

Moody's Investors Service ("MIS")

Exhibit 1

Credit Ratings Performance Measurement Statistics

Performance Measurement Statistics, consisting of transition and default rates for each applicable asset class and subclass of credit rating over 1-year, 3-year, and 10-year time periods through December 31, 2020, are provided in the Transition/Default Matrices on the following pages, pp. 1-25 (the "Matrices").¹ Please note that all the numbers in the Matrices are in percentage.

Financial Institutions, Brokers and Dealers

Financial Institutions, Brokers and Dealers - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	39	97%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
Aa1	28	0%	93%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%
Aa2	68	0%	0%	93%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%
Aa3	179	0%	0%	0%	91%	8%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
A1	261	0%	0%	0%	7%	90%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%
A2	166	0%	0%	0%	0%	3%	89%	7%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
A3	221	0%	0%	0%	0%	0%	2%	88%	7%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Baa1	172	0%	0%	0%	0%	0%	0%	3%	92%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%
Baa2	138	0%	0%	0%	1%	0%	1%	5%	4%	79%	9%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Baa3	136	0%	0%	0%	0%	0%	0%	0%	6%	3%	69%	8%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	7%
Ba1	60	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	75%	8%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
Ba2	66	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	11%	73%	8%	2%	0%	0%	0%	0%	0%	0%	0%	0%	2%	3%
Ba3	66	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	5%	20%	65%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
B1	55	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	69%	7%	4%	0%	0%	0%	0%	0%	2%	4%	5%
B2	89	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	8%	73%	2%	3%	0%	0%	0%	0%	2%	7%	3%
B3	49	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	35%	55%	0%	2%	0%	0%	0%	0%	0%	6%
Caa1	42	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	29%	7%	2%	0%	0%	0%	0%	24%
Caa2	30	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	10%	3%	30%	10%	0%	0%	3%	0%	37%
Caa3	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	0%	0%	0%	0%	33%
Ca	-																								
C	-																								
Total	1,868																								

¹ Ratings withdrawn for reasons other than having defaulted or been paid off are accounted for in the column titled "Withdrawn (other)."

Financial Institutions, Brokers and Dealers - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	42	90%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%
Aa1	17	0%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%
Aa2	54	0%	9%	61%	15%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	4%
Aa3	116	0%	2%	11%	62%	16%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	3%
A1	268	0%	0%	5%	31%	54%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	2%
A2	189	0%	0%	1%	1%	31%	42%	11%	3%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	5%
A3	197	0%	0%	0%	0%	2%	19%	64%	7%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	5%
Baa1	175	0%	0%	0%	0%	3%	2%	22%	63%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	3%
Baa2	131	0%	0%	0%	0%	0%	8%	6%	15%	47%	13%	1%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	2%
Baa3	141	0%	0%	0%	1%	0%	0%	2%	8%	19%	35%	10%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	1%	6%	11%
Ba1	60	0%	0%	0%	0%	0%	0%	0%	3%	0%	23%	25%	2%	7%	0%	13%	3%	0%	0%	0%	0%	0%	0%	3%	20%
Ba2	69	0%	0%	0%	0%	0%	0%	0%	1%	0%	4%	22%	43%	3%	0%	6%	3%	0%	0%	0%	0%	0%	0%	7%	10%
Ba3	82	0%	0%	0%	0%	0%	0%	0%	0%	2%	5%	10%	26%	26%	2%	1%	1%	4%	0%	1%	0%	0%	0%	1%	21%
B1	68	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	4%	6%	16%	12%	7%	4%	3%	0%	0%	0%	0%	0%	9%	35%
B2	101	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	7%	24%	43%	3%	0%	1%	2%	0%	0%	1%	4%	12%
B3	37	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	3%	16%	11%	5%	3%	0%	0%	0%	11%	5%	43%
Caa1	35	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	6%	17%	40%	3%	6%	0%	0%	0%	0%	9%	17%
Caa2	19	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	0%	11%	0%	0%	0%	11%	5%	21%
Caa3	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	30%	20%	10%	10%	0%	0%	0%	0%	20%
Ca	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	25%	50%
C	-																								
Total	1,815																								

Financial Institutions, Brokers and Dealers - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	80	44%	5%	8%	11%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%	5%
Aa1	115	0%	9%	10%	54%	1%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	5%
Aa2	146	0%	0%	6%	9%	23%	5%	3%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32%	16%
Aa3	230	0%	0%	3%	14%	29%	5%	6%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	27%	11%
A1	207	0%	0%	3%	6%	16%	15%	13%	6%	3%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	19%
A2	186	0%	1%	0%	4%	7%	15%	16%	8%	3%	3%	2%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%	18%	18%
A3	199	0%	0%	0%	1%	1%	7%	17%	10%	5%	2%	2%	3%	3%	1%	2%	0%	0%	0%	0%	0%	0%	3%	17%	30%
Baa1	108	0%	0%	0%	0%	0%	3%	12%	19%	6%	4%	5%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	5%	10%	36%
Baa2	114	0%	0%	0%	0%	0%	0%	8%	13%	4%	11%	8%	9%	2%	0%	3%	0%	0%	0%	0%	0%	0%	4%	10%	29%
Baa3	111	0%	0%	0%	0%	1%	2%	2%	11%	5%	8%	2%	6%	1%	2%	1%	1%	0%	0%	0%	0%	0%	7%	12%	41%
Ba1	60	0%	0%	0%	0%	0%	0%	0%	2%	10%	7%	8%	3%	2%	5%	7%	3%	2%	0%	2%	0%	0%	8%	13%	28%
Ba2	62	0%	0%	0%	0%	2%	0%	0%	0%	8%	6%	6%	8%	3%	3%	8%	3%	2%	0%	0%	0%	0%	8%	8%	34%
Ba3	81	0%	0%	0%	0%	0%	0%	0%	0%	16%	4%	1%	5%	5%	7%	10%	9%	0%	1%	0%	0%	0%	9%	2%	31%
B1	51	0%	0%	0%	2%	0%	0%	0%	0%	2%	8%	0%	2%	12%	2%	4%	0%	0%	0%	0%	0%	0%	10%	8%	51%
B2	83	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	8%	7%	8%	0%	0%	2%	0%	0%	6%	10%	53%
B3	72	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	1%	3%	0%	7%	11%	0%	1%	0%	0%	0%	10%	7%	57%
Caa1	27	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	4%	74%
Caa2	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	33%	
Caa3	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	
Ca	-																								
C	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	33%	33%
Total	1,940																								

Insurance Companies

Insurance Companies - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	5	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1	12	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa2	61	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa3	99	0%	0%	0%	95%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%
A1	125	0%	0%	0%	1%	96%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
A2	200	0%	0%	0%	0%	0%	92%	7%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
A3	122	0%	0%	0%	0%	0%	2%	95%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%
Baa1	69	0%	0%	0%	0%	0%	0%	1%	91%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%
Baa2	71	0%	0%	0%	0%	0%	1%	0%	4%	86%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%
Baa3	34	0%	0%	0%	0%	0%	0%	0%	3%	0%	79%	3%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba1	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	53%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%
Ba2	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	50%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%
Ba3	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%
B1	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	33%	0%	0%	0%	0%	0%	0%	0%	33%
B2	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	71%
B3	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	20%	0%	0%	0%	0%	0%	0%	70%
Caa1	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	50%
Caa2	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%
Caa3	-																								
Ca	-																								
C	-																								
Total	859																								

Insurance Companies - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	5	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa1	12	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa2	65	0%	0%	94%	5%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa3	94	0%	0%	0%	91%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	5%	
A1	133	0%	0%	0%	2%	84%	7%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	5%	
A2	201	0%	0%	0%	0%	3%	77%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	
A3	104	0%	0%	0%	0%	0%	17%	68%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	6%	
Baa1	70	0%	0%	0%	0%	0%	0%	20%	61%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	10%	
Baa2	75	0%	0%	0%	0%	0%	1%	0%	21%	57%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	7%	
Baa3	32	0%	0%	0%	0%	0%	3%	0%	3%	16%	53%	3%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	
Ba1	24	0%	0%	0%	0%	0%	0%	0%	4%	8%	38%	21%	0%	8%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	17%	
Ba2	13	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	15%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	46%	
Ba3	11	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	18%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	64%	
B1	13	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	
B2	11	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	9%	18%	0%	0%	0%	0%	0%	0%	64%	
B3	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	50%	
Caa1	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
Caa2	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	0%	0%	0%	0%	13%	13%	
Caa3	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%		
Ca	-																									
C	-																									
Total	877																									

