Rating Friends: the Effect of Personal Connections on Credit Ratings

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Research question

Are credit ratings affected by personal connections between directors of issuing companies and credit rating agencies (CRAs)?

Motivations

- CRAs should provide impartial independent ratings. As noted by the SEC in 2003, CRAs strongly take the position that "[...] *their reputation for issuing objective and credible ratings is of paramount importance* [...]".

- Moody's Code of Professional Conduct assures investors of the "*Independence and Avoidance and/or Management of Conflicts of Interest*".

- ***However*** directors (and top execs) of CRAs sit on ratings committees. Moody's regulation document states: "*At minimum, the committee includes a managing director or other designated individual and the lead analyst.*"

Motivations

- In his comment on the SEC proposed rules for Nationally Recognized Statistical Rating Organizations (2011), the former Senior President William Harrington at Moody's, declared: "[…] ***From the Managing Directors of the Derivatives Group upward to the CEO of Moody's Corporation Ray McDaniel, Moody's management undercut analyst attempts to produce informed Moody's opinions regarding CDOs*** […]"

- Therefore personal connections may affect ratings in 2 ways:
  - Give CRAs access to soft information
    → *Information Channel*
- CRAs have the incentives to issue more conservative ratings to those firms with stronger asymmetric information (Bannier, et al., 2010).

  - Exacerbate the incentive problem embedded in the issuer-paid business model
    → *Favourable Treatment*
- CRAs' need to maintain market share may create an incentive for them to cater to the interests of the issuers (e.g., Mählmann (2011); Jiang Stanford and Xie (2012))

- Increasing growing body of studies on the importance of directors' networks on corporate policies and decisions:
  - Portfolio allocation (Cohen Frazzini Malloy (2008));
  - Access to capital (Engelberg Gao Parson (2012));
  - Investment decisions (Renneboog and Zhao (2013))
  - Firm value (Fracassi and Tate (2012))
- We show that yet personal connections relate also to credit ratings.

Data

- Our tests are all on Moody's due to data availability.
- S&Ps is a subsidiary of McGraw-Hill's. Therefore it proved impossible to discriminate the directors of the rating agency from the rest in BoardEx (except for the President of S&P's division).
- Fitch is jointly owned (50/50) by Fimalac (a French public financial company) and Hearst Corporation (US media private firm), and it is a private company. There is very little data in BoardEx.

Data (Economic)

- SDC Platinum issue data (including **credit rating**), issue date, maturity, and seniority, filing date and filing number
- SEC's EDGAR database for Solicitation data (S-3 forms)
- Compustat-CRSP for financial and accounting variables
- TRACE for bond yields
- Coles Daniel and Naveen (2013) for ***Delta*** and ***Vega***
- Entrenchment index by Bebchuck Cohen and Ferrel (2009)

Data (Connections)

- BoardEx provides biographical data on board members and senior executives around the world.

- *Connection Dummy, Current Connection and Past Connection*
  - All Connections are initiated prior to the debt issue. Current Connection are still ongoing at the time of issue while Past Connections have terminated before the issue date

- *Professional, Education and Army Connections.*
  - Professional Connection: when the CEO of an issuing company and the president of Moody's have served on the board of a third company together for several years.
  - Educational: When two directors have graduated from the same Institution the same year
  - Army: as given by Boardex

Data

- Merging all these datasets gives us a sample of 1,719 non-convertible public debt issues by 327 US industrial companies from 1994 to 2011.

- Very comparable to previous studies
  - Poon (2003) 595 issues and 265 firms
  - Gan (2004) 1,410 issues and 303 firms
  - Butler and Cornaggia (2012) 360 issues and 153 firms.

Descriptive Stats

	Mean	S.D.	Min	Max
Connection Dummy	0.786	0.409	0	1
Current Conn. Dummy	0.272	0.445	0	1
Past Conn. Dummy	0.770	0.420	0	1
Professional Conn. Dummy	0.618	0.485	0	1
Educational Conn. Dummy	0.544	0.498	0	1
Army Connection Dummy	0.161	0.367	0	1
Total Connections	5.153	11.668	0	104
Current Connections	1.488	6.458	0	71
Past Connections	3.665	7.639	0	61
Professional Connections	4.068	11.505	0	101
Educational Connections	0.905	1.056	0	6
Army Connections	0.179	0.440	0	3
Number of Issues	1,719			
Number of Firms	327			

Descriptive Stats

Numerical Equivalent	Moody's Rating
17	Aaa
16	Aa1
15	Aa2
14	Aa3
13	A1
12	A2
11	A3
10	Baa1
9	Baa2
8	Baa3
7	Ba1
6	Ba2
5	Ba3
4	B1
3	B2
2	B3
1	Caa, Caa1 & Caa2

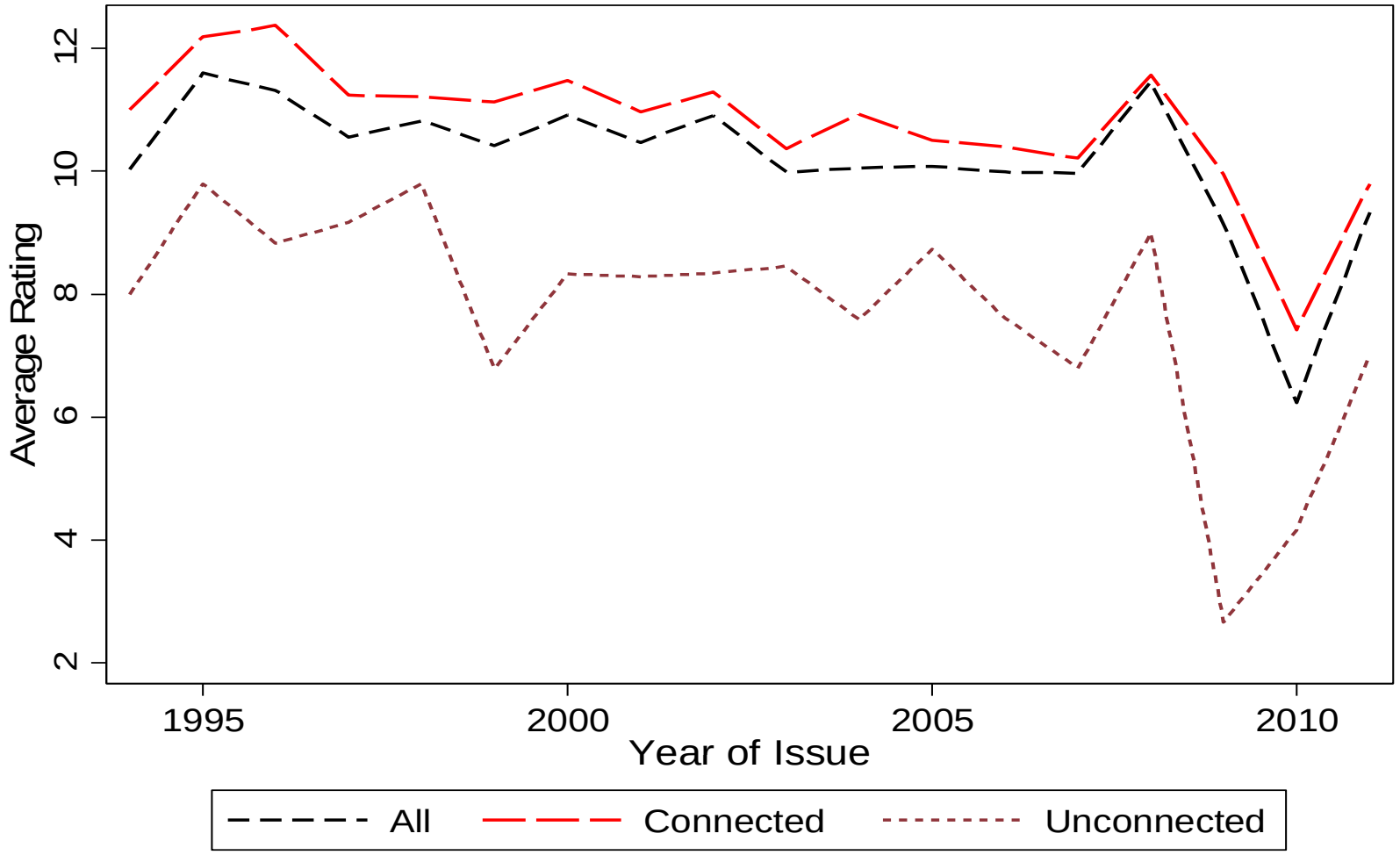
Descriptive Stats

	All Sample	Non-Connected Issues		Connected Issues		Diff. in Means (*p*-value)
	Mean	N	Mean	N	Mean	
Moody's Rating	10.442	367	8.376	1,352	11.003	0.000
Solicitation	0.596	367	0.599	1,352	0.595	0.889
Issue Amount ($m)	1550.332	367	773.000	1,352	1760	0.000
Maturity	12.049	367	12.422	1,352	11.948	0.475
Seniority	0.970	367	0.921	1,352	0.984	0.000
Default – 5Y (%)	1.264%	335	5.373%	1,247	0.160%	0.000
Default – 10Y (%)	2.449%	324	9.568%	1,187	0.505%	0.000
Bond Yield	5.446	75	6.189	354	5.288	0.000

Descriptive Stats (firm level)

	All Sample	Non-Connected Firms		Connected Firms		Diff. in Means (*p*-value)
	Mean	N	Mean	N	Mean	
Int. Cov. Ratio	9.957	7.252	367	10.691	1352	0.006
Profit Margin	0.192	0.205	367	0.190	1352	0.024
Return on Assets	0.166	0.150	367	0.171	1352	0.000
Leverage	0.252	0.306	367	0.237	1352	0.000
Bk-to-Mk Ratio	0.404	0.477	367	0.385	1352	0.000
Total Assets ($m)	16025	5380	367	18900	1352	0.000
MM Beta	0.829	0.844	367	0.826	1352	0.476
Sigma	0.020	0.022	367	0.020	1352	0.000
Ln. (1+No. of Con. Ind)	7.942	6.879	367	8.231	1352	0.000

Descriptive Stats



