

Corporate Financial Distress and CEO Networks

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Agenda

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- II. Social Network Analysis & Network Measures
- III. Research Hypothesis
- IV. Data and Sample Selection
- V. Research Results
- VI. Conclusions and Limitations

Hertz Car Rental Deal Case

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- In 2012 , Hertz paid \$2.6 billion in cash to buy Dollar thrifty it's discount competitor .
- Hertz stock price has **declined by 78%** in the last 12 months and the company is now valued at \$1 billion and has a total of \$14 billion of debt.
- The Deal has destroyed shareholder value and left the firm financially unhealthy instead of producing strategic benefits for the company.
- The CEO, a former United Airlines executive assumed that he can impose price hikes the same way as in the Airline business. The Strategy backfired.
- On 5/9/2017 Moody's **downgraded Hertz's rating to B2** and it's coupon bonds are selling at a discount.
- Finally , the new CEO is making a shift by buying new car models.
- Why didn't the former CEO initiate the required strategic changes to avoid the downgrade ?

- Main Question: Do CEOs social networks play an indirect role in escalating or changing the business or corporate strategy ?

Source : Bloomberg Gadfly (5/11/2017)

I. Introduction

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- We utilize the framework presented in [Zajac and Wesphal \(1998\)](#), [Hambrick et al. \(2008\)](#) and [Westphal and Zajac \(2013\)](#)
- The **First dimension** is the Formal structure dimension
 - Designing optimal incentive and monitoring structures
 - Enforcing and creating governance rules and regulations
- The **Second dimension** is the Behavioral structure dimension
 - How positions affect power and politics within organizations
 - How information flows in interorganizational networks
- The **Third dimension** is the Behavioral process dimension
 - How decision making processes may be biased
- [Casciaro et al. \(2015\)](#) Positional, relational or structural properties of actors in a network do not work in isolation of actor psychological motives and outcomes.

I. Introduction(Cont.)

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- ▶ Previous research of finance in social network analysis ONLY utilizes agency theory.
- ▶ Using power as the main explanation . Powerful CEOs are likely to impose their views and influence corporate finance policies.
- ▶ Power is relative not absolute . The power dependence relation relies on the premise that the power an actor has over the other (A over B) is based upon the dependence of the other actor (B over A).
(Emerson 1962; Cook,et al., 1983; Molm et al., 1999 ; Cook and Rice, 2003)
- ▶ The threat-rigidity effect theory : Managers in threatening situations, such as a crisis or failure, tend to behave with rigidity, abusing their power and authority and continuing to escalate their commitment **(Staw et al., 1981; Daily and Dalton, 1994; and Mellahi, 2005).**
- ▶ Self- categorization theory : Suggests that individuals are more likely to seek and rely on advice, information and seek conformity and approval from alters or connections who share a specific attribute **(Tajfel et al., 1971)**
- ▶ The presence of weak and strong ties . Does the type of information matter ? **(Hansen,1999)**