Insurance Companies - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	6	83%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa1	13	0%	85%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	
Aa2	69	0%	0%	64%	25%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	
Aa3	119	0%	0%	1%	33%	17%	10%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	18%	
A1	106	0%	0%	0%	8%	32%	21%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	26%	
A2	261	0%	0%	0%	8%	16%	31%	10%	1%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%	28%	
A3	121	0%	0%	0%	1%	6%	24%	29%	9%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	22%	
Baa1	44	0%	0%	0%	0%	0%	11%	9%	32%	14%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	9%	18%	
Baa2	51	0%	0%	0%	0%	2%	0%	6%	22%	29%	8%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22%	10%	
Baa3	47	0%	0%	0%	0%	0%	2%	0%	6%	23%	13%	0%	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	23%	28%	
Ba1	19	0%	0%	0%	0%	0%	0%	16%	5%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	58%	
Ba2	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	
Ba3	21	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	71%	
B1	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	
B2	20	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	90%	
B3	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	0%	6%	35%	47%	
Caa1	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	67%	
Caa2	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	67%	
Caa3	-																									
Ca	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
C	-																									
Total	933																									

Corporate Issuers

Corporate Issuers - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	15	53%	47%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1	7	0%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%
Aa2	41	0%	0%	93%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
Aa3	49	0%	0%	0%	82%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
A1	167	0%	0%	0%	0%	83%	13%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%
A2	236	0%	0%	0%	0%	3%	83%	8%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%
A3	352	0%	0%	0%	0%	0%	1%	88%	7%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	1%
Baa1	491	0%	0%	0%	0%	0%	0%	1%	85%	9%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%
Baa2	554	0%	0%	0%	0%	0%	0%	0%	3%	87%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%
Baa3	428	0%	0%	0%	0%	0%	0%	0%	0%	4%	78%	4%	3%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	5%	4%
Ba1	145	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	64%	13%	9%	0%	0%	1%	0%	0%	0%	0%	0%	0%	6%	0%
Ba2	150	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	71%	11%	6%	1%	0%	1%	0%	0%	0%	0%	0%	5%	1%
Ba3	155	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	5%	69%	13%	1%	3%	1%	0%	0%	0%	0%	0%	8%	1%
B1	151	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	6%	55%	15%	10%	2%	0%	0%	0%	1%	2%	7%	1%
B2	123	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	4%	59%	16%	8%	2%	0%	0%	0%	7%	2%	1%
B3	149	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	5%	51%	17%	6%	1%	1%	0%	6%	5%	4%
Caa1	95	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	2%	44%	13%	12%	2%	1%	9%	12%	4%
Caa2	90	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	6%	43%	11%	7%	0%	23%	8%	1%
Caa3	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	31%	6%	0%	50%	13%	0%
Ca	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%	0%	0%	88%	0%	0%
C	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
Total	3,425																								

Corporate Issuers - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	15	47%	47%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%
Aa1	8	0%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
Aa2	47	0%	0%	77%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	2%
Aa3	48	0%	0%	2%	48%	40%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	2%
A1	171	0%	0%	0%	6%	61%	20%	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	4%
A2	241	0%	0%	0%	0%	7%	62%	15%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	2%
A3	319	0%	0%	0%	0%	0%	6%	65%	18%	2%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	4%	3%
Baa1	460	0%	0%	0%	0%	0%	1%	10%	64%	13%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	2%
Baa2	483	0%	0%	0%	0%	0%	0%	1%	9%	67%	9%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	5%
Baa3	420	0%	0%	0%	0%	0%	0%	0%	3%	17%	51%	4%	2%	0%	2%	1%	0%	0%	0%	0%	0%	0%	1%	12%	7%
Ba1	156	0%	0%	0%	0%	0%	0%	0%	1%	7%	20%	29%	8%	4%	4%	3%	1%	1%	0%	0%	0%	0%	0%	14%	8%
Ba2	145	0%	0%	0%	0%	0%	0%	0%	0%	1%	7%	12%	42%	9%	3%	2%	1%	1%	0%	0%	0%	0%	0%	16%	6%
Ba3	175	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	6%	15%	34%	7%	2%	6%	2%	1%	0%	0%	0%	2%	21%	3%
B1	150	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	5%	14%	29%	7%	9%	4%	3%	1%	0%	1%	3%	16%	6%
B2	128	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	4%	9%	27%	12%	4%	2%	2%	1%	0%	13%	23%	3%
B3	175	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	7%	9%	19%	15%	3%	2%	2%	0%	13%	23%	6%
Caa1	134	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	4%	9%	16%	9%	10%	1%	0%	17%	27%	4%
Caa2	67	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	6%	22%	1%	1%	0%	21%	40%	3%
Caa3	27	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	78%	19%	0%
Ca	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	71%	21%	0%
C	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	60%	20%	20%
Total	3,388																								

Corporate Issuers - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	24	29%	29%	4%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	8%	
Aa1	39	0%	10%	21%	33%	10%	0%	3%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	15%	
Aa2	35	0%	0%	9%	6%	46%	3%	9%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	6%	
Aa3	62	0%	0%	11%	16%	19%	11%	3%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	24%	8%	
A1	145	0%	0%	10%	2%	24%	21%	10%	3%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	13%	
A2	235	0%	0%	0%	2%	9%	19%	12%	11%	10%	1%	1%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	19%	13%	
A3	336	0%	0%	0%	0%	1%	12%	21%	20%	5%	2%	1%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	21%	13%	
Baa1	352	0%	0%	0%	0%	0%	3%	15%	24%	16%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	23%	12%	
Baa2	389	0%	0%	0%	0%	1%	1%	7%	16%	21%	11%	3%	2%	0%	1%	0%	1%	0%	0%	0%	0%	0%	2%	24%	12%	
Baa3	337	0%	0%	0%	0%	0%	0%	3%	11%	18%	17%	4%	4%	2%	1%	0%	1%	0%	0%	0%	0%	0%	1%	27%	11%	
Ba1	135	0%	0%	1%	0%	0%	0%	0%	5%	8%	13%	10%	5%	2%	1%	1%	1%	0%	0%	1%	0%	0%	3%	38%	10%	
Ba2	96	0%	0%	0%	0%	0%	0%	0%	3%	8%	10%	2%	4%	3%	2%	1%	3%	2%	1%	3%	0%	0%	5%	46%	5%	
Ba3	109	0%	0%	0%	0%	0%	0%	1%	0%	5%	7%	0%	1%	7%	4%	4%	4%	1%	0%	2%	1%	0%	9%	43%	12%	
B1	148	0%	0%	0%	0%	0%	0%	0%	0%	1%	4%	3%	7%	5%	5%	3%	3%	1%	1%	0%	0%	0%	7%	52%	9%	
B2	109	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%	4%	4%	2%	5%	2%	0%	2%	0%	0%	17%	47%	13%	
B3	164	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	1%	4%	2%	2%	2%	1%	1%	0%	0%	0%	18%	57%	11%	
Caa1	119	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	1%	3%	3%	2%	2%	5%	1%	1%	0%	0%	18%	58%	6%	
Caa2	58	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	3%	0%	0%	0%	0%	36%	53%	5%	
Caa3	27	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	41%	48%	7%	
Ca	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	53%	6%	35%	
C	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	67%	
Total	2,939																									

Residential Mortgage Backed Securities (RMBS)

RMBS - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	4,280	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%
Aa1	704	7%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Aa2	428	4%	11%	77%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	1%
Aa3	389	1%	4%	2%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	1%
A1	459	0%	2%	5%	4%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	1%
A2	489	0%	0%	1%	6%	3%	79%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	1%
A3	441	0%	0%	0%	0%	4%	5%	56%	9%	0%	1%	0%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	16%	5%
Baa1	356	0%	0%	0%	0%	2%	3%	2%	69%	1%	1%	0%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	11%	7%
Baa2	341	0%	0%	0%	0%	0%	1%	8%	4%	67%	2%	1%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	10%	3%
Baa3	524	0%	0%	0%	0%	0%	0%	0%	6%	2%	58%	3%	11%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	8%	5%
Ba1	487	0%	0%	0%	0%	0%	0%	0%	1%	2%	2%	50%	8%	3%	17%	0%	0%	0%	0%	0%	0%	0%	0%	11%	5%
Ba2	369	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	3%	54%	4%	22%	0%	0%	0%	0%	0%	0%	0%	0%	6%	5%
Ba3	391	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	52%	26%	5%	1%	0%	0%	0%	0%	0%	0%	7%	5%
B1	805	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	85%	1%	2%	0%	0%	0%	0%	0%	0%	5%	4%
B2	324	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	4%	0%	76%	1%	4%	0%	0%	0%	1%	6%	6%	
B3	347	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	1%	77%	7%	1%	0%	0%	0%	0%	6%	3%
Caa1	527	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	81%	0%	2%	0%	0%	2%	5%	8%
Caa2	512	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	85%	0%	0%	0%	4%	4%	7%
Caa3	579	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	88%	1%	0%	4%	1%	4%
Ca	1,188	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	96%	0%	1%	1%	1%
C	643	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	4%	3%	3%	
Total	14,583																								

