



HR Ratings

Credit Ratings Performance Measurement Statistics

Transition/ Default Matrices of NRSRO ratings are composed in the following subclasses:

- I. Financial Institutions, Brokers, or Dealers.
 - a. Banks
 - b. Non-Bank Banks
 - c. Financial Groups
 - d. Brokerage Firms
 - e. Leasing Companies
 - f. Finance Companies
 - g. Mutual Funds
 - h. Decentralized Government Entities
 - i. Credits and securities issued by any of the entities previously mentioned with any additional credit enhancement or subordination to senior debt
- II. Corporate Issuers.
 - a. Corporations
 - b. Decentralized Government Entities
 - c. Credits and securities issued by any of the entities previously mentioned with any additional credit enhancement or subordination to senior debt
- III. Sovereign Issuers.
- IV. U.S. Public Finance.
- V. International Public Finance.

*Percentages may not add to exactly 100% due to rounding of decimal points.



- One- Year Financial Institutions, Long Term Transition Matrix – 2017-2018

**Financial Institutions Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)**

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	71	77%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18%	4%
HR AA +	12	-	92%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8%	-
HR AA	22	-	-	91%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9%	-
HR AA -	21	5%	-	5%	29%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	10%
HR A +	17	-	-	-	-	76%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24%	-
HR A	22	-	-	5%	-	-	82%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9%	5%
HR A -	16	-	-	-	-	-	-	88%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13%
HR BBB +	6	-	-	-	-	-	-	17%	83%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB	31	-	-	-	-	-	-	-	19%	77%	-	-	-	-	-	-	-	-	-	-	-	-	3%
HR BBB -	28	-	-	-	-	-	-	-	-	7%	71%	7%	-	-	4%	-	-	-	-	-	4%	-	7%
HR BB +	13	-	-	-	-	-	-	-	-	-	8%	38%	15%	-	-	-	-	-	-	8%	15%	-	15%
HR BB	11	-	-	-	-	-	-	-	-	-	9%	-	55%	-	9%	-	-	-	-	-	9%	-	18%
HR BB -	7	-	-	-	-	-	-	-	-	-	-	-	14%	43%	-	-	-	-	-	-	14%	-	29%
HR B +	2	-	-	-	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	50%
HR B	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-
HR B -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	281																						

Source: HR Ratings



- One- Year Financial Institutions, Short Term Transition Matrix – 2017-2018

**Financial Institutions Short Term Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)**

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)						Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR +1	HR1	HR2	HR3	HR4	HR5	Default	Paid Off	Withdrawn (Other)
HR +1	21	100%	-	-	-	-	-	-	-	-
HR1	18	-	89%	-	-	-	-	-	-	11%
HR2	34	-	-	94%	-	-	-	-	-	6%
HR3	64	-	-	2%	88%	3%	-	2%	-	6%
HR4	34	-	-	-	6%	47%	9%	15%	-	24%
HR5	3	-	-	-	-	-	67%	-	-	33%
Total	174									

Source: HR Ratings



- One- Year Financial Institutions, Long Term Global Transition Matrix – 2017-2018

Financial Institutions Long Term Global - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA + (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA - (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A + (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A - (G)	2	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB + (G)	1	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB - (G)	4	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-
HR BB + (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB (G)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
HR BB - (G)		-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-
HR B + (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B - (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C + (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C - (G)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	8																						

Source: HR Ratings



- One- Year Financial Institutions, Short Term Global Transition Matrix – 2017-2018

*The one-year Financial Institutions Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global Financial Institutions ratings.