Ordered Probit

	I	II	III	IV
Connection Dummy	**0.308*** **			
Current Connection Dummy		**0.184*** **		
Past Connection Dummy			**0.251*** **	
Professional Connection Dummy				**0.150** **
Education Connection Dummy				**0.148** **
Army Connection Dummy				**0.164** **
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R2	0.227	0.226	0.226	0.227
N	1,719	1,719	1,719	1,719

Standard CVs included Solicitation, Issue Amount, Maturity, Seniority, Int. Cov. Ratio, Profit Margin, ROA, Leverage, B/M, Size, Beta, Sigma, Total Connectivity. Standard errors are robust to heteroskedasticity and they are clustered at the firm level.

Ordered Probit

	Solicited								
	Yes	**No**	**Business ties**		**Education**	**Exper.**	**Compens.**	**C.Gov.**	**All**
Conn. Dummy	**0.274*** **	**0.316** **	**0.301*** **	**0.295*** **	**0.330*** **	**0.332*** **	**0.287*** **	**0.557*** **	**0.681*** **
Relate			0.026***						0.027
Tot.Issues				0.005**					0.006
MBA					-0.91***				-1.41***
MSc					0.196				-0.311
PhD					-0.299				-0.35
Other					-1.18***				-1.138
Quoted Boards						0.021***			0.028*
Total Boards						-0.011**			0.006
Age						-0.024**			-0.010
*Delta**							-0.041**		-0.163*
*Vega**							-0.663***		0.336
E-index								0.032	-0.056
N	**1,025**	**694**	**1,719**	**1,719**	**1,715**	**1,502**	**1,499**	**541**	**435**

* Divided by 1000 for presentation purposes

Economic Impact

	I	II	III	IV	V	VI
Connection Dummy	0.903***					
	0.903					
Current Connection Dummy		0.765***				
		0.765				
Past Connection Dummy			0.838***			
			0.838			
Ln.(1+N. of Connections)				0.66***		
				0.918		
Ln. (1+N. of Curr. Connections)					0.69***	
					0.956	
Ln. (1+N. of Past Connections)						0.66***
						0.923
Issue and Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	435	435	435	435	435	435

Comparing Apples to Oranges?

- Our Desc Stats show important differences in issue and firm characteristics between connected and unconnected firms
- Connected firms issue larger amounts of debt (almost 3 times), they are more profitable, they are larger (almost 3 times)
- Ideally, we want to show that the difference in outcome is attributable to difference in treatment (connected or not) rather than difference in characteristics

Propensity Score Matching

	Matched Issues	Credit Rating Mean	Diff. in Means (Connected-Non-Connected)	Diff. (*p*-value)	*P*-Score (*p*-value)
			All Connections		
Connected	124	9.895	0.564	0.0492	0.83
Non-Connected	124	9.33			
			Current Connections		
Connected	41	10.39	0.878	0.077	0.586
Non-Connected	41	9.512			
			Past Connections		
Connected	119	9.916	0.806	0.011	0.795
Non-Connected	119	9.109			

Matching on all available (**complete model**) firm and issue level controls, year and industry dummies. The difference between the propensity score of connected firm and its peer cannot exceed 1% in absolute value.

Falsification Tests

- One concern is that results may be driven by unobservable firm-specific characteristic.
  - The ordered probit specification does not allow us to control for firm fixed effects.
  - Matching "falls prey to the same endogeneity problems that arise from omitted variables" Roberts and Whited (2012).

- We perform permutation tests, where we randomly reshuffle the connection status across the subsample of firms that have at least one treated issue.

- If firms specific characteristics are driving the results, then we should still find a positive and significant effect between the placebo treatment and ratings.

Falsification Tests

	True Coefficient	Random Shuffle Coefficient> True Coefficient	No. of Trials	Implied *p*-value
Connection Dummy	0.681	0	100,000	0.000
Current Connection Dummy	0.561	0	100,000	0.000
Past Connection Dummy	0.626	0	100,000	0.000
Ln.(1+No. of Connections)	0.523	0	100,000	0.000
Ln. (1+No. of Current Connections)	0.536	0	100,000	0.000
Ln. (1+No. of Past Connections)	0.524	0	100,000	0.000
N	435			

Interpretation of Results: Default Rate Analysis

	Matched Issues	Default Mean	Diff. in Means (Connected-Non-Connected)	Diff. (*p*-value)	*P*-Score (*p*-value)
			Default in 5 years		
Connected	157	0.000	-0.025**	0.044	0.838
Non-Connected	157	0.025			
			Default in 10 years		
Connected	145	0.000	-0.069**	0.001	0.847
Non-Connected	145	0.069			

Matching on rating, Z-Score, overall connectivity, all issue characteristics (*Solicitation*, *Issue Amount*, *Maturity* and *Seniority*), year and industry dummies. The difference between the propensity score of connected firm and its peer cannot exceed 1% in absolute value.

Interpretation of Results: Bond Yield Analysis

	Matched Issues	Bond Yield Mean	Diff. in Means (Connected-Non-Connected)	Diff. (*p*-value)	*P*-Score (*p*-value)
			At the time of the issue		
Connected	34	5.676	0.091	0.741	0.928
Non-Connected	34	5.585			
			Three years after the issue		
Connected	34	7.234	-0.949	0.225	
Non-Connected	34	8.183			

Matching on rating, overall connectivity, and all issue characteristics (*Solicitation*, *Issue Amount*, *Maturity* and *Seniority*), year and industry dummies. The difference between the propensity score of connected firm and its peer cannot exceed 1% in absolute value.

Conclusions

- Novel evidence on the role of personal connections on Credit Ratings
- Personal connections have a positive effect on ratings
- We perform several robustness tests to control for managerial traits including education, experience, age, risk-taking incentives and also corporate governance
- Further, we control for possible endogeneity using propensity score tests and placebo falsification tests
- We find no evidence of *Favorable Treatment* by the Rating Agency