RMBS - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	2,514	69%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%	3%
Aa1	534	35%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	36%	6%
Aa2	717	17%	21%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	7%
Aa3	329	18%	16%	5%	18%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32%	11%
A1	520	14%	8%	6%	7%	23%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	31%	11%
A2	504	11%	7%	5%	5%	4%	37%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	8%
A3	635	6%	4%	3%	3%	6%	2%	9%	6%	0%	1%	0%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	33%	25%
Baa1	857	5%	2%	2%	2%	4%	4%	2%	9%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	17%	49%
Baa2	573	3%	2%	2%	4%	4%	6%	5%	2%	10%	1%	1%	1%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	21%	36%
Baa3	922	2%	0%	1%	1%	2%	3%	3%	3%	1%	9%	0%	3%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	24%	43%
Ba1	985	0%	1%	1%	1%	2%	2%	2%	3%	3%	2%	8%	3%	2%	9%	0%	0%	0%	0%	0%	0%	0%	1%	18%	42%
Ba2	698	0%	0%	1%	1%	1%	1%	2%	3%	4%	5%	2%	10%	1%	14%	1%	0%	0%	0%	0%	0%	0%	1%	14%	40%
Ba3	801	0%	0%	0%	0%	1%	0%	1%	3%	3%	4%	4%	3%	10%	15%	2%	0%	0%	0%	0%	0%	0%	1%	9%	41%
B1	1,105	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	3%	2%	34%	0%	2%	1%	0%	0%	0%	0%	5%	11%	34%
B2	660	0%	0%	0%	0%	0%	0%	0%	1%	1%	4%	3%	3%	5%	6%	16%	0%	3%	0%	0%	0%	0%	3%	10%	43%
B3	673	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	2%	2%	9%	1%	16%	5%	1%	0%	0%	0%	4%	12%	44%
Caa1	1,248	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	2%	4%	2%	1%	21%	0%	1%	0%	0%	9%	11%	45%
Caa2	1,225	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	2%	3%	2%	25%	1%	0%	0%	17%	6%	42%
Caa3	1,048	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%	5%	2%	40%	2%	0%	15%	5%	23%
Ca	1,889	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	4%	2%	56%	0%	14%	5%	14%
C	1,545	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	3%	4%	37%	27%	6%	17%
Total	19,982																								

RMBS - 10-Year Transition and Default Rates
(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	6,901	6%	2%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	63%	24%
Aa1	886	3%	3%	0%	0%	1%	1%	0%	0%	1%	1%	1%	1%	0%	4%	1%	0%	0%	0%	0%	0%	0%	3%	54%	24%
Aa2	1,564	1%	1%	1%	1%	3%	1%	1%	1%	1%	1%	1%	2%	1%	5%	1%	0%	0%	0%	0%	0%	0%	3%	45%	31%
Aa3	1,263	2%	2%	1%	1%	1%	8%	2%	1%	0%	1%	0%	1%	0%	2%	0%	1%	0%	0%	0%	0%	0%	3%	48%	26%
A1	1,058	1%	2%	0%	1%	1%	1%	0%	1%	1%	1%	1%	1%	0%	3%	1%	1%	1%	0%	0%	0%	0%	5%	42%	38%
A2	1,263	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	0%	1%	1%	3%	0%	1%	1%	1%	1%	1%	0%	8%	45%	29%
A3	724	1%	1%	0%	1%	0%	0%	0%	1%	1%	0%	1%	0%	1%	3%	1%	1%	1%	1%	1%	2%	1%	9%	42%	30%
Baa1	975	0%	1%	0%	1%	1%	1%	1%	2%	0%	1%	1%	1%	1%	3%	1%	1%	1%	1%	1%	1%	1%	12%	43%	27%
Baa2	1,208	1%	0%	0%	1%	1%	0%	1%	1%	0%	1%	0%	1%	0%	3%	0%	1%	2%	1%	1%	1%	2%	16%	45%	22%
Baa3	952	1%	0%	0%	1%	0%	1%	0%	0%	0%	1%	1%	1%	1%	3%	2%	2%	1%	1%	1%	2%	1%	18%	42%	21%
Ba1	842	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	2%	1%	0%	1%	2%	0%	1%	1%	23%	43%	19%
Ba2	683	1%	0%	0%	0%	1%	0%	1%	1%	0%	0%	1%	0%	1%	2%	1%	1%	1%	1%	1%	1%	1%	20%	47%	16%
Ba3	693	2%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	1%	0%	2%	1%	2%	2%	1%	1%	2%	1%	21%	43%	18%
B1	896	2%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%	0%	1%	2%	1%	1%	1%	0%	19%	44%	23%
B2	1,018	1%	1%	1%	0%	0%	0%	0%	0%	1%	1%	0%	1%	1%	2%	0%	1%	2%	1%	1%	1%	0%	20%	43%	24%
B3	1,503	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	2%	1%	1%	5%	2%	1%	1%	1%	32%	28%	21%
Caa1	1,963	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	3%	2%	1%	1%	0%	52%	15%	18%
Caa2	2,868	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	2%	0%	1%	1%	4%	1%	2%	0%	67%	7%	10%
Caa3	3,431	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	1%	1%	8%	3%	0%	71%	3%	5%
Ca	3,283	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	1%	1%	2%	1%	21%	2%	52%	5%	7%
C	7,611	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	1%	0%	1%	1%	1%	1%	5%	79%	3%	2%
Total	41,585																								

Commercial Mortgage Backed Securities (CMBS)

CMBS - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	1,928	91%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%
Aa1	84	1%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
Aa2	169	0%	0%	95%	1%	1%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Aa3	285	0%	1%	1%	89%	1%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%
A1	111	0%	0%	1%	1%	75%	5%	6%	4%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%
A2	73	1%	0%	0%	0%	0%	74%	5%	1%	3%	1%	4%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%
A3	177	0%	0%	0%	0%	0%	1%	1%	81%	5%	6%	1%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%
Baa1	65	0%	0%	0%	0%	0%	2%	3%	71%	2%	3%	3%	0%	0%	2%	0%	2%	2%	0%	0%	0%	0%	0%	12%	0%
Baa2	53	0%	0%	0%	0%	0%	0%	0%	0%	75%	2%	2%	6%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	13%	0%
Baa3	134	0%	0%	0%	0%	0%	0%	0%	0%	0%	72%	6%	6%	1%	3%	2%	1%	1%	1%	0%	0%	0%	0%	6%	0%
Ba1	40	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	5%	3%	8%	5%	3%	5%	0%	0%	0%	5%	0%	13%	0%
Ba2	58	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	43%	12%	19%	5%	2%	3%	2%	2%	0%	0%	0%	10%	0%
Ba3	62	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	11%	8%	3%	5%	2%	3%	2%	0%	0%	13%	0%
B1	44	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	0%	36%	2%	9%	7%	2%	9%	2%	5%	0%	23%	0%
B2	52	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	37%	17%	15%	10%	6%	0%	8%	0%	6%	0%
B3	56	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	59%	7%	13%	7%	2%	4%	0%	7%	0%
Caa1	40	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	63%	0%	8%	5%	15%	8%	3%	0%
Caa2	21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	62%	5%	0%	10%	10%	14%	0%
Caa3	45	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	62%	4%	11%	9%	13%	0%
Ca	19	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	0%	5%	11%	0%
C	42	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	74%	14%	12%	0%
Total	3,558																								

CMBS - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	1,884	72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	0%
Aa1	89	9%	64%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%	0%
Aa2	172	1%	6%	66%	2%	1%	1%	2%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%
Aa3	227	0%	2%	10%	67%	1%	2%	2%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%
A1	140	1%	1%	5%	14%	46%	5%	5%	4%	1%	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	16%	0%
A2	81	0%	0%	0%	1%	6%	38%	5%	0%	1%	1%	4%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	42%	0%
A3	160	0%	0%	0%	0%	1%	3%	8%	49%	4%	6%	1%	4%	1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	22%	0%
Baa1	94	2%	0%	0%	0%	0%	1%	7%	29%	14%	2%	0%	0%	0%	1%	0%	1%	1%	0%	0%	0%	1%	0%	40%	0%
Baa2	72	0%	0%	0%	0%	1%	0%	6%	3%	24%	1%	0%	3%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	61%	0%
Baa3	126	0%	0%	0%	1%	0%	2%	0%	2%	2%	29%	7%	5%	2%	4%	3%	1%	3%	2%	1%	0%	1%	1%	37%	0%
Ba1	65	2%	0%	0%	0%	0%	0%	2%	0%	0%	12%	14%	0%	2%	5%	0%	2%	0%	0%	2%	0%	2%	3%	57%	0%
Ba2	90	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	2%	23%	8%	12%	4%	3%	7%	1%	1%	0%	2%	1%	31%	0%
Ba3	65	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	15%	8%	5%	5%	5%	5%	3%	2%	5%	2%	45%	2%
B1	66	0%	2%	0%	0%	0%	2%	0%	2%	0%	0%	3%	2%	0%	11%	2%	6%	0%	0%	5%	2%	3%	3%	61%	0%
B2	66	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	2%	12%	17%	14%	8%	11%	5%	3%	0%	27%	0%
B3	67	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	1%	1%	0%	24%	7%	1%	4%	0%	7%	12%	37%	0%
Caa1	68	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	21%	0%	4%	0%	7%	10%	54%	0%
Caa2	47	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	4%	21%	4%	0%	0%	30%	36%	0%
Caa3	98	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	4%	2%	19%	3%	2%	23%	44%	0%
Ca	32	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	44%	3%	34%	13%	0%
C	124	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	23%	63%	11%	0%
Total	3,833																								