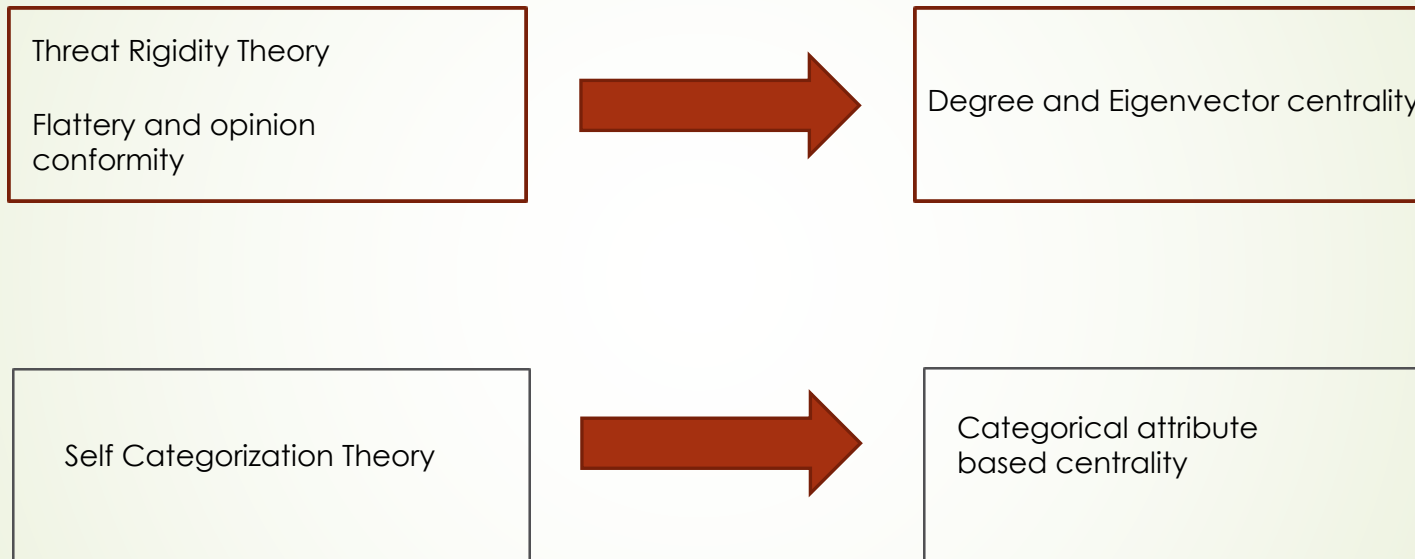
I. Introduction(Cont.)

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- ▶ In declining or crisis periods, organizations often engage in a shift which results in centralization of authority (**Daily and Dalton, 1994**).
- ▶ Larger networks and networks of alters could facilitate quick collection and diffusion of information on relevant corporate policies.
- ▶ On the other hand this could justify or rationalize a specific corporate finance action or policy leading to a specific commitment and slowing corporate reorganization in times of decline or threats of failure.
- ▶ The dissection of CEO alters in groups could assist in understanding how CEOs relate differently to one connection from another. Could sharing a common attribute impact information delivery and processing?

I. Introduction (Cont.)

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II. Social Network Analysis & Network Measures

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- ▶ Embeddedness : Positional , Structural , Relational
- ▶ We focus on Positional Embeddedness
- ▶ Positional embeddedness is concerned with the position a specific node or actor has in a network.
- ▶ Our network is a one mode network , with Undirected , Unweighted links . Our unit of analysis are executive and director employment and social links.
- ▶ Centrality : Centrality is a property of a node's position in a network .
- ▶ We focus on local centrality measures

II. Social Network Analysis & Network Measures (Cont.)

- ▶ Degree and Eigenvector Centrality.
- ▶ We also utilize attribute based centrality measures and compute Degree E-I attribute centrality

Degree Centrality : The Number of direct links or connections a specific actor has .

Eigenvector Centrality : The Number of nodes adjacent to an individual or actor weighted by each adjacent node centrality

Degree E-I Attribute based centrality : Measures the difference between within group links and between group links as a ratio of the total number of alters.

other measures:

- 1) variability of age
- 2) variability in the number of academic degrees
- 3) Difference between time in organization and time as CEO (Non CEO Tenure).

III. Research Hypothesis

- ▶ The Corporate elite , and CEOs with relatively high social status tend to be targets of flattery statements.
- ▶ Managers are susceptible to conformity bias , which could reduce the likelihood that the CEO would make the required strategic changes in response to declining performance (**Park et. al, 2011**) , **Westphal and Stern (2006)** , **Macdonald and Westphal (2003)**
- ▶ Receiving flattery and conformity statements, from those who are already of high social status in the network could amplify CEO confidence in the ongoing strategic direction of the organization and make changing the firm's strategic direction more difficult than if the CEO was connected to less influential individuals. **Petty, Brinol and Tormala (2002)**
- ▶ ***Hypothesis 1: The likelihood of firm financial distress is higher with higher CEO Eigenvector centrality.***

III. Research Hypothesis (Cont.)

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- ▶ If the number of links the CEO has directly increases the chances that the CEO will identify with a group or increase the chances of merely depending on in-group advice, resulting in biases in advice seeking and further organizational decline .
- ▶ CEOs with extensive professional networks are more likely to be targets of such flattery from a larger pool of potential candidates seeking director appointments. This suggests that firms with CEOs with increasing changes in degree centrality increases the likelihood of financial distress .
- ▶ ***Hypothesis 2: The likelihood of firm financial distress is higher with higher CEO Degree centrality.***

III. Research Hypothesis (Cont.)

- ▶ Longer organizational tenure for CEOs assists the CEO in developing and gaining intrafirm networks with members of the organization (**Cao et al., 2006**)
- ▶ CEOs who know more members of the organization, and know them well, are more likely to develop intrafirm networks.
- ▶ A CEO with intrafirm ties can facilitate the dissemination of this information within the organization, which can be used to consider a different direction in its strategic decision making.
- ▶ Strong intrafirm networks are developed through greater and longer exposure to organization members.
- ▶ ***Hypothesis 3: The likelihood of firm financial distress is lower with longer Non-CEO tenure years.***

III. Research Hypothesis (Cont.)

- ▶ CEOs with higher portions of within- group links are more likely to frequently communicate, process and disseminate information to members of the group. People are also more likely to communicate to others based on affinity, seeking approval and conformity from others.
- ▶ This confirmation seeking and reciprocity of conformity from members of the group could prevent members from taking corrective actions.
- ▶ ***Hypothesis 4(a) The likelihood of firm financial distress is higher with lower CEO Degree E-I.***
- ▶ On the other hand, repeated advice seeking and communication with with-in group members could foster trust and reciprocal advice flows between members of the group which could be useful in transferring tacit knowledge .
- ▶ ***Hypothesis 4(b) The likelihood of firm financial distress for firms with specialty knowledge is higher with higher CEO Degree E-I.***

III. Research Hypothesis (Cont.)

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- ▶ One tenet of group formation in societies is the similarity principle, which is the tendency of individuals to seek out and affiliate with other individuals who are similar to them in one characteristic or another.
- ▶ We focus on homophily with regard to age and education.
- ▶ Cognitive and emotional conflict due to age or educational gaps could impact the board in forming kinship links and networks, hindering informational flows and not making timely corporate decisions.
- ▶ ***Hypothesis 5: The likelihood of firm financial distress is higher with higher variability in director age and director education.***

III. Research Hypothesis (Cont.)

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- ▶ CEOs in general and young CEOs in particular take corporate finance decisions to signal their talent and skill. (**Prendergast and Stole, 1996**)
- ▶ Younger managers do not have reputations as high quality managers, they face greater labor market scrutiny if they make a bad investment decision, which could significantly reduce future career opportunities. (**Serfling, 2014**)
- ▶ Early signals of decline could impair firms with young CEOs from taking the required corrective actions to avoid signals of incompetence and poor decision making leading to an escalation of commitment to a specific corporate policy or strategy.
- ▶ ***Hypothesis 6 : The likelihood of firm financial distress is higher with higher CEO Degree/Eigenvector centrality for firms with young CEOs.***

IV. Data and Sample Selection

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- Financial Distress Events from January 2003 to December 2015 - New Generation Data
Distress events include credit rating downgrades, covenant violations, Audit concern, and Default
- Financial Data – Compustat
- CEO Tenure , Board Size , Board Independence , Female Directors ,Board Size – BoardEx
- Network Data – BoardEx
- Ownership Data (Blockholder , Institutional ownership) - Thomson Reuters' 13F dataset
- CEO and Director Education – BoardEx , RelationshipScience , ZoomInfo , CrunchBase, LinkedIn
- We initially have 1,850 unique financially distressed firms . Our final sample includes 706 unique financially distressed firms after matching with other datasets and excluding financial and utilities (SIC codes 6000-6999 and 4900-4949) .
- Each distressed is matched with a nondistressed firm in the same 4 digit SIC code and closest to total assets three years prior to the year of distress.
- This results in a total sample of 696 distressed firm year observations 3 years prior to the year of distress event, 762 distressed firm year observations 2 years prior to the year of distress event and 689 distressed firm year observations 1 year prior to the year of distress event

IV. Data and Sample Selection (Cont.)

- To take into consideration the severity of distress , we calculate Z- score and use 1.81 and 2.99 as two critical values .
- We also calculate interest coverage ratio and use 1 as a critical value.
- We construct 3 different Networks: Employment Networks in Public Firms , Employment Networks in Public & Private Firms , we then add employment and membership links in social institutions (clubs, charities , NGOs ,....) to the second network.
- We assume that the tie (relationship) continues after the end of the official overlap period until one director dies.
- Network size for 2014 (Full network : 671,783 unique Executives and Directors , linked by approximately 73 million ties)
- We use the percentile ranking of the centrality measure with respect to all executives and directors in each specific year. This makes network size changes irrelevant.

IV. Data and Sample Selection (Cont.)

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- ▶ Our final sample of CEOs with full education data is 1,851 CEOs out of our total sample of 1,992 unique CEOs. (92% of sample)
- ▶ Regarding the directors the CEOs are directly connected to, we rely on BoardEx and collect education data on 89,459 directors from the total sample of 125,085 unique directors connected to the CEOs in our sample. (72% of sample)
- ▶ We collect this for the sample of distressed and matched firms one year prior to the year of distress and limit it to the second network which includes public and private firms' employment links.
- ▶ We use three different groupings. The first classification is the Ivy League classification , The second is the top school classification **Gompers (2016)** and the third is the Carnegie classification , which consists of 33 groups .
- ▶ A director with a degree from the CUNY School of law and another degree from Yale University is considered to be part of two groups, 31 and 15 according to the Carnegie classification.

Results and Tables

- Firms with CEOs occupying central locations in the vast network of corporate directors are more likely to experience an event of financial distress
- Results are stronger in the subsample of young CEOs .
- Firms with central CEOs who spent more time employed at the firm prior to acquiring the formal CEO position are less likely to experience an event of financial distress.
- We find that for R&D intensive firms, CEOs with more within group connections reduce the likelihood of financial distress.
- Heterophily with respect to education increases the likelihood of a financial distress event for a firm.

Results and tables

Economic Significance :

1- An increase in Degree percentile in the Public/Private network from the 50th percentile to the 90th percentile increases the likelihood of financial distress by **20.62%**, while an increase in Eigenvector percentile in the Public/Private network from the 50th percentile to the 90th percentile increases the likelihood of financial distress by **16.11%**. (one year lag)

2- An increase in degree and eigenvector centrality ranking increases the likelihood of distress. An increase in Degree percentile in the public/private network from the 50th to the 90th percentile increase the likelihood of distress by **12.22%**, while an increase in Eigenvector centrality percentile in the public/private network increases the likelihood of distress by **11.06%**

3- Increasing age variability of directors from 1 to 10 increases the probability of distress by **13.60 %**, while increasing education variability from 1 to 2 increases the probability of distress by **17.21%**.

VI. Limitations

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Currently working on :

- Include Age as an attribute
- Include Eigenvector attribute based centrality
- Include same school as an educational group

VI. Conclusions

- 1- Firms with CEOs occupying central locations in the vast network of corporate directors are more likely to experience an event of financial distress. Results are stronger in the subsample of young CEOs .
- 2- Firms with central CEOs who spent more time employed at the firm prior to acquiring the formal CEO position are less likely to experience an event of financial distress.
- 3-We find that for R&D intensive firms, CEOs with more within group connections reduce the likelihood of financial distress.
- 4- Heterophily with respect to education increases the likelihood of a financial distress event for a firm.

Thank You