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- Three- Year Financial Institutions, Long Term Transition Matrix – 2015-2018

Financial Institutions Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	54	57%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43%	-
HR AA +	9	-	56%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44%	-
HR AA	14	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA -	19	-	-	5%	11%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74%	11%
HR A +	25	4%	-	-	8%	32%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56%	-
HR A	14	7%	-	7%	-	7%	36%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43%	-
HR A -	10	-	-	-	-	-	60%	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB +	13	-	-	-	-	-	-	54%	15%	8%	-	-	-	-	-	-	-	-	-	-	-	-	23%
HR BBB	18	-	-	-	-	-	-	6%	33%	33%	6%	-	-	-	-	-	-	-	-	-	-	-	22%
HR BBB -	22	-	-	-	-	-	-	-	5%	32%	18%	5%	-	-	-	-	-	-	-	5%	5%	-	32%
HR BB +	22	-	-	-	-	-	-	-	-	18%	32%	5%	9%	-	-	-	-	-	-	-	5%	-	32%
HR BB	10	-	-	-	-	-	-	-	-	-	20%	20%	-	10%	10%	-	-	-	-	-	10%	-	30%
HR BB -	3	-	-	-	-	-	-	-	-	-	-	-	-	67%	-	-	-	-	-	-	-	-	33%
HR B +	2	-	-	-	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	50%
HR B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B -	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	236																						

Source: HR Ratings



- Three- Year Financial Institutions, Short Term Transition Matrix – 2015-2018

**Financial Institutions Short Term Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)**

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)						Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR +1	HR1	HR2	HR3	HR4	HR5	Default	Paid Off	Withdrawn (Other)
HR +1	17	94%	-	-	-	-	-	-	-	6%
HR1	11	-	82%	-	-	-	-	-	-	18%
HR2	24	4%	13%	79%	-	-	-	-	4%	-
HR3	52	-	-	13%	50%	2%	6%	2%	-	27%
HR4	38	-	-	-	32%	24%	3%	5%	-	37%
HR5	1	-	-	-	-	-	-	-	-	100%
Total	143									

Source: HR Ratings



- Three- Year Financial Institutions, Long Term Global Transition Matrix – 2015-2018

Financial Institutions Long Term Global - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2015- 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A - (G)	1	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB + (G)	2	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	-	-	50%	-
HR BB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB - (G)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
HR B + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: HR Ratings



- Three- Year Financial Institutions, Short Term Global Transition Matrix – 2015-2018

*The three-year Financial Institutions Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global Financial Institutions ratings.



- Ten- Year Financial Institutions, Long Term Transition Matrix – 2008-2018

*The ten-year Financial Institutions Long Term Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Financial Institutions ratings as of 2009.



- Ten- Year Financial Institutions, Short Term Transition Matrix – 2008-2018

*The ten-year Financial Institutions Short Term Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Financial Institutions ratings as of 2009.



- Ten- Year Financial Institutions, Long Term Global Transition Matrix – 2008-2018

*The ten-year Financial Institutions Long Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Long Term Global Financial Institutions ratings as of 2015.



- Ten- Year Financial Institutions, Short Term Global Transition Matrix – 2008-2018

*The ten-year Financial Institutions Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global Financial Institutions ratings.



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- One- Year Corporates, Long Term Transition Matrix – 2017-2018

**Corporate Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)**

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	25	80%	16%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4%
HR AA +	9	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA	13	-	23%	62%	8%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8%	-	-
HR AA -	23	-	-	-	83%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17%
HR A +	12	-	-	-	25%	75%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A	18	-	-	-	-	-	72%	-	-	-	-	-	-	-	-	-	6%	-	-	-	6%	6%	11%
HR A -	9	-	-	-	-	-	22%	33%	33%	-	-	-	-	-	-	-	-	-	-	-	-	-	11%
HR BBB +	5	-	-	-	-	-	-	40%	40%	20%	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB	2	-	-	-	-	-	-	-	-	50%	-	50%	-	-	-	-	-	-	-	-	-	-	-
HR BBB -	2	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	-	50%	-	-
HR BB +	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
HR BB	2	-	-	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	-	50%
HR BB -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B -	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C -	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
Total	123																						

Source: HR Ratings



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- One- Year Corporates, Short Term Transition Matrix – 2017-2018

**Corporate Short Term Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)**

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)						Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR +1	HR1	HR2	HR3	HR4	HR5	Default	Paid Off	Withdrawn (Other)
HR +1	6	83%	-	-	-	-	-	-	-	17%
HR1	3	-	67%	-	-	-	-	-	-	33%
HR2	11	-	9%	64%	18%	-	-	-	-	9%
HR3	2	-	-	-	-	50%	-	50%	-	-
HR4	1	-	-	-	-	100%	-	-	-	-
HR5	-	-	-	-	-	-	-	-	-	-
Total	23									