CMBS - 10-Year Transition and Default Rates
(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	2,095	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	0%
Aa1	164	1%	0%	0%	1%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	96%	0%
Aa2	330	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	2%
Aa3	245	0%	0%	0%	0%	0%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	91%	1%
A1	211	0%	0%	0%	4%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	89%	1%
A2	265	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	2%	94%	1%
A3	237	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	3%	92%	1%
Baa1	241	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	92%	1%
Baa2	309	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	85%	1%
Baa3	326	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	1%	0%	0%	0%	0%	1%	1%	0%	1%	0%	0%	9%	82%	1%
Ba1	258	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	10%	85%	2%
Ba2	276	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	13%	80%	3%
Ba3	240	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	18%	78%	1%
B1	236	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	0%	21%	74%	2%
B2	260	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	1%	0%	1%	0%	0%	25%	68%	1%
B3	307	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%	0%	31%	62%	3%
Caa1	244	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	2%	0%	0%	39%	55%	2%
Caa2	265	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	1%	0%	1%	51%	43%	2%
Caa3	366	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	3%	0%	1%	53%	40%	1%
Ca	361	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	2%	73%	21%	0%
C	956	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	86%	11%	0%
Total	8,192																								

CMBS: Commercial real estate (CRE) CDOs, where 70% or more of the collateral is comprised of CRE loans, are classified as CMBS. If the collateral backing the transaction contains less than 70% CRE loans, then the deal is classified as a CDO.

Collateralized Loan Obligations (CLOs)

CLOs - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	1,981	87%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%
Aa1	127	20%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Aa2	1,126	0%	2%	93%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
Aa3	23	0%	0%	4%	78%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%
A1	47	2%	11%	9%	4%	62%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%
A2	963	0%	0%	0%	1%	1%	90%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%
A3	29	0%	0%	0%	0%	0%	0%	62%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	31%	0%
Baa1	22	0%	0%	0%	0%	0%	9%	14%	64%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%
Baa2	207	0%	0%	0%	0%	0%	1%	1%	2%	88%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Baa3	743	0%	0%	0%	0%	0%	0%	0%	1%	1%	82%	11%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%
Ba1	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba2	247	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	90%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%
Ba3	739	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	74%	19%	1%	0%	1%	0%	0%	0%	0%	0%	3%	0%
B1	49	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	63%	4%	14%	4%	2%	8%	0%	0%	0%	2%	0%
B2	226	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	80%	10%	2%	2%	2%	0%	0%	0%	2%	0%
B3	214	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	19%	21%	7%	0%	0%	0%	2%	0%
Caa1	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	13%	38%	25%	0%	0%	13%	0%
Caa2	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	33%	50%	0%	0%	0%	0%
Caa3	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	71%	0%	0%	14%	0%
Ca	-																								
C	-																								
Total	6,768																								

CLOs - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	1,530	31%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	69%	0%
Aa1	244	18%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	74%	0%
Aa2	686	2%	4%	41%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	0%
Aa3	14	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	93%	0%
A1	86	6%	8%	2%	2%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	76%	0%
A2	654	0%	1%	1%	1%	2%	37%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%
A3	23	0%	0%	0%	0%	9%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	74%	0%
Baa1	20	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%
Baa2	189	0%	1%	0%	1%	1%	2%	3%	4%	35%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	0%
Baa3	512	0%	0%	0%	0%	0%	0%	0%	1%	2%	29%	8%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	59%	0%
Ba1	20	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%
Ba2	200	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	41%	3%	1%	0%	0%	0%	0%	1%	0%	0%	0%	52%	0%
Ba3	516	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	27%	14%	1%	0%	2%	1%	1%	0%	0%	0%	54%	0%
B1	31	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	3%	0%	35%	6%	6%	0%	0%	0%	0%	0%	0%	45%	0%
B2	220	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	27%	7%	1%	4%	4%	2%	0%	1%	50%	0%
B3	104	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	6%	13%	6%	2%	0%	0%	56%	0%
Caa1	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	29%	43%	0%	0%	14%	0%
Caa2	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
Caa3	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%
Ca	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
C	-																								
Total	5,062																								

CLOs - 10-Year Transition and Default Rates
(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	513	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Aa1	284	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Aa2	269	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Aa3	234	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
A1	198	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
A2	187	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	1%
A3	159	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Baa1	138	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Baa2	128	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Baa3	234	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Ba1	254	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Ba2	156	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	1%
Ba3	200	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
B1	258	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
B2	110	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
B3	144	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	99%	0%
Caa1	115	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Caa2	201	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	99%	0%
Caa3	270	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	97%	0%
Ca	150	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	95%	1%
C	43	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	2%	0%	2%	2%	0%	2%	0%	0%	0%	0%	5%	81%	2%
Total	4,245																								

Collateralized Debt Obligations (CDOs)

CDOs - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	154	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	2%
Aa1	56	9%	89%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Aa2	51	0%	6%	84%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	
Aa3	49	0%	6%	10%	76%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	
A1	25	0%	0%	8%	16%	72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	
A2	34	0%	0%	0%	0%	3%	91%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	
A3	43	2%	0%	0%	0%	0%	5%	81%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	
Baa1	10	0%	0%	0%	0%	0%	0%	10%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Baa2	16	0%	0%	6%	0%	0%	0%	0%	6%	81%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	
Baa3	48	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	
Ba1	19	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	84%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	
Ba2	12	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	75%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Ba3	33	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	88%	3%	0%	0%	0%	0%	0%	0%	0%	3%	0%	
B1	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
B2	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	60%	0%	0%	0%	0%	0%	0%	0%	0%	
B3	13	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	62%	15%	0%	0%	0%	0%	0%	15%	
Caa1	18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%	0%	0%	0%	0%	6%	11%	
Caa2	13	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	8%	0%	8%	15%	15%	
Caa3	19	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	58%	0%	0%	0%	42%	
Ca	117	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	62%	0%	0%	36%		
C	261	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	3%	0%	30%	
Total	1,006																								

CDOs - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	166	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	69%	2%
Aa1	59	36%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32%	0%
Aa2	66	2%	29%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52%	0%
Aa3	46	4%	24%	15%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	2%
A1	30	0%	10%	13%	33%	17%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	0%
A2	52	0%	0%	2%	12%	6%	27%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	0%
A3	20	5%	0%	10%	0%	20%	5%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	5%
Baa1	14	0%	0%	7%	0%	29%	14%	7%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	0%
Baa2	14	0%	0%	7%	0%	0%	0%	7%	14%	43%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%
Baa3	46	0%	0%	0%	0%	2%	0%	4%	4%	7%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	61%	0%
Ba1	29	0%	0%	0%	0%	0%	0%	10%	7%	0%	24%	28%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	31%	0%
Ba2	20	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	25%	20%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Ba3	28	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	7%	0%	25%	4%	0%	0%	0%	0%	0%	0%	0%	0%	57%	4%
B1	18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	22%	0%	0%	0%	0%	0%	0%	0%	0%	39%	22%
B2	12	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	25%	33%	0%	0%	0%	0%	0%	0%	0%	0%	17%	17%
B3	25	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	8%	8%	4%	8%	24%	4%	0%	4%	0%	0%	0%	20%	8%
Caa1	20	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	20%	10%
Caa2	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	7%	14%	7%	0%	0%	7%	43%	7%
Caa3	37	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	0%	0%	11%	27%	3%	0%	8%	16%	30%
Ca	197	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	36%	10%	22%	2%	29%
C	326	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48%	32%	0%	20%
Total	1,239																								

CDOs - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	321	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	3%
Aa1	116	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	0%
Aa2	82	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	5%
Aa3	117	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	96%	3%
A1	116	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	97%	3%
A2	68	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	4%
A3	88	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	0%
Baa1	65	6%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	88%	2%
Baa2	77	6%	8%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	81%	4%
Baa3	96	1%	7%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	91%	0%
Ba1	160	6%	3%	1%	3%	1%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	79%	4%
Ba2	116	2%	4%	4%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	83%	1%
Ba3	91	3%	3%	2%	4%	1%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	81%	2%
B1	121	2%	4%	0%	3%	2%	0%	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	81%	6%
B2	70	0%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%	84%	3%
B3	115	0%	0%	2%	1%	2%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	1%	78%	9%
Caa1	89	0%	2%	0%	1%	0%	0%	0%	1%	0%	1%	3%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	3%	80%	7%
Caa2	133	0%	2%	0%	2%	2%	1%	2%	0%	0%	2%	2%	2%	1%	0%	0%	1%	0%	0%	1%	2%	0%	2%	77%	5%
Caa3	308	0%	0%	1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	2%	0%	8%	77%	6%
Ca	867	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	1%	0%	0%	1%	7%	3%	22%	54%	8%
C	1,187	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	13%	64%	15%	6%
Total	4,403																								

CDO: Derivative securities such as structured notes and repackaged securities are not considered as part of this sector. Commercial real estate (CRE) CDOs are also excluded (see the definition of CMBS).

