Special Deals from Special Investors:
The Rise of State-Connected Private Owners in China

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Discussion
Randall Morck

Discussant Has a Duty to Criticize

☐ Criticizing a good paper is much easier that writing a good paper

☐ But a Discussant's job is to criticize

☐ So here goes …

"Any fool can criticize, complain, and condemn—and most fools do."
— Dale Carnegie,

Six Stylized Facts about Chinese Businesses

Fact 0: Lots of registered corporations are held via(chains of) shell companies. Why?

☐ **Separation of ownership from control?**

Table 7: Share of Connected Owners in Registered Capital, 2000-2019

	All Private	Connected Private		Connected State
		Direct	Indirect	
	Cash Flow Rights			
2000	54.7%	9.9%	4.2%	38.5%
2010	64.6%	13.9%	10.1%	33.0%
2019	76.7%	15.3%	18.2%	22.5%
	Control Rights			
2000	52.9%	8.8%	4.1%	40.0%
2010	62.7%	13.3%	9.6%	34.9%
2019	76.1%	16.3%	17.4%	23.1%

Note: Private owners are defined as individuals, foreign legal persons and other private organizations. Directly connected private owners have joint ventures with state owners. Indirectly connected private owners are linked to the state through another private owner. "All private" includes unconnected and connected private owners. Connected state owners have joint ventures with private owners. Control rights assigns all the registered capital of a firm to the controlling shareholder. See Appendix E for details.

Figure 1: Owners of East Hope Aluminum and Dachang Mining

11% + 89% = 100%

36.6% + 51.3% +12.2 =100%

Note: East Hope Aluminum and Dachang Mining are the two dark gray circles at the bottom of the figure. The other circles represent the owners of East Hope Aluminum and Dachang Mining. Dark gray circles represent "real" private companies, light grey (suspected) holding shells, red for state-owned firms, and blue for individual owners.

☐ **Ownership & control are not very separate in these data, so hardly justification for multiple holding companies separating owners from operating firms**

Pan, Xiaofei, and Gary Gang Tian. "Family control and loan collateral: Evidence from China." Journal of Banking & Finance 67 (2016): 53-68.dge

Wang, X., Cao, J., Liu, Q., Tang, J. and Tian, G.G. 2015. Disproportionate ownership structure and IPO long-run performance of non-SOEs in China. China Economic Review, 33.27-42.

☐ **Other studies find substantial ownership-control wedges, but in listed firms**

☐ **Most of the firms in this data are small and unlisted, so little scope for separating ownership from control**
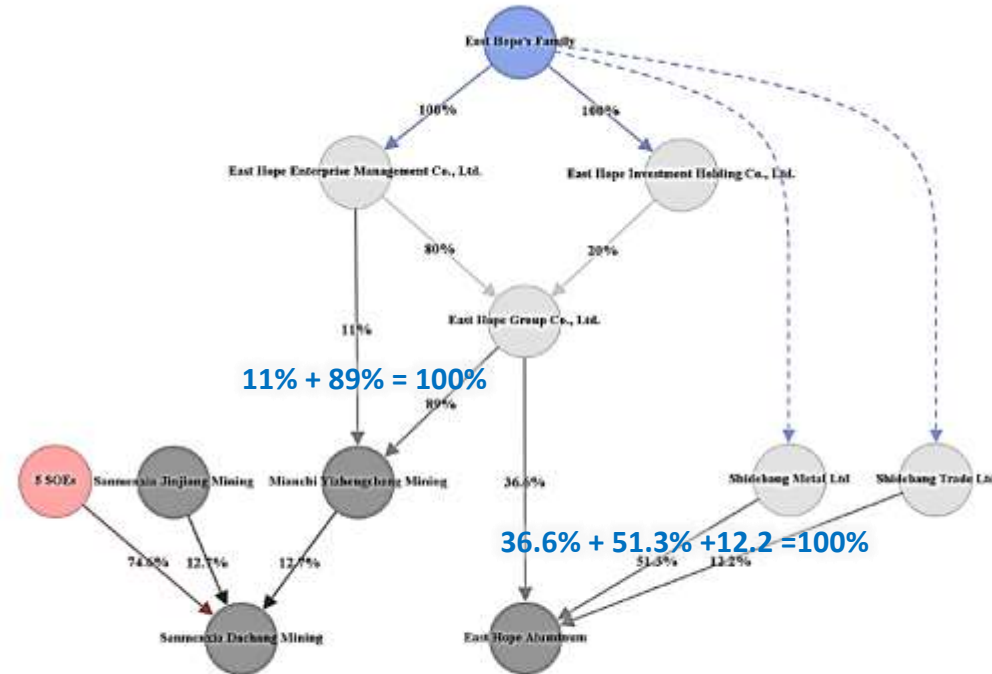
Six Stylized Facts about Chinese Businesses

Fact 0: Lots of registered corporations are held via(chains of) shell companies. Why?

Belenzon, Sharon, Honggi Lee, Andrea Patacconi. 2018. Separation of ownership from control? Towards a legal theory of the firm: The effects of enterprise liability on asset partitioning, decentralization and corporate group growth. NBER working paper 24720

- ❏ **Personal bankruptcy in China is somewhat like defaulting on a student loan in the US**
- ❏ **These data record each firm's <u>registered capital</u>**
  - ❏ **Registered capital = owners' <u>liability cap</u>**
  - ❏ **The paper defines <u>shell companies</u> as companies with <u>very small registered capital</u>**
  - ❏ **Are shell companies organized as <u>liability shields</u>?**

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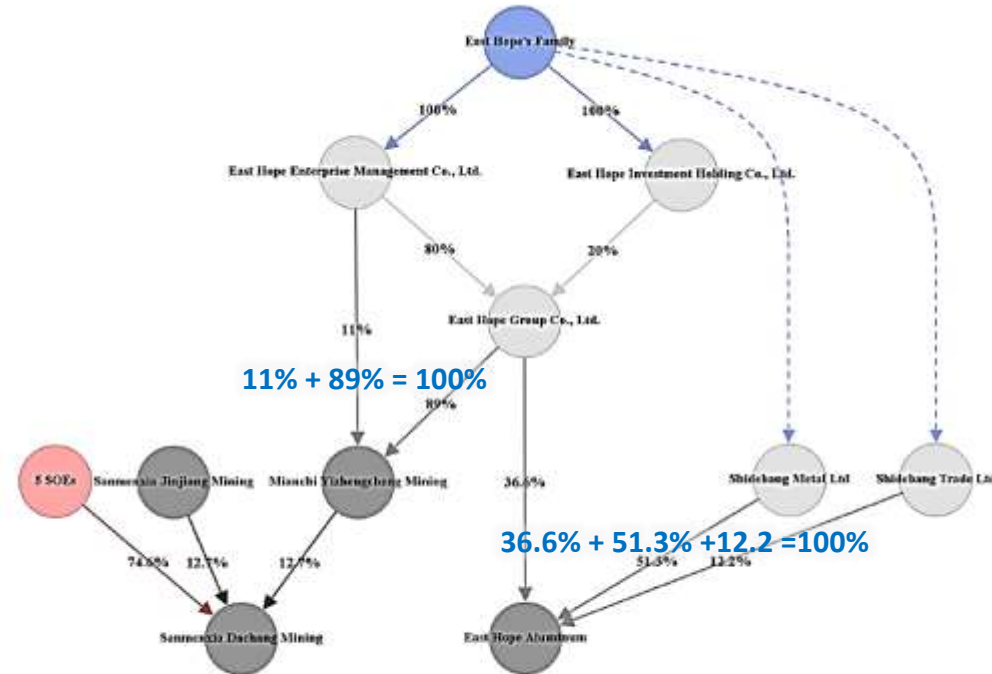
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Fact 0: Lots of registered corporations are held via (chains of) shell companies

Fact 1: Large owners are "connected"

- ❑ **The Party said "Grasp the large, let go the small" and that's what they did**
- ❑ **Insight: "Grasp" = "direct ownership" and/or "connections influence"**

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Fact 2: Private owner is higher in hierarchy ➔ bigger & more downward connections

Sort of what you'd expect in a hierarchy

❑ **The opposite (private owner higher in hierarchy ➔ smaller & fewer downward connections) would have been surprising**

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Fact 3: Connected investors are not majority shareholders

I found this part hard to understand

Text: "For each firm i, denote $Y_i^{1st} \equiv max\, Y_{ik}$ and denote Y_i^{2nd} the second largest number of $\{Y_{ik}\}$. If $Y_i^{1st} > Y_i^{2nd} + \sum_{j=1}^{M} X_{ij}$, which guarantees that no other owners can own more than Y_i^{1st} by cash flow rights. The owner who owns Y_i^{1st} is, therefore, the firm's controlling shareholder."

"X_{ij} denotes the proportion of equity shares of firm i owned by another firm j.

Y_{ik} denotes the proportion of equity shares of firm i owned by owner k from the four types of owners specified in Appendix C"

Appendix C describes how state owners are classified "we treat the Department of Finance of Shandong Province and the SASAC (State-Owned Assets Supervision and Administration Commission) of Shandong Province as the same owner as both are different departments of the Shandong provincial government. However, we assume that the government of Shandong Province and the government of Jinan City (the capital city of Shandong) are two different owners. The exception to this rule is that if a state firm is directly and 100% owned by a government, we classify it as a separate state owner. For example, although SAIC is owned by Shanghai's SASAC, we assume SAIC is a separate state owner.

OK, so this seems to mean that a firm has a "connected ultimate controlling shareholder" if

$$\begin{bmatrix} 1^{st}\, largest \\ connected\, ultimate \\ owner's\, stake \end{bmatrix} > \begin{bmatrix} 2^{nd}\, largest \\ (connected?)\, ultimate \\ owner's\, stake \end{bmatrix} + \sum \begin{bmatrix} stakes\, of\, all \\ other\, firms \\ in\, this\, firm \end{bmatrix}$$

i.e. the largest distinct connected ultimate owner's stake > the 2nd largest distinct connected ultimate owner's stake + combined stakes of all corporations

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Please help the reader by intuitively clarifying why this definition makes sense

❑ **CPC is united, so why not sum all state-connected stakes into one "connected stake"?**

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❑ **Why not keep it simple?**

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. 1999. Corporate ownership around the world. Journal of Finance 54(2)471-517

  ❑ **Define controlling shareholder as**

$$Y_i = largest\ stake\ \geq 20\%$$

  ❑ **Then use weakest link in hierarchical control chains, rather than** $Y_i^{1st} > Y_i^{2nd} + \sum_{j=1}^{M} X_{ij}$

  ❑ **If I misunderstand, please rewrite to clarify. If I understand, please explain & justify**

❑ **Complications are needed for complex webs, cross-ownership, and circular ownership**

Almeida, Heitor, Sang Yong Park, Marti G. Subrahmanyam, and Daniel Wolfenzon. 2011. The structure and formation of business groups: Evidence from Korean chaebols. Journal of Financial Economics 99(2)447-475

  ❑ **Shubik-Shapely value used for chaebol for circular ownership & cross ownership**

  ❑ **But these structures are only mentioned in passing in this study.**

Six Stylized Facts about Chinese Businesses

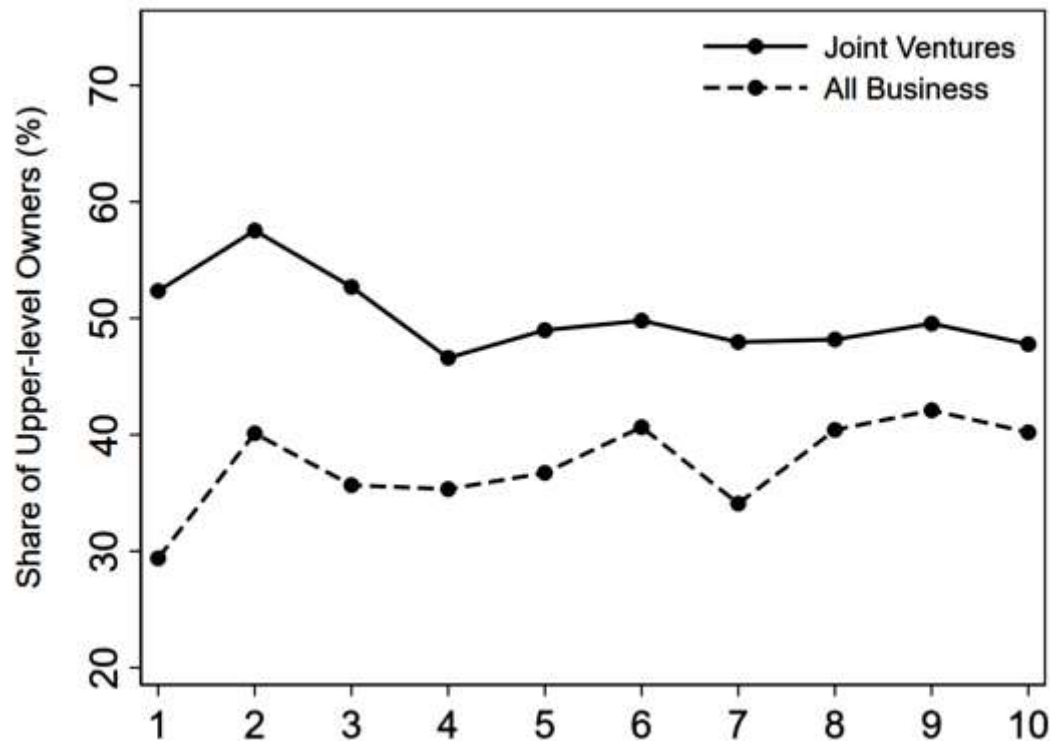**Fact 0: Lots of registered corporations are held via (chains of) shell companies**

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Does separating various state stakes make finding Fact 3 too easy?

❑ **If state blocks are summed & weakest link is used in control chains, do connected ultimate controlling shareholders still not have majority control bocks?**

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Or should "control rights" in China not be measured as in other countries?

❑ **Every private-sector firm of any importance has a Party Committee & Party Secretary**
  ❑ **Generally quiet, but intervene to help CEO & board avoid errors**
  ❑ **Do Party Committees & Party Secretaries make share ownership an incomplete measure?**

❑ **Some work suggests this**

  Wang, Kai, Ning-Ning Miao, and Kun-Kun Xue. 2020. Does the technology background of the Party Committee Secretary affect firm's innovation efficiency? Evidence from listed state-owned enterprises in China. *Technology Analysis & Strategic Management* 32.5 489-502.
  ❑ **Chinese SOEs innovate more after a scientist is Party Secretary**
  ❑ **In what other ways do Party Secretaries and Party Committees matter?**

❑ **How best to measure "control with Chinese characteristics" requires further research**

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Fact 4: The number of private owners connected to the state has increased

Is Fact 4 too easy to find because it comes from

$$\begin{bmatrix} No.\,private\,owners \\ directly\,connected \\ to\,state\,owners \end{bmatrix} = \begin{bmatrix} No.\,state\,owners\,that \\ undertake\,investments \\ with\,private\,owners \end{bmatrix} \times \begin{bmatrix} No.\,private\,owners \\ each\,state\,owner \\ invests\,in \end{bmatrix}$$

The way the text is currently written suggests some double counting because

❑ **Multiple state owners can undertake investments with a given private owner**

❑ **State owners can invest in private owner firms without gaining control blocks**

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Fact 5: Private owners grow faster after they get connected

Panel regression results

☐ **After a firm gets more connected, it grows faster**
  measuring growth as increases in
  1. **Number of other firms the firm is <u>connected</u> to**
  2. **Number of <u>connections</u> it has with other private owners**
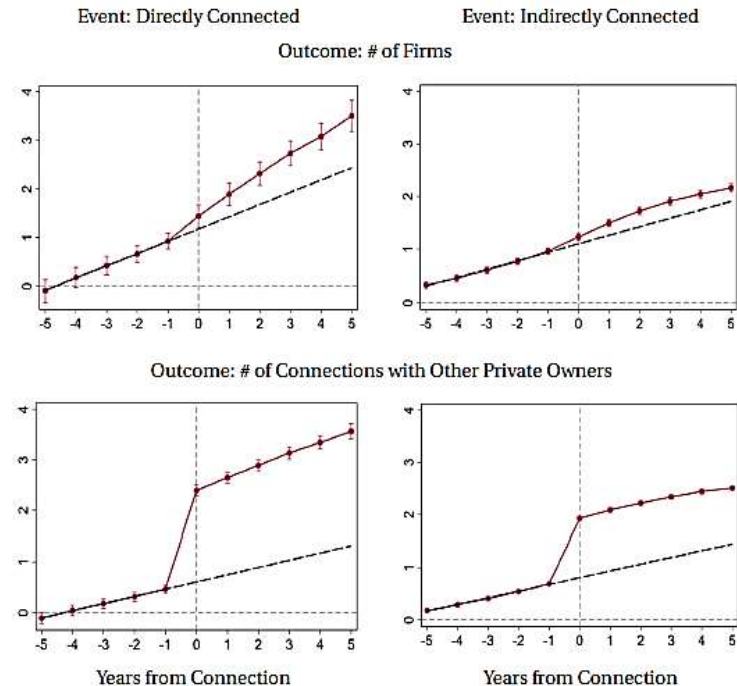
☐ **How self-referential is this? Probably not totally.**
  ☐ **Becoming more connected makes a firm .... more connected**
  ☐ **H_0: Change = 0 might not be the right null hypothesis?**
  ☐ **What null hypothesis does make sense?**

Figure 6: Effect of Getting "Connected" on # Firms and # of Connections with Other Private Owners

Note: Figure plots the average # of firms (row 1) and number of connections with other private owners (row 2) of owners that become connected to state owners (column 1) or to private owners that are themselves connected to state owners (column 2) before and after the owner became connected. X-axis is number of years from the year the owner became connected (year 0). Dashed line shows the pre-connection trend.

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Fact 3: Connected investors ~~...~~

Fact 4: The number of privat~~...~~ ...ate has increased

Fact 5: Private owners grow ~~...~~ ...ected

> Typo? Summation over $\tau = -14 \, to + 15$?
> 30 years of data around each change. But elsewhere, it sounds like data are 2000 to 2019

☐ **How to run firm-year panel reg~~...~~ ...oss sections 10 years apart**

nected has on a private owner. Specifically, we estima~~...~~ following empirical model for the panel of owners between 2000 and 2019:

$$y_{i,t} = \sum_{\tau=-14}^{\tau=15} \theta_\tau \text{Direct}_{i,t-\tau} + \sum_{\tau=-14}^{\tau=15} \beta_\tau \text{Indirect}_{i,t-\tau} + \mu_i + \lambda_t + \varepsilon_{i,t}, \quad (1)$$

where $y_{i,t}$ is a measure of owner i's businesses; μ_i and λ_t denote owner and year fixed effects; $\text{Direct}_{i,t}$ is an indicator variable for an owner that creates a joint venture with a state owner at t; and $\text{Indirect}_{i,t}$ is an indicator variable for an owner that becomes indirectly connected (distance = 2) to the state at t. The control group are private owners who are never connected to the state during 2000-2019. The coefficients of interest are θ_τ and β_τ which summarize the values of y in the year τ before and after the "event" (becoming connected).

Is there an inconsistency?
☐ **Assume time-invariant ownership stakes in test for effects of changes in control?**

Nothing is Written in Stone

1. **Use 2019 cross-section to get all ownership shares for all firms & years (backfill with repeated data)**
2. **Use 2019 cross-section to get each firm's first & last registration year (obsolete firms are included)**
3. **Entering & exiting firms mean the** $\begin{bmatrix} 1^{st} \text{ largest} \\ \text{connected ultimate} \\ \text{owner's stake} \end{bmatrix} > \begin{bmatrix} 2^{nd} \text{ largest} \\ \text{connected ultimate} \\ \text{owner's stake} \end{bmatrix} + \sum \begin{bmatrix} \text{stakes of all} \\ \text{other firms} \\ \text{in this firm} \end{bmatrix}$ **criterion identifies**

    different connected controlling shareholders in different years for some firms. These are firm-years with changes in $\text{Direct}_{i,t-\tau}$ **and** $\text{Indirect}_{i,t-\tau}$ **in the panel regressions**

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Fact 6: Connected private owners explain increased importance of private sector

Panel regression results

❑ **After a firm gets <u>more connected</u>, it becomes <u>more important</u> in that there are increases in**
   1. Number of industries containing firms it's <u>connected</u> to
   2. Number of provinces containing firms it's <u>connected</u> to

❑ **How self-referential is this? Probably not totally.**
   ❑ **Becoming more connected makes a firm …. more connected**
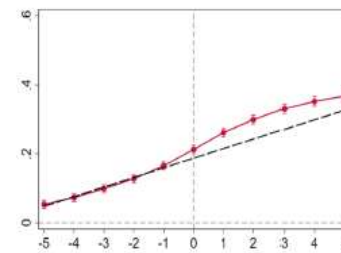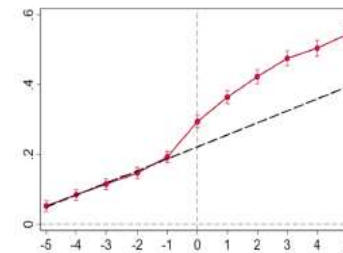   ❑ **H_0: Change = 0 might not be the right null hypothesis?**
   ❑ **What null hypothesis does make sense?**

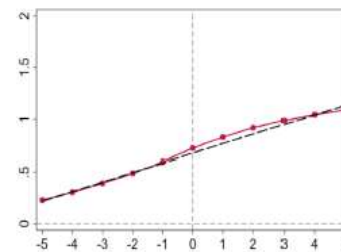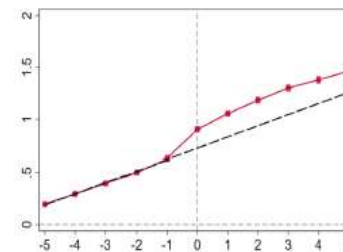Figure 7: Effect of Becoming "Connected" on # Provinces and Products

Event: Directly Connected   Event: Indirectly Connected

Outcome: # of Provinces

Outcome: # of 2-Digit Industries

Years from Connection

Years from Connection

Note: Figure plots the average # of provinces (row 1) and 2-digit industries (row 2) of owners that become connected to state owners (column 1) or to private owners that are themselves connected to state owners (column 2) before and after the owner became connected. X-axis is number of years from the year the owner became connected (year 0). Dashed line is the pre-trend.

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Suppose it's all true. What might be going on?

1. **Connections to help get loans from SOE banks?**
   - ❑ But so could Party Committees & Party Secretaries. Why does a change in a chain of equity blocks help better?
   - ❑ Maybe OK that this is not the authors' focus
2. **Connections to help get loans from "shadow banking"**
   - ❑ SOE banks lend to firms directly connected to them. Those firms provide shadow banking credit (intercorporate loans, trade credit, …) to firms they're connected with. Those firms do likewise for firms' they're connected with
   - ❑ If this is why connections matter, implications for e.g. monetary policy transmission
3. **Connections are a form of corruption not yet eliminated?**
   - ❑ Rather than firms choosing to become connected, connected (powerful) people choose firms to partially own

   [What else?]

N. **Connections help firms grease bureaucratic gears?**
   - ❑ But so could Party Committees & Party Secretaries. Why does a change in a chain of equity blocks help better?
   - ❑ Paper associates this explanation with a model

Six Stylized Facts about Chinese Businesses

f) shell companies

wnward connections

s increased

of private sector

Proof of Proposition 2

Denote by $\mathcal{L}_j$ the resources employed by private owners connected at distance j.

$$\mathcal{L}_j = N_j \left(\frac{\beta \Gamma_j \min\{A_i\}}{w} \right)^{\frac{1}{1-\beta}}.$$

The market clearing condition is:

$$\sum_{j=1}^{\bar{d}} \left[N_j \left(\frac{\beta \Gamma_j \min\{A_i\}}{w} \right)^{\frac{1}{1-\beta}} \right] + N^{nc} \left(\frac{\beta \underline{\Gamma} \min\{A_i\}}{w} \right)^{\frac{1}{1-\beta}} + N_0 \left(\frac{\beta \bar{A}_0}{w} \right)^{\frac{1}{1-\beta}} = \mathcal{L}.$$

The first term on the left-hand side represents resources employed by connected private owners, denoted by $\mathcal{L}^c \equiv \sum_{j=1}^{\bar{d}} \mathcal{L}_j$. The second and third terms represent resources employed by unconnected private owners and state owners, denoted by $\mathcal{L}^{nc}$ and $\mathcal{L}^s$, respectively. The general equilibrium effect, Φ_d, follows

$$\Phi_d = -\beta \left\{ \frac{\mathcal{L}_d}{\mathcal{L}} \frac{1}{1-\beta} + \sum_{j=1}^{\bar{d}} \left[\frac{\mathcal{L}_j}{\mathcal{L}} \frac{\partial \ln N_j}{\partial \ln \Gamma_d} \right] - \frac{\mathcal{L}^{nc}}{\mathcal{L}} \frac{N^c}{N - N^c} \sum_{j=1}^{\bar{d}} \frac{N_j}{N^c} \frac{\partial \ln N_j}{\partial \ln \Gamma_d} \right\}.$$

Because $\Gamma_j > \underline{\Gamma}$, any connected private owner at distance j employs more L than an unconnected private owner – i.e. $\mathcal{L}_j/N_j > \mathcal{L}^{nc}/(N - N^c)$. Therefore, $\Phi_d < 0$.

If Γ_d is interpreted as TFP, rather than output wedge, there will be no resource misallocation. In this case, $Y_i \propto L_i$, which also means $\mathcal{y}_j/\mathcal{Y} = \mathcal{L}_j/\mathcal{L}$ for any $j \in [1, \bar{d}]$ and $\mathcal{y}^{nc}/\mathcal{Y} = \mathcal{L}^{nc}/\mathcal{L}$. It is easy to show that $\frac{\partial \ln \mathcal{Y}}{\partial \ln \Gamma_d} > 0$.[31] Since $\frac{\partial \ln \mathcal{y}^p}{\partial \ln \Gamma_d} > \frac{\partial \ln \mathcal{Y}}{\partial \ln \Gamma_d}$, $\frac{\partial \ln \mathcal{y}^p}{\partial \ln \Gamma_d} > 0$. Total output of private owners and aggregate output increase in Γ_d for any d.

I   Structural Estimation

We assume that private owner's productivity follows a Pareto distribution with the scale parameter set equal to 1. We first calibrate k, the shape parameter of the Pareto distribution. Denote $\bar{A}_d^{Data}$ the average productivity of private owners at distance $d \in [1, \bar{d}]$ in the data. The idea is to back out k by matching $\bar{A}_d^{Data}$. $\bar{d}$ is set to 10. The private owners with $d \leq 10$ account for more than 98% of the registered capital in the connected private sector. Given $\{N_d/N\}, d = 1, 2, \cdots, \bar{d}$, $\bar{A}_d$ will only depend on k. As will be clear below, the estimated model is constructed to exactly match $\{N_d/N\}$ in the data. Therefore, we can directly back out $\bar{A}_d(k, \{N_d/N\})$ without knowing the other parameter values. Specifically, k is calibrated by:

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[31]The direct effect of changes in Γ_d on $\mathcal{y}^p$ is $\frac{\mathcal{y}_d}{\mathcal{y}^p} \frac{1}{1-\beta}$, rather than $\frac{\mathcal{y}_d}{\mathcal{y}^p} \frac{\beta}{1-\beta}$. The direct effect of changes in

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Model is about firm productivity, but data are firm size. How to calibrate?

1. Estimate <u>productivity as function of size</u>, assuming Power Law (more complete data for small sample of bigger firms)
2. Infer productivity from their sizes (registered capital) of all firms, including very small ones
   - ❑ Firm size obeys a Power Law & firm productivity obeys a power law … <u>in the tails</u>
   - ❑ How well does a Power Law relate size to productivity for small (not in tail) firms?

Exclusion of other things that affect productivity & might correlate with closer connections?
- ❑ State-connected firms are less productive than private-sector firms
- ❑ <u>Political rent-seeking</u> firms are less productive than <u>innovative</u> firms
- ❑ <u>Older</u> firms are less productive than <u>younger</u> firms
- ❑ <u>Unionized</u> firms are less productive than <u>non-unionized</u> firms
- ❑ <u>Poorly governed</u> firms are less productive than <u>well governed</u> firms
- ❑ <u>Opaque</u> firms are less productive than <u>transparent</u> firms

[What else?]

Does "more closely connected" stand in for one or more of these?

Six Stylized Facts about Chinese Businesses

"Too large a proportion of recent "mathematical" economics are mere concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols."

- John Maynard Keynes, BA First Class in Mathematics, Cambridge University
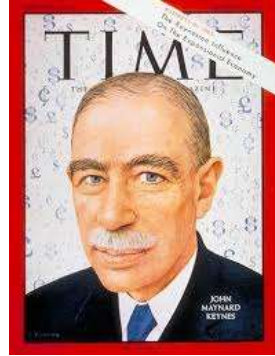
Keynes goes too far. A mathematical model in economics can add substantial value by crystalizing intuition

Prove Keynes wrong!

- ❑ **Currently, reading the paper is like solving a puzzle. The reader must search carefully for hidden clues to make sense of the data, the model, …**
- ❑ **Reader is left wondering why the variables are what they are, why the model is what it is**
- ❑ **Be kind to readers like me (B.Sc. *summa cum laude* in Applied Mathematics, Yale): No new variables popping up midway through, no ornamental mathematics, …**

Keynes explaining himself

"I would rather be roughly right than precisely wrong"

- John Maynard Keynes, BA First Class in Mathematics, Cambridge University
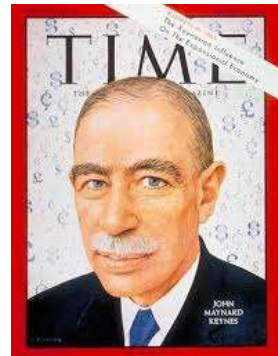
Why This is a Good Research Project

The stylized facts are likely <u>roughly right</u>

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The model is likely <u>not precisely wrong</u>

❑ Clearer exposition would help reader appreciate the huge amount of work in the model

❑ But many economic pressures not in the model might also be important

❑ China is complicated and readers might worry model is incomplete guide

And I may be wrong (I often am)

❑ Where I misunderstand, please make the paper easier for readers like me to understand

And don't take any discussant (esp. me) too seriously …

"Any jackass can kick a barn down, but it takes a carpenter to build it."
- Sam Rayburn, US politician

Thank you