Source: HR Ratings



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- One- Year Corporates, Long Term Global Transition Matrix – 2017-2018

Corporates Long Term Global - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)																							
HR AA + (G)																							
HR AA (G)																							
HR AA - (G)																							
HR A + (G)																							
HR A (G)																							
HR A - (G)	10							90%															10%
HR BBB + (G)																							
HR BBB (G)																							
HR BBB - (G)																							
HR BB + (G)	3										33%	67%											
HR BB (G)																							
HR BB - (G)																							
HR B + (G)																							
HR B (G)																							
HR B - (G)																							
HR C + (G)																							
HR C (G)																							
HR C - (G)																							
Total	13																						

Source: HR Ratings



- One- Year Corporates, Short Term Global Transition Matrix – 2017-2018

*The one-year Corporates Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global Corporate ratings.



- Three- Year Corporates, Long Term Transition Matrix – 2015-2018

**Corporate Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)**

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	30	57%	7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	17%
HR AA +	10	-	60%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	20%
HR AA	11	-	18%	27%	9%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45%	-
HR AA -	5	-	-	-	60%	-	-	-	-	-	-	-	-	-	-	-	20%	-	-	-	20%	-	-
HR A +	11	-	-	-	36%	9%	36%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18%	-
HR A	9	-	-	-	11%	22%	11%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22%	33%
HR A -	4	-	-	-	-	-	25%	-	50%	-	-	-	-	-	-	-	-	-	-	-	-	25%	-
HR BBB +	4	-	-	-	-	-	-	50%	-	25%	-	-	-	-	-	-	-	-	-	-	-	-	25%
HR BBB	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	80%
HR BBB -	4	-	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	-	-	50%
HR BB +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
HR BB -	3	-	-	-	-	-	-	-	-	-	-	-	33%	-	-	-	-	-	-	-	-	-	67%
HR B +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	97																						

Source: HR Ratings



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- Three- Year Corporates, Short Term Transition Matrix – 2015-2018

**Corporate Short Term Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)**

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)						Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR +1	HR1	HR2	HR3	HR4	HR5	Default	Paid Off	Withdrawn (Other)
HR +1	7	43%	-	-	-	-	-	-	-	57%
HR1	3	-	33%	-	-	-	-	-	-	67%
HR2	5	-	-	20%	20%	-	-	-	-	60%
HR3	6	-	-	17%	-	-	-	-	17%	67%
HR4	2	-	-	-	-	-	-	-	-	100%
HR5	-	-	-	-	-	-	-	-	-	-
Total	23									

Source: HR Ratings



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- Three- Year Corporates, Long Term Global Transition Matrix – 2015-2018

Corporates Long Term Global - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A - (G)	4	-	-	-	-	-	-	75%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25%
HR BBB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB (G)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
HR BBB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: HR Ratings



- Three- Year Corporates, Short Term Global Transition Matrix – 2015-2018

*The three-year Corporates Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global Corporate ratings.



- Ten- Year Corporates, Long Term Transition Matrix – 2008-2018

*The ten-year Corporates Long Term Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Corporate ratings as of 2009.



- Ten- Year Corporates, Short Term Transition Matrix – 2008-2018

*The ten-year Corporates Short Term Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Corporate ratings as of 2009.



- Ten- Year Corporates, Long Term Global Transition Matrix – 2008-2018

*The ten-year Corporates Long Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Long Term Global Corporate ratings as of 2015.



- Ten- Year Corporates, Short Term Global Transition Matrix – 2008-2018

*The ten-year Corporates Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global Corporate ratings.



- One- Year Sovereign Issuers, Long Term Global Transition Matrix – 2017-2018

Sovereign Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)	1	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A - (G)	2	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB (G)	1	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-
HR BB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR D (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: HR Ratings

- One- Year Sovereign Issuers, Short Term Global Transition Matrix – 2017-2018

Sovereign Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)						Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR +1 (G)	HR1 (G)	HR2 (G)	HR3 (G)	HR4 (G)	HR5 (G)	Default	Paid Off	Withdrawn (Other)
HR+1 (G)	1	100%	-	-	-	-	-	-	-	-
HR1 (G)	-	-	-	-	-	-	-	-	-	-
HR2 (G)	1	-	-	100%	-	-	-	-	-	-
HR3 (G)	1	-	-	100%	-	-	-	-	-	-
HR4 (G)	1	-	-	-	-	100%	-	-	-	-
HR5 (G)	-	-	-	-	-	-	-	-	-	-
Total	4									

Source : HR Ratings



- Three- Year Sovereign Issuers, Long Term Global Transition Matrix – 2015-2018

Sovereign Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A - (G)	1	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB + (G)	1	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: HR Ratings

- Three- Year Sovereign Issuers, Short Term Global Transition Matrix – 2015-2018

Sovereign Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)						Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR +1 (G)	HR1 (G)	HR2 (G)	HR3 (G)	HR4 (G)	HR5 (G)	Default	Paid Off	Withdrawn (Other)
HR+1 (G)	-	-	-	-	-	-	-	-	-	-
HR1 (G)	-	-	-	-	-	-	-	-	-	-
HR2 (G)	1	-	-	100%	-	-	-	-	-	-
HR3 (G)	1	-	-	100%	-	-	-	-	-	-
HR4 (G)	-	-	-	-	-	-	-	-	-	-
HR5 (G)	-	-	-	-	-	-	-	-	-	-
Total	2									

Source : HR Ratings



- Ten- Year Sovereign Issuers, Long Term Global Transition Matrix – 2008-2018

*The ten-year Sovereign Issuer Long Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Long Term Sovereign ratings as of 2012.



- Ten- Year Sovereign Issuers, Short Term Global Transition Matrix – 2008-2018

*The ten-year Sovereign Issuer Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Short Term Sovereign ratings as of 2012.



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- One- Year U.S. Public Finance Long Term Global Transition Matrix – 2017-2018

U.S Public Finance - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																		Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)			
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB + (G)	6	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB (G)	6	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C + (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C - (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: HR Ratings

Source: HR Ratings



- One- Year U.S. Public Finance Short Term Global Transition Matrix – 2017-2018

*The one-year U.S. Public Finance Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global U.S Public Finance ratings.



-Three- Year U.S. Public Finance Long Term Global Transition Matrix – 2015-2018

U.S Public Finance - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA (G)	HR AA + (G)	HR AA (G)	HR AA - (G)	HR A + (G)	HR A (G)	HR A - (G)	HR BBB + (G)	HR BBB (G)	HR BBB - (G)	HR BB + (G)	HR BB (G)	HR BB - (G)	HR B + (G)	HR B (G)	HR B - (G)	HR C + (G)	HR C (G)	HR C - (G)	Default	Paid Off	Withdrawn (Other)
HR AAA (G)																							
HR AA + (G)																							
HR AA (G)																							
HR AA - (G)																							
HR A + (G)																							
HR A (G)																							
HR A - (G)																							
HR BBB + (G)																							
HR BBB (G)																							
HR BBB - (G)	1									100%													
HR BB + (G)																							
HR BB (G)																							
HR BB - (G)																							
HR B + (G)																							
HR B (G)																							
HR B - (G)																							
HR C + (G)																							
HR C (G)																							
HR C - (G)																							
Total	1																						

Source: HR Ratings



-Three- Year U.S. Public Finance Short Term Global Transition Matrix – 2015-2018

*The three-year U.S. Public Finance Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global U.S Public Finance ratings.



- Ten- Year U.S. Public Finance Long Term Global Transition Matrix – 2008-2018

*The ten-year U.S. Public Finance Long Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings started issuing Long Term U.S. Public Finance ratings as of 2014.



- Ten- Year U.S. Public Finance Short Term Global Transition Matrix – 2008-2018

*The ten-year U.S. Public Finance Short Term Global Transition Matrix cannot be calculated due to the fact that HR Ratings hasn't issued Short Term Global U.S Public Finance ratings.

Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- One- Year International Public Finance Transition Matrix – 2017-2018

International Public Finance Issuers - 1 Year Transition and Default Rates
(December 31, 2017 through December 31, 2018)

Credit Ratings as of 12/31/2017		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2017 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	48	42%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58%	-
HR AA +	75	24%	67%	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7%	1%
HR AA	76	12%	12%	26%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	4%
HR AA -	27	-	19%	26%	37%	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7%	7%
HR A +	20	-	10%	20%	20%	30%	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15%	-
HR A	13	-	-	8%	8%	-	69%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15%	-
HR A -	14	-	-	-	-	-	7%	79%	7%	-	-	-	-	-	-	-	-	-	-	-	-	-	7%
HR BBB +	17	-	-	-	-	-	6%	-	76%	6%	6%	-	-	-	-	-	-	-	-	-	-	6%	-
HR BBB	21	-	-	-	-	-	-	-	14%	76%	-	-	-	-	-	-	-	-	-	-	5%	-	5%
HR BBB -	18	-	-	-	-	-	-	-	28%	11%	50%	6%	-	-	-	-	-	-	-	-	-	-	6%
HR BB +	6	-	-	-	-	-	-	-	-	-	17%	67%	17%	-	-	-	-	-	-	-	-	-	-
HR BB	9	-	-	-	-	-	-	-	-	-	-	44%	44%	11%	-	-	-	-	-	-	-	-	-
HR BB -	1	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-
HR B +	1	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-
HR B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	1	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-
HR C -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	347																						

Source: HR Ratings



Credit Ratings Performance Measurement Statistics

NRSRO Ratings

- Three- Year International Public Finance Transition Matrix – 2015-2018

International Public Finance Issuers - 3 Year Transition and Default Rates
(December 31, 2015 through December 31, 2018)

Credit Ratings as of 12/31/2015		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 12/31/2015 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	23	35%	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61%	-
HR AA +	39	28%	36%	8%	3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26%	-
HR AA	83	13%	28%	7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	6%
HR AA -	39	-	10%	23%	13%	3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	5%
HR A +	27	-	4%	7%	19%	7%	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48%	11%
HR A	15	-	-	7%	13%	7%	33%	13%	-	-	-	-	-	-	-	-	-	-	-	-	-	27%	-
HR A -	12	-	-	-	-	-	17%	25%	8%	-	8%	-	8%	-	-	-	-	-	-	-	-	17%	17%
HR BBB +	13	-	-	-	-	8%	15%	-	23%	15%	8%	-	-	-	-	-	-	-	-	-	-	31%	-
HR BBB	18	-	-	-	-	-	-	22%	28%	11%	11%	-	-	-	-	-	-	-	-	-	6%	6%	17%
HR BBB -	20	-	-	-	-	-	-	-	35%	30%	20%	10%	5%	-	-	-	-	-	-	-	-	-	-
HR BB +	19	-	-	-	-	-	-	-	11%	26%	11%	16%	-	11%	-	-	-	-	-	-	-	11%	16%
HR BB	8	-	-	-	-	-	-	-	-	25%	38%	-	13%	-	-	-	-	-	-	-	-	-	25%
HR BB -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	316																						

Source: HR Ratings



- Ten- Year International Public Finance Transition Matrix – 2008-2018

International Public Finance Issuers - 10 Year Transition and Default Rates
(May 31, 2008 through December 31, 2018)

Credit Ratings as of 05/31/2008		Credit Ratings as of 12/31/2018 (Percent)																			Other Outcomes During 05/31/2008 - 12/31/2018 (Percent)		
Credit Rating Scale	Number of Ratings Outstanding	HR AAA	HR AA +	HR AA	HR AA -	HR A +	HR A	HR A -	HR BBB +	HR BBB	HR BBB -	HR BB +	HR BB	HR BB -	HR B +	HR B	HR B -	HR C +	HR C	HR C -	Default	Paid Off	Withdrawn (Other)
HR AAA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA +	2	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR AA -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A +	1	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-
HR A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR A -	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
HR BBB +	1	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BBB	1	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
HR BBB -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR BB -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR B -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HR C -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: HR Ratings

