Productivity, management and firm organization

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based on work with Raffaella Sadun (HBS)

MIT/Harvard Org Econ Lecture 1 (February 2013)
Two part lecture course

Tuesday: Productivity and management

• Overview on productivity facts; what are management practices, how to measure, why they vary & what effect they have on performance

• Highlight how little is rigorously known – management is one of the major holes in social science, and a great research area

Thursday: Organizational practices

• Overview on types of organizational practices, how to measure, why they vary and what effect do they have on performance

• Again, large holes in rigorous large sample evidence
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 
  \(\sim 4\times\) higher labor productivity than plant at the 10\textsuperscript{th} percentile  
  (Syverson, 2004 ReStat)

- 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)
“...we have the phenomenon in every community and in every state of the market, of some employers realizing no profits at all, while others are making fair profits; others, again, large profits; others, colossal profits.”

FIRM HETEROGENEITY HAS LONG BEEN RECOGNIZED

Francis Walker (Quarterly Journal of Economics, 1887)
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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

\[ y_i^c = \beta MNG_i^c + \alpha_l l_i^c + \alpha_k k_i^c + \alpha_m h_i^c + \gamma' x_i^c + u_i^c \]

- Management (average z-scores)
- \( \ln(\text{capital}) \)
- \( \ln(\text{labor}) \)
- \( \ln(\text{materials}) \)
- Other controls

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

- Note – **not necessarily a causal relationship**, only an association
External validation: better performance is correlated with better management

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Productivity (% increase)</th>
<th>Profits (ROCE)</th>
<th>5yr Sales growth</th>
<th>Share Price (Tobin Q)</th>
<th>Exit</th>
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<tr>
<td>Estimation</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>Probit</td>
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<tr>
<td>Firm sample</td>
<td>All</td>
<td>All</td>
<td>All</td>
<td>Quoted</td>
<td>All</td>
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<tr>
<td>Management</td>
<td><strong>28.7</strong>*</td>
<td><strong>2.018</strong>*</td>
<td><strong>0.047</strong>*</td>
<td><strong>0.250</strong>*</td>
<td>-0.262**</td>
</tr>
<tr>
<td>Firms</td>
<td>3469</td>
<td>1994</td>
<td>1883</td>
<td>374</td>
<td>3161</td>
</tr>
</tbody>
</table>

Includes controls for country, with results robust to controls for industry, year, firm-size, firm-age, skills etc.

Significance levels: *** 1%, ** 5%, * 10%.

Sample of all firms where accounting data is available
Lecture 1: Overview

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   a) Measurement
   b) Variation
   c) Impact on performance
Surveyed over 10,000 manufacturing firms globally, measuring monitoring, targets and incentives
Management Practice Scores (in Manufacturing) Vary by Country, but are Strongly Linked to Level of Development

Note: Averages taken across all firms within each country. 9079 observations in total.
Firm management spreads like productivity spreads

US (N=695 firms)

India (N=620 firms)
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
Theories of Competition and management

• **Negative**
  – Schumpeterian: less rents, less incentive to improve

• **Positive**
  – Managerial agency issues (Schmidt, 1997)
  – “Raises stakes” marginal effect of productivity improvement bigger effect on profitability (Raith, 2003)
  – Fewer firms, but each larger. Scale effect: as fixed costs spread over more units (Vives, 2008)

• **Ambiguous**, no “canonical model” (cf. Aghion et al, 2005 “inverted U” innovation-competition relationship)
Studies find competition has positive effect on TFP

Nickell (1996, JPE) shows changes in competition lead to faster TFP growth within a panel of firms

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

Pavcnik (2002, REStud) and Olley-Pakes (1996, Econometrica) also at changes in competition from trade-reforms and deregulations respectively, finding this weeds out low TFP firms

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

Bloom, Draca & Van Reenen (2010, NBER) China’s WTO accession & its affect on EU firms in affected sectors
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?”
Competition appears linked to better management (regressions from Bloom and Van Reenen, 2007 QJE)

