

S&P Global Ratings
Credit Ratings Performance
Measurement Statistics

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Table 1		Financial Institutions, Brokers, or Dealers Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																								
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	4	75.00%	25.00%																							
AA+	22		100.00%																							
AA	15			100.00%																						
AA-	77				87.01%	3.90%	1.30%																		7.79%	
A+	81				1.23%	81.48%	8.64%			1.23%															7.41%	
A	140					2.86%	87.86%	5.00%																	4.29%	
A-	109						8.26%	81.65%	5.50%																4.59%	
BBB+	167							0.60%	10.18%	73.05%	10.78%														5.39%	
BBB	133								0.75%	18.80%	68.42%	6.77%	0.75%												4.51%	
BBB-	114									0.88%	16.67%	61.40%	5.26%	7.02%	0.88%										7.02%	
BB+	70											14.29%	64.29%	5.71%											12.86%	
BB	80											1.25%	5.00%	63.75%	7.50%										22.50%	
BB-	90											1.11%	2.22%	8.89%	61.11%	10.00%	1.11%								15.56%	
B+	63												1.59%	17.46%	55.56%	7.94%	1.59%								15.87%	
B	65													1.54%	12.31%	66.15%	9.23%	1.54%	1.54%				1.54%		6.15%	
B-	65														13.85%	4.62%	69.23%	1.54%					1.54%		9.23%	
CCC+	14																21.43%	42.86%					28.57%		7.14%	
CCC	6																50.00%	16.67%	16.67%						16.67%	
CCC-	2																50.00%								50.00%	
CC																										
C																										
Total	1317																									

Table 2		Financial Institutions, Brokers, or Dealers Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																									
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)					
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)		
AAA	4	50.00%	25.00%																						25.00%		
AA+	24	4.17%	87.50%	4.17%																						4.17%	
AA	20		5.00%	65.00%	15.00%	5.00%																				10.00%	
AA-	72				77.78%	9.72%																				12.50%	
A+	85				4.71%	32.94%	40.00%	1.18%	4.71%	1.18%																15.29%	
A	156					16.67%	48.72%	17.31%	2.56%																	14.74%	
A-	118					1.69%	11.02%	48.31%	22.03%	1.69%			0.85%													14.41%	
BBB+	131							12.21%	55.73%	19.08%	2.29%		0.76%	2.29%												7.63%	
BBB	106							1.89%	16.04%	53.77%	7.55%	0.94%	0.94%													18.87%	
BBB-	139								2.88%	15.83%	33.09%	12.23%	10.79%	0.72%												23.02%	
BB+	71								4.23%	4.23%	8.45%	26.76%	19.72%	4.23%	2.82%											28.17%	
BB	59								1.69%		11.86%	8.47%	25.42%	18.64%	3.39%											30.51%	
BB-	78										2.56%	2.56%	12.82%	33.33%	11.54%	7.69%	2.56%							1.28%		25.64%	
B+	66									1.52%		1.52%	1.52%	15.15%	30.30%	13.64%	4.55%							10.61%		21.21%	
B	83										1.20%	1.20%		3.61%	7.23%	31.33%	21.69%		1.20%						7.23%	25.30%	
B-	44															9.09%	43.18%	4.55%							18.18%	25.00%	
CCC+	17														41.18%		5.88%								29.41%	23.53%	
CCC	3																	33.33%							66.67%		
CCC-	4														25.00%		25.00%									50.00%	
CC																											
C																											
Total	1280																										

Table 3		Financial Institutions, Brokers, or Dealers Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	36	8.33%	41.67%	11.11%	2.78%	2.78%	2.78%				2.78%														27.78%	
AA+	27		14.81%	7.41%	3.70%	11.11%	11.11%		3.70%																	48.15%
AA	89		1.12%	5.62%	12.36%	12.36%	10.11%	6.74%	5.62%	2.25%	1.12%															42.70%
AA-	110		0.91%		15.45%	6.36%	20.91%	6.36%	6.36%	4.55%	0.91%															37.27%
A+	117			0.85%	9.40%	8.55%	16.24%	6.84%	8.55%	4.27%	2.56%		0.85%			0.85%										40.17%
A	146				1.37%	4.11%	15.07%	11.64%	10.96%	3.42%	3.42%		0.68%	1.37%												45.21%
A-	114					2.63%	6.14%	23.68%	5.26%	10.53%	2.63%	2.63%	1.79%	0.89%	3.51%											40.35%
BBB+	112					0.89%		9.82%	16.96%	8.93%	6.25%	2.68%	1.79%	0.89%												46.43%
BBB	77							2.60%	15.58%	20.78%	2.60%	5.19%	1.30%	1.30%	2.60%											37.66%
BBB-	75							2.67%	13.33%	8.00%	9.33%	5.33%	5.33%	2.67%												41.33%
BB+	44								2.27%	4.55%	4.55%	2.27%	18.18%		2.27%	6.82%	4.55%									45.45%
BB	35						2.86%		2.86%	2.86%	2.86%	8.57%	8.57%	5.71%	2.86%	5.71%	5.71%									45.71%
BB-	57								1.75%	1.75%		3.51%	15.79%	7.02%	3.51%	5.26%										56.14%
B+	40									2.50%				5.00%	12.50%	2.50%	2.50%									57.50%
B	39									2.56%				2.56%	2.56%	12.82%	2.56%									53.85%
B-	20													5.00%	5.00%	15.00%	35.00%									35.00%
CCC+	8																									62.50%
CCC	4													25.00%												25.00%
CCC-																										
CC	1																									100.00%
C																										
Total	1151																									

Table 4		Insurance Companies Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																								
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA																										
AA+	14		100.00%																							
AA	38			100.00%																						
AA-	73				94.52%	1.37%																			4.11%	
A+	150				2.00%	86.67%	6.00%	0.67%																	4.67%	
A	155					3.23%	90.32%	3.87%																	2.58%	
A-	144						2.78%	85.42%	3.47%																8.33%	
BBB+	82						1.22%	3.66%	76.83%	6.10%	2.44%														9.76%	
BBB	58								12.07%	62.07%	5.17%	12.07%		1.72%												6.90%
BBB-	26									7.69%	65.38%															26.92%
BB+	16										6.25%	81.25%		6.25%												6.25%
BB	19											21.05%	52.63%	5.26%												21.05%
BB-	11											9.09%	9.09%	45.45%	9.09%											27.27%
B+	9													11.11%	33.33%	22.22%										33.33%
B	39														12.82%	58.97%	15.38%							2.56%		10.26%
B-	6															33.33%	50.00%									16.67%
CCC+																										
CCC	1																									100.00%
CCC-																										
CC																										
C																										
Total	841																									

Table 5		Insurance Companies Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																								
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA																										
AA+	15		93.33%	6.67%																						
AA	37			94.59%																					5.41%	
AA-	81				72.84%	17.28%		1.23%																	8.64%	
A+	135				5.93%	67.41%	15.56%																		11.11%	
A	149			0.67%		12.75%	62.42%	9.40%	0.67%		0.67%														13.42%	
A-	148				0.68%		15.54%	63.51%	5.41%		0.68%		0.68%												13.51%	
BBB+	87						1.15%	10.34%	47.13%	6.90%	2.30%	4.60%					1.15%								26.44%	
BBB	56						1.79%	1.79%	23.21%	48.21%	7.14%												1.79%		16.07%	
BBB-	39				2.56%			2.56%		12.82%	33.33%	5.13%	2.56%												41.03%	
BB+	19								5.26%		10.53%	31.58%	5.26%												36.84%	
BB	19											15.79%	26.32%	15.79%											42.11%	
BB-	12								8.33%				16.67%	8.33%	8.33%										50.00%	
B+	8											12.50%	12.50%		25.00%										12.50%	37.50%
B	23															17.39%	47.83%	17.39%						12.50%	4.35%	13.04%
B-	8											12.50%				12.50%										75.00%
CCC+	2																									100.00%
CCC																										
CCC-																										
CC																										
C																										
Total	838																									

Table 6		Insurance Companies Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	38		34.21%	23.68%	2.63%																		2.63%		36.84%	
AA+	9			22.22%	22.22%	11.11%	22.22%																			22.22%
AA	83		1.20%	14.46%	16.87%	14.46%	9.64%	1.20%	4.82%			1.20%											6.02%			30.12%
AA-	80			5.00%	23.75%	28.75%	8.75%	1.25%	2.50%	1.25%					1.25%											27.50%
A+	94			5.32%	5.32%	27.66%	11.70%	8.51%	2.13%	2.13%																37.23%
A	127			0.79%	3.94%	13.39%	29.92%	11.02%	3.94%			0.79%				0.79%							0.79%			34.65%
A-	118				2.54%	2.54%	24.58%	28.81%	5.08%	0.85%		0.85%	0.85%										1.69%			32.20%
BBB+	82					2.44%	8.54%	23.17%	17.07%	4.88%	3.66%	1.22%														39.02%
BBB	53					1.89%		7.55%	13.21%	15.09%	5.66%	1.89%														54.72%
BBB-	44							2.27%	11.36%	11.36%	6.82%	4.55%	2.27%		2.27%								4.55%			54.55%
BB+	22								9.09%	9.09%	4.55%	4.55%											4.55%			68.18%
BB	13										15.38%	7.69%			7.69%											69.23%
BB-	10										10.00%		20.00%	10.00%												60.00%
B+	10											10.00%	10.00%		10.00%	10.00%										60.00%
B	15														6.67%	13.33%										73.33%
B-	4																						75.00%			25.00%
CCC+																										
CCC	2																									100.00%
CCC-	1																									100.00%
CC	1																									100.00%
C																										
Total	806																									

