

DIRECTOR NETWORKS

Amir Barnea and Ilan Guedj (2009)

Research Questions

- How does the board of directors network affects boardroom decisions?
 - ▣ Is CEO compensation affected by board connections?
 - ▣ Is CEO pay-performance sensitivity affected by board connections?
 - ▣ Is CEO turnover affected by board connections?

What do we learn from this paper?

- In firms whose directors are more central in the network:
 - CEO pay is higher
 - CEO pay is less sensitive to firm performance
 - CEO turnover is less likely to occur.
 - Well-connected directors are more likely to be awarded more directorships in the future

Data

- Five different sets:
 - IRRC-Directors data set
 - Director characteristics for all firms in S&P 1500 index from 1996-2004
 - ExecuComp
 - CEO compensation data
 - Compustat and CRSP
 - Firm characteristics
 - IRCC-Governance data set
 - Corporate governance variables

- Total obs.: 9889. Unique obs.: 1914

Network Measures (1)

□ Degree:

- Number of direct links that each director has to other director in the network. For year t :

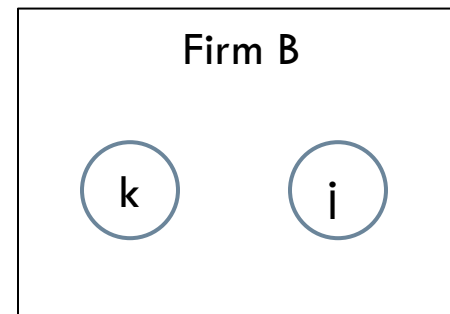
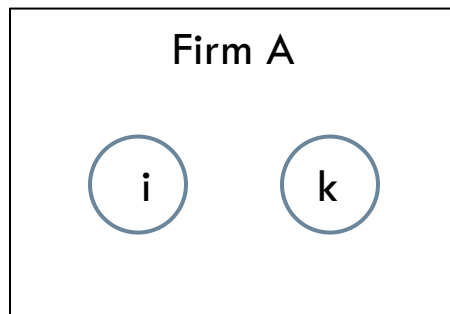
Director	1	2	3	4	N_t
1	0	1	0	0					1
2	1	0	1	1					0
3	0	1	0	0					0
4	0	1	0	0					1
.									
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.									
.									
N_t	1	0	0	1					0

Network Measures (2)

- Closeness :
 - ▣ A refined measure of the importance of the links that each director has.
 - ▣ Variable that assigns weights to each connection
 - ▣ “Central” directors under this notion have very short communication paths to all other directors in the network

Network Measures (3)

- **Betweenness :**
 - ▣ Estimate of the importance of non-direct links to network centrality.
 - ▣ Importance of each director in linking directors to each other
 - $\text{Betweenness}(\text{director } k) > \text{Betweenness}(\text{director } i)$
 - $\text{Betweenness}(\text{director } k) > \text{Betweenness}(\text{director } j)$



Results (1)

- CEO Compensation:

$$CEO\ Compensation_{it} = \beta_0 + \beta_1 Connectedness_{it} + \beta_2 Controls_{it}$$

- Firm-level controls:

- Value of assets
- Current and future profitability: Tobin's Q, Stock Returns, Total Debt to Assets, Firm Age
- Fixed effects: year, industry and state
- CEO characteristics: Age, Tenure, Gender
- Governance characteristics

- Output:

- Other things equal, a CEO of a firm in the top quintile of connected firms receives a salary (total compensation) 11% (14%) higher than that of a CEO of a firm in the bottom quintile of connected firms

- Endogeneity concerns: Run fixed effects and instrumental variable test.

Results (2)

□ CEO Pay-Performance Sensitivity:

$$W_{jt} = \alpha + \beta_1 \times R_{jt} + \beta_2 \times Connectedness_{jt} + \beta_3 \times R_{jt} \times Connectedness_{jt} + \gamma \times Control_{jt} + \delta \times R_{jt} \times Control_{jt} + \sum_{i=1}^{50} \theta_i \times Industry_i + \sum_{t=1997}^{2004} \mu_t \times Year_t + \varepsilon_{jt}$$

□ Pay-performance sensitivity:

$$\partial W / \partial R = \beta_1 + \beta_3 \times Connectedness + \delta \times Control$$

$$\partial W / \partial R = \beta_1 + \beta_3 \times Connectedness + \beta_5 \times F(Assets) + \beta_7 \times F(Volatility) + \beta_9 \times F(TDA)$$

□ Output:

- Other things equal, pay-performance sensitivity of well connected CEOs is 21% lower than that of CEOs of firms whose boards are not well connected.

Results (3)

- CEO Compensation: Logistic regression

$$CEO\ Turnover_{it} = \beta_0 + \beta_1 Connectedness_{it} + \beta_2 Controls_{it}$$

- Firm-level controls:

- Value of assets
- Current and future profitability: Tobin's Q, Stock Returns, Total Debt to Assets, Firm Age
- Fixed effects: year, industry and state
- CEO characteristics: Age, Tenure
- Governance characteristics

- Output:

- Other things equal, a CEO in a firm in the top quintile of connected firms is 24.5% less likely to be fired than a CEO in the bottom quintile of connected firms.

Summing up

- In firms whose directors are more central in the network:
 - CEO pay is higher
 - CEO pay is less sensitive to firm performance
 - CEO turnover is less likely to occur.
 - Well-connected directors are more likely to be awarded more directorships in the future