<table>
<thead>
<tr>
<th>Competition proxies</th>
<th>Dependent variable: Management</th>
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</thead>
<tbody>
<tr>
<td>Import penetration</td>
<td>0.066** (0.033)</td>
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<tr>
<td>(SIC-3 industry, 1995-99)</td>
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<tr>
<td>“1-Rents” measure¹</td>
<td>1.964** (0.721)</td>
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<tr>
<td>(SIC-3 except firm itself, 1995-99)</td>
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<tr>
<td># of competitors</td>
<td>0.158*** (0.023)</td>
</tr>
<tr>
<td>(Firm level, 2004 and 2006)</td>
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<tr>
<td>Observations</td>
<td>2499</td>
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<td></td>
<td>2980</td>
</tr>
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<td></td>
<td>3589</td>
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<tr>
<td>Full controls²,³</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
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<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

¹ 1-Rents = 1- (operating profit – capital costs)/sales
² Includes 108 SIC-3 industry, country, firm-size, public and interview noise (analyst, time, date, and manager characteristic) controls
³ S.E.s in ( ) below, robust to heteroskedasticity, clustered by country-industry
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
Figure 7: Family and founder owned and managed firms (in manufacturing and retail) typically have the worst 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.
So why does management vary across countries and firms?

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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).
So why does management vary across countries and firms?

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• Education
Figure 10: Labor Market Regulation Seems to Inhibit Good Management Practices, Particularly Incentives Management

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/](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
Figure 11: 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….”
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”
MY FAVOURITE QUOTES:

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 productivity growth accelerated in US after 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

US management ≈ 50% of faster TFP growth than EU after 1995
Multinationals use similar people management practices in their overseas affiliates.

Figure 3a: People management z-scores, all firms by country of location

Figure 3b: People management z-scores, multinationals by country of origin
### Table 6—European Firm-Level Panel Data with Direct Measures of Management

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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<td>Dependent variable</td>
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<td>In ((Q/L))</td>
<td>In ((Q/L))</td>
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<td>In ((Q/L))</td>
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<td>YES</td>
<td>NO</td>
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<tr>
<td>USA (\times) In ((C/L))</td>
<td>0.1790**</td>
<td>0.0784</td>
<td>0.0518</td>
<td>0.0192</td>
<td></td>
<td></td>
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<tr>
<td>USA ownership (\times) computers per employee</td>
<td>(0.0733)</td>
<td>(0.0720)</td>
<td>(0.0713)</td>
<td>(0.0785)</td>
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<td>MNE (\times) In ((C/L))</td>
<td>-0.0263</td>
<td>-0.0235</td>
<td>0.0218</td>
<td>0.0235</td>
<td></td>
<td></td>
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<tr>
<td>Non-US multinational (\times) computers per employee</td>
<td>(0.0586)</td>
<td>(0.0553)</td>
<td>(0.0547)</td>
<td>(0.0550)</td>
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<td>People management</td>
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<td>0.0219</td>
<td></td>
<td>0.1268***</td>
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<tr>
<td>People management (\times) In ((C/L))</td>
<td>0.1451***</td>
<td>0.1404***</td>
<td>0.1284*</td>
<td>0.0994*</td>
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<tr>
<td>People management (\times) computers per employee</td>
<td>(0.0331)</td>
<td>(0.0344)</td>
<td>(0.0773)</td>
<td>(0.0581)</td>
<td></td>
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<tr>
<td>In ((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>
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<td>(0.0284)</td>
<td>(0.0276)</td>
<td>(0.0276)</td>
<td>(0.0926)</td>
<td>(0.0882)</td>
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<td>In ((L))</td>
<td>-0.0182</td>
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<td>0.0409</td>
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<td>Labor</td>
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<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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<td>USA</td>
<td>0.2548***</td>
<td>0.0779</td>
<td>0.1111**</td>
<td>0.0837*</td>
<td>0.2601***</td>
<td>0.2150***</td>
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<td>USA ownership</td>
<td>(0.0438)</td>
<td>(0.0481)</td>
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<td>(0.046)</td>
<td>(0.0742)</td>
<td>(0.0732)</td>
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<td>MNE</td>
<td>0.1909***</td>
<td>0.1597***</td>
<td>0.1604***</td>
<td>0.1618***</td>
<td>0.0492</td>
<td>0.0367</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>(0.0596)</td>
<td>(0.0591)</td>
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<tr>
<td>In (\text{degree})</td>
<td>0.0433**</td>
<td>0.0375**</td>
<td>0.0370**</td>
<td></td>
<td>0.0585**</td>
<td>0.0359</td>
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<tr>
<td>Percentage employees with a college degree</td>
<td>(0.0183)</td>
<td>(0.0184)</td>
<td>(0.0184)</td>
<td>(0.0293)</td>
<td>(0.0296)</td>
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<tr>
<td>In (\text{degree}) (\times) In ((C/L))</td>
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<td></td>
<td></td>
<td>0.0700</td>
<td></td>
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<tr>
<td>Percentage employees with a college degree (\times) computers per employee</td>
<td></td>
<td></td>
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<td></td>
<td>(0.0484)</td>
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<tr>
<td>Observations</td>
<td>9,463</td>
<td>2,555</td>
<td>2,555</td>
<td>2,555</td>
<td>2,555</td>
<td>2,555</td>
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<td>2,555</td>
</tr>
<tr>
<td>Test USA (\times) In ((C/L)) = MNE (\times) In ((C/L)), p-value</td>
<td>0.1789</td>
<td>0.1206</td>
<td>0.3094</td>
<td>0.1264</td>
<td>0.9565</td>
<td>0.0095</td>
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<tr>
<td>Test USA = MNE, p-value</td>
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</tbody>
</table>
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 - Karlan and Valdivia (2010) 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 extremely 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