Table 7		Corporate Issuers Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	10	60.00%	40.00%																						
AA+	5		100.00%																						
AA	26		3.85%	88.46%	7.69%																				
AA-	66			1.52%	81.82%	12.12%	1.52%																		3.03%
A+	85				2.35%	78.82%	11.76%	4.71%		1.18%	1.18%														
A	178					6.74%	84.27%	5.62%		0.56%															2.81%
A-	313						3.19%	89.14%	4.15%	0.96%	0.32%														2.24%
BBB+	390							4.10%	88.97%	4.36%															2.56%
BBB	437					0.23%		0.23%	7.09%	82.84%	3.89%	1.37%		0.23%											4.12%
BBB-	393					0.25%			1.53%	9.92%	79.13%	2.29%	2.04%		0.25%										4.58%
BB+	287							0.35%		0.35%	10.80%	75.26%	5.57%	0.70%	1.05%										5.92%
BB	356										0.56%	9.83%	71.91%	5.90%	0.84%	0.56%							0.28%		10.11%
BB-	388											1.03%	10.57%	66.75%	7.22%	2.58%	0.52%								11.34%
B+	415											0.24%	1.93%	8.67%	57.11%	12.29%	1.69%	0.72%	0.24%	0.48%			0.48%		16.14%
B	825													0.48%	5.94%	62.55%	10.67%	1.45%	0.48%	0.61%			0.24%		17.58%
B-	347													1.15%	2.02%	12.97%	54.47%	8.36%	2.31%	1.44%	1.15%		3.17%		12.97%
CCC+	127								0.79%							3.15%	15.75%	33.07%	7.09%	3.15%	0.79%		15.75%		20.47%
CCC	56															1.79%	12.50%	8.93%	23.21%	8.93%			32.14%		12.50%
CCC-	24														4.17%		8.33%	4.17%	4.17%	4.17%	4.17%		50.00%		20.83%
CC	14																						7.14%		71.43%
C																									
Total	4742																								

Table 8		Corporate Issuers Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																									
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)					
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)		
AAA	12	50.00%	50.00%																								
AA+	5		40.00%	20.00%		20.00%	20.00%																				
AA	28		3.57%	50.00%	28.57%	3.57%																			14.29%		
AA-	61		4.92%	62.30%	22.95%	1.64%	1.64%	1.64%																		4.92%	
A+	96			5.21%	6.25%	53.13%	15.63%	7.29%	1.04%	1.04%	1.04%															9.38%	
A	181					4.42%	56.91%	19.34%	7.73%	1.66%	1.10%		0.55%													8.29%	
A-	271				0.37%	2.95%	7.75%	61.62%	13.65%	5.17%	1.48%				0.37%											6.64%	
BBB+	367						2.18%	14.17%	58.58%	10.90%	3.00%	1.36%	0.82%	0.27%	0.27%											8.45%	
BBB	478					0.21%		5.65%	17.57%	52.51%	7.53%	1.88%	1.26%	1.26%		0.42%		0.21%		0.21%						11.30%	
BBB-	403			0.25%		0.25%		0.25%	3.97%	14.39%	45.16%	9.43%	3.47%	2.48%	0.99%	0.50%	0.25%			0.50%			0.25%			17.87%	
BB+	294								0.34%	4.08%	17.69%	37.41%	12.24%	3.06%	1.70%	1.70%	1.02%	0.34%	0.34%				2.38%			17.69%	
BB	313											0.32%	4.79%	16.61%	37.70%	13.10%	3.51%	3.19%	0.64%	0.32%			0.96%			18.53%	
BB-	367											1.09%	0.82%	14.71%	28.88%	10.08%	9.26%	1.63%	0.82%	0.82%			3.81%			28.07%	
B+	494											1.21%	4.45%	12.75%	23.08%	12.75%	4.86%	1.01%	0.61%	0.40%			5.87%			33.00%	
B	931											0.11%	1.07%	2.69%	5.91%	27.39%	10.20%	4.30%	1.29%	0.43%	0.21%	10.20%	8.59%	1.29%		37.81%	
B-	346												0.87%	0.29%	2.60%	10.40%	21.39%	4.34%	1.45%	0.87%	0.58%	20.23%				36.99%	
CCC+	82									1.22%		1.22%				2.44%	3.66%	9.76%	2.44%	3.66%	2.44%		40.24%			32.93%	
CCC	28															7.14%	10.71%		3.57%				39.29%			39.29%	
CCC-	24													4.17%	8.33%	8.33%	12.50%						37.50%			29.17%	
CC	6																						83.33%			16.67%	
C																											
Total	4787																										

Table 9		Corporate Issuers Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	15	26.67%	13.33%	26.67%	13.33%	6.67%	6.67%																		6.67%	
AA+	14		14.29%	7.14%	21.43%	7.14%	7.14%	28.57%																		14.29%
AA	58		5.17%	10.34%	25.86%	12.07%	3.45%	6.90%	3.45%	3.45%																29.31%
AA-	56			5.36%	16.07%	21.43%	7.14%	12.50%	7.14%																	30.36%
A+	101				9.90%	20.79%	18.81%	16.83%	0.99%	3.96%	1.98%	2.97%														23.76%
A	204			2.94%	1.96%	6.37%	21.08%	19.61%	10.78%	6.86%	2.45%	0.98%		0.49%			0.49%							0.49%		25.49%
A-	267			0.75%	0.37%	0.75%	12.36%	26.97%	21.72%	8.24%	3.37%	1.50%	0.75%		0.37%		0.37%									22.10%
BBB+	323				0.31%	0.93%	4.64%	17.03%	22.29%	18.27%	6.19%	2.17%	0.62%	0.31%	0.62%	0.62%			0.31%	0.31%				0.31%		25.08%
BBB	363					1.65%	1.38%	7.44%	14.05%	20.39%	13.77%	3.31%	3.03%	1.10%	0.83%					0.28%				0.28%		32.51%
BBB-	293					0.34%	0.34%	3.07%	13.65%	20.14%	12.63%	7.51%	2.05%	1.37%	1.02%	0.34%								2.05%		35.49%
BB+	180					0.56%			1.67%	6.11%	13.89%	14.44%	7.22%	6.11%	3.33%	3.89%									3.33%	38.89%
BB	255				0.39%			0.78%	2.75%	2.75%	6.67%	10.20%	10.98%	5.49%	2.35%	2.75%	2.35%	0.78%	1.18%					7.45%		43.14%
BB-	374					0.53%	0.80%		1.34%	0.53%	3.21%	5.08%	9.63%	7.22%	6.42%	1.60%	1.34%		0.27%	0.27%				16.04%		45.72%
B+	425								0.47%	0.47%	0.71%	1.65%	3.29%	4.47%	4.71%	6.59%	3.53%	0.94%		0.24%				18.59%		54.35%
B	554									0.54%	0.36%	0.54%	1.81%	2.71%	2.71%	3.79%	1.99%	0.18%						31.95%		53.43%
B-	213										0.47%	1.41%		1.88%	0.94%	3.76%	1.88%	0.47%						38.03%		51.17%
CCC+	52												1.92%												55.77%	42.31%
CCC	22																								81.82%	18.18%
CCC-	4																								50.00%	50.00%
CC	4																								75.00%	25.00%
C																										
Total	3777																									

Table 10		Issuers of Asset-Backed Securities - Residential Mortgage-Backed Securities Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																			Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	3542	81.11%	0.20%	0.28%		0.03%						0.03%	0.03%				0.03%						0.03%	17.96%	0.31%
AA+	1955	3.07%	74.07%	0.26%	0.77%	0.92%	0.36%	0.51%	0.26%	0.46%		0.15%	0.10%		0.51%	0.05%	0.41%		0.05%				0.10%	13.30%	4.65%
AA	866	5.20%	4.73%	72.17%	0.23%	0.92%	0.69%	0.35%			0.35%	0.23%		0.12%	0.12%	0.12%			0.23%				0.35%	13.16%	1.04%
AA-	393	2.80%	7.89%	14.25%	54.96%	1.27%	0.51%	0.76%	0.25%	0.25%	1.02%	0.51%												15.27%	0.25%
A+	1546	1.62%	3.56%	2.46%	1.55%	72.90%	0.06%	0.32%	2.01%	0.71%	0.26%	0.26%	0.26%	0.39%	0.06%				0.06%				0.45%	11.71%	1.36%
A	770	1.30%	1.69%	5.19%	2.47%	9.74%	60.91%	0.26%	1.82%	1.17%	0.65%	0.52%	0.39%		0.13%		0.13%		0.13%				0.39%	11.30%	1.82%
A-	528		0.95%	0.38%	2.46%	1.70%	33.52%	40.15%	1.14%	1.33%	0.57%	0.38%			0.38%	0.19%							0.38%	15.91%	0.57%
BBB+	930	0.65%	2.80%	1.72%	0.22%	5.05%	5.48%	1.61%	61.29%	0.54%	0.97%	2.47%	0.75%	0.11%	0.86%				0.54%				0.75%	12.04%	2.15%
BBB	732	0.55%	1.64%	1.64%	0.68%	1.78%	6.42%	2.46%	2.19%	65.03%	0.82%	0.68%	1.91%	0.14%	0.41%	0.27%	0.41%						0.55%	9.56%	2.87%
BBB-	377		1.06%	1.33%		3.18%	2.12%	2.65%	5.04%	1.33%	62.86%	3.45%	1.59%	2.39%	0.27%	0.53%			0.27%				0.80%	9.55%	1.59%
BB+	918	0.44%	0.54%	0.98%		1.85%	1.20%	0.65%	4.79%	2.61%	0.76%	61.44%	0.65%	1.53%	1.31%	0.98%	2.61%		0.76%				1.74%	12.64%	2.51%
BB	535	0.37%		1.50%	0.19%	1.12%	2.24%	0.37%	2.62%	6.54%	2.24%	1.31%	65.61%	0.37%	0.93%	3.36%	0.56%		0.75%				0.56%	8.04%	1.31%
BB-	356			0.84%		0.56%	1.12%	0.56%	0.56%	2.53%	1.97%	3.65%	2.25%	61.80%	1.12%	3.93%	4.49%		1.40%				2.25%	9.55%	1.40%
B+	444			0.90%			0.68%	0.23%	2.03%	1.80%	1.13%	4.05%	3.15%	0.45%	59.91%	1.80%	6.31%		2.03%				0.23%	7.88%	7.43%
B	574			0.17%		0.70%	0.35%		0.52%	1.74%	0.35%	1.92%	5.23%	1.22%	0.87%	66.72%	2.79%		4.53%				1.74%	9.23%	1.92%
B-	1204	0.08%	0.08%	0.33%		0.42%	0.50%	0.08%	0.33%	0.75%	0.58%	1.58%	2.08%	0.50%	2.57%	0.66%	71.35%		5.90%				0.33%	8.22%	3.65%
CCC+	15																	86.67%					13.33%		
CCC	7445			0.01%			0.04%		0.04%	0.12%	0.03%	0.09%	0.27%	0.07%	0.13%	0.81%	0.44%		85.39%	0.01%	0.31%		5.01%	4.02%	3.21%
CCC-	13																		76.92%	15.38%			7.69%		
CC	1301																0.15%		3.84%		74.87%		17.68%	2.46%	1.00%
C																									
Total	24444																								

