																												

International Public Finance - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)

DBRS Morningstar		International Public Finance - 1-Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																											
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																	Other Outcomes During 12/31/2021-12/31/2022 (Percent)										
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	7	100.00%																											
AA (high)	4		100.00%																										
AA	5			100.00%																									
AA (low)	10				100.00%																								
A (high)	11					100.00%																							
A	11						100.00%																						
A (low)	14							100.00%																					
BBB (high)	6								83.33%	16.67%																			
BBB	4									100.00%																			
BBB (low)	4										75.00%																		
BB (high)	1											100.00%																	
BB	1												100.00%																
BB (low)	0																												
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	78																												

DBRS Morningstar International Public Finance - 3-Year Transition and Default Rates (December 31, 2019 through December 31, 2022)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																	Other Outcomes During 12/31/2019-12/31/2022 (Percent)										
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	8	87.50%																											
AA (high)	4	100.00%																											
AA	7		71.43%	28.57%																									
AA (low)	6			100.00%																									
A (high)	13					84.62%	7.69%																						7.69%
A	11						90.91%																						9.09%
A (low)	15							80.00%	6.67%																				
BBB (high)	8							25.00%	50.00%	12.50%			12.50%																
BBB	4									75.00%	25.00%																		
BBB (low)	2										100.00%																		
BB (high)	1											100.00%																	
BB	0																												
BB (low)	0																												
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	79																												

International Public Finance - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)

DBRS Morningstar		International Public Finance - 10-Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																											
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																Other Outcomes During 12/31/2012-12/31/2022 (Percent)											
Credit Rating	Number of Ratings Outstanding	AAA	AA (high)	AA	AA (low)	A (high)	A	A (low)	BBB (high)	BBB	BBB (low)	BB (high)	BB	BB (low)	B (high)	B	B (low)	CCC (high)	CCC	CCC (low)	CC (high)	CC	CC (low)	C (high)	C	C (low)	Default	Paid Off	Withdrawn (other)
AAA	7	71.43%	100.00%		14.29%																								
AA (high)	3																												
AA	6			66.67%	33.33%																								
AA (low)	5			20.00%	60.00%	20.00%																							
A (high)	9				11.11%	55.56%	22.22%																						
A	14					35.71%	42.86%	14.29%	7.14%																				
A (low)	9						22.22%	66.67%	11.11%																				
BBB (high)	3							33.33%		33.33%																			
BBB	0																												
BBB (low)	1										100.00%																		
BB (high)	0																												
BB	0																												
BB (low)	0																												
B (high)	0																												
B	0																												
B (low)	0																												
CCC (high)	0																												
CCC	0																												
CCC (low)	0																												
CC (high)	0																												
CC	0																												
CC (low)	0																												
C (high)	0																												
C	0																												
C (low)	0																												
Total	57																												

Exhibit 1 – Transition/Default Rates

Form NRSRO – Annual Certification

March 2023



Categories and notches within a category for each class and subclass of credit ratings in DBRS Morningstar's Transition/Default Matrix:

The rating categories below represent DBRS Morningstar's long-term credit ratings and provide an opinion on risk of default, which DBRS Morningstar considers to be the risk that an issuer will fail to satisfy the financial obligations in accordance with the terms under which a long-term obligation has been issued.

All rating categories below, other than AAA and D, also contain subcategories "(high)" and "(low)". The absence of either a "(high)" or "(low)" designation indicates the rating is in the middle of the category. Subcategory "(high)" reflects a lower risk that an issuer will fail to satisfy its financial obligations in accordance with the terms under which an obligations has been issued, while subcategory "(low)" reflects a higher risk.

AAA

Highest credit quality. The capacity for the payment of financial obligations is exceptionally high and unlikely to be adversely affected by future events.

AA

Superior credit quality. The capacity for the payment of financial obligations is considered high. Credit quality differs from AAA only to a small degree. Unlikely to be significantly vulnerable to future events.