Long Term Local Rating Scale

Symbol	Definition of the Rating
HR AAA	The issuer or issue with this rating is considered to have the highest credit quality, offering high safety for timely payment of debt obligations. Maintains minimum credit risk.
HR AA	The issuer or issue with this rating is considered to have high credit quality and offers high safety for timely payment of debt obligations. Maintains very low credit risk under adverse economic scenarios.
HR A	The issuer or issue with this rating offers acceptable safety for timely payment of debt obligations. Maintains low credit risk.
HR BBB	The issuer or issue with this rating provides moderate safety for timely payment of debt obligations. Maintains moderate credit risk, with weakness in the ability to pay in adverse economic scenarios.
HR BB	The issuer or issue with this rating provides inadequate safety for timely payment of debt obligations. Maintains high credit risk.
HR B	The issuer or issue with this rating provides low safety for timely payment of debt obligations and maintains a high credit risk. The issue or issuer is susceptible to falling into default.
HR C	The issuer or issue with this rating exhibits high probability of falling into default in debt obligation payments.
HR D	The issuer or issue with this rating has the lowest rating. The issue is already in, or is highly likely to fall into, default in the short term.

**Our ratings range from HR AAA to HR D, a plus or minus sign may be included in the range from HR AA to HR C, to indicate strength or weakness within a general rating category.*

Short Term Local Rating Scale

Symbol	Definition of the Rating
HR1	The issuer or issue with this rating exhibits high capacity for timely payment of debt obligations in the short term and maintains the lowest credit risk. Within this category, debt instruments and or issuers with features showing relative superiority in terms of credit characteristics may be rated as HR+1.
HR2	The issuer or issue with this rating exhibits an acceptable capacity for timely payment of debt obligations in the short term and maintains a higher credit risk compared with higher credit rating debt instruments.
HR3	The issuer or issue with this rating exhibits a moderate capacity for timely payment of debt obligations in the short term and maintains a higher credit risk compared with higher credit rating debt instruments.
HR4	The issuer or issue with this rating exhibits an insufficient capacity for timely payment of debt obligations in the short term and maintains a very high credit risk. These instruments are susceptible to falling into default.
HR5	The issuer or offering is highly probable they will fall into default on the payment of debt obligations.
HR D	The issuer or offering given this rating has the lowest credit rating and they are already in default.

Long Term Global Rating Scale

Symbol	Definition of the Rating
HR AAA (G)	The issuer or issue with this rating is considered to have the highest credit quality, offering high safety for timely payment of debt obligations. Maintains minimum credit risk on a global scale basis.
HR AA (G)	The issuer or issue with this rating is considered to have high credit quality and offers high safety for timely payment of debt obligations. Maintains very low credit risk on a global scale basis, under adverse economic scenarios.
HR A (G)	The issuer or issue with this rating offers acceptable safety for timely payment of debt obligations. Maintains low credit risk on a global scale basis.
HR BBB (G)	The issuer or issue with this rating provides moderate safety for timely payment of debt obligations. Maintains moderate credit risk on a global scale, with weakness in the ability to pay in adverse economic scenarios.
HR BB (G)	The issuer or issue with this rating provides inadequate safety for timely payment of debt obligations. Maintains high credit risk on a global scale basis.
HR B (G)	The issuer or issue with this rating provides low safety for timely payment of debt obligations and maintains a high credit risk on a global scale. The issue or issuer is susceptible to falling into default.
HR C (G)	The issuer or issue with this rating exhibits high probability of falling into default in debt obligation payments.
HR D (G)	The issuer or issue with this rating has the lowest rating on a global scale basis. The issue is already in, or is highly likely to fall into, default in the short term.

**Our ratings range from HR AAA (G) to HR D (G), a plus or minus sign may be included in the range from HR AA (G) to HR C (G), to indicate strength or weakness within a general rating category.*

Short Term Global Rating Scale

Symbol	Definition of the Rating
HR1 (G)	The issuer or issue with this rating exhibits high capacity for timely payment of debt obligations in the short term and maintains the lowest credit risk on a global scale basis. Within this category, debt instruments and or issuers with features showing relative superiority in terms of credit characteristics may be rated as HR+1 (G).
HR2 (G)	The issuer or issue with this rating exhibits an acceptable capacity for timely payment of debt obligations in the short term and maintains a higher credit risk compared with higher credit rating debt instruments on a global scale basis.
HR3 (G)	The issuer or issue with this rating exhibits a moderate capacity for timely payment of debt obligations in the short term and maintains a higher credit risk compared with higher credit rating debt instruments on a global scale basis.
HR4 (G)	The issuer or issue with this rating exhibits an insufficient capacity for timely payment of debt obligations in the short term and maintains a very high credit risk on a global scale basis. These instruments are susceptible to falling into default.
HR5 (G)	The issuer or offering is highly probable they will fall into default on the payment of debt obligations.
HR D (G)	The issuer or offering given this rating has the lowest credit rating and they are already in default.

Structured Finance Rating Scale

Symbol	Definition of the Rating
HR AAA (E)*	The issue with this rating is considered to have the highest credit quality, offering high safety for timely payment of debt obligations. Maintains minimum credit risk.
HR AA (E)*	The issue with this rating is considered to have high credit quality and offers high safety for timely payment of debt obligations. Maintains very low credit risk under adverse economic scenarios.
HR A (E)*	The issue with this rating offers acceptable safety for timely payment of debt obligations. Maintains low credit risk.
HR BBB (E)*	The issue with this rating provides moderate safety for timely payment of debt obligations. Maintains moderate credit risk, with weakness in the ability to pay in adverse economic scenarios.
HR BB (E)*	The issue with this rating provides inadequate safety for timely payment of debt obligations. Maintains high credit risk.
HR B (E)*	The issue with this rating provides low safety for timely payment of debt obligations and maintains a high credit risk. The issue is susceptible to falling into default.
HR C (E)*	The issue with this rating exhibits high probability of falling into default in debt obligation payments.
HR D (E)*	The issue with this rating has the lowest rating. The issue is already in, or is highly likely to fall into, default in the short term.

(E)* is a local rating

*Our ratings range from HR AAA (E) to HR D (E), a plus or minus sign may be included in the range from HR AA (E) to HR C (E), to indicate strength or weakness within a general rating category.



Market Risk Rating Scale

Symbol	Definition of the Rating
1HR	The asset portfolio has extremely low sensitivity to changes in market conditions.
2HR	The asset portfolio has low sensitivity to changes in market conditions.
3HR	The asset portfolio has low to moderate sensitivity to changes in market conditions.
4HR	The asset portfolio is moderately sensitive to changes in market conditions.
5HR	The asset portfolio has moderate to high sensitivity to changes in market conditions.
6HR	The asset portfolio is highly sensitive to changes in market conditions.
7HR	The asset portfolio is extremely sensitive to changes in market conditions.

Default Criteria

HR Ratings' Default Criteria is as follows:

- a) HR Ratings defines "default" as the failure to comply with the obligatory interest and principal payments according to the original agreed terms. In the context of the responsible entity of complying with the payment, the determination of the credit rating depends on the degree of compliance of its set payment obligations. When the default of an entity covers the "predominant" part of its debt, the rating would be HR D.
- b) When the default extends to a "significant" part of its debt but it is not necessarily predominant, the rating would be HR DS (selective default).
- c) In several cases, an entity may be in difficult conditions that damage its will and/or capacity of complying with its payment obligations according to the original agreed conditions. This may result in a renegotiation of the payment terms between the entity and its creditors. HR Ratings considers a restructure in which the creditors agree to accept the new payment terms knowing that the alternative is to receive inferior payments to the ones originally agreed (or no payment whatsoever), as a "forced restructure". This restructure may represent a "technical default" due to the fact that the entity wouldn't be complying with the original agreed payment terms. The result would be the assignment of a rating of HR DT (technical default) for the instrument(s) in matter, in the moment in which the determined payment is made in the forced restructure.

The definition of default was last updated on March 2016 and took effect starting April 22nd, 2016 applying to all asset classes that HR Ratings analyses. For further reference please consult the General Methodological Criteria published on HR Ratings website.

URL

HR Ratings Uniform Resource Locator (URL) of its corporate Internet website where the credit rating histories are disclosed is the following:

- <http://hrratings.com/en/ratings>