Table 11		Issuers of Asset-Backed Securities - Residential Mortgage-Backed Securities Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																								
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																			Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)					
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	3599	57.24%	1.36%	0.44%	0.19%	0.28%	0.11%	0.03%	0.08%		0.06%	0.11%	0.06%	0.03%	0.03%		0.03%		0.22%				0.06%	38.79%	0.89%	
AA+	2423	4.46%	46.88%	1.40%	1.82%	2.23%	0.83%	0.95%	0.78%	0.54%	0.37%	0.62%	0.12%	0.12%	0.54%	0.08%	0.45%		0.25%				0.70%	27.40%	9.45%	
AA	1033	12.68%	5.91%	26.62%	0.68%	0.97%	0.77%	1.36%	1.16%	0.10%	0.77%	0.58%	0.19%	0.10%	0.19%	0.39%			1.16%				1.74%	42.40%	2.23%	
AA-	350	4.86%	7.43%	14.57%	21.71%	4.29%	3.43%	1.71%	1.71%		0.29%	0.86%				0.29%								37.14%	1.71%	
A+	2142	2.19%	9.57%	7.05%	2.47%	37.63%	2.33%	1.77%	2.94%	2.19%	1.21%	1.35%	0.61%	0.33%	0.51%	0.14%	0.42%		0.51%				1.03%	23.53%	2.19%	
A	1216	4.52%	1.64%	5.02%	2.71%	6.17%	22.04%	3.54%	0.66%	0.49%	0.49%	0.41%	0.41%	0.08%	0.08%	0.66%	0.16%		0.58%				0.49%	46.38%	3.45%	
A-	251	0.80%	2.79%	2.39%	7.97%	7.97%	21.12%	4.78%	2.39%	1.59%	1.20%	0.80%	0.40%	0.40%	0.40%	0.40%			1.99%				1.59%	31.08%	2.79%	
BBB+	1415	0.71%	4.17%	2.97%	1.27%	13.22%	8.41%	1.27%	24.03%	2.76%	2.83%	3.67%	1.34%	0.64%	0.92%	1.41%	0.78%		2.40%				1.06%	22.69%	3.46%	
BBB	1020	2.65%	3.43%	3.73%	1.57%	4.12%	9.12%	3.63%	2.25%	21.96%	2.06%	1.76%	1.76%	0.69%	0.69%	1.18%	1.08%		0.98%				1.37%	33.24%	2.75%	
BBB-	452	0.22%	2.21%	2.43%	0.22%	5.09%	7.52%	3.54%	8.41%	3.76%	18.81%	6.42%	1.11%	3.10%	2.21%	2.43%	4.42%		2.21%				1.77%	22.35%	1.77%	
BB+	1161	0.60%	0.95%	1.21%	0.09%	3.19%	3.10%	0.43%	6.20%	4.57%	1.46%	29.20%	2.58%	2.07%	1.89%	2.67%	6.20%		4.82%				2.07%	20.33%	6.37%	
BB	711	0.70%	0.42%	2.25%	0.28%	3.09%	3.38%	0.70%	6.89%	8.58%	3.66%	3.94%	22.22%	2.67%	3.23%	3.52%	3.52%		5.34%				0.70%	21.66%	3.23%	
BB-	399	1.50%		1.25%		0.75%	2.51%	2.76%	3.01%	4.26%	4.26%	6.27%	3.76%	24.56%	4.01%	2.76%	8.02%		6.77%				1.75%	20.30%	1.50%	
B+	524		0.19%	3.05%		0.19%	0.57%	0.57%	4.77%	3.82%	1.91%	4.58%	4.77%	1.34%	25.19%	2.29%	13.36%		7.06%				2.29%	16.98%	7.06%	
B	825	0.36%	0.36%	0.73%	0.24%	0.73%	1.33%	0.12%	1.09%	3.64%	1.70%	4.00%	6.18%	2.18%	2.06%	20.73%	7.15%		11.88%		0.36%		2.42%	14.06%	18.67%	
B-	1467	0.07%	0.34%	0.55%	0.14%	0.68%	1.16%	0.20%	1.30%	1.36%	0.95%	2.59%	3.61%	2.25%	2.86%	2.45%	34.76%	0.41%	19.22%				3.00%	16.56%	5.52%	
CCC+	11																	63.64%	9.09%	9.09%			18.18%			
CCC	8675	0.01%	0.01%	0.07%		0.02%	0.13%	0.02%	0.22%	0.35%	0.02%	0.36%	0.69%	0.30%	0.50%	1.67%	1.66%		63.03%	0.03%	2.21%		19.60%	6.44%	2.65%	
CCC-	11																		63.64%	18.18%			18.18%			
CC	3084			0.03%		0.03%	0.06%		0.03%				0.16%	0.06%	0.06%	0.03%	0.23%	0.45%		13.75%				50.71%	5.77%	2.72%
C																										
Total	30769																									

Table 12		Issuers of Asset-Backed Securities - Residential Mortgage-Backed Securities Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																							
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	45933	1.42%	2.98%	0.96%	0.31%	2.15%	0.84%	0.33%	1.14%	0.67%	0.42%	0.76%	0.53%	0.35%	0.43%	0.52%	1.01%		8.08%		0.86%		30.63%	26.92%	18.64%
AA+	3191	0.50%	1.47%	0.72%	0.16%	1.16%	0.91%	0.34%	0.97%	0.88%	0.63%	1.94%	1.00%	0.72%	1.00%	1.13%	3.20%		11.16%		1.35%		51.36%	14.92%	4.48%
AA	5997	0.63%	0.63%	1.00%	0.27%	1.30%	1.43%	0.38%	1.00%	0.68%	0.40%	2.07%	0.60%	0.50%	0.68%	1.08%	2.15%	0.03%	11.01%		1.37%		49.82%	18.11%	4.84%
AA-	1812	0.39%	0.55%	0.50%	0.22%	1.27%	0.50%	0.33%	0.94%	0.33%	0.44%	1.21%	0.33%	0.28%	0.28%	0.94%	1.66%		10.76%		1.88%		67.27%	7.34%	2.59%
A+	2100	0.29%	0.43%	0.33%	0.10%	0.67%	0.38%	0.52%	0.86%	0.48%	0.24%	0.95%	0.52%	0.29%	0.43%	0.95%	1.57%	0.05%	10.33%		2.00%		69.48%	7.33%	1.81%
A	4748	0.27%	0.11%	0.25%	0.29%	0.84%	1.39%	0.32%	0.57%	0.53%	0.36%	0.70%	0.44%	0.32%	0.51%	0.51%	1.37%	0.02%	10.36%	0.04%	1.66%		62.13%	13.29%	3.73%
A-	2103	0.05%	0.10%	0.14%		0.38%	0.24%	0.29%	0.38%	0.24%	0.14%	0.38%	0.33%	0.10%	0.33%	0.52%	1.09%	0.05%	9.61%		2.95%		71.42%	8.89%	2.38%
BBB+	2245	0.18%				0.36%	0.31%	0.04%	0.27%	0.31%	0.13%	0.45%	0.22%	0.18%	0.09%	0.31%	0.62%		7.08%		2.49%		78.17%	7.48%	1.29%
BBB	4357	0.14%	0.18%		0.11%	0.25%	0.16%	0.21%	0.30%	0.44%	0.21%	0.50%	0.62%	0.18%	0.14%	0.44%	0.99%	0.14%	4.25%	0.02%	1.77%		69.86%	15.06%	4.04%
BBB-	2012		0.05%				0.05%	0.10%	0.25%	0.15%	0.10%	0.20%	0.15%	0.25%	0.20%	0.25%	0.40%		3.13%	0.05%	1.59%		81.26%	9.39%	2.44%
BB+	964					0.21%			0.21%			0.10%				0.21%	0.31%		1.45%		1.24%		87.55%	6.95%	1.76%
BB	3370						0.06%	0.03%	0.06%		0.06%	0.03%	0.12%		0.21%	0.45%	1.19%	0.03%	1.72%	0.09%	1.07%		84.09%	7.66%	3.15%
BB-	447								0.22%	0.22%					0.22%	0.22%	0.89%		0.89%		0.67%		87.70%	7.38%	1.57%
B+	304																0.33%		0.99%		0.99%		92.43%	3.95%	1.32%
B	3226					0.03%						0.03%	0.03%				0.12%		0.71%		0.59%		93.03%	3.87%	1.58%
B-	359																0.28%		0.56%				94.99%	3.62%	0.56%
CCC+																									
CCC	2227																		0.09%		0.22%		96.41%	1.30%	1.98%
CCC-	22																			9.09%			86.36%	4.55%	
CC	3																						66.67%		33.33%
C																									
Total	85420																								

Table 13		Issuers of Asset-Backed Securities - Commercial Mortgage-Backed Securities Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	713	70.69%	0.98%																					21.88%	6.45%
AA+	133	4.51%	49.62%																					45.86%	
AA	146	1.37%	7.53%	54.79%			0.68%																	35.62%	
AA-	201	2.49%	4.98%	3.98%	66.67%	1.49%		0.50%																18.91%	1.00%
A+	69	1.45%	7.25%		2.90%	52.17%																		36.23%	
A	124	0.81%	4.03%	2.42%	1.61%	2.42%	58.87%		0.81%			1.61%												26.61%	
A-	210	1.43%	0.95%	0.48%	2.86%	0.95%	6.19%	65.24%	1.43%	0.48%	0.95%													19.05%	
BBB+	82	1.22%	3.66%		2.44%		2.44%	2.44%	59.76%	1.22%				1.22%											25.61%
BBB	80		3.75%	2.50%	1.25%	5.00%	5.00%		1.25%	57.50%	1.25%		2.50%												20.00%
BBB-	251	1.20%	1.99%	1.20%	0.40%	0.40%	1.99%	0.80%	2.79%	1.59%	58.57%	1.20%	1.20%	1.20%	0.40%								0.40%	24.30%	
BB+	102		5.88%	0.98%	1.96%		2.94%		0.98%	56.86%	1.96%	0.98%												1.96%	22.55%
BB	99	2.02%	3.03%	1.01%	1.01%	1.01%		1.01%		2.02%	4.04%	1.01%	53.54%		2.02%	1.01%	1.01%						2.02%	22.22%	
BB-	206		0.97%	0.49%	0.49%	0.49%	0.97%	0.49%	0.49%	0.97%	0.49%	2.91%	0.97%	56.80%	3.88%	2.43%	0.97%	0.49%						1.46%	24.27%
B+	91		1.10%	1.10%		2.20%	1.10%		3.30%			1.10%	2.20%	2.20%	54.95%		2.20%		1.10%	2.20%				4.40%	20.88%
B	105			0.95%		0.95%	0.95%		0.95%		2.86%	0.95%	0.95%	0.95%	1.90%	51.43%	3.81%		0.95%	0.95%				5.71%	25.71%
B-	237		0.84%			0.42%		0.42%	1.27%	0.42%	0.84%	3.80%	1.27%	0.42%	3.38%			0.84%	1.27%	3.38%				7.17%	21.94%
CCC+	20																	60.00%	5.00%	5.00%				20.00%	10.00%
CCC	59		1.69%										1.69%		1.69%	3.39%			42.37%	5.08%				35.59%	8.47%
CCC-	81		1.23%										2.47%	1.23%		2.47%				37.04%				46.91%	6.17%
CC	7																							85.71%	14.29%
C																									
Total	3016																								

Table 14		Issuers of Asset-Backed Securities - Commercial Mortgage-Backed Securities Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																									
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)					
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)		
AAA	1131	29.71%	0.80%																					53.23%	16.27%		
AA+	94	5.32%	24.47%																				1.06%	65.96%	3.19%		
AA	163	4.29%	7.98%	25.15%	0.61%																			61.35%	0.61%		
AA-	161	3.73%	4.35%	8.70%	30.43%	1.86%		0.62%															0.62%	49.69%			
A+	105	0.95%	9.52%		3.81%	13.33%	3.81%																2.86%	63.81%	1.90%		
A	163	1.84%	1.84%	0.61%	3.68%	3.68%	24.54%			0.61%		1.23%					0.61%							58.90%	1.84%		
A-	215	1.40%	2.33%	1.86%	3.72%	1.86%	4.19%	25.58%	2.33%	0.47%	0.93%												0.47%	53.95%	0.93%		
BBB+	142	2.11%	2.82%	1.41%		0.70%	3.52%	2.11%	17.61%			0.70%					1.41%							3.52%	62.68%	1.41%	
BBB	145	1.38%	2.07%	2.07%	1.38%	1.38%	4.83%	0.69%	8.28%	14.48%		1.38%	1.38%				0.69%		0.69%						58.62%	0.69%	
BBB-	266	3.01%	1.88%			0.38%	2.26%	0.38%	2.26%	3.76%	23.31%	4.51%	0.75%	1.13%									0.75%	53.38%	1.50%		
BB+	149	1.34%	6.04%	0.67%		1.34%	0.67%	2.01%		2.01%	0.67%	14.09%	1.34%										0.67%	0.67%	3.36%	62.42%	1.34%
BB	170	2.35%	2.94%	2.94%		2.94%	0.59%	0.59%	0.59%	1.18%	2.35%	4.71%	21.18%	0.59%	1.76%								0.59%	1.76%	1.76%	48.24%	1.76%
BB-	176	0.57%	3.98%		1.14%	1.70%	0.57%	0.57%	2.84%	2.27%	0.57%	3.41%	1.14%	23.30%	3.41%	2.84%	1.14%	0.57%	0.57%					3.98%	44.89%	0.57%	
B+	167	1.80%	4.19%	2.99%	1.80%	1.80%	0.60%		0.60%	1.20%	1.80%	3.59%	1.20%	2.40%	17.96%								0.60%	2.40%	14.37%	37.72%	1.20%
B	159		2.52%	1.26%	0.63%	1.26%	0.63%	0.63%	1.26%	0.63%	1.26%	2.52%	1.89%	0.63%	3.14%	14.47%	7.55%	1.26%		2.52%	0.63%			13.21%	40.25%	1.89%	
B-	304	0.33%	2.30%	0.33%	0.66%	0.66%	0.99%	1.32%	1.32%	0.33%	0.99%	2.30%	1.32%	0.66%	2.63%	0.66%	20.07%	0.66%	1.32%	3.62%	0.33%			25.33%	30.26%	1.64%	
CCC+	65		1.54%		1.54%		4.62%			1.54%				1.54%	1.54%	1.54%	3.08%	12.31%	4.62%	3.08%	1.54%			35.38%	21.54%	3.08%	
CCC	148		2.70%			0.68%			0.68%	0.68%	0.68%		1.35%		1.35%	1.35%	3.38%		12.84%	4.73%	0.68%			53.38%	12.16%	3.38%	
CCC-	220			0.91%		0.45%			0.45%				0.91%	0.91%		0.45%	0.45%	2.73%						61.36%	19.55%	3.18%	
CC	9																							88.89%	11.11%		
C																											
Total	4152																										