A

Good credit quality. The capacity for the payment of financial obligations is substantial, but of lesser credit quality than AA. May be vulnerable to future events, but qualifying negative factors are considered manageable.

BBB

Adequate credit quality. The capacity for the payment of financial obligations is considered acceptable. May be vulnerable to future events.

BB

Speculative, non-investment grade credit quality. The capacity for the payment of financial obligations is uncertain. Vulnerable to future events.

B

Highly speculative credit quality. There is a high level of uncertainty as to the capacity to meet financial obligations.

CCC / CC / C

Very highly speculative credit quality. In danger of defaulting on financial obligations. There is little difference between these three categories, although CC and C ratings are normally

Exhibit 1 – Transition/Default Rates

Form NRSRO – Annual Certification

March 2023



applied to obligations that are seen as highly likely to default, or subordinated to obligations rated in the CCC to B range. Obligations in respect of which default has not technically taken place but is considered inevitable may be rated in the C category.

D

When the issuer has filed under any applicable bankruptcy, insolvency or winding up statute or there is a failure to satisfy an obligation after the exhaustion of grace periods, a downgrade to D may occur. DBRS may also use SD (Selective Default) in cases where only some securities are impacted, such as the case of a “distressed exchange”.

The rating categories below represent DBRS Morningstar’s short-term debt credit ratings and provide an opinion on the risk that an issuer will not meet its short-term financial obligations in a timely manner. The R-1 and R-2 rating categories are further denoted by the subcategories “(high)”, “(middle)”, and “(low)”.

R-1 (high)

Highest credit quality. The capacity for the payment of short-term financial obligations as they fall due is exceptionally high. Unlikely to be adversely affected by future events.

R-1 (middle)

Superior credit quality. The capacity for the payment of short-term financial obligations as they fall due is very high. Differs from R-1 (high) by a relatively modest degree. Unlikely to be significantly vulnerable to future events.

R-1 (low)

Good credit quality. The capacity for the payment of short-term financial obligations as they fall due is substantial. Overall strength is not as favorable as higher rating categories. May be vulnerable to future events, but qualifying negative factors are considered manageable.

R-2 (high)

Upper end of adequate credit quality. The capacity for the payment of short-term financial obligations as they fall due is acceptable. May be vulnerable to future events.

R-2 (middle)

Adequate credit quality. The capacity for the payment of short-term financial obligations as they fall due is acceptable. May be vulnerable to future events or may be exposed to other factors that could reduce credit quality.

R-2 (low)

Lower end of adequate credit quality. The capacity for the payment of short-term financial obligations as they fall due is acceptable. May be vulnerable to future events. A number of challenges are present that could affect the issuer’s ability to meet such obligations.

Exhibit 1 – Transition/Default Rates

Form NRSRO – Annual Certification

March 2023



R-3

Lowest end of adequate credit quality. There is a capacity for the payment of short-term financial obligations as they fall due. May be vulnerable to future events and the certainty of meeting such obligations could be impacted by a variety of developments.

R-4

Speculative credit quality. The capacity for the payment of short-term financial obligations as they fall due is uncertain.

R-5

Highly speculative credit quality. There is a high level of uncertainty as to the capacity to meet short-term financial obligations as they fall due.

D

When the issuer has filed under any applicable bankruptcy, insolvency or winding up statute or there is a failure to satisfy an obligation after the exhaustion of grace periods, a downgrade to D may occur. DBRS Morningstar may also use SD (Selective Default) in cases where only some securities are impacted, such as the case of a “distressed exchange”.

Exhibit 1 – Transition/Default Rates

Form NRSRO – Annual Certification

March 2023



Relationship Between DBRS Morningstar's Long-Term and Short-Term Rating Categories

There will be a strong relationship between the short- and long-term credit ratings for any given credit, barring any differences caused by consideration for factors such as covenants or guarantees. In other words, while it is possible for an entity with strong liquidity to achieve a short-term credit rating that is superior relative to its long-term credit rating, it is not possible for this “gap” to vary significantly from the longer-term DBRS Morningstar opinion on the issuer. For example, a company with a long-term credit rating of A (low), which is defined to be at the lower end of “satisfactory”, would be precluded from achieving a “superior” short-term credit rating of R-1 (middle).