Asset-Backed Commercial Paper (ABCP)

ABCP - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)				Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	P-1	P-2	P-3	NP	Default	Paid Off	Withdrawn (other)
P-1	113	94%	0%	0%	0%	0%	5%	1%
P-2	2	0%	100%	0%	0%	0%	0%	0%
P-3	1	0%	0%	0%	100%	0%	0%	0%
NP	-							
Total	116							

ABCP - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)				Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	P-1	P-2	P-3	NP	Default	Paid Off	Withdrawn (other)
P-1	110	84%	0%	0%	0%	0%	15%	1%
P-2	4	25%	50%	0%	0%	0%	0%	25%
P-3	1	0%	0%	0%	100%	0%	0%	0%
NP	-							
Total	115							

ABCP - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	P-1	P-2	P-3	NP	Default	Paid Off	Withdrawn (other)
P-1	180	39%	1%	0%	0%	0%	48%	11%
P-2	2	0%	0%	0%	0%	0%	100%	0%
P-3	-							
NP	-							
Total	182							

Other Asset Backed Securities (Other ABS)

Other ABS - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	2,594	71%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	0%
Aa1	226	21%	61%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%	0%
Aa2	211	16%	15%	44%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22%	2%
Aa3	251	7%	7%	1%	57%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	1%
A1	167	1%	8%	5%	4%	51%	2%	2%	0%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	1%
A2	156	3%	4%	4%	4%	13%	48%	2%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%
A3	86	0%	2%	6%	2%	7%	6%	53%	7%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	6%
Baa1	96	0%	2%	0%	4%	6%	7%	2%	50%	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22%	0%
Baa2	137	1%	0%	1%	1%	3%	4%	1%	6%	55%	5%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	6%
Baa3	173	0%	1%	0%	0%	1%	1%	3%	2%	2%	70%	3%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	1%
Ba1	63	0%	0%	0%	0%	0%	2%	0%	2%	5%	10%	67%	5%	3%	0%	3%	0%	0%	0%	0%	0%	0%	0%	5%	0%
Ba2	49	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	14%	57%	10%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%
Ba3	43	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	72%	7%	5%	0%	0%	0%	0%	0%	0%	0%	7%	0%
B1	44	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	2%	82%	5%	0%	0%	0%	0%	0%	0%	0%	7%	0%
B2	59	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	61%	7%	2%	0%	0%	0%	0%	0%	24%	3%
B3	42	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	2%	71%	2%	2%	0%	0%	0%	0%	19%	0%
Caa1	23	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	17%	4%	0%	0%	0%	4%	4%
Caa2	21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	86%	10%	0%	0%	0%	0%	0%
Caa3	34	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	79%	0%	0%	0%	15%	6%
Ca	32	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	6%	0%	41%	3%
C	73	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	3%	5%	8%	8%
Total	4,580																								

Other ABS - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	2,520	37%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	61%	0%	
Aa1	169	22%	24%	1%	7%	1%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	42%	3%	
Aa2	246	12%	9%	11%	6%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	59%	2%		
Aa3	188	15%	4%	4%	18%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	56%	1%		
A1	230	12%	6%	1%	7%	20%	1%	2%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	3%		
A2	173	7%	3%	2%	3%	7%	18%	1%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	55%	2%		
A3	116	6%	3%	1%	5%	6%	3%	21%	7%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	6%		
Baa1	106	8%	5%	0%	2%	3%	1%	3%	10%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	60%	4%		
Baa2	139	4%	1%	1%	0%	2%	1%	2%	8%	24%	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	4%		
Baa3	174	2%	1%	1%	2%	3%	1%	2%	1%	1%	46%	5%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	32%	3%		
Ba1	71	3%	0%	0%	1%	1%	3%	0%	1%	3%	6%	31%	3%	3%	0%	1%	0%	0%	0%	0%	0%	0%	37%	7%		
Ba2	71	0%	1%	0%	0%	3%	3%	1%	4%	1%	3%	1%	20%	1%	1%	0%	0%	0%	0%	0%	0%	0%	55%	4%		
Ba3	53	0%	0%	0%	2%	0%	0%	0%	0%	0%	2%	2%	0%	34%	0%	2%	0%	0%	0%	0%	0%	2%	47%	9%		
B1	56	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	2%	4%	0%	41%	5%	2%	2%	0%	0%	0%	0%	32%	11%		
B2	56	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	25%	9%	5%	2%	0%	0%	0%	46%	9%		
B3	51	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	2%	0%	0%	6%	35%	0%	8%	0%	0%	0%	31%	14%		
Caa1	31	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	16%	26%	0%	0%	19%	10%		
Caa2	24	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	8%	38%	8%	0%	8%	25%	8%		
Caa3	36	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	3%	0%	3%	44%	0%	0%	33%	8%		
Ca	33	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	6%	3%	42%	12%	
C	92	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	64%	12%	11%	11%		
Total	4,635																									

Other ABS - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	3,135	8%	1%	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	1%
Aa1	299	9%	1%	1%	0%	5%	0%	3%	2%	2%	6%	3%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	1%	60%	2%
Aa2	286	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	88%	2%
Aa3	285	1%	1%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	1%	0%	0%	0%	2%	86%	1%
A1	264	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	1%	92%	1%
A2	545	6%	1%	0%	2%	1%	1%	0%	0%	0%	0%	1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	1%	81%	3%
A3	382	2%	1%	0%	1%	1%	1%	0%	0%	0%	1%	0%	1%	0%	0%	1%	0%	1%	1%	1%	0%	0%	2%	85%	2%
Baa1	258	2%	0%	0%	1%	0%	1%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%	1%	1%	0%	0%	5%	84%	2%
Baa2	348	1%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	88%	4%
Baa3	477	0%	0%	0%	0%	0%	0%	0%	2%	1%	1%	1%	1%	1%	0%	0%	3%	0%	0%	1%	0%	0%	3%	82%	3%
Ba1	156	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	0%	0%	2%	1%	0%	2%	1%	2%	0%	0%	3%	84%	2%
Ba2	132	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	2%	7%	0%	1%	7%	77%	4%
Ba3	73	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	84%	4%
B1	67	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	3%	0%	0%	1%	1%	3%	1%	9%	69%	6%
B2	121	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	7%	86%	4%
B3	100	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	4%	9%	76%	8%
Caa1	91	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%	0%	2%	2%	3%	85%	3%
Caa2	41	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	2%	10%	5%	76%	5%
Caa3	69	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	6%	6%	81%	3%
Ca	77	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	35%	10%	47%	5%
C	104	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	12%	35%	41%	12%
Total	7,310																								

Other Structured Finance Products (Other SFPs)

Other SFPs - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	1,456	93%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%
Aa1	198	1%	94%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	1%
Aa2	108	0%	8%	68%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	2%
Aa3	117	0%	4%	2%	91%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%
A1	134	0%	0%	1%	2%	82%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%
A2	110	0%	0%	0%	1%	2%	85%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
A3	57	2%	0%	0%	0%	11%	7%	67%	4%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%
Baa1	51	0%	0%	0%	0%	2%	8%	4%	65%	4%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	6%
Baa2	38	0%	0%	0%	3%	0%	0%	0%	11%	58%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	3%
Baa3	75	0%	0%	0%	0%	0%	0%	0%	7%	3%	76%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	9%
Ba1	41	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	88%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
Ba2	18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	28%	6%	0%	0%	6%	0%	0%	0%	0%	0%	6%	6%
Ba3	24	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	42%	8%	8%	4%	4%	8%	0%	0%	0%	0%	17%	4%
B1	29	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	14%	24%	10%	7%	0%	3%	0%	0%	3%	0%
B2	46	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	4%	11%	4%	0%	0%	0%	0%	0%	11%
B3	47	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	57%	26%	0%	4%	2%	0%	0%	0%	9%
Caa1	80	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%	4%	1%	0%	1%	0%	6%	5%
Caa2	197	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	87%	2%	1%	0%	0%	4%	7%
Caa3	335	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	87%	1%	1%	2%	2%	7%
Ca	374	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	91%	1%	0%	1%	7%
C	361	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%	6%	9%
Total	3,896																								

Other SFPs - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	1,318	81%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	1%
Aa1	289	53%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%
Aa2	174	5%	23%	31%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	3%
Aa3	76	4%	8%	14%	53%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	1%
A1	137	1%	4%	1%	28%	31%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	1%
A2	143	0%	6%	1%	2%	14%	41%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	3%
A3	107	2%	2%	0%	2%	23%	19%	22%	5%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	3%
Baa1	85	0%	0%	0%	0%	4%	5%	4%	9%	2%	1%	2%	0%	6%	0%	0%	0%	1%	0%	0%	0%	0%	0%	24%	42%
Baa2	73	0%	3%	0%	4%	5%	7%	4%	14%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32%	29%
Baa3	82	0%	0%	0%	0%	0%	0%	1%	5%	1%	17%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	44%
Ba1	95	0%	0%	0%	1%	1%	0%	1%	1%	1%	23%	24%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	32%
Ba2	57	0%	0%	0%	0%	0%	4%	2%	2%	11%	4%	2%	5%	0%	5%	0%	0%	2%	0%	0%	0%	0%	0%	21%	44%
Ba3	62	0%	0%	0%	0%	0%	0%	2%	6%	6%	0%	3%	0%	15%	3%	6%	6%	2%	5%	0%	0%	0%	0%	16%	29%
B1	69	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	6%	3%	0%	12%	4%	13%	10%	6%	3%	1%	0%	0%	16%	20%
B2	116	0%	0%	0%	0%	0%	2%	0%	0%	0%	9%	1%	0%	0%	0%	22%	3%	4%	0%	1%	0%	2%	0%	7%	49%
B3	108	0%	0%	0%	0%	0%	0%	1%	3%	0%	2%	0%	0%	0%	1%	3%	17%	15%	2%	1%	1%	2%	7%	14%	32%
Caa1	168	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	2%	2%	0%	0%	0%	1%	27%	3%	1%	0%	2%	0%	20%	40%
Caa2	476	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	33%	4%	1%	4%	0%	16%	41%
Caa3	574	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	46%	3%	3%	0%	6%	40%
Ca	517	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	2%	55%	3%	2%	7%	30%
C	624	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	41%	3%	21%	28%
Total	5,350																								

Other SFPs - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	2,665	6%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	26%	
Aa1	227	3%	7%	4%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	22%	
Aa2	285	1%	1%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	31%	
Aa3	235	3%	2%	0%	1%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	36%	
A1	184	1%	2%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	65%	29%	
A2	213	0%	0%	0%	0%	10%	6%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	22%	
A3	190	1%	0%	1%	0%	0%	0%	5%	3%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	74%	17%	
Baa1	124	0%	0%	0%	0%	1%	2%	2%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%	1%	66%	25%	
Baa2	146	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	5%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%	64%	28%	
Baa3	132	0%	0%	0%	0%	0%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	3%	62%	31%	
Ba1	145	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	0%	6%	61%	26%	
Ba2	104	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	5%	71%	21%	
Ba3	162	0%	0%	0%	0%	0%	1%	0%	2%	0%	12%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	2%	51%	28%	
B1	160	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	49%	46%	
B2	202	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	46%	50%	
B3	259	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	1%	6%	34%	54%	
Caa1	359	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	24%	69%	
Caa2	497	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	4%	22%	71%	
Caa3	821	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%	1%	0%	10%	20%	67%	
Ca	823	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%	9%	49%	38%	
C	723	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	18%	51%	26%	
Total	8,656																									

Other SFPs includes the following Moody's rated long-term product lines: *

- » ABCP - Fully Supported
- » ABCP - Other
- » ABS - Leases - Aircraft - Repacs
- » ABS - Repackaged Securities
- » CDO - Repackaged Securities
- » CDO - Repackaged Securities - CBO
- » CDO - Repackaged Securities - CLO
- » CDO - Resecuritization
- » CDO - Resecuritization - Cash Flow
- » CDO - Resecuritization - Synthetic
- » Covered Bonds **
- » MBS - Resecuritized Agency Guaranteed
- » MBS - Resecuritized MBS
- » Other - CAPCO
- » Other - Insurance Linked
- » Other - Repackaged Securities
- » Other - Structured Covered Bonds
- » Other - Structured Notes
- » Other - Tax Credit Linked Structured Notes
- » Structured Investment Vehicles - CDO

* Starting from November 1, 2016, nonconventional securities like Interest-Only (IO) tranches and combination securities (combo notes) are reclassified as other structured finance products.

** Please note that single-issuer covered bonds are reported on deal level instead of on series level. The rationale is that ratings of a covered bond deal are almost always unambiguously the same as ratings of such deal's underlying series. Given a covered bond deal could have as many as 300 series issued under it, reporting on series level would introduce great amount of redundancy. In the rare cases where a covered bond deal has different ratings on its concurrently outstanding series, the rating for a covered bond deal is generally taken as the rating of the highest rated series.

Sovereign Issuers

Sovereign Issuers - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	12	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1	2	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa2	8	0%	0%	50%	38%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa3	6	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A1	6	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A2	7	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A3	6	0%	0%	0%	0%	0%	0%	67%	17%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa1	5	0%	0%	0%	0%	0%	0%	20%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa2	6	0%	0%	0%	0%	0%	0%	0%	17%	67%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa3	9	0%	0%	0%	0%	0%	0%	0%	0%	0%	78%	0%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba1	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba2	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	67%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba3	9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%
B1	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	50%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%
B2	18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	72%	17%	6%	0%	0%	0%	6%	0%	0%	0%
B3	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	13%	0%	0%	0%	13%	0%	0%	0%
Caa1	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	80%	0%	0%	0%	0%	0%	0%	0%
Caa2	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	50%	0%	0%
Caa3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sovereign Issuers - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	12	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1	2	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa2	8	0%	0%	50%	38%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa3	6	0%	0%	0%	83%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A1	6	0%	0%	0%	17%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A2	5	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A3	8	0%	0%	0%	0%	0%	25%	50%	13%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa1	3	0%	0%	0%	0%	0%	0%	33%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa2	10	0%	0%	0%	0%	0%	0%	0%	30%	30%	30%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa3	6	0%	0%	0%	0%	0%	0%	0%	0%	17%	50%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba1	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	50%	0%	13%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba2	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	60%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba3	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	75%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%
B1	12	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	33%	33%	0%	8%	0%	0%	0%	0%	8%	0%	0%
B2	12	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	58%	25%	8%	0%	0%	0%	8%	0%	0%	0%
B3	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	47%	13%	0%	0%	0%	27%	0%	0%	0%
Caa1	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	25%	0%	0%	0%	0%	0%	0%	0%
Caa2	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	25%	0%	50%	0%	0%	0%	0%	0%	0%
Caa3	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Ca	-																								
C	-																								
Total	135																								

Sovereign Issuers - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																				Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	17	71%	12%	6%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1	3	0%	0%	0%	67%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa2	8	0%	0%	25%	13%	25%	13%	13%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa3	7	0%	0%	0%	43%	43%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%
A1	8	0%	0%	13%	13%	25%	25%	0%	0%	0%	13%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A2	2	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A3	4	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	50%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa1	6	0%	0%	0%	0%	0%	17%	17%	33%	0%	17%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa2	3	0%	0%	0%	0%	0%	0%	0%	33%	0%	33%	0%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa3	11	0%	0%	0%	0%	0%	9%	18%	18%	0%	18%	9%	9%	0%	0%	9%	0%	0%	0%	0%	0%	0%	9%	0%	0%
Ba1	9	0%	0%	0%	0%	0%	0%	0%	0%	22%	11%	22%	11%	0%	0%	11%	11%	0%	0%	0%	0%	0%	11%	0%	0%
Ba2	4	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	25%	25%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba3	4	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	25%	25%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
B1	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	21%	7%	14%	21%	14%	0%	0%	0%	0%	14%	0%	0%
B2	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%	20%	0%	0%	0%	0%	0%	40%	0%	0%
B3	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	50%	0%	0%
Caa1	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%
Caa2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caa3	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
Ca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	113																								

United States Public Finance

United States Public Finance - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	709	98%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	
Aa1	1,033	1%	94%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	
Aa2	2,415	0%	2%	93%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	
Aa3	2,196	0%	0%	1%	93%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	
A1	2,016	0%	0%	0%	2%	91%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	
A2	1,144	0%	0%	0%	1%	4%	88%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	
A3	642	0%	0%	0%	0%	1%	3%	89%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	
Baa1	318	0%	0%	0%	0%	0%	1%	4%	81%	7%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	
Baa2	265	0%	0%	0%	0%	0%	0%	3%	4%	82%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	
Baa3	225	0%	0%	0%	0%	0%	0%	0%	3%	4%	84%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	
Ba1	70	0%	0%	0%	0%	0%	0%	0%	0%	4%	6%	73%	9%	4%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%	
Ba2	42	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	2%	71%	10%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	
Ba3	26	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	81%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	
B1	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
B2	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	60%	0%	0%	0%	0%	0%	0%	0%	0%	20%	
B3	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	71%	14%	0%	0%	0%	0%	0%	0%	0%	
Caa1	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	0%	0%	0%	0%	0%	0%	25%	
Caa2	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	
Caa3	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	
Ca	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
C	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
Total	11,133																									

United States Public Finance - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	684	89%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	6%
Aa1	980	6%	80%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	7%
Aa2	2,550	0%	7%	78%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	7%
Aa3	2,229	0%	0%	8%	75%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	9%
A1	2,209	0%	0%	0%	9%	69%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	11%
A2	1,170	0%	0%	0%	2%	11%	65%	6%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	10%
A3	697	0%	0%	0%	0%	3%	13%	63%	6%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	10%
Baa1	318	0%	0%	0%	0%	2%	4%	11%	51%	10%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	15%
Baa2	242	0%	0%	0%	0%	0%	2%	6%	12%	51%	7%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	14%
Baa3	196	0%	0%	1%	0%	1%	1%	3%	5%	18%	46%	7%	3%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	14%
Ba1	64	0%	0%	0%	0%	0%	0%	2%	6%	8%	6%	39%	11%	6%	0%	2%	0%	0%	0%	0%	0%	0%	0%	2%	19%
Ba2	34	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	15%	35%	9%	6%	3%	0%	0%	3%	0%	0%	0%	0%	0%	21%
Ba3	21	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	14%	62%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%
B1	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	7%	14%	29%	7%	0%	7%	0%	0%	0%	0%	0%	0%	21%
B2	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	25%	25%	25%	0%	0%	0%	0%	0%	0%	0%
B3	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	10%	10%	20%	20%	10%	0%	0%	0%	0%	0%	20%
Caa1	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	17%	17%	0%	0%	0%	0%	50%
Caa2	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Caa3	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Ca	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
C	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Total	11,435																								

United States Public Finance - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)			
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	1,046	43%	6%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	26%	
Aa1	935	12%	50%	12%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	15%	
Aa2	3,316	1%	10%	44%	9%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	20%	
Aa3	2,599	0%	1%	12%	35%	8%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	26%	
A1	3,215	0%	0%	2%	10%	27%	6%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	32%	
A2	1,078	0%	0%	0%	4%	12%	22%	7%	3%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%	32%	
A3	478	0%	0%	0%	2%	4%	13%	17%	5%	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	11%	40%	
Baa1	337	0%	0%	0%	0%	1%	6%	9%	13%	6%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	18%	42%	
Baa2	192	0%	0%	0%	1%	1%	1%	4%	5%	12%	4%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	0%	1%	7%	60%	
Baa3	158	0%	0%	1%	0%	1%	2%	1%	1%	8%	11%	4%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	1%	10%	58%	
Ba1	63	0%	0%	0%	0%	3%	0%	0%	3%	10%	10%	3%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	10%	60%	
Ba2	27	0%	0%	0%	0%	0%	0%	4%	4%	7%	4%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%	48%	
Ba3	31	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	6%	16%	68%	
B1	13	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	31%	0%	46%	
B2	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	80%	
B3	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	
Caa1	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	25%	50%	
Caa2	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%		
Caa3	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	67%	0%	0%	
Ca	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
C	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	67%	0%	0%
Total	13,525																									

International Public Finance

International Public Finance - 1-Year Transition and Default Rates

(December 31, 2019 through December 31, 2020)

Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2020 (Percent)																						Other Outcomes During 12/31/2019 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)	
Aaa	17	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa1	11	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa2	23	0%	0%	87%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Aa3	19	0%	0%	5%	74%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	
A1	29	0%	0%	0%	0%	83%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	
A2	7	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
A3	8	0%	0%	0%	0%	0%	13%	75%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Baa1	14	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Baa2	6	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Baa3	19	0%	0%	0%	0%	0%	0%	0%	0%	0%	79%	0%	16%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Ba1	25	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Ba2	18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	67%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	
Ba3	21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	67%	10%	0%	0%	5%	0%	0%	0%	0%	0%	0%	14%	
B1	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	71%	12%	0%	0%	0%	0%	0%	0%	0%	0%	6%	
B2	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%	0%	0%	0%	0%	0%	0%	0%	0%	17%	
B3	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	25%	0%	0%	0%	0%	0%	0%	25%	
Caa1	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	67%	0%	0%	0%	0%	0%	0%	0%	
Caa2	11	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	18%	0%	45%	0%	27%	
Caa3	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
Ca	-																									
C	-																									
Total	260																									

International Public Finance - 3-Year Transition and Default Rates

(December 31, 2017 through December 31, 2020)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2017 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	17	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1	11	0%	82%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%
Aa2	22	0%	9%	68%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
Aa3	10	0%	0%	10%	40%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A1	22	0%	0%	0%	18%	73%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
A2	12	0%	0%	0%	0%	33%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	42%
A3	8	0%	0%	0%	13%	0%	50%	13%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa1	13	0%	0%	0%	0%	0%	8%	31%	46%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa2	15	0%	0%	0%	0%	0%	0%	0%	33%	13%	47%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Baa3	15	0%	0%	0%	0%	0%	0%	0%	0%	13%	40%	13%	20%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Ba1	19	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	21%	26%	11%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	21%
Ba2	29	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48%	14%	14%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	21%
Ba3	24	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%	42%	8%	0%	0%	4%	0%	0%	0%	0%	0%	0%	25%
B1	22	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	23%	45%	14%	0%	0%	0%	0%	0%	0%	0%	0%	14%
B2	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	14%	0%	0%	0%	7%	14%	0%	36%	0%	21%
B3	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	25%	0%	0%	0%	25%
Caa1	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	20%	0%	0%	20%	0%	0%	0%	40%
Caa2	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%
Caa3	-																								
Ca	-																								
C	-																								
Total	264																								

International Public Finance - 10-Year Transition and Default Rates

(December 31, 2010 through December 31, 2020)

Credit Ratings as of 12/31/2010		Credit Ratings as of 12/31/2020 (Percent)																					Other Outcomes During 12/31/2010 - 12/31/2020 (Percent)		
Credit Ratings	Number of Ratings Outstanding	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C	Default	Paid Off	Withdrawn (other)
Aaa	28	50%	14%	7%	7%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%
Aa1	21	10%	29%	10%	10%	5%	0%	10%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	14%
Aa2	34	0%	3%	21%	0%	38%	3%	0%	9%	6%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%
Aa3	20	0%	0%	0%	0%	5%	20%	0%	0%	0%	20%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%
A1	11	0%	0%	0%	9%	0%	9%	0%	0%	0%	18%	27%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%
A2	13	0%	0%	0%	15%	8%	8%	0%	0%	0%	0%	15%	15%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%
A3	4	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	25%
Baa1	9	0%	0%	0%	0%	0%	0%	11%	33%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	44%
Baa2	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Baa3	18	0%	0%	0%	0%	0%	0%	0%	6%	11%	28%	17%	17%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%
Ba1	22	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	9%	9%	9%	5%	5%	0%	9%	0%	0%	0%	0%	0%	0%	50%
Ba2	28	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	7%	25%	4%	7%	0%	0%	0%	0%	0%	0%	0%	0%	46%
Ba3	20	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	15%	25%	10%	5%	0%	0%	0%	0%	0%	0%	5%	35%
B1	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	6%	6%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%
B2	7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	43%	0%	43%
B3	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	75%	0%	0%
Caa1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caa2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caa3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ca	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	257																								

Definition of Symbols

Moody's definitions of the symbols, numbers and scores in the rating scales used by Moody's to denote credit rating categories and notches within those categories for the classes and subclasses of credit ratings shown in the Matrices, are as follows:

Moody's Global Rating Scales

Ratings assigned on Moody's global long-term and short-term rating scales are forward-looking opinions of the relative credit risks of financial obligations issued by non-financial corporates, financial institutions, structured finance vehicles, project finance vehicles, and public sector entities. Moody's defines credit risk as the risk that an entity may not meet its contractual financial obligations as they become due and any estimated financial loss in the event of default or impairment. The contractual financial obligations² addressed by Moody's ratings are those that call for, without regard to enforceability, the payment of an ascertainable amount, which may vary based upon standard sources of variation (e.g., floating interest rates), by an ascertainable date. Moody's rating addresses the issuer's ability to obtain cash sufficient to service the obligation, and its willingness to pay.³ Moody's ratings do not address non-standard sources of variation in the amount of the principal obligation (e.g., equity indexed), absent an express statement to the contrary in a press release accompanying an initial rating.⁴ Long-term ratings are assigned to issuers or obligations with an original maturity of one year or more and reflect both on the likelihood of a default or impairment on contractually promised payments and the expected financial loss suffered in the event of default or impairment. Short-term ratings are assigned to obligations with an original maturity of thirteen months or less and reflect both on the likelihood of a default or impairment on contractually promised payments and the expected financial loss suffered in the event of default or impairment.^{5,6} Moody's issues ratings at the issuer level and instrument level on both the long-term scale and the short-term scale. Typically, ratings are made publicly available, although private and unpublished ratings may also be assigned.

Moody's differentiates structured finance ratings from fundamental ratings (i.e., ratings on nonfinancial corporate, financial institution, and public sector entities) on the global long-term scale by adding (sf) to all structured finance ratings.⁷ The addition of (sf) to structured finance ratings should eliminate any presumption that such ratings and fundamental ratings at the same letter grade level will behave the same. The (sf) indicator for structured finance security ratings indicates that otherwise similarly rated structured finance and fundamental securities may have different risk characteristics. Through its current methodologies, however, Moody's aspires to achieve broad expected equivalence in structured finance and fundamental rating performance when measured over a long period of time.

² In the case of impairments, there can be a financial loss even when contractual obligations are met.

³ For issuer level ratings, see the definition of Issuer Ratings in this Exhibit. In some cases the relevant credit risk relates to a third party, in addition to, or instead of the issuer. Examples include credit-linked notes and guaranteed obligations.

⁴ Because the number of possible features or structures is limited only by the creativity of issuers, Moody's cannot comprehensively catalogue all the types of non-standard variation affecting financial obligations, but examples include indexed values, equity values and cash flows, prepayment penalties, and an obligation to pay an amount that is not ascertainable at the inception of the transaction.

⁵ For certain preferred stock and hybrid securities in which payment default events are either not defined or do not match investors' expectations for timely payment, long-term and short-term ratings reflect the likelihood of impairment and financial loss in the event of impairment.

⁶ Debts held on the balance sheets of official sector institutions – which include supranational institutions, central banks and certain government-owned or controlled banks – may not always be treated the same as debts held by private investors and lenders. When it is known that an obligation is held by official sector institutions as well as other investors, a rating (short-term or long-term) assigned to that obligation reflects only the credit risks faced by non-official sector investors.

⁷ Like other global scale ratings, (sf) ratings reflect both the likelihood of a default and the expected loss suffered in the event of default. Ratings are assigned based on a rating committee's assessment of a security's expected loss rate (default probability multiplied by expected loss severity), and may be subject to the constraint that the final expected loss rating assigned would not be more than a certain number of notches, typically three to five notches, above the rating that would be assigned based on an assessment of default probability alone. The magnitude of this constraint may vary with the level of the rating, the seasoning of the transaction, and the uncertainty around the assessments of expected loss and probability of default.

Global Long-Term Rating Scale

Aaa	Obligations rated Aaa are judged to be of the highest quality, subject to the lowest level of credit risk.
Aa	Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.
A	Obligations rated A are judged to be upper-medium grade and are subject to low credit risk.
Baa	Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics.
Ba	Obligations rated Ba are judged to be speculative and are subject to substantial credit risk.
B	Obligations rated B are considered speculative and are subject to high credit risk.
Caa	Obligations rated Caa are judged to be speculative of poor standing and are subject to very high credit risk.
Ca	Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
C	Obligations rated C are the lowest rated and are typically in default, with little prospect for recovery of principal or interest.

Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. Additionally, a "(hyb)" indicator is appended to all ratings of hybrid securities issued by banks, insurers, finance companies, and securities firms.*

** By their terms, hybrid securities allow for the omission of scheduled dividends, interest, or principal payments, which can potentially result in impairment if such an omission occurs. Hybrid securities may also be subject to contractually allowable write-downs of principal that could result in impairment. Together with the hybrid indicator, the long-term obligation rating assigned to a hybrid security is an expression of the relative credit risk associated with that security.*

Global Short-Term Rating Scale

P-1	Issuers (or supporting institutions) rated Prime-1 have a superior ability to repay short-term debt obligations.
P-2	Issuers (or supporting institutions) rated Prime-2 have a strong ability to repay short-term debt obligations.
P-3	Issuers (or supporting institutions) rated Prime-3 have an acceptable ability to repay short-term obligations.
NP	Issuers (or supporting institutions) rated Not Prime do not fall within any of the Prime rating categories.

Standard Linkage Between the Global Long-Term and Short-Term Rating Scales

The following table indicates the long-term ratings consistent with different short-term ratings when such long-term ratings exist.⁸

LONG-TERM RATING	SHORT-TERM RATING
Aaa Aa1 Aa2 Aa3 A1 A2 A3 Baa1 Baa2 Baa3	Prime-1 Prime-2 Prime-3
Ba1, Ba2, Ba3 B1, B2, B3 Caa1, Caa2, Caa3 Ca, C	Not Prime

Issuer Ratings

Issuer Ratings are opinions of the ability of entities to honor senior unsecured debt and debt like obligations.^{9,10} As such, Issuer Ratings incorporate any external support that is expected to apply to all current and future issuance of senior unsecured financial obligations and contracts, such as explicit support stemming from a guarantee of all senior unsecured financial obligations and contracts, and/or implicit support for issuers subject to joint default analysis (e.g. banks and government-related issuers). Issuer Ratings do not incorporate support arrangements, such as guarantees, that apply only to specific (but not to all) senior unsecured financial obligations and contracts.

While Issuer Ratings reflect the risk that debt and debt-like claims are not serviced on a timely basis, they do not reflect the risk that a contract or other non-debt obligation will be subjected to commercial disputes. Additionally, while an issuer may have senior unsecured obligations held by both supranational institutions and central banks (e.g., IMF, European Central Bank), as well as other investors, Issuer Ratings reflect only the risks faced by other investors.

Long-Term and Short-Term Obligation Ratings

Moody's assigns ratings to long-term and short-term financial obligations. Long-term ratings are assigned to issuers or obligations with an original maturity of one year or more and reflect both on the likelihood of a default on contractually promised payments and the expected financial loss suffered in the event of default. Short-term ratings are assigned to obligations with an original maturity of thirteen months or less and reflect both on the likelihood of a default on contractually promised payments and the expected financial loss suffered in the event of default.

⁸ Structured finance short-term ratings are usually based either on the short-term rating of a support provider or on an assessment of cash flows available to retire the financial obligation.

⁹ Issuer Ratings as applied to US local governments, excluding US K-12 public school districts, typically reflect an unlimited general obligation pledge which may have security and structural features in some states that improve credit quality for general obligation bondholders but not necessarily for other counterparties holding obligations that may lack such features. An Issuer Rating as applied to a US K-12 public school district reflects its ability to repay debt and debt-like obligations without consideration of any pledge, security or structural features.

¹⁰ These opinions exclude debt known to be held by official sector investors because in practice such debt could effectively be treated as either senior or junior to senior unsecured debt held by private sector investors.

Definition of Default

Moody's definition of default is applicable only to debt or debt-like obligations (e.g., swap agreements). Four events constitute a debt default under Moody's definition:

- a. a missed or delayed disbursement of a contractually-obligated interest or principal payment (excluding missed payments cured within a contractually allowed grace period¹¹), as defined in credit agreements and indentures;
- b. a bankruptcy filing or legal receivership by the debt issuer or obligor that will likely cause a miss or delay in future contractually-obligated debt service payments;
- c. a distressed exchange whereby 1) an issuer offers creditors a new or restructured debt, or a new package of securities, cash or assets that amount to a diminished value relative to the debt obligation's original promise and 2) the exchange has the effect of allowing the issuer to avoid a likely eventual default; or
- d. a change in the payment terms of a credit agreement or indenture imposed by the sovereign that results in a diminished financial obligation, such as a forced currency re-denomination (imposed by the debtor, or the debtor's sovereign) or a forced change in some other aspect of the original promise, such as indexation or maturity.¹²

We include distressed exchanges in our definition of default in order to capture credit events whereby issuers effectively fail to meet their debt service obligations but do not actually file for bankruptcy or miss an interest or principal payment. Moody's employs fundamental analysis in assessing the likelihood of future default and considers various indicators in assessing loss relative to the original promise, which may include the yield to maturity of the debt being exchanged.

Moody's definition of default does not include so-called "technical defaults," such as maximum leverage or minimum debt coverage violations, unless the obligor fails to cure the violation and fails to honor the resulting debt acceleration which may be required. For structured finance securities, technical defaults (such as breach of an overcollateralization test or certain other events of default as per the legal documentation of the issuer), or a temporary missed interest payment on a security whose terms allow for the deferral of such payments together with corresponding interest (such as PIKable securities) prior to its legal final maturity date do not constitute defaults.

Also excluded are payments owed on long-term debt obligations which are missed due to purely technical or administrative reasons which are 1) not related to the ability or willingness to make the payments and 2) are cured in very short order (typically, 1-2 business days after the technical/administrative issue is recognized).

Finally, in select instances based on the facts and circumstances, missed payments on financial contracts or claims may be excluded if they are the result of legal disputes regarding the validity of those claims.

Credit Rating Histories

The credit rating histories required to be disclosed pursuant to 17 CFR 17g-7(b) are located on Moody's website, www.moodys.com, at the following URL: <https://www.moodys.com/Pages/reg001004.aspx>.

¹¹ Among some structured finance asset classes, missed scheduled payments impose meaningful investor losses even though such payments are not contractually obligated. Therefore, for structured finance securities, Moody's practice is to recognize that a default has occurred if a material interest payment has been missed for 12 months or longer or if there has been a material principal loss (or writedown) to the security. If such an interest or principal shortfall is subsequently reduced below the materiality threshold of 50 basis points of the original balance of the security, then the default is cured.

¹² Moreover, unlike a general tax on financial wealth, the imposition of a tax by a sovereign on the coupon or principal payment on a specific class of government debt instruments (even if retroactive) would represent a default. Targeted taxation on government securities would represent a default even if the government's action were motivated by fairness or other considerations, rather than inability or unwillingness to pay.