Table 15		Issuers of Asset-Backed Securities - Commercial Mortgage-Backed Securities Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																							
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																			Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	4428	1.42%	0.29%	0.29%	0.07%	0.07%	0.41%	0.02%	0.07%	0.02%	0.05%	0.27%	0.20%		0.29%	0.07%	0.29%	0.05%	0.11%	0.07%	0.02%		3.36%	76.85%	15.70%
AA+	369	0.81%	1.63%		0.27%		0.27%		0.27%			0.81%		0.54%	0.27%	0.81%	1.90%	0.54%	0.27%	0.27%			12.47%	72.63%	6.23%
AA	723	0.41%	0.83%	2.07%	0.41%	0.14%	0.69%		0.41%		0.55%	0.83%	0.28%	0.28%	0.69%	0.97%	0.55%	1.24%	0.83%	0.14%			18.67%	62.38%	7.61%
AA-	365	1.64%	0.82%	0.55%	0.55%	0.82%	0.55%		1.64%	0.27%	0.55%	0.82%	0.55%	0.27%	0.82%	0.27%	1.92%		0.55%	0.82%			27.12%	55.89%	3.56%
A+	286	0.35%	0.70%	0.70%	0.70%	0.70%			0.35%	1.05%	0.70%	0.35%	0.35%		0.35%	0.35%	1.40%		0.70%				26.92%	56.99%	7.34%
A	671	0.89%	1.19%	0.30%	0.45%	0.60%	1.04%	0.15%	0.15%	0.30%	0.30%	0.45%	0.30%		1.04%	0.45%	0.75%		0.45%	0.89%	0.15%		30.40%	51.42%	8.35%
A-	430	0.70%	1.63%	0.70%	0.70%	0.23%	0.47%	0.23%	0.47%	0.47%	0.47%	0.70%	0.23%		0.47%	0.93%	1.16%	0.23%	0.23%	1.16%			37.91%	46.74%	4.19%
BBB+	482	0.83%	1.66%		0.21%	0.62%	0.62%	0.21%	2.90%		0.62%		0.41%		0.41%	0.21%	0.83%	0.21%	0.62%				42.32%	43.57%	3.73%
BBB	727	0.41%	0.96%	0.28%	0.28%	0.41%	0.14%	0.41%	0.14%	0.55%		0.41%	0.41%	0.14%			0.69%	0.14%	0.69%	1.10%	0.14%		44.29%	43.19%	5.23%
BBB-	606	0.66%	1.16%				0.66%	0.17%	0.17%	0.99%		0.17%	0.17%				0.17%		0.83%	0.17%			52.48%	36.47%	5.78%
BB+	447	0.22%	1.12%	0.45%	0.22%	0.22%			0.22%	0.45%		0.67%		0.22%	0.22%		0.45%		0.22%	0.22%			58.84%	32.66%	3.58%
BB	494	0.20%	0.40%	0.81%		0.20%	0.20%		0.20%	0.20%	0.20%		0.40%		0.20%		0.40%			0.81%	0.20%		69.03%	24.09%	2.43%
BB-	372	0.27%	0.81%	0.54%	0.54%	0.27%	0.27%	0.27%	0.27%	0.27%		0.54%	0.27%	0.27%	0.27%								74.46%	17.74%	2.96%
B+	343		0.58%		0.29%	0.87%			0.29%				0.29%	0.58%	0.58%	0.29%	0.29%						78.72%	16.33%	0.87%
B	370		0.54%	0.27%		0.54%	0.54%			0.27%					0.27%	0.54%	0.54%						82.16%	13.24%	1.08%
B-	341	0.29%	0.29%	0.29%	0.29%			0.29%		0.29%	0.29%	0.29%				0.29%	0.88%	0.29%					84.46%	11.73%	
CCC+	24								4.17%														87.50%	8.33%	
CCC	33																						93.94%	3.03%	3.03%
CCC-	22																						95.45%	4.55%	
CC																									
C																									
Total	11533																								

Table 16		Issuers of Asset-Backed Securities - Collateralized Loan Obligations Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																			Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	1233	29.28%																						68.86%	1.87%
AA+	286	13.99%	14.34%																					70.63%	1.05%
AA	587	3.24%	1.02%	36.97%		0.17%																		55.37%	3.24%
AA-	74	6.76%	2.70%	4.05%	21.62%																			62.16%	2.70%
A+	195	4.62%	3.59%	2.05%	2.56%	15.38%	0.51%	1.03%	1.03%															69.23%	
A	476		1.47%	0.42%	1.05%	1.47%	38.87%	0.21%																53.57%	2.94%
A-	37		5.41%			8.11%	2.70%	21.62%	2.70%															59.46%	
BBB+	153		2.61%		0.65%	6.54%	2.61%	0.65%	21.57%	0.65%														64.71%	
BBB	433				0.23%	0.23%	0.46%	0.23%	1.62%	47.58%														47.58%	2.08%
BBB-	59			1.69%			1.69%	1.69%	5.08%	45.76%									1.69%	1.69%				40.68%	
BB+	126					0.79%		1.59%	11.90%	1.59%	0.79%	19.84%	0.79%	4.76%	3.17%	0.79%	0.79%							51.59%	1.59%
BB	393								0.25%	0.25%	1.53%	54.20%	0.25%	0.25%	0.25%	0.25%								42.24%	1.02%
BB-	115										0.87%	4.35%	0.87%	57.39%	0.87%									35.65%	
B+	73													1.37%	1.37%	4.11%							1.37%	50.68%	
B	162															67.28%	1.23%							31.48%	
B-	73								2.74%						2.74%		58.90%		1.37%					34.25%	
CCC+	19														5.26%	21.05%	21.05%	10.53%	10.53%	5.26%				26.32%	
CCC	12																8.33%	33.33%	16.67%					41.67%	
CCC-	42														4.76%			4.76%	38.10%	23.81%			9.52%	19.05%	
CC	7																			71.43%			28.57%		
C																									
Total	4555																								

Table 17		Issuers of Asset-Backed Securities - Collateralized Loan Obligations Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																								
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1341	6.71%																						91.42%	1.86%	
AA+	465	5.59%	1.29%																					92.90%	0.22%	
AA	681	3.38%	2.20%	8.81%		0.15%																		82.23%	3.23%	
AA-	87	5.75%	2.30%	3.45%	2.30%																			86.21%		
A+	269	8.18%	3.72%	0.74%	1.86%	2.60%	0.74%	0.37%	0.74%															81.04%		
A	548	1.64%	1.64%	0.36%	1.64%	2.01%	9.49%	0.18%																80.11%	2.92%	
A-	78	7.69%	3.85%			1.28%	1.28%	3.85%	1.28%															80.77%		
BBB+	263	2.66%	3.04%	0.76%	1.14%	4.18%	1.14%	0.76%	2.66%															83.65%		
BBB	472	0.42%	0.21%	0.21%	1.48%	0.42%	0.64%	0.21%	2.33%	20.76%	0.21%													70.76%	2.33%	
BBB-	88		1.14%	1.14%		5.68%		2.27%	6.82%	1.14%	7.95%							1.14%						72.73%		
BB+	216		0.93%			2.78%	0.46%	0.93%	8.33%	0.46%	0.46%	3.70%		0.46%	0.46%		0.46%							80.09%	0.46%	
BB	398				0.25%	0.25%			0.25%		0.75%	1.76%	30.40%	1.01%	0.25%	0.25%	0.25%							63.07%	1.51%	
BB-	89		1.12%						3.37%		3.37%	2.25%		22.47%	1.12%									66.29%		
B+	166		0.60%		0.60%	0.60%	0.60%		2.41%	2.41%	0.60%	9.04%		2.41%	9.04%	0.60%	1.20%							69.88%		
B	164											1.22%		1.83%	50.00%	4.27%								42.68%		
B-	76								2.63%		1.32%	2.63%		2.63%	2.63%	1.32%	10.53%		1.32%				1.32%	73.68%		
CCC+	78								1.28%		1.28%	2.56%	6.41%		3.85%	1.28%	5.13%	3.85%		2.56%	1.28%		1.28%	69.23%		
CCC	29												3.45%		10.34%		10.34%		13.79%	6.90%			3.45%	51.72%		
CCC-	86								1.16%						2.33%		1.16%	2.33%	4.65%	18.60%	12.79%		19.77%	37.21%		
CC	8																						50.00%		37.50%	12.50%
C																										
Total	5602																									

Table 18		Issuers of Asset-Backed Securities - Collateralized Loan Obligations Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	2018	1.93%	0.10%	0.25%	0.35%	0.35%	0.05%	0.05%	0.35%	0.05%	0.15%	0.05%					0.05%		0.05%				0.35%	87.76%	8.13%	
AA+	26																							80.77%	19.23%	
AA	776	4.51%	1.16%		0.26%	0.26%		0.13%	0.26%	0.13%					0.13%	0.13%			0.13%	0.13%			0.90%	87.63%	4.25%	
AA-	27								3.70%	3.70%								3.70%						59.26%	25.93%	
A+	47				2.13%	4.26%	2.13%		2.13%											4.26%				76.60%	8.51%	
A	844	2.37%	1.90%	0.24%	0.71%	1.18%	0.47%	0.12%	0.47%		0.12%	0.47%			0.12%		0.12%			0.59%	0.24%		1.66%	86.02%	3.20%	
A-	111	1.80%	1.80%		1.80%	1.80%		0.90%	0.90%											0.90%	0.90%		3.60%	81.08%	4.50%	
BBB+	42				2.38%			2.38%	2.38%						2.38%	2.38%							2.38%	59.52%	11.90%	
BBB	834	0.12%	0.36%	0.12%		0.36%	0.24%	0.36%	1.80%		0.24%	0.72%		0.12%	0.36%	0.24%	0.12%			0.12%	0.36%	0.60%	1.80%	86.21%	5.76%	
BBB-	196		1.02%	0.51%		4.59%		0.51%	5.10%	2.04%	1.02%	1.02%		1.02%	1.02%		0.51%		0.51%				4.59%	67.35%	9.18%	
BB+	32																						12.50%	62.50%	21.88%	
BB	567					0.18%			0.18%		0.53%	1.76%	0.53%	0.53%	1.94%	0.18%	1.06%			0.18%	0.71%		5.29%	83.77%	3.17%	
BB-	128								2.34%					6.25%	3.91%	0.78%	6.25%	0.78%	3.91%	1.56%	0.78%	0.78%	0.78%	7.81%	63.28%	0.78%
B+	5																						40.00%	40.00%	20.00%	
B	33													6.06%						3.03%	6.06%	3.03%	12.12%	51.52%	15.15%	
B-	4																							100.00%		
CCC+	3																						100.00%			
CCC																										
CCC-	14																						100.00%			
CC																										
C																										
Total	5707																									

