Analyst Promotions within Credit Rating Agencies: Accuracy or Bias?

INTERNET APPENDIX

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Appendix Table A-1
Number of Rated Firms and Level of Rated Firm Assets by Analyst Rank and Years in Rank

This table reports statistics by analyst rank and years in rank. Panel A reports the average number of covered firms and the fraction of observations for which we observe an increase in the number of covered firms. Panel B reports the mean total assets of covered firms and mean change in total assets of covered firms. Panel C reports the number of analysts in each cell. The unexpectedly large number of covered firms for first-year Analysts is driven by 5 observations.

Panel A

| | Mean Number of Covered Firms | | | | | Fraction with Increase in Number of Covered Firms? | | | | |
| | Years in Rank | | | | | Years in Rank | | | | |
Analyst Rank	1	2	3	4	5+	1	2	3	4	5+
Analyst	16.6	6.1	7.5	7.6	7.3	100.0%	65.2%	62.2%	31.0%	33.3%
Senior Analyst	8.5	9.3	10.1	10.0	7.9	50.0%	69.6%	49.1%	37.8%	27.1%
Senior Credit Officer	13.0	8.4	9.8	9.0	6.9	34.7%	33.3%	20.0%	38.9%	33.3%
Senior Vice President	24.1	25.0	29.8	29.4	23.8	69.7%	50.0%	30.8%	47.8%	26.8%
Managing Director	33.0	30.2	35.3	33.4	16.0	38.9%	55.0%	46.2%	23.1%	4.8%

Panel B

| | Mean Total Assets of Covered Firms | | | | | Mean Change in Total Assets of Covered Firms | | | | |
| | Years in Rank | | | | | Years in Rank | | | | |
Analyst Rank	1	2	3	4	5+	1	2	3	4	5+
Analyst	21.5	27.3	39.2	37.6	37.4	10.2	19.0	6.7	6.9	-2.9
Senior Analyst	101.2	84.5	97.8	79.6	106.2	33.7	27.6	15.6	-10.1	6.3
Senior Credit Officer	136.5	136.6	112.1	77.9	98.4	50.1	8.8	15.4	6.9	14.7
Senior Vice President	182.6	232.5	294.8	383.4	357.4	53.0	70.8	37.1	45.4	34.2
Managing Director	462.3	388.8	407.0	504.4	229.9	122.7	55.4	52.5	161.7	-26.2

Panel C

| | Count | | | | | |
| | Years in Rank | | | | | |
Analyst Rank	1	2	3	4	5+	TOTAL
Analyst	5	46	37	29	27	144
Senior Analyst	20	69	55	37	48	229
Senior Credit Officer	49	39	25	18	27	158
Senior Vice President	33	32	26	23	56	170
Managing Director	18	20	13	13	21	85
TOTAL	125	206	156	120	179	786

Appendix Table A-2
Promotion and Departure Probabilities for Different Measures of Accuracy and Bias

This table summarizes the frequency of Moody's analyst promotions and departures for our three measures of accuracy (STOCK_ACC, RATING_ACC, and YIELD_ACC), two measures of negative bias (DOWNGRADER and MODEL_PRED_PESS), two measures of positive bias (UPGRADER and MODEL_PRED_OPT), and one measure of low abnormal equity returns (LOW_ABNORMAL_RET). Across the columns, we report statistics for all analyst-years and separately for each (beginning of year) rank within Moody's. "Analyst" is the juniormost rank and "Managing Director" is the seniormost rank. Panel A reports the percentage of analyst-years in which analysts that we classify as accurate or biased are promoted; it excludes Managing Directors because they are not eligible for promotion. Panel B reports comparable percentages for departures from Moody's; it includes Managing Directors but excludes the 13 analysts-year observations where we classify the departure as an external promotion. We define the low abnormal equity return dummy variable in Section IV.F and the other dummy variables in Section IV.A.

		Analyst Rank					
Independent Variable	Value	All Levels	Analyst	Senior Analyst	Senior Credit Officer	Senior Vice President	Managing Director
Panel A: Promotion [N = 701]							
STOCK_ACC [t-1]	Yes [N = 346]	16.8%	15.4%	22.6%	18.6%	9.4%	-
	No [N = 355]	12.4%	17.7%	14.0%	11.4%	5.4%	-
RATING_ACC [t-1]	Yes [N = 278]	16.5%	18.2%	21.7%	18.0%	6.2%	-
	No [N = 423]	13.2%	15.7%	15.9%	12.4%	8.6%	-
YIELD_ACC [t-1]	Yes [N = 235]	16.6%	18.2%	21.3%	15.8%	10.4%	-
	No [N = 146]	13.0%	22.2%	17.9%	8.8%	6.5%	-
DOWNGRADER [t-1]	Yes [N = 275]	13.1%	19.2%	16.1%	10.9%	6.7%	-
	No [N = 426]	15.5%	15.2%	19.9%	16.5%	8.4%	-
MODEL_PRED_PESS [t-1]	Yes [N = 181]	9.4%	20.8%	11.9%	8.2%	2.0%	-
	No [N = 520]	16.3%	15.8%	20.6%	17.4%	9.9%	-
UPGRADER [t-1]	Yes [N = 277]	15.2%	12.5%	20.7%	16.4%	9.5%	-
	No [N = 424]	14.2%	19.3%	16.8%	13.6%	6.3%	-
MODEL_PRED_OPT [t-1]	Yes [N = 240]	17.1%	18.0%	20.5%	16.3%	12.7%	-
	No [N = 461]	13.2%	16.0%	17.2%	13.8%	4.7%	-
LOW_ABNORMAL_RET [t-1]	Yes [N = 126]	9.5%	13.6%	6.3%	9.1%	10.0%	-
	No [N = 575]	15.7%	17.2%	20.3%	15.4%	6.7%	-
Panel B: Departure [N = 786]							
STOCK_ACC [t-1]	Yes [N = 388]	3.6%	4.6%	3.5%	2.9%	3.1%	4.8%
	No [N = 398]	7.8%	8.9%	10.5%	8.0%	4.1%	4.7%
RATING_ACC [t-1]	Yes [N = 313]	3.5%	3.6%	6.2%	1.6%	0.0%	5.7%
	No [N = 473]	7.2%	9.0%	7.6%	8.2%	5.7%	4.0%
YIELD_ACC [t-1]	Yes [N = 266]	3.8%	0.0%	7.9%	1.8%	1.5%	3.2%
	No [N = 170]	5.3%	11.1%	2.6%	8.8%	2.2%	4.2%
DOWNGRADER [t-1]	Yes [N = 316]	7.6%	7.7%	9.7%	12.7%	2.7%	4.9%
	No [N = 470]	4.5%	6.5%	5.1%	1.9%	4.2%	4.5%
MODEL_PRED_PESS [t-1]	Yes [N = 201]	6.5%	4.2%	10.2%	8.2%	2.0%	5.0%
	No [N = 585]	5.5%	7.5%	5.9%	4.6%	4.1%	4.6%
UPGRADER [t-1]	Yes [N = 319]	5.3%	7.1%	6.5%	5.5%	1.4%	7.1%
	No [N = 467]	6.0%	6.8%	7.3%	5.8%	5.2%	2.3%
MODEL_PRED_OPT [t-1]	Yes [N = 272]	4.0%	8.0%	6.4%	0.0%	1.6%	3.1%
	No [N = 514]	6.6%	6.4%	7.3%	8.3%	4.7%	5.7%
LOW_ABNORMAL_RET [t-1]	Yes [N = 150]	3.3%	0.0%	9.4%	0.0%	4.0%	0.0%
	No [N = 636]	6.3%	8.2%	6.6%	6.6%	3.3%	6.6%

Appendix Table A-3
Accuracy, Pessimism, and Optimism

This table reports ordered logit and logit specifications analogous to those estimated in Table 7, except that we include OPT_INDEX. The absolute values of Z-statistics are reported below the coefficients, where ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively, based on heteroskedasticity-robust standard errors that are clustered by analyst.

Panel A: Full Sample

Independent Variable	Ordered Logit: CAREER_PATH [t]		Logit: PROMOTED [t]	
	1	2	3	4
ACC_INDEX [t-1]	1.850***	1.865***	1.565***	1.529**
	(4.100)	(3.933)	(2.656)	(2.246)
PESS_INDEX [t-1]	0.565***	0.549***	0.610***	0.569***
	(3.968)	(3.812)	(2.764)	(2.827)
OPT_INDEX [t-1]	0.964	0.924	1.015	0.952
	(0.316)	(0.631)	(0.106)	(0.320)
Calendar Year FEs?	No	Yes	No	Yes
Analyst Rank * Years in Rank FEs?	No	Yes	No	Yes
N	786	786	701	701
Pseudo R-Squared	0.028	0.095	0.030	0.137

Panel B: Excludes career outcomes for 2008 and 2009

Independent Variable	Ordered Logit: CAREER_PATH [t]		Logit: PROMOTED [t]	
	1	2	3	4
ACC_INDEX [t-1]	2.017***	1.982***	1.646**	1.599**
	(3.856)	(3.571)	(2.479)	(2.056)
PESS_INDEX [t-1]	0.562***	0.549***	0.618**	0.562**
	(3.316)	(3.278)	(2.376)	(2.532)
OPT_INDEX [t-1]	0.953	0.918	1.033	0.949
	(0.326)	(0.525)	(0.179)	(0.255)
N	563	563	499	480
Pseudo R-Squared	0.032	0.090	0.024	0.122

Panel C: Excludes senior vice presidents (SVP) and managing directors (MD)

Independent Variable	Ordered Logit: CAREER_PATH [t]		Logit: PROMOTED [t]	
	1	2	3	4
ACC_INDEX [t-1]	1.893***	1.958***	1.588***	1.609**
	(4.097)	(4.079)	(2.654)	(2.407)
PESS_INDEX [t-1]	0.572***	0.530***	0.668**	0.596**
	(3.473)	(3.561)	(2.169)	(2.411)
OPT_INDEX [t-1]	0.944	0.836	0.972	0.827
	(0.436)	(1.224)	(0.175)	(1.033)
N	531	531	531	531
Pseudo R-Squared	0.032	0.086	0.020	0.127

Appendix Table A-4
Accuracy Versus Pessimism Controlling for Level of Rated Assets

This table reports ordered logit and logit specifications analogous to those estimated in Table 7, except that we include LN_RATED_ASSETS, the natural logarithm of the level of rated assets in year t-1. The absolute values of Z-statistics are reported below the coefficients, where ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively, based on heteroskedasticity-robust standard errors that are clustered by analyst.

Panel A: Full Sample

Independent Variable	Ordered Logit: CAREER_PATH [t]		Logit: PROMOTED [t]	
	1	2	3	4
ACC_INDEX [t-1]	1.784***	1.721***	1.518**	1.409*
	(4.066)	(3.519)	(2.570)	(1.797)
PESS_INDEX [t-1]	0.552***	0.522***	0.590***	0.546***
	(4.161)	(4.136)	(2.977)	(2.998)
LN_RATED_ASSETS [t-1]	1.088	1.220***	1.155*	1.351***
	(1.477)	(2.761)	(1.928)	(2.809)
Calendar Year FEs?	No	Yes	No	Yes
Analyst Rank * Years in Rank FEs?	No	Yes	No	Yes
N	786	786	701	701
Pseudo R-Squared	0.030	0.099	0.028	0.146

Panel B: Excludes career outcomes for 2008 and 2009

Independent Variable	Ordered Logit: CAREER_PATH [t]		Logit: PROMOTED [t]	
	1	2	3	4
ACC_INDEX [t-1]	1.940***	1.834***	1.608**	1.453*
	(3.843)	(3.285)	(2.526)	(1.694)
PESS_INDEX [t-1]	0.547***	0.506***	0.595***	0.537***
	(3.442)	(3.640)	(2.586)	(2.733)
LN_RATED_ASSETS [t-1]	1.107	1.286***	1.179*	1.442***
	(1.454)	(3.047)	(1.772)	(2.784)
N	563	563	499	480
Pseudo R-Squared	0.035	0.102	0.032	0.145

Panel C: Excludes senior vice presidents (SVP) and managing directors (MD)

Independent Variable	Ordered Logit: CAREER_PATH [t]		Logit: PROMOTED [t]	
	1	2	3	4
ACC_INDEX [t-1]	1.785***	1.773***	1.490**	1.416*
	(3.721)	(3.481)	(2.291)	(1.743)
PESS_INDEX [t-1]	0.551***	0.512***	0.652**	0.581**
	(3.756)	(3.781)	(2.329)	(2.498)
LN_RATED_ASSETS [t-1]	1.287***	1.311***	1.335***	1.382***
	(3.474)	(3.044)	(3.404)	(2.887)
N	531	531	531	531
Pseudo R-Squared	0.047	0.098	0.042	0.143