Management, Organization & Innovation

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Based on work with Nick Bloom (Stanford) and Raffaella Sadun (HBS)

NBER Entrepreneurship Boot Camp (July 2013)
Three part lecture course

1. Management and Productivity
   • Productivity facts; what are management practices, how to measure, why they vary & what effect they have on performance

2. Organization
   • Types of organizational practices with focus on decentralization, how to measure & why they vary

3. Innovation
   • Measurement, private & social return, effect of competition

Caveat: Focus of lectures not just on start-up entrepreneurs, but how firms grow ("intra-preneurs")
Lecture 1: Overview

1. Productivity across firms and countries

2. Managers

3. Management practices
   a) Measurement
   b) Variation
   c) Impact on performance
Large GDP/capita & TFP differences across countries

Average US worker produces more in a day than Tanzanian in a month with same inputs

Source: Jones and Romer (2010). US=1
Productivity differences across plants & firms within countries are also large

- In average US 4 digit industry plant at 90\textsuperscript{th} percentile has ~4x higher labor productivity than plant at the 10\textsuperscript{th} percentile (Syverson, 2004, 2011 JEL)
- Controlling for other inputs, TFP difference is about 2:1
- In India this gap is about 5:1 (Hsieh and Klenow, 2009 QJE)
DISTRIBUTION OF PLANT TFP DIFFERENCES IN US VS. INDIA
HIGHER US TFP DUE TO REALLOCATION - THINNER "TAIL"
OF LESS PRODUCTIVE PLANTS

Source: Hsieh and Klenow (2009); US mean=1
“...we have the phenomenon in every community and in every trade, in whatever state of the market, of some employers realizing no profits at all, while others are making fair profits; others, again, large profits; others, still, colossal profits.”

Francis Walker (Quarterly Journal of Economics, ’87)
FIRM HETEROGENEITY HAS LONG BEEN RECOGNIZED

"...we have the phenomenon in every community and in every trade, in whatever state of the market, of some employers realizing no profits at all, while others are making small profits, again, large profits; others, still, colossal profits..."

Francis Walker (Quarterly Journal of Economics, 1887)
The evidence on management is limited

“No potential driving factor of productivity has seen a higher ratio of speculation to empirical study”.
- Chad Syverson (2011, JEL)
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One explanation for variation in performance is differences in “managers”

There is a large literature looking at CEOs (managers) – for example Jack Welch, Steve Jobs or Alex Ferguson

Two key empirical papers on impact of CEOs are probably:
- Bertrand and Schoar (2003, QJE)
- Perez-Gonzalez (2006, AER)
Summary of Bertrand and Schoar (2003, QJE)

Build a panel dataset tracking managers across S&P500 publicly traded US firms, allowing for firm and top manager fixed effects.

Average size of firms about 10,000 employees – so impact of strategy by the top managers. They finding:

1. Manager fixed effect exist, particularly for M&A, dividend policy, debt ratios and cost-cutting.
2. Managers have styles - more/less aggressive, internal/external growth focus. These correlated with CEO birth cohort & MBA.
3. Managers are also absolutely “better” or “worse” – performance fixed effects exist, linked to compensation & governance (e.g. concentrated ownership increases CEO perform FE & pay).
Summary of Perez-Gonzalez (2006, AER)

- Looks at the 335 management transitions in US publicly quoted firms (1980-2001) with concentrated family holdings

- Find the announcement that the founding CEO will step-down leads to:
  - Big stock rise if the next CEO is not a family-member
  - Big drop if the next CEO is a family member, driven by the family members from “non-selective colleges” (defined as outside top 189 US Colleges)

- Related paper (Bennedsden, Mortenson, Perez-Gonzalez and Wolfenson, 2007 QJE) looks at family CEOs in Denmark, using gender of first born as an instrument
  - Larger negative impact of family CEOs in IV than OLS
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Measuring management practices

Also a literature on management practices, which I will focus on more as these are more about firms than individuals.

Historically been strongly case study based– e.g. Ford, GM, Toyota, GE, Mayo Clinic, Dabbawala etc. Case studies helpful for intuition and illustration, but potentially misleading because very selected sample– e.g. Enron.

More recently work has focused on trying to systematically measure management practices in large samples of firms:

• First generation, single country studies & direct questions
• Second generation, international studies & indirect questions
Challenges to measuring management practices

Despite sounding easy, “measuring management” is fraught with difficulties, which has held back research.

1) How to quantify (as in put numbers on) management practices

2) How to get data from firms – surveys are tough to do

3) How to get the truth – will badly managed firms ‘fess-up’

4) Building a representative population – e.g. not just targeting Compustat firms – especially important for cross-country work
First generation surveys: single-country focus with direct survey techniques

Black and Lynch (2001, REStat) is a good example of a well executed single country management survey

Surveyed about 3,000 establishments with the US Census bureau

1. **Quantify**: Asked a series of questions on employee recruitment, work organization, meetings and modern production practices

2. **Get data**: Administered by the US Census Bureau

3. **Truth**: Told respondents their answers were confidential

4. **Population**: Stratified from the Census establishment database

Found large variations in management, and strong correlation of management practices and performance in cross section (initial “arms length” survey)
Second wave surveys: cross countries and tries to address response bias with indirect surveys

Cross country comparisons: identification of many factors driving management aided by cross-country data

Problems with direct surveys: unfortunately people typically do not tell the complete truth in open surveys:

• Schwartz (1999, American Psychologist)
• Opinion poll-evidence

Bloom and Van Reenen (2007, QJE) is a good example of a second wave of management survey, which I’ll cover in detail
The Bloom and Van Reenen (2007) approach

1) Quantifying: use scoring grid from a consulting firm
   • Scores 18 monitoring, targets and incentives practices
   • ≈45 minute phone interview of manufacturing plant managers

2) Truth: use “Double-blind”
   • Interviewers do not know the company’s performance
   • Managers are not informed (in advance) they are scored
   • All interviews run from a single location with rotation by country

3) Getting data: a variety of tricks
   • Introduced as “Lean-manufacturing” interview, no financials
   • Official Endorsement: Bundesbank, PBC, CII & RBI, etc.
   • Run by 100+ MBAs types (loud, assertive & business experience)

4) Population: sample randomly medium and large firms (50-5000 employees) from population databases across countries
| Score | (1): Measures tracked do not indicate directly if overall business objectives are being met. Certain processes aren’t tracked at all | (3): Most key performance indicators are tracked formally. Tracking is overseen by senior management | (5): Performance is continuously tracked and communicated, both formally and informally, to all staff using a range of visual management tools |

**Note:** All questions plus many more examples in paper & on website http://cep.lse.ac.uk/pubs/download/dp0716.pdf
Getting representative cross country samples

• So far interviewed about 10,000 organizations (8k manufacturing) across about 20 countries

• Obtained ~45% coverage rate from sampling frame (with response rates uncorrelated with performance measures)

• Extended to Retail firms, Hospitals, Schools, Law Firms, nursing homes, Not for Profits, and Tax Collection Agencies
  • So basic concept can be used in different industries
Internal survey validation – useful exercise suggesting double-blind methodology may work

Re-interviewed 222 firms with different interviewers & managers

Firm average scores (over 18 question)

Firm-level correlation of 0.627
External survey validation – another useful exercise suggesting double-blind methodology may work

Performance measure for country $c$

$$y_i^c = \beta \text{MNG}_i^c + \alpha_l l_i^c + \alpha_k k_i^c + \alpha_m h_i^c + \gamma' x_i^c + u_i^c$$

Management (average z-scores)

ln(capital) ln(labor) ln(materials) other controls

- Use most recent cross-section of data (typically 2006)

- Note – **not necessarily a causal relationship**, only an association
## FIRM PERFORMANCE IS CORRELATED WITH MANAGEMENT SCORE

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Ln(sales)</th>
<th>Ln(sales)</th>
<th>Ln(employment)</th>
<th>Profitability ROCE</th>
<th>5yr Sales growth</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimation</td>
<td>OLS</td>
<td>Fixed Effects</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
</tr>
<tr>
<td>Firm sample</td>
<td>All</td>
<td>2+ surveys</td>
<td>All</td>
<td>All</td>
<td>Quoted</td>
<td>All</td>
</tr>
<tr>
<td>Management</td>
<td>0.150***</td>
<td>0.033**</td>
<td>0.338***</td>
<td>1.202***</td>
<td>0.039***</td>
<td>-0.006***</td>
</tr>
<tr>
<td>(SD=1)</td>
<td>(0.016)</td>
<td>(0.013)</td>
<td>(0.015)</td>
<td>(0.264)</td>
<td>(0.013)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>Ln(employees)</td>
<td>0.645***</td>
<td>0.374***</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(0.024)</td>
<td>(0.096)</td>
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</tr>
<tr>
<td>Ln(capital)</td>
<td>0.307***</td>
<td>0.237***</td>
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<tr>
<td></td>
<td>(0.019)</td>
<td>(0.078)</td>
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<td></td>
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<tr>
<td>Firms</td>
<td>3,493</td>
<td>1,543</td>
<td>7,519</td>
<td>3,917</td>
<td>3,606</td>
<td>7,532</td>
</tr>
<tr>
<td>Observations</td>
<td>8,314</td>
<td>6,364</td>
<td>15,608</td>
<td>9,163</td>
<td>8,365</td>
<td>7,532</td>
</tr>
</tbody>
</table>

**Notes:** Regressions includes controls for country, SIC3 & year, dummies. Firm-age, skills, noise controls etc. SE clustered by firm.
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Plant locations from World Management Survey (~8,000 firms, 3 major waves: 2004, 2006, 2009; 20 countries)

Medium sized manufacturing firms (50-5,000 workers, median≈250)
Now extended to Hospitals, Retail, Schools, etc.
Extension to nearer population surveys (e.g. US MOPs)
Management and Organizational Practices survey (MOPS)

It was delivered to 47,534 manufacturing plants in 2011.

This was quick and easy to fill out - and mandatory - so 78% of plants responded, covering 5.6m employees (>50% of US manufacturing employment).
Management Practice Scores (in Manufacturing) Vary by Country & Linked to Level of Development

Note: Averages taken across all firms within each country. 9079 observations in total.
HUGE VARIATION IN MANAGEMENT SCORES ACROSS FIRMS WITHIN COUNTRIES

Note: Bars are the histogram of the actual density. Scores from 9,995 management interviews across 20 countries.
So why does management vary across countries and firms?

I will discuss five factors that seem important

- Competition
- Family firms
- Multinationals
- Labor market regulations
- Education
COMPETITION & MANAGEMENT

• Will cover in more detail in Lecture 3

• Various ways that competition may influence management
  – **Selection**: badly run firms more likely to shrink & exit, so average management quality (& productivity) higher in a more competitive industry
  – **Effort**: forces badly run firms to try harder to survive
  – But “Schumpeterian” effects may counterbalance. Mark-ups lower so less incentive to make investments that increase future productivity (like management or R&D)

• **Theoretical ambiguity** (e.g. Aghion et al, 2005, inverted U)
Empirical studies generally find competition has positive effect on TFP

Examples

Syverson (2004, JPE) on US concrete industry. More competitive markets had higher average levels of TFP & less dispersion.

Schmitz (2005, JPE) shows great lakes iron-producers responded positively to import competition

Pavcnik (2002, RESTud) increase in competition from trade-reforms

Olley-Pakes (1996, Econometrica) deregulation of telecom supply industry

All find increase in productivity from a combination of reallocation and within firm productivity increases
Competition Appears Linked to Better Management

Sample of 9469 manufacturing and 661 retail firms (private sector panel) and 1183 hospitals and 780 schools (public sector panel).

Reported competitors defined from the response to the question “How many competitors does your [organization] face?”

<table>
<thead>
<tr>
<th>Number of Reported Competitors</th>
<th>Management score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.55</td>
</tr>
<tr>
<td>1</td>
<td>2.6</td>
</tr>
<tr>
<td>2 to 4</td>
<td>2.65</td>
</tr>
<tr>
<td>5+</td>
<td>2.7</td>
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<tr>
<td>0</td>
<td>2.8</td>
</tr>
<tr>
<td>1</td>
<td>2.85</td>
</tr>
<tr>
<td>2 to 4</td>
<td>2.9</td>
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<tr>
<td>5+</td>
<td>2.95</td>
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<tr>
<td>0</td>
<td>3</td>
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<td>1</td>
<td>2.8</td>
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<tr>
<td>2 to 4</td>
<td>2.85</td>
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<tr>
<td>5+</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Sample of 9469 manufacturing and 661 retail firms (private sector panel) and 1183 hospitals and 780 schools (public sector panel). Reported competitors defined from the response to the question “How many competitors does your [organization] face?”
## COMPETITION AND MANAGEMENT

3 competition proxies from Nickell (1996) & Aghion et al. (2005)

<table>
<thead>
<tr>
<th>Competition proxies</th>
<th>Dependent variable: Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import penetration</td>
<td></td>
</tr>
<tr>
<td>(lagged industry-country level)</td>
<td><strong>0.095</strong> (0.042)</td>
</tr>
<tr>
<td>1- Lerner Index¹</td>
<td></td>
</tr>
<tr>
<td>(lagged industry-country level)</td>
<td><em>4.915</em> (2.747)</td>
</tr>
<tr>
<td># of competitors</td>
<td></td>
</tr>
<tr>
<td>(Firm level)</td>
<td><strong>0.141</strong>* (0.041)</td>
</tr>
<tr>
<td></td>
<td>0.120** (0.052)</td>
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<tr>
<td>Observations</td>
<td>2,657</td>
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<td></td>
<td>2,819</td>
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<td></td>
<td>2,789</td>
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<td></td>
<td>864</td>
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<tr>
<td>Firm fixed effects?</td>
<td>No</td>
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<td></td>
<td>No</td>
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<td></td>
<td>No</td>
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<td></td>
<td>Yes</td>
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<tr>
<td>Full controls²</td>
<td>Yes</td>
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<td>Yes</td>
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<td></td>
<td>Yes</td>
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<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Notes:** “Full controls” includes 108 SIC-3 industry, country, firm-size, public and interview noise (interviewer, time, date & manager characteristic) controls, 2004-2006, UK, US, France and Germany only. Col (1) and (2) clustered SE by ind*cty, col (3) clustered by firm. Bloom, Sadun & Van Reenen (2013)
So why does management vary across countries and firms?

I will discuss five factors that seem important

- Competition
- Family firms
- Multinationals
- Labor market regulations
- Education
Family-run & government firms have poor management practices (Bloom, Genakos, Sadun & Van Reenen, 2012)

Management scores after controlling for country, industry and number of employees. Data from 9085 manufacturers and 658 retailers. “Founder owned, founder CEO” firms are those still owned and managed by their founders. “Family firms” are those owned by descendants of the founder. “Dispersed shareholder” firms are those with no shareholder with more than 25% of equity, such as widely held public firms.
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Multinationals achieve Good Management Practices Wherever They Locate (Bloom, Genakos, Sadun & Van Reenen, 2012)

Sample of 7,262 manufacturing and 661 retail firms, of which 5,441 are purely domestic and 2,482 are foreign multinationals. Domestic multinationals are excluded – that is the domestic subsidiaries of multinational firms (like a Toyota subsidiary in Japan).
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• Education
Heavy Labor Regulation Inhibit Good People Management Practices (Bloom, Genakos, Sadun & Van Reenen, 2012)

Note: Averaged across all manufacturing firms within each country (9079 observations). We did not include other sectors as we do not have the same international coverage. Incentives management defined as management practices around hiring, firing, pay and promotions. The index is from the Doing Business database [http://www.doingbusiness.org/ExploreTopics/EmployingWorkers/]
So why does management vary across countries and firms?

Five factors that seem important

- Competition
- Family firms
- Multinationals
- Labor market regulations
- Education
Education for Non-Managers and Managers Appear Linked to Better Management (in manufacturing and retail)

Sample of 8,032 manufacturing and 647 retail firms. We did not collect comparable education data in hospitals and schools.
MY FAVOURITE QUOTES:

The traditional British Chat-Up

[Male manager speaking to an Australian female interviewer]

*Production Manager:* “Your accent is really cute and I love the way you talk. Do you fancy meeting up near the factory?”

*Interviewer* “Sorry, but I’m washing my hair every night for the next month….”
The traditional Indian Chat-Up

*Production Manager:* “Are you a Brahmin?’

*Interviewer* “Yes, why do you ask?”

*Production manager* “And are you married?”

*Interviewer* “No?”

*Production manager* “Excellent, excellent, my son is looking for a bride and I think you could be perfect. I must contact your parents to discuss this”
The difficulties of defining ownership in Europe

*Production Manager:* “We’re owned by the Mafia”

*Interviewer:* “I think that’s the “Other” category……..although I guess I could put you down as an “Italian multinational” ?”

Americans on geography

*Interviewer:* “How many production sites do you have abroad?
*Manager in Indiana, US:* “Well…we have one in Texas…”
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Estimating effect of management on performance

• Is there really “bad” management, or are management variations just optimal responses to different environments?

• Management discipline is big on “contingent” management (Woodward, 1958), while the Chicago school would claim bad managed firms would be swiftly driven out of the market.
The effect of management practices on performance

- Arms length surveys
- Longitudinal ground-based studies
- Experiments
Survey example: “Americans do IT better” (Bloom, Sadun and Van Reenen, AER 2012)

Why did productivity growth accelerate in US post-1995, but not in EU?
US productivity miracle linked to use of IT

- Prices of IT fell rapidly post 1995, and IT using sectors showed rapid TFP growth in the US

- US firms have higher scores on people management so able to use IT better. European firms low scores and struggled to adapt

- Test this by examining US multinationals in Europe. Find:
  - US multinationals much higher impact of IT on output compared to non-US multinationals
  - True even after take-overs with about a 3 year lag
  - Once control for management explains the US advantage management accounts for ≈ 50% of faster US-EU TFP growth after 1995
Multinationals use similar people management practices in their overseas affiliates.
<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
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</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>ln (Q/L)</td>
<td>ln (Q/L)</td>
<td>ln (Q/L)</td>
<td>ln (Q/L)</td>
<td>ln (Q/L)</td>
<td>ln (Q/L)</td>
<td>ln (Q/L)</td>
</tr>
<tr>
<td>Fixed effects</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>USA × ln (C/L)</td>
<td>0.1790**</td>
<td>0.0784</td>
<td>0.0518</td>
<td>0.0192</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA ownership × computers per employee</td>
<td>(0.0733)</td>
<td>(0.0720)</td>
<td>(0.0713)</td>
<td>(0.0785)</td>
<td></td>
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</tr>
<tr>
<td>MNE × ln (C/L)</td>
<td>-0.0263</td>
<td>-0.0235</td>
<td>0.0218</td>
<td>0.0235</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-US multinational × computers per employee</td>
<td>(0.0586)</td>
<td>(0.0553)</td>
<td>(0.0547)</td>
<td>(0.0550)</td>
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<tr>
<td>People management</td>
<td>0.0271</td>
<td>0.0271</td>
<td>0.1268***</td>
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<tr>
<td>People management × ln (C/L)</td>
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<td></td>
<td>0.1451***</td>
<td>0.1404***</td>
<td>0.1284*</td>
</tr>
<tr>
<td>People management × computers per employee</td>
<td>(0.0219)</td>
<td>(0.0219)</td>
<td>(0.0773)</td>
<td>(0.0581)</td>
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</tr>
<tr>
<td>ln (K/L)</td>
<td>0.2401***</td>
<td>0.1838***</td>
<td>0.1782***</td>
<td>0.1791***</td>
<td>0.2347**</td>
<td>0.2316***</td>
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<td>Non IT capital per employee</td>
<td>(0.0163)</td>
<td>(0.0284)</td>
<td>(0.0276)</td>
<td>(0.0276)</td>
<td>(0.0926)</td>
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<td>0.0409</td>
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<td>Labor</td>
<td>(0.0162)</td>
<td>(0.0360)</td>
<td>(0.0344)</td>
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<td>(0.2600)</td>
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<td>ln (C/L)</td>
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<td>0.1430***</td>
<td>0.1463***</td>
<td>-0.0493</td>
<td>-0.2282</td>
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<tr>
<td>Computers per employee</td>
<td>(0.031)</td>
<td>(0.0284)</td>
<td>(0.0303)</td>
<td>(0.0596)</td>
<td>(0.1738)</td>
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<tr>
<td>USA</td>
<td>0.2548***</td>
<td>0.0779</td>
<td>0.1111**</td>
<td>0.0837*</td>
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<td></td>
<td>0.2601***</td>
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<td>USA ownership</td>
<td>(0.0438)</td>
<td>(0.0481)</td>
<td>(0.0446)</td>
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<td>(0.0742)</td>
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<td>MNE</td>
<td>0.1909***</td>
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<td>0.0492</td>
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<tr>
<td>Non-US multinational</td>
<td>(0.0304)</td>
<td>(0.0363)</td>
<td>(0.0355)</td>
<td>(0.0357)</td>
<td></td>
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<td>(0.0596)</td>
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<tr>
<td>ln (degree)</td>
<td>0.0433**</td>
<td>0.0375**</td>
<td>0.0370**</td>
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<td>0.0585**</td>
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<td>Percentage employees with a college degree</td>
<td>(0.0183)</td>
<td>(0.0184)</td>
<td>(0.0184)</td>
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<td>(0.0293)</td>
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<tr>
<td>ln (degree) × ln (C/L)</td>
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<tr>
<td>Percentage employees with a college degree × computers per employee</td>
<td>(0.0484)</td>
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<td>Observations</td>
<td>9,463</td>
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<tr>
<td>Test USA × ln (C/L) = MNE × ln (C/L), p-value</td>
<td>0.1890</td>
<td>0.2419</td>
<td>0.6360</td>
<td>0.9565</td>
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<td>Test USA = MNE, p-value</td>
<td>0.1789</td>
<td>0.1206</td>
<td>0.3094</td>
<td>0.1264</td>
<td>0.0095</td>
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The effect of management practices on performance

- Arms length surveys
- Longitudinal ground-based studies
- Experiments
Classic paper is Ichniowski, Shaw and Prennushi (1997, AER)

- Collect detailed monthly performance and management data on 36 steel lines owned by 17 firms.

- Find:
  - introducing high-performance management linked to improved performance (robust to various controls)
  - clustering of “high performance” practices suggesting complementarity of practices

- Influential paper, but obvious concerns over endogeneity
The effect of management practices on performance

- Arms length surveys
- Longitudinal ground-based studies
- Experiments
Very recently, academics have started running experiments on changing management practices

Running management experiments is expensive, so this is to date this has been limited to:

- **Developing countries**, typically on micro-enterprises (i.e. 1 to 10 person firms), or

- **Single firms** (e.g. fruit-picking firms) in developed countries
Evidence from micro-enterprises in developing countries (1/2)

• A few projects are in progress in Peru; Bruhn, Karlan and Schoar in Mexico; Karlan and Udry in Ghana; McKenzie and Woodruff in Sri Lanka.

• Survey in Karlan, Knight & Udry (2012).

• These provide a limited amount (≈ 50 hours) of basic trainings to small firms – e.g. accounting, marketing, pricing, strategy etc.

• This training is provided randomly and performance measured before and after the intervention.
Evidence from micro-enterprises in developing countries (2/2)

• Data so far preliminary

• Some studies find evidence of impact of management training on performance, others do not (so far)

• Maybe management does not matter in these small firms, or the intervention is very poor quality?
Evidence from the **single firms in developed countries**


- **Example**: Lazaer (2000, AER) classic paper on individual incentive pay scheme for Safelite Glass

Lazear (2000, AER) study on Safelite glass

Studies the introduction of one type of management practice – piece-rate pay – on performance.

The setting is Safelite Glass, who replace car windscreens, who rolled out a switch from flat to piece-rate across regions.

Examines performance data for 19 months before and after the switch from hourly rates to piece-rate and finds:

• Increase in productivity of 44%  
• About ½ selection and ½ effort effects
Bandiera, Barankay and Rasul (2005, QJE; 2007, QJE; 2009, Econometrica; and 2010, REStud)

• Run experiments on incentives for workers and managers, team selection, tournament & task division on a fruit picking farm

• Introduce managerial changes part-way through season to look at change in performance, use last season output as controls

• Find large effects of varying management practices:

  • Worker incentive pay increases their performance, especially absolute (rather than relative) incentives

  • Manager incentive pay improves team selection (less favoritism) and the effort they put into monitoring workers: 21% increase in productivity, 10% is selection
Management experiment on larger firms

Bloom, Eifert, Mahajan, McKenzie and Roberts (2013, QJE).

Randomize management practices delivered by Accenture to 20 plants in large (300 person) textile firms in Mumbai, India.

Control firms get one month of diagnostic. Treatment firms get one month of diagnostic, four months of intervention.

Collect weekly data for all plants from 2008 to 2010.
Inventory Control: Before
Inventory Control: **After**
Factory operations: Before
Factory operations: After
PRODUCTIVITY IMPROVEMENTS IN RCT ON ADOPTION OF MANAGEMENT PRACTICES

Weeks after the start of the management experiment

Productivity (output per worker)

Source: Bloom, Eifert, Mahajan, McKenzie & Roberts (2013)
Why don’t firms all adopt best practices?

- **Information**: I don’t know my firm is bad

- **Inspiration**: I know firm’s bad, but I don’t know how to change

- **Motivation**: I know firm’s bad & know how to change, but I don’t have the incentive to do so

- **Persuasion**: I know firm’s bad, I know how to change & I’m motivated but I can’t persuade others to change (e.g. Gibbons & Henderson, 2013)
1. Productivity across firms and countries

2. Managers

3. Management practices

4. Conclusions
Conclusions and summary

• Managers and management practices vary widely across firms and countries, much like productivity

• Factors associated with good management are competition, meritocratic selection of CEO (not family firms), human capital & some degree of labor flexibility

• There is some element of “good” and “bad” management, in that monitoring, targets and incentives appear to causally improve performance

• Change appears slow with many badly run firms.
Some outstanding research questions

1. Dynamics of management quality over firm’s life cycle

2. Why do management practices take so long to change?

3. What fraction of the differences in TFP across firms and countries can management causally explain?

4. What are the key factors causing difference in management?

5. Are different management practices complementary, or are their impacts more or less additive?
SOME FIRMS SEEMED TO BE TOO TRUTHFUL

Who rules the home in Ireland

*Interviewer:* “Would you mind if I asked how much your bonus is as a manager?”

*Manager:* “I don't even tell my wife how much my bonus is!”

*Interviewer:* “Frankly, that’s probably the right decision...”

Staff retention the American way

*Manager:* “I spend most of my time walking around cuddling and encouraging people - my staff tell me that I give great hugs”

The trusted Secretary

*French secretary:* “You want to talk to the plant manager? There are legal proceedings against him, so hurry up!!”
Interviewer : “Do staff sometimes end up doing the wrong sort of work for their skills?

NHS Manager: “You mean like doctors doing nurses jobs, and nurses doing porter jobs? Yeah, all the time. Last week, we had to get the healthier patients to push around the beds for the sicker patients”
MY FAVOURITE QUOTES:

The bizarre

*Interviewer:* “[long silence]……hello, hello….are you still there….hello”

*Production Manager:* “……I’m sorry, I just got distracted by a submarine surfacing in front of my window”

The unbelievable

*[Male manager speaking to a female interviewer]*

*Production Manager:* “I would like you to call me “Daddy” when we talk”

*[End of interview…]*
Backup slides
Spare parts: Before
Stores: After
Stores: After
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<td>1-C</td>
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| 21-A | 4.5 | 8.6 |
| 1-B | 6.7 | 3.9 |
| 1-C | 1 | 2.3 |
| 1-B | 4-1 | 2-1 |
| 1-C | 4-1 | 2-1 |
| 2-A | 12 | 4-1 |

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| 25 | 50.5 |

| 12 | 12 |
| 12 | 12 |