

Movers and Shakers

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- ▶ In business, they usually involve, among other things, raising capital from disparate sources.
- ▶ While it is difficult to unite people in a common endeavor, some people, whom we call “movers and shakers,” seem able to do it.

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- ▶ Applications to private equity and VC, anchor investors, real estate development.
- ▶ Implications for: income distribution, politics, organizational structure, economic growth.

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- ▶ In our baseline model: agents are identical *ex ante*; however, one agent becomes better connected and thus emerges as a mover and shaker.
- ▶ The assumption of *ex ante* identical agents highlights basic forces.
- ▶ In extensions, we step away from this assumption to consider factors associated with being a mover and shaker.

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 1. **Investors:** \$100m needed just for the tower Zeckendorf proposed as the site's centerpiece.
 2. **Potential tenants:** every major company had its offices on St. James Street.

Talk outline

- ▶ Preview + Connections to the Literature
- ▶ Statement of the Problem
- ▶ Results
- ▶ Extensions
- ▶ Applications

Preview: Outline of the Model

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- ▶ **Stage 3:** winning bidder puts effort into raising awareness of the project.
- ▶ Investors who become aware receive private signals of the project's quality and decide whether to invest.
- ▶ The project's return depends both upon its underlying quality and the amount of capital raised.

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- ▶ When we endogenize the network, we find all investors link to one particular manager.
- ▶ That manager consequently moves and shakes the project and earns a rent.

Connections to literature

- ▶ **Global games:** Carlsson and van Damme (1993), Morris and Shin (1998).
- ▶ **Investment:** We explore a new form of “lumpiness” in investment.
- ▶ **Leadership/persuasion:** Dewan and Myatt (2007, 2008), Hermalin (1998), Caillaud and Tirole (2007), Bolton, Brunnermeier and Veldkamp (2013).
- ▶ **Attention in orgs:** Calvo-Armengol, de Marti and Prat (2014), Dessein and Santos (2014), and Dessein, Galeotti and Santos (2014).
- ▶ **Networks + communication:** Hagenbach and Koessler (2010), Galeotti and Goyal (2010), Calvo-Armengol and de Marti (2009), Galeotti, Ghiglino and Squintani (2013).
- ▶ **Sociological literature on networks:** Burt (1992, 2001, 2004).

Statement of the problem: Primitives

- ▶ Two types of agents – managers and investors – and a project.
- ▶ Managers have skills needed to run the project; investors each have one unit of capital they can contribute to the project.
- ▶ Finite number of managers and investors.
- ▶ A network g exists between managers and investors. $g_{ij} = 1$ if manager i and investor j are connected; $g_{ij} = 0$ otherwise.

Statement of the problem: Timing

Four periods; all choices observable; perfect recall.

1. Managers place bids (b_i) in a second-price auction for an asset A needed to undertake the project.
 - ▶ Project yields a return R at the end of the game where:

$$R = \theta + v \cdot K.$$

- ▶ θ denotes the project's quality.
 - ▶ K denotes the amount of capital raised.
 - ▶ $v > 1$ parameterizes the returns to moving and shaking.
-
- ▶ Common prior on θ : $N(\mu, \tau^2)$, $\mu, \tau > 0$.

Statement of the problem: Timing

2. The auction winner (M) decides how much effort to exert (e_M) to make investors aware of the project.
 - ▶ An investor becomes aware of the project with probability e_M if he is connected to M and with probability 0 otherwise.
 - ▶ This delivers a set S of aware investors. Let n denote the cardinality of S . S , once drawn, is commonly known.
 - ▶ Cost of effort: $c(e_M)$, where $c'(0) = 0$ and $c'(e) > 0$ for $e > 0$.

Statement of the problem: Timing

3. M chooses how much equity (β_M) to offer investors in set S in exchange for contributing their capital.
 - ▶ Investors in S then receive private signals of the project's quality: $x_j = \theta + \varepsilon_j$, where the ε_j 's are distributed iid $N(0, \sigma^2)$.
 - ▶ We focus on the case where $\sigma \rightarrow 0$ since this delivers closed-form solutions.
4. Investors in set S simultaneously decide whether to invest (a_j), after which the project is undertaken, its return R is realized, and players receive the share of the return due to them.

Results

Proposition 1

In equilibrium:

- (1) *Managers bid their valuations of asset A in the auction:
 $b_i = V_i$.*
- (2) *Manager i's valuation of asset A is a function of his social connections (d_i): $V_i = V(d_i)$.*
- (3) *There exists \hat{v} such that, whenever the returns to moving and shaking exceed \hat{v} ($v > \hat{v}$):*
 - (i) *$V(d_i)$ is strictly increasing in d_i .*
 - (ii) *Provided the manager who wins the auction has some social connections ($d_M > 0$), he exerts positive effort ($e_M > 0$).*

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- ▶ Assume there are initially no connections between agents.
- ▶ In period 0, each investor chooses one manager to whom he will link.

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- ▶ We find: even though managers are identical *ex ante*, all investors link to one particular manager in equilibrium.
- ▶ This manager consequently wins the auction, moves and shakes the project, and earns a higher payoff than his peers.
- ▶ The intuition is as follows.

Endogenizing the network: intuition

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- ▶ They prefer to do so because the most connected manager wins the auction; unless an investor links to the auction winner, he has no opportunity to invest in the project.

Endogenizing the network: intuition

- ▶ Investors strictly prefer to link to the most connected manager.
- ▶ They prefer to do so because the most connected manager wins the auction; unless an investor links to the auction winner, he has no opportunity to invest in the project.
- ▶ Since investors strictly prefer to link to the most connected manager, all investors end up linking to the same manager in equilibrium.

Extensions

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2. Talent at communicating with investors: $c\left(\frac{e_j}{\gamma_j}\right)$.
3. How much capital they have: k_j .
 - ▶ M can put $s_M \leq k_M$ of seed capital into the project before investors decide whether to participate.

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- ▶ When we endogenize the network, these characteristics are also predictive of who emerges as most connected.
 - ▶ As before, all investors link to one particular manager (Y). But an equilibrium only exists in which $i = Y$ if $(\alpha_i, \gamma_i, k_i)$ is large.
 - ▶ Note: Y need not be the most skilled manager; and Y earns a higher expected payoff than his peers even if less skilled.

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- ▶ Intuitively, investors may coordinate on a manager who is more or less suited to run the project.

Applications

1. Real Estate Development.
2. Entrepreneurship.
3. Venture Capital.
4. Seed Capital.

Concluding remarks

Some implications and potential avenues for future work:

- ▶ Inequality
- ▶ Literature on “persistent performance differences” across firms.
- ▶ Political campaigns
- ▶ Towards a theory of *network capital*?

Thank You!

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