• Growing literature (survey in Bloom & Van Reenen, 2011, Handbook of Labor Economics)

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

  — Others include Shearer (2004, REStud) RCT on tree planters; Lavy (2008, AER) on teachers; Hamilton et al (2003, JPE) on group incentives in garment factory, Bloom, Liang, Roberts and Ying (2013, mimeo) on working-from-home
Lazear (2000, AER) study on Safelite glass

Another classic, which 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
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.

Bandiera, Barankay and Rasul (2005, QJE; 2007, QJE; 2009, Econometrica; and 2010, REStud)
Finally, a management experiment on larger firms

The only experiment I know on panels of large firms is 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**
Spare parts: **Before**
Stores: After
Stores: After
**Factory information: Before**

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<td>1-2-3-5-7</td>
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<tr>
<td>1-B</td>
<td>6-7-3-9-10</td>
<td>1-2-1-2-1</td>
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<td>1-C</td>
<td>1-2-7-9-5-9-10-4</td>
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<td>1-C</td>
<td>4-1-2-1-1-5</td>
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Selvedge

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<tbody>
<tr>
<td>18 dest.</td>
<td>26 dest.</td>
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</tbody>
</table>

Repo - Dust

108 sticks
Factory information: After
These simple management improvements increased productivity by 20% within 1 year alone.

Source: Bloom, Eifert, Mahajan, McKenzie & Roberts, forthcoming Quarterly Journal of Economics
Also increased firm size – better management allowed the family to manage more plants

<table>
<thead>
<tr>
<th>TABLE III</th>
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</thead>
<tbody>
<tr>
<td>LONG-RUN IMPACT OF THE EXPERIMENT ON FIRM SIZE AND DECENTRALIZATION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Firm size</th>
<th>Delegation to plant management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>No. of</td>
<td>No. of plants</td>
</tr>
<tr>
<td>Sample</td>
<td>Industry</td>
<td>Experiment</td>
</tr>
<tr>
<td>Management_{it}</td>
<td>1.040*</td>
<td>(0.563)</td>
</tr>
<tr>
<td>Male family members_{it}</td>
<td>0.210***</td>
<td>(0.065)</td>
</tr>
<tr>
<td>Posttreatment_{it}</td>
<td>0.259**</td>
<td>(0.110)</td>
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<tr>
<td>Plant manager related_{i}</td>
<td>0.423***</td>
<td>(0.150)</td>
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<tr>
<td>Plant manager tenure_{i}</td>
<td>0.014**</td>
<td>(0.007)</td>
</tr>
</tbody>
</table>

Small sample robustness

Permutation tests (p-value) | n/a | 0.21 | 0.02 | n/a | 0.12 | 0.001
Time FEs | n/a | 3 | 3 | n/a | 3 | 3
Plant/Firm FEs | n/a | 17 | 121 | n/a | 28 | 128
Observations | 107 | 68 | 468 | 120 | 108 | 499

Notes. The size dependent variable in columns (1)–(3) is the number of plants in the firm. The decentralization dependent variable in columns (4)–(6) is the z-score index of plant decentralization, which is the sum of the four z-scored (normalized to a mean of 0 and standard deviation of 1) individual responses over plant manager autonomy over weaver hