A Comparison of Group and Non-Group Firms in India

Marianne Bertrand
Princeton, CEPR, and NBER

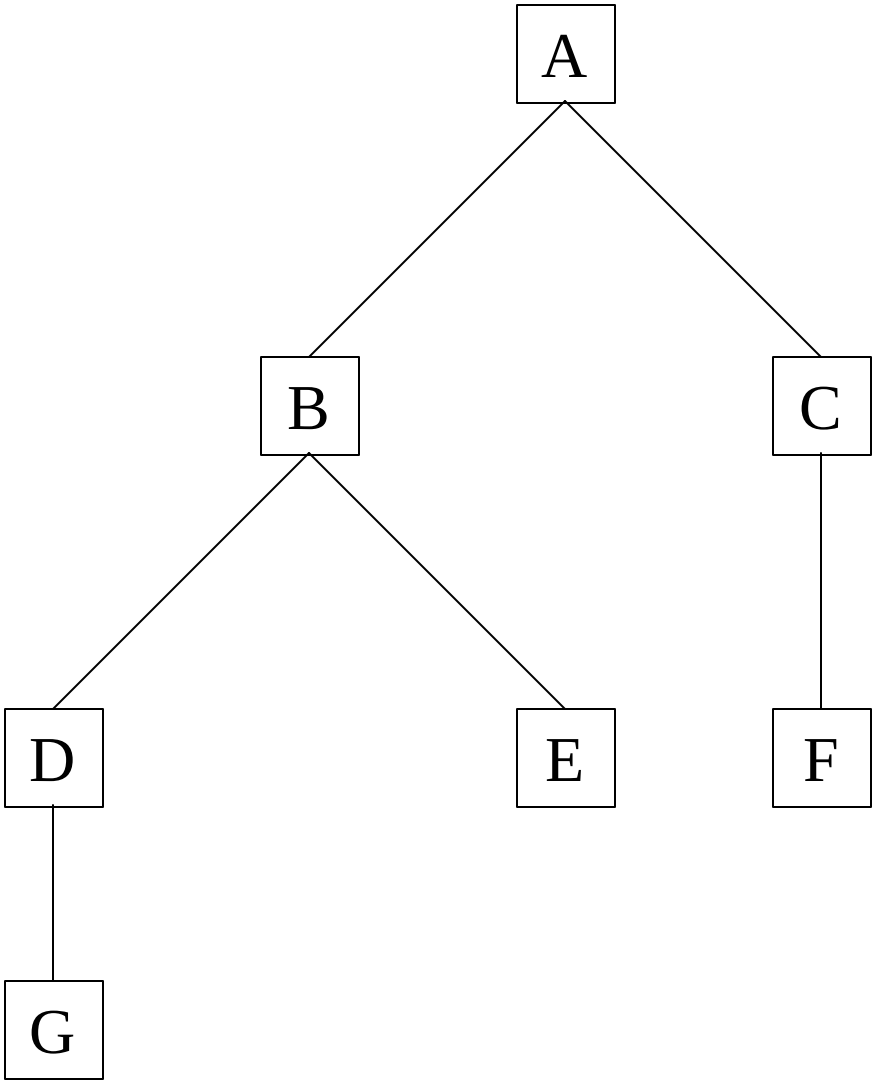
Paras Mehta
MIT

Sendhil Mullainathan
MIT and NBER

Some Basic Facts about Groups

- Group and non-group firms coexist in India
  - 28% of all firms are in groups
  - 73% of all assets held in group firms
  - 81% of market cap is represented by groups
- Groups span a diverse set of industries
- Groups often held like a pyramid
  - “Often” here is mainly anecdotal

Pyramidal Group Structure



How Groups May Help Shareholders

- Their size allows them to serve as an internal capital market
- Economies of scale in handling regulations
- Unique talents of families
- Provision of infrastructure

How Groups May Hurt Shareholders

- Pyramidal ownership makes “stealing” easy
  - Suppose BMM Group fully owns A, which owns 25% of B which owns 25% of C which owns 25% of D
  - Rs dividend would give us less than 2 Rs
  - Yet we have full effective control of D.
  - The urge to divert funds from D (to A) will be large
- Types of “Stealing”
  - Transfer pricing, asset sales, loans or investment from and to other group members
  - Pure inefficiency

Our Goal Today

- Cross-sectional differences between group and non-group firms.

- Characterize responsiveness of groups and non-groups to “shocks”
  - Ideal strategy
  - Strategy that we will use today

Data

- Centre for Monitoring the Indian Economy
- 7651 firms, 1989-1999
- Includes firms listed on the BSE
-
- Annual accounting data
- Daily financial data

Table 1

Cross-Sectional Differences

- Group firms are bigger and older
- Group firms have greater sales/assets, and accounting returns and q
- When controls for size, age and industry are accounted for groups have
  - Higher Sales/Assets
  - No difference in Gross Profits/Assets
  - Lower Net Profits/Assets
  -

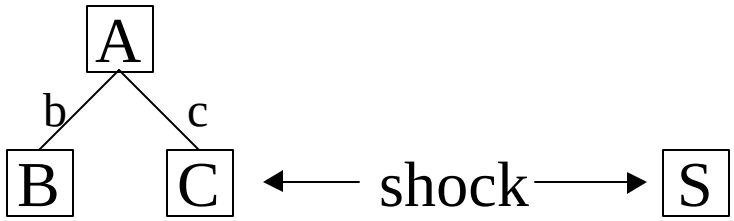
TABLE 2

Problems with X-Section

- Doesn't allow us to really track flows between group firms
  - Ideal data for this would be transfer prices, sales to group firms, asset sales numbers, data on loans investments between group firms…
  - Detailed info like this not available in CMIE…may not ever be available.
- Unobserved differences between Groups &
  - Groups located in tougher environments (worse infrastructure, more regulation)…

Ideal Approach

- Compare stand-alone firm S with a group



- Firms S and C are in the same industry I
- Compare performance responses Px
  x to an exogenous shock to I
  - For example, world rubber prices rise. How do group firms respond? How do stand alone firms

What This Approach Does and Does Not Address

- Flows can be readily “tracked”
  - Of course, dissipation to group firms outside our sample and inefficiency may be hard to distinguish.
- Endogeneity problem changes but doesn’t disappear
  - Let’s return to this after looking at all the results and see what pattern of OVB could explain our results.

Today's Approach

- Instead of specific shock, we'll use mean industry performance as our "shock".
- Imprecise measurement of extractability
  - Other equity ownership lower bounds minority
  - Director's ownership lower bounds group's
  - Group size proxies for number of firms which are "low" in the pyramid

Problems with Today's Approach

- Some shocks may very naturally affect group firms more/less than non-group firms
    - Ex: Loosening of licensing requirements
  - General ambiguity about what exactly where the variation comes from
- Ownership measures noisy
  - Also don't allow tracking of holdings
- View results as tentative

Sensitivity to Own Shocks

- Group firms less sensitive than private firms
- Group firms with low director's equity or high outside equity are the least sensitive(?)
- Large groups show the least sensitivity

Table 3

Sensitivity to Group Shocks

- Group firms show positive sensitivity
- Greater sensitivity for high director's equity
- Greater sensitivity for low outside equity
- No significant effect of group size

Table 4

Sensitivity to Group Shocks II

- Classify shocks based on where they “come

  – From other group firms with high or low directors’ equity
  – Similar exercise using others’ equity
- Firms more responsive to shocks from low directors’ equity firms
- Firms more responsive to shocks high others’ equity firms

Table 5

Sensitivity to Shocks and Market

- Estimate a q premium (discount) for each
- Firms in groups with a higher premium are
  - More sensitive to own shock
  - Less sensitive to group shock

Table 6

Interpretation

- Preliminary evidence suggests redistribution within the pyramid
  - Sensitivity and sensitivity/ownership patterns suggest extraction from minority shareholders

- Limitations
  - No baseline against which to compare sensitivity to group shocks
  - Omitted variable bias

Next Steps

- Specific, exogenous shock (e.g., commodity
- Identify how cash may be extracted

Table 1: Summary Statistics

	All Firms	Group	Non-Group
Total Assets	104.35	183.54	48.45
	(492.86)	(676.7)	(289.1)
Sales	72.03	135.42	27.31
	(268.47)	(403.25)	(58.05)
Gross Profits	12.70	23.03	5.41
	(57.68)	(80.72)	(30.82)
Net Profits	3.23	6.35	1.03
	(26.8)	(40.56)	(7.25)
Sales/Assets	1.02	1.07	0.984
	(1.03)	(1.13)	(.944)
G.Profits/Assets	.122	.131	.116
	(.187)	(.177)	(.193)
N.Profits/Assets	.02	.022	.018
	(.21)	(.247)	(.171)
Market Value	83.97	172.16	21.71
	(467.9)	(698.52)	(140.36)
"Q"	.94	1.05	.865
	(.69)	(.747)	(.626)
Incorporation Year	1974	1968	1978
# of Firms in Group			13.82
			(20.24)
Sample Size	32409	13407	19002

Notes:

1. This contains the sample of all firms with accounting data

Table 2: Comparison of Group and Non-Group Firms With and Without controls

Dependent Variable	**Without controls**	**With Controls**
Sales/Assets	0.086	.099
	(.012)	(.012)
Gross Profits/Asets	.016	-.002
	(.002)	(.002)
Net Profits/Assets	.004	-.008
	(.002)	(.002)
q	.188	.120
	(.010)	(.011)

Notes:

1. Each cell contains the coefficient on a group dummy from a **different regression**
2. "With Controls" corresponds to four digit industry fixed effects, splines for log(total assets), dummies for age, and year dummies.

Table 3: Sensitivity to Own Shock for Sales/Accounting

	Sales Regressions		Gr. Profit Regressions	
	Private	**Group**	**Private**	**Group**
Sample				
All	.163	.151	.026	.019
	(.033)	(.033)	(.006)	(.005)
High Director's Equity	.148	.110	0.025	.014
	(.042)	(.051)	(.006)	(.009)
Low Director's Equity	.284	.107	.025	.006
	(.115)	(.045)	(.023)	(.009)
High Other Ownership	.127	.152	.024	.019
	(.038)	(.035)	(.006)	(.006)
Low Other Ownership	.259	.151	.029	.017
	(.052)	(.064)	(.011)	(.010)
Large Groups		.120		.005
		(.042)		(010)
Small Group		.184		.018
		(.047)		(.007)

Notes:

1. Each cell contains the coefficient on the industry shock from a **different regression**
2. High Director's Equity corresponds to Director's Equity > 1%, Low to less than 1%. For Other, the cutoffs are above and below 25%. For Group size, <5 and > 5 are cutoffs.
3. All regressions contain size controls, year dummies, firm fixed effects.
4. Standard errors correcting for clustering at the four digit industry-year cell level.

Table 4: Sensitivity to Group Shock

	Sales Regressions		Gross Profit Reg.	
	Own Shock	**Group**	**Own Shock**	**Group**
Sample				
All	0.153	.047	.019	.012
	(.024)	(.024)	(.005)	(.005)
High Director's Equity	.158	.060	.022	.016
	(.031)	(.030)	(.006)	(.006)
Low Director's Equity	.149	.028	.012	.004
	(.033)	(.033)	(.003)	(.009)
High Other Ownership	.148	.003	.016	.007
	(.029)	(.032)	(.006)	(.006)
Low Other Ownership	.155	.131	.021	.020
	(.039)	(.038)	(.008)	(.008)
Large Groups	.161	-.093	-.0002	-.027
	(.073)	(.131)	(.018)	(.032)
Small Groups	.208	.087	.016	.017
	(.040)	(.033)	(.008)	(.007)

Notes:

1. Each **set of cells** contains the coefficient on the industry shock from a

2. High Director's Equity corresponds to Director's Equity > 1% , Low corresponds to < 1%. For other, the cutoffs are above and below 25%. For Group size, <5 and >5.

3. All regressions contain size controls, year dummies, firm fixed effects.

Table 5: Sensitivity to Group Shock based on Source of Group Shock

	Sales Regressions			Gr. Profit Regressions		
	Own Shock	**Ghigh**	**Glow**	**Own Shock**	**Ghigh**	**Glow**
Classification						
Director's Equity	.189	-.05	.040	.024	-.000	.011
	(.021)	(.03)	(.030)	(.004)	(.01)	(.006)
Other Ownership	.210	.037	-.018	.025	.018	.005
	(.022)	(.022)	(.037)	(.005)	(.004)	(.008)

Notes:

1. Each set of cells contains a different regression. Regressions restricted to Group Firms
2. High Director's Equity corresponds to Director's Equity > 1% , Low corresponds to < 1%. For other, the cutoffs are above and below 25%.
3. All regressions contain size controls, year dummies, firm fixed effects and own industry shock.

Table 6: Dependence of Sensitivities on Group Market Premia

	Sales Regression	Profit Regression
Independent Variable		
Own Shock	0.156	.019
	(.024)	(.005)
Own Shock*(Premia)	-.034	.011
	(.025)	(.005)
Group Shock	.037	.014
	(.025)	(.005)
Group Shock*(Premia)	-.287	-.037
	(.056)	(.011)

Notes:

1. Each **column** contains a different regression
2. Premia corresponds to the group's premium from a q regression.
3. All regressions contain size controls, year dummies, firm fixed effects.