Mapping Table¹

Long-term ratings²

AAA	R-1 H																	AAA
AAH	R-1 H	R-1 M																AAH
AA	R-1 H	R-1 M																AA
AAL		R-1 M	R-1 L															AAL
AH		R-1 M	R-1 L															AH
A			R-1 L															A
AL			R-1 L	R-2 H														AL
BBBH			R-1 L	R-2 H	R-2 H													BBBH
BBB				R-2 H	R-2 M	R-2 L	R-3											BBB
BBBL					R-2 M	R-2 L	R-3											BBBL
								R-3										
BBH									R-4									BBH
BB									R-4									BB
BBL									R-4									BBL
BH									R-4									BH
B										R-5								B
BL										R-5								BL
CCC										R-5								CCC
CC										R-5								CC
C											R-5							C
D												D						D

	Standard mapping
	Exception

1. Short-term ratings as noted in this table include proposed changes to lower-end categories as detailed in the September 15, 2006, press release.

2. Long-term ratings would typically relate to the most senior unsecured debt of the issuer, equivalent to an issuer rating.

Note: For the purpose of this table, DBRS has not shown the “high” and “low” categories involved with C to CCC rating categories.

Referencing the above Mapping Table, there is a standard relationship between short- and long-term credit ratings when exceptional liquidity strength or liquidity concerns are not factors. With respect to the “exceptions” (or “mapping exceptions”) as noted in the Table, the most likely exceptions occur when AA, A (high) and BBB (high) rated entities are able to achieve respective R-1 (high), R-1 (middle) and R-1 (low) CP credit ratings due to the existence and expected continuation of superior liquidity strength. For example, AA rated banks and governments are candidates for R-1 (high) credit ratings.

Exhibit 1 – Transition/Default Rates

Form NRSRO – Annual Certification

March 2023



While not noted in the Mapping Table, DBRS Morningstar notes that there may be unique circumstances that lead to rating mappings that are not covered even with the “exception mappings” as noted. For example, DBRS Morningstar has had cases where “A” rated entities have achieved R-1 (middle) CP credit ratings, where BBB rated entities have achieved R-1 (low) credit ratings, and where an entity with a long term non-investment grade credit rating was able to achieve a short term investment grade credit rating. However, these and possibly other mappings not noted on the table are very rare correlation exceptions that typically relate to very unique circumstances. While DBRS Morningstar reserves the right to make these exceptions when deemed to be the correct rating judgement, such occurrences are and will continue to be extremely infrequent.

Conditions under which DBRS Morningstar classifies obligors, securities, or money market instruments as being in default:

DBRS Morningstar issues a default rating when:

- The issuer has filed under any applicable bankruptcy, insolvency or winding up statute.
- There is failure to pay or satisfy an obligation (subject to applicable grace periods and/or waiver of such failure) in accordance with the underlying transaction documents and DBRS Morningstar believes that this default will subsequently be general in nature and include all obligations.
- Independent of the issuer rating, securities described as a “Distressed Exchange” are downgraded to ‘D’.
- DBRS Morningstar also reserves the right to (a) downgrade ratings to ‘D’ when it believes that a general default is imminent and unavoidable, although this is a less frequent and a more subjective decision, or (b) Discontinue-Withdraw ‘D’ ratings at its discretion.

The preceding categories and subcategories are publicly available at:

<https://www.dbrsmorningstar.com/research/236754/long-term-obligations-rating-scale.pdf>

For completeness, all of DBRS Morningstar rating scales are publicly available at:

<https://www.dbrsmorningstar.com/understanding-ratings/#about-ratings>

URL Page:

Please note below the uniform resource locator (URL) of the website which provides the credit rating history of the DBRS Morningstar credit ratings that are required to be disclosed pursuant to 17 CFR 17g-7(b):

<https://www.dbrsmorningstar.com/about/historyAgree/>