Table 19		Issuers of Asset-Backed Securities - Collateralized Debt Obligations Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	121	66.94%	3.31%																					29.75%	
AA+	27	3.70%	70.37%																					25.93%	
AA	50			74.00%																				26.00%	
AA-	23		4.35%		60.87%		17.39%																	13.04%	4.35%
A+	27		7.41%	3.70%		48.15%	3.70%																	37.04%	
A	126				0.79%	23.81%	50.79%	0.79%	1.59%															22.22%	
A-	38				2.63%	13.16%	7.89%	44.74%	5.26%															26.32%	
BBB+	101				0.99%	2.97%	2.97%	62.38%	1.98%															27.72%	0.99%
BBB	41							12.20%	9.76%	39.02%	4.88%													34.15%	
BBB-	40							5.00%		20.00%	15.00%	2.50%												52.50%	2.50%
BB+	39									7.69%		30.77%		2.56%		2.50%								56.41%	2.56%
BB	20								5.00%			10.00%	20.00%											60.00%	5.00%
BB-	32											6.25%		12.50%									3.13%	78.13%	
B+	38											7.89%		5.26%	23.68%	2.63%	2.63%		5.26%					52.63%	
B	16					12.50%									6.25%	25.00%	12.50%							43.75%	
B-	34													2.94%			17.65%							50.00%	29.41%
CCC+	29											3.45%			3.45%	3.45%	3.45%	37.93%						48.28%	
CCC	36					2.78%			5.56%								2.78%	33.33%	5.56%	2.78%				27.78%	19.44%
CCC-	162								0.62%						0.62%		0.62%		70.99%	3.70%			4.94%	16.67%	1.85%
CC	66								1.52%			4.55%											18.18%	3.03%	
C																									
Total	1066																								

Table 20		Issuers of Asset-Backed Securities - Collateralized Debt Obligations Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																							
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	113	38.05%			4.42%																			55.75%	1.77%
AA+	66	7.58%	16.67%	3.03%		4.55%	7.58%																	59.09%	1.52%
AA	73	9.59%		43.84%		1.37%	1.37%																	39.73%	4.11%
AA-	20		20.00%																					80.00%	
A+	63	3.17%	6.35%			7.94%	1.59%																	61.90%	19.05%
A	154		1.95%		1.30%	11.04%	33.77%	1.95%	1.30%															47.40%	1.30%
A-	72	1.39%		1.39%	2.78%			12.50%	8.33%	9.72%	2.78%	1.39%												41.67%	18.06%
BBB+	126		1.59%		3.97%	5.56%	0.79%	4.76%	13.49%	2.38%														57.94%	9.52%
BBB	70				1.43%	2.86%	1.43%	1.43%	12.86%	7.14%	1.43%	4.29%												42.86%	24.29%
BBB-	71							5.63%	1.41%	7.04%	5.63%		1.41%	4.23%	1.41%				2.82%					52.11%	18.31%
BB+	124					1.61%		2.42%	5.65%	1.61%		3.23%		1.61%									0.81%	51.61%	30.65%
BB	53						1.89%			1.89%	1.89%		1.89%											71.70%	18.87%
BB-	52						1.92%						3.85%				1.92%						1.92%	75.00%	15.38%
B+	103							0.97%	0.97%	0.97%			3.88%	0.97%	0.97%	1.94%								65.05%	24.27%
B	56					3.57%							1.79%	3.57%	1.79%	3.57%	1.79%			5.36%	1.79%			48.21%	25.00%
B-	63												3.17%	1.59%	3.17%	1.59%	3.17%							60.32%	26.98%
CCC+	112												1.79%		1.79%	0.89%	3.57%	4.46%	0.89%	1.79%				61.61%	23.21%
CCC	61					1.64%				3.28%					3.28%	1.64%	3.28%	18.03%	1.64%	3.28%			3.28%	49.18%	11.48%
CCC-	391								0.77%				0.26%		0.77%		0.26%	1.02%		28.39%	4.60%		10.74%	39.13%	14.07%
CC	162								0.62%				1.23%										32.10%	5.56%	39.51%
C																									
Total	2005																								

Table 21		Issuers of Asset-Backed Securities - Collateralized Debt Obligations Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																							
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	6126	0.69%	0.02%	0.15%	0.02%	0.13%	0.10%	0.11%	0.20%			0.03%	0.03%	0.05%	0.05%	0.05%		0.02%	0.03%	0.18%	0.13%		26.41%	50.24%	21.37%
AA+	377			0.27%	0.53%														0.27%				30.24%	50.66%	18.04%
AA	2020					0.10%			0.15%	0.10%	0.05%	0.15%					0.15%	0.15%		0.35%	0.54%		36.04%	46.19%	15.84%
AA-	509		0.39%		0.20%		5.50%	0.39%	0.59%										0.20%	0.39%			31.63%	45.19%	15.52%
A+	360					0.28%	0.56%		0.28%	0.83%		0.56%					0.28%	0.56%		1.94%	0.28%		38.33%	40.83%	15.28%
A	940						0.43%	0.11%	0.11%	0.11%		0.32%					0.11%	0.11%	0.11%	1.06%	0.96%		51.38%	31.60%	13.62%
A-	556					0.18%		0.36%	0.36%								0.18%		0.54%	1.08%	1.08%		38.85%	42.27%	15.11%
BBB+	383								1.04%	0.52%	0.26%								0.78%	0.78%	0.26%		44.13%	37.08%	15.14%
BBB	999					0.10%		0.20%	0.30%	0.10%	0.20%	0.40%				0.10%		0.20%	0.10%	1.20%	0.50%		60.76%	24.32%	11.51%
BBB-	499								0.20%								0.40%	0.40%		1.60%	0.60%		49.70%	33.87%	12.83%
BB+	260																			1.15%	0.38%		70.00%	17.31%	11.15%
BB	370																						55.95%	26.22%	13.51%
BB-	137																						60.58%	20.44%	16.06%
B+	81																						69.14%	19.75%	9.88%
B	106																						64.15%	23.58%	11.32%
B-	88								1.14%														79.55%	7.95%	11.36%
CCC+	39																						97.44%	2.56%	
CCC	49																						87.76%	4.08%	8.16%
CCC-	90																						84.44%	10.00%	5.56%
CC	157																						89.81%	8.28%	1.91%
C																									
Total	14146																								

Table 22		Issuers of Asset-Backed Securities - Asset-Backed Commercial Paper Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)								
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)						Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)		
Credit Rating	Number of Ratings Outstanding	A-1+	A-1	A-2	A-3	B	C	Default	Paid Off	Withdrawn (Other)
A-1+	79	35.44%	1.27%						62.03%	1.27%
A-1	149		97.32%						0.67%	2.01%
A-2	19		21.05%	63.16%					10.53%	5.26%
A-3	1			100.00%						
B										
C										
Total	248									

Table 23		Issuers of Asset-Backed Securities - Asset-Backed Commercial Paper Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)								
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)						Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)		
Credit Rating	Number of Ratings Outstanding	A-1+	A-1	A-2	A-3	B	C	Default	Paid Off	Withdrawn (Other)
A-1+	90	22.22%	1.11%						67.78%	8.89%
A-1	167	0.60%	68.26%	2.40%					10.78%	17.96%
A-2	8			50.00%					25.00%	25.00%
A-3	1			100.00%						
B										
C										
Total	266									

Table 24		Issuers of Asset-Backed Securities - Asset-Backed Commercial Paper Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)					Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	A-1+	A-1	A-2	A-3	B	C	Default	Paid Off	Withdrawn (Other)
A-1+	423	0.95%	2.84%	0.71%				2.36%	36.17%	56.97%
A-1	151		21.85%	2.65%				0.66%	25.83%	49.01%
A-2	7							14.29%	71.43%	14.29%
A-3	1									100.00%
B										
C										
Total	582									

Table 25		Issuers of Asset-Backed Securities - Other Asset-Backed Securities Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																								
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1653	67.03%					0.06%																	32.37%	0.54%	
AA+	522	13.98%	74.90%				0.96%																	10.15%		
AA	687	7.71%	2.47%	75.84%			1.02%			0.15%														12.81%		
AA-	106	13.21%	6.60%	5.66%	33.02%	0.94%																		38.68%	1.89%	
A+	211	8.53%	4.27%	4.27%	1.90%	65.40%																		15.17%	0.47%	
A	596	5.37%	2.35%	3.52%	1.68%	2.52%	68.79%	2.18%					0.34%											13.09%	0.17%	
A-	130	7.69%	2.31%	3.08%		3.85%	4.62%	62.31%	1.54%		1.54%		0.77%											12.31%		
BBB+	298	0.34%	1.68%	1.68%	1.01%	2.01%	2.01%	21.81%	54.36%	1.01%	1.34%		1.01%											11.74%		
BBB	368	0.27%	0.27%	0.82%	1.63%	1.09%	4.62%	7.07%	2.99%	63.04%	0.82%	1.36%	2.99%											13.04%		
BBB-	65			6.15%				1.54%	3.08%	9.23%	43.08%	1.54%	3.08%											24.62%	7.69%	
BB+	30				6.67%					6.67%	3.33%	66.67%	6.67%											10.00%		
BB	111			0.90%		0.90%	2.70%	0.90%	2.70%	7.21%	1.80%	2.70%	63.96%	1.80%			0.90%						0.90%	10.81%	1.80%	
BB-	26								11.54%				3.85%	65.38%	7.69%										11.54%	
B+	30										3.33%				76.67%								3.33%	16.67%		
B	34								2.94%		2.94%		2.94%	2.94%	61.76%										26.47%	
B-	65												1.54%	1.54%	3.08%	87.69%									6.15%	
CCC+	25														4.00%	4.00%		92.00%								
CCC	62																		77.42%	12.90%	3.23%			6.45%		
CCC-	27																	7.41%	3.70%	81.48%	3.70%		3.70%			
CC	81																				91.36%		7.41%		1.23%	
C																										
Total	5127																									

Table 26		Issuers of Asset-Backed Securities - Other Asset-Backed Securities Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																								
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																			Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)					
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1360	28.01%	0.15%				0.15%	0.29%																70.88%	0.51%	
AA+	695	16.83%	43.60%	0.14%			0.72%						0.14%											38.56%		
AA	626	5.27%	1.44%	44.25%		0.16%	1.12%			0.16%			0.16%											47.28%	0.16%	
AA-	151	9.27%	1.32%	6.62%	8.61%																			73.51%	0.66%	
A+	310	8.71%	2.90%	15.48%	0.97%	24.19%			0.32%															47.10%	0.32%	
A	559	7.51%	3.22%	3.94%	0.89%	2.33%	31.48%	4.47%	0.36%		0.36%													44.54%	0.89%	
A-	279	2.51%				1.43%	3.23%	32.26%	32.26%	0.36%	1.43%													26.16%	0.36%	
BBB+	80	17.50%	5.00%			1.25%		2.50%	21.25%	1.25%			2.50%									1.25%		46.25%	1.25%	
BBB	373	3.75%	1.61%	1.88%	0.27%	1.07%	2.95%	3.49%	2.68%	27.35%	0.54%	0.27%	1.34%			0.27%								51.47%	1.07%	
BBB-	57			7.02%		1.75%	1.75%			3.51%	12.28%	1.75%	5.26%				3.51%							54.39%	8.77%	
BB+	52	5.77%	1.92%	5.77%	3.85%	1.92%	3.85%		1.92%	1.92%	26.92%	1.92%	1.92%	1.92%								1.92%		38.46%		
BB	95	1.05%		4.21%		3.16%	4.21%	2.11%	4.21%	6.32%	2.11%	2.11%	17.89%		1.05%	1.05%	1.05%						1.05%	48.42%		
BB-	32							3.13%	12.50%	9.38%		3.13%	6.25%	9.38%	3.13%			25.00%				3.13%		25.00%		
B+	31								3.23%	9.68%	3.23%				48.39%	3.23%							3.23%	29.03%		
B	54	1.85%					1.85%	1.85%	1.85%		1.85%			1.85%	1.85%	1.85%	5.56%		3.70%	14.81%	1.85%			57.41%	1.85%	
B-	83									1.20%	2.41%	1.20%		2.41%	3.61%	4.82%	60.24%	1.20%	6.02%					15.66%		
CCC+	14																	92.86%						7.14%		
CCC	57															1.75%	3.51%		1.75%	68.42%			10.53%	3.51%	10.53%	
CCC-	55								3.64%						1.82%	1.82%		3.64%	3.64%	40.00%	21.82%		9.09%	3.64%	10.91%	
CC	78			1.28%																				21.79%	6.41%	1.28%
C																										
Total	5041																									

Table 27		Issuers of Asset-Backed Securities - Other Asset-Backed Securities Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	4768	4.15%	4.59%	0.29%	0.08%	0.27%	0.15%	0.34%	0.15%	0.27%	0.02%	0.10%	0.04%		0.04%	0.04%	0.25%	0.17%	0.38%	0.29%	0.36%		0.10%	80.77%	7.13%	
AA+	89	1.12%		49.44%	1.12%	3.37%	3.37%		1.12%														2.25%	38.20%		
AA	374		1.07%	5.88%		0.80%	0.80%		5.35%			0.27%				0.27%				0.53%	0.53%	0.27%		2.41%	76.47%	5.08%
AA-	185		1.62%	2.70%			0.54%	3.78%	25.95%	0.54%														63.24%	1.62%	
A+	258		0.39%	1.55%				21.32%	0.78%													0.39%		1.16%	71.71%	2.71%
A	765	0.39%	1.70%	4.44%	1.31%	0.65%	0.39%	0.65%	0.39%	0.13%	0.92%		1.05%	0.13%	0.26%		0.78%	0.26%	0.13%			1.05%		3.40%	76.21%	5.75%
A-	51				3.92%	1.96%		3.92%																80.39%	9.80%	
BBB+	83			1.20%							2.41%	3.61%	2.41%		1.20%					1.20%		1.20%		7.23%	74.70%	4.82%
BBB	789				0.13%	0.25%	0.63%	0.63%	1.27%	1.65%	0.51%	0.51%	0.63%	0.25%	1.14%	0.38%	3.93%	0.63%	0.76%	0.38%			2.79%	78.96%	4.56%	
BBB-	42							7.14%		2.38%		4.76%						4.76%	14.29%			2.38%		52.38%	11.90%	
BB+	27														3.70%		3.70%							7.41%	70.37%	3.70%
BB	124								0.81%	0.81%			1.61%						1.61%		1.61%		8.06%	80.65%	4.84%	
BB-	40						2.50%									2.50%	2.50%	7.50%	7.50%	2.50%			15.00%	50.00%	10.00%	
B+	12									8.33%				8.33%				8.33%							50.00%	
B	25								4.00%	4.00%							8.00%	4.00%						28.00%	28.00%	16.00%
B-	37									2.70%	2.70%	2.70%		2.70%				2.70%	5.41%	16.22%	16.22%	2.70%		10.81%	29.73%	5.41%
CCC+	10																	20.00%		10.00%	50.00%			20.00%		
CCC	34														2.94%			2.94%	5.88%	29.41%				41.18%	8.82%	8.82%
CCC-	56																		1.79%	35.71%				58.93%	3.57%	
CC	3																				33.33%			33.33%	33.33%	
C																										
Total	7772																									

Table 28		Issuers of Asset-Backed Securities - Other Structured Finance Products Issues Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	4	75.00%																						25.00%	
AA+	11		90.91%																					9.09%	
AA	27			100.00%																					19.35%
AA-	31				67.74%	9.68%	3.23%																		38.46%
A+	13	7.69%				53.85%																			54.17%
A	24	8.33%					37.50%																		31.43%
A-	35						5.71%	42.86%	20.00%																19.80%
BBB+	101							1.98%	78.22%																45.71%
BBB	35								5.71%	45.71%	2.86%														21.43%
BBB-	14								7.14%		71.43%														8.33%
BB+	12										50.00%	41.67%													30.00%
BB	20											5.00%	65.00%												33.33%
BB-	6													50.00%		16.67%									20.00%
B+	5														40.00%	40.00%									20.00%
B	5															80.00%									20.00%
B-	9															88.89%	11.11%								
CCC+	1																		100.00%						
CCC	6																		66.67%				33.33%		
CCC-																									
CC																									
C																									
Total	359																								

Table 29		Issuers of Asset-Backed Securities - Other Structured Finance Products Issues Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																							
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	45	2.22%			2.22%																			95.56%	
AA+	21		47.62%																					52.38%	
AA	36			75.00%	19.44%																			5.56%	
AA-	17				29.41%	29.41%	5.88%		11.76%															23.53%	
A+	28	3.57%				14.29%	10.71%		3.57%															67.86%	
A	39	7.69%				2.56%	10.26%	10.26%	7.69%															58.97%	2.56%
A-	71					1.41%	12.68%	43.66%																42.25%	
BBB+	63					1.59%	4.76%	52.38%	1.59%	3.17%														36.51%	
BBB	42							2.38%	30.95%	4.76%	2.38%													52.38%	7.14%
BBB-	29							20.69%		24.14%	3.45%	6.90%												44.83%	
BB+	11							36.36%		36.36%	9.09%													18.18%	
BB	46							8.70%		13.04%		19.57%												58.70%	
BB-	13							7.69%					15.38%		30.77%									46.15%	
B+	3											33.33%	33.33%											33.33%	
B	6																		16.67%						83.33%
B-	6														33.33%	50.00%	16.67%								
CCC+	1																		100.00%						
CCC	5																		60.00%				40.00%		
CCC-	11														72.73%										27.27%
CC	1																								100.00%
C																									
Total	494																								

Table 30		Issuers of Asset-Backed Securities - Other Structured Finance Products Issues Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																							
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	646	0.77%	0.77%	3.25%	0.15%	0.31%	0.46%	0.62%	6.04%			0.31%	0.15%		0.31%	0.46%	0.15%		0.46%				1.39%	61.76%	22.60%
AA+	6																							50.00%	50.00%
AA	72				2.78%	1.39%																	1.39%	62.50%	31.94%
AA-	90							2.22%	2.22%														14.44%	64.44%	16.67%
A+	109				3.67%	1.83%		1.83%	0.92%		3.67%												7.34%	59.63%	21.10%
A	148								16.22%		2.70%		4.73%										4.73%	58.11%	13.51%
A-	49								4.08%	2.04%	8.16%												2.04%	59.18%	24.49%
BBB+	65						3.08%		9.23%							3.08%							4.62%	64.62%	15.38%
BBB	71							2.82%			4.23%	1.41%				1.41%							7.04%	69.01%	14.08%
BBB-	59									6.78%		1.69%		3.39%		13.56%							8.47%	49.15%	16.95%
BB+	27								3.70%				7.41%			3.70%								77.78%	7.41%
BB	25									16.00%									4.00%				32.00%	32.00%	16.00%
BB-	21																							71.43%	28.57%
B+	18											5.56%												83.33%	11.11%
B	13																						30.77%	69.23%	
B-	12																		8.33%				50.00%	41.67%	
CCC+	14																						92.86%	7.14%	
CCC																									
CCC-																									
CC	3																							66.67%	33.33%
C																									
Total	1448																								

Table 31		Sovereign Issuers Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																							
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	12	91.67%	8.33%																						
AA+	4		100.00%																						
AA	9			77.78%	22.22%																				
AA-	5				80.00%	20.00%																			
A+	5					100.00%																			
A	5					20.00%	40.00%	20.00%	20.00%																
A-	10							90.00%	10.00%																
BBB+	5						20.00%		60.00%	20.00%															
BBB	4									75.00%	25.00%														
BBB-	10								20.00%	70.00%	10.00%														
BB+	7									42.86%	42.86%	14.29%													
BB	5										20.00%	80.00%													
BB-	9											11.11%	66.67%	22.22%											
B+	11												9.09%	81.82%	9.09%										
B	12														83.33%	16.67%									
B-	15														6.67%	13.33%	60.00%	6.67%	6.67%				6.67%		
CCC+																									
CCC	1																			100.00%					
CCC-																									
CC	1																100.00%								
C																									
Total	130																								

Table 32		Sovereign Issuers Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																							
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	12	83.33%	8.33%	8.33%																					
AA+	8	12.50%	50.00%		37.50%																				
AA	6			83.33%	16.67%																				
AA-	7			14.29%	28.57%	42.86%		14.29%																	
A+	1					100.00%																			
A	9					22.22%	22.22%	22.22%	22.22%				11.11%												
A-	7					14.29%		85.71%																	
BBB+	8							12.50%	25.00%	25.00%	12.50%	12.50%	12.50%												
BBB	7								14.29%	28.57%	14.29%	28.57%			14.29%										
BBB-	8						12.50%			25.00%	50.00%	12.50%													
BB+	3									66.67%			33.33%												
BB	6										33.33%		50.00%	16.67%											
BB-	10												10.00%	40.00%	10.00%	20.00%	10.00%								10.00%
B+	13											7.69%		7.69%	46.15%	7.69%	23.08%						7.69%		
B	12													8.33%	16.67%	50.00%	16.67%		8.33%						
B-	9															44.44%	44.44%	11.11%							
CCC+	3														33.33%		33.33%			33.33%					
CCC																									
CCC-																									
CC																									
C																									
Total	129																								

Table 33		Sovereign Issuers Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	20	55.00%	20.00%	10.00%		5.00%			5.00%																5.00%	
AA+	1		100.00%																							
AA	8		12.50%	12.50%	12.50%	37.50%	12.50%			12.50%																
AA-	6			16.67%	33.33%	16.67%		16.67%			16.67%															
A+	8			25.00%			12.50%	25.00%	12.50%	12.50%		12.50%														
A	12				8.33%	16.67%		33.33%					8.33%		8.33%										16.67%	8.33%
A-	3										33.33%	33.33%														
BBB+	5							20.00%	20.00%	40.00%		20.00%														
BBB	5									60.00%		20.00%			20.00%											
BBB-	5							20.00%		40.00%			20.00%				20.00%									
BB+	7									14.29%	14.29%		14.29%	28.57%	14.29%										14.29%	
BB	7									14.29%		14.29%			14.29%	42.86%	14.29%									
BB-	8												12.50%		37.50%	12.50%	12.50%				12.50%					12.50%
B+	10									10.00%				20.00%	30.00%		20.00%									20.00%
B	8												12.50%			25.00%	12.50%								25.00%	25.00%
B-	4												25.00%				25.00%								50.00%	
CCC+																										
CCC																										
CCC-																										
CC																										
C																										
Total	117																									

Table 34		International Public Finance Issuers Ratings 1 Year Transition and Default Rates (December 31, 2016 through December 31, 2017)																								
Credit Rating as of 12/31/2016		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2016 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	28	100.00%																								
AA+	35	2.86%	94.29%	2.86%																						
AA	42		4.76%	88.10%		2.38%																			4.76%	
AA-	26			15.38%	69.23%	3.85%																				11.54%
A+	25				20.00%	76.00%																				4.00%
A	12						100.00%																			
A-	8							87.50%	12.50%																	
BBB+	17								94.12%																	5.88%
BBB	12								16.67%	58.33%	8.33%															16.67%
BBB-	24									25.00%	41.67%															33.33%
BB+	22										22.73%	68.18%	4.55%													4.55%
BB	16											6.25%	93.75%													
BB-	19												15.79%	57.89%	10.53%											15.79%
B+	6														83.33%											16.67%
B	2															100.00%										
B-	12														41.67%	25.00%	25.00%									8.33%
CCC+	1																	100.00%								
CCC																										
CCC-																										
CC																										
C																										
Total	307																									

Table 35		International Public Finance Issuers Ratings 3 Year Transition and Default Rates (December 31, 2014 through December 31, 2017)																								
Credit Rating as of 12/31/2014		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2014 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	30	90.00%		3.33%		3.33%																			3.33%	
AA+	36	2.78%	83.33%	8.33%	2.78%																					2.78%
AA	40	2.50%	7.50%	67.50%	2.50%	2.50%																				17.50%
AA-	29			24.14%	34.48%	13.79%																				27.59%
A+	33			3.03%	30.30%	36.36%	3.03%																			27.27%
A	7						57.14%																			42.86%
A-	9						55.56%	33.33%	11.11%																	
BBB+	5						20.00%		80.00%																	
BBB	10								50.00%	20.00%	10.00%		10.00%													10.00%
BBB-	31								3.23%	29.03%	9.68%	9.68%	6.45%											3.23%		32.26%
BB+	22										27.27%	40.91%	9.09%	4.55%	4.55%											13.64%
BB	14											7.14%	71.43%		7.14%			7.14%								7.14%
BB-	17												23.53%	52.94%	5.88%											17.65%
B+	5														40.00%	20.00%										40.00%
B	5													20.00%												80.00%
B-	4															25.00%										75.00%
CCC+																										
CCC																										
CCC-	11														36.36%	18.18%	9.09%							9.09%		27.27%
CC																										
C																										
Total	308																									

Table 36		International Public Finance Issuers Ratings 10 Year Transition and Default Rates (December 31, 2007 through December 31, 2017)																								
Credit Rating as of 12/31/2007		Credit Ratings as of 12/31/2017 (Percent)																				Other Outcomes During 12/31/2007 - 12/31/2017 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	32	46.88%	18.75%	12.50%		3.13%	6.25%																		12.50%	
AA+	34	23.53%	26.47%	11.76%		2.94%			5.88%		2.94%															26.47%
AA	30	3.33%	20.00%	30.00%		6.67%	3.33%		10.00%	3.33%					3.33%											20.00%
AA-	26	3.85%	23.08%	15.38%	7.69%	7.69%							3.85%													38.46%
A+	36			11.11%	13.89%	5.56%					13.89%	2.78%														52.78%
A	16			6.25%	18.75%	6.25%	12.50%																			56.25%
A-	8				25.00%		12.50%	12.50%			12.50%															37.50%
BBB+	11						9.09%		18.18%			9.09%														63.64%
BBB	5								20.00%	20.00%			20.00%													40.00%
BBB-	9										22.22%	33.33%			11.11%											33.33%
BB+	30									10.00%	13.33%	10.00%	16.67%	3.33%											16.67%	30.00%
BB	28										3.57%	10.71%	21.43%	7.14%		3.57%									10.71%	42.86%
BB-	30											3.33%	6.67%	6.67%	3.33%										6.67%	73.33%
B+	20											10.00%	5.00%	10.00%	20.00%	5.00%									15.00%	35.00%
B	5																									100.00%
B-	2																								50.00%	50.00%
CCC+																										
CCC																										
CCC-																										
CC																										
C																										
Total	322																									

Appendix 1

S&P Global Ratings Definitions

https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352

The above URL represents the location of the Ratings Definitions page on S&P Global Ratings Internet website. The Ratings Definitions page describes each symbol in the rating scale that is used to denote a credit rating category and notches within a category for each class and subclass of credit ratings in the tables presented in Exhibit 1. The Ratings Definitions page also explains the conditions under which S&P Global Ratings classifies obligors, securities, or money market instruments as being in default.

Appendix 2

Methodology

S&P Global Ratings uses the single cohort approach method of calculating the performance measurement statistics in Exhibit 1. The single cohort approach is used to calculate transition and default rates in order to determine the percent of credit ratings at each notch in the rating scale for a given class or subclass and for the applicable time period (1-, 3-, and 10-years) that were rated at the same notch or transitioned to another notch as of the end of the period, and the percent of credit ratings at each notch that were classified as a default or paid off, or had been withdrawn for reasons other than being classified as a default or paid off during the period. For example, a matrix containing 3-year transition and default rates for the class of corporate issuers discloses the number of credit ratings of corporate issuers S&P Global Ratings had outstanding as of the period start date that is three years prior to the most recent calendar year end at each notch in the rating scale used by S&P Global Ratings, the percent of those credit ratings that were rated at the same notch and the percent that transitioned to each other notch in the rating scale as of the end of the 3-year period, and the percent that were classified as a default or paid off, or had been withdrawn at any time during the 3-year period.

Single and average cohort approaches provide different information about rating performance. The single cohort approach uses information from only the most recent 1-, 3-, and 10-year periods and thus presents the rating performance at specific points in time. As such, it is useful for presenting the historical experience of a particular group of ratings under a particular set of circumstances. On the other hand, the average cohort approach uses information from multiple time periods and thus presents the weighted average rating performance across all available 1-, 3-, or 10-year time periods. Both approaches are valid, depending on the needs of the user, but they do not yield comparable information.

S&P Global Ratings uses both single and average cohort approaches in the rating performance measurement statistics it publishes on its Internet website. As noted previously, single and average cohort approaches provide different information about rating performance. S&P Global Ratings uses both approaches to present the rating performance measurement statistics to avoid the pitfalls in estimating default and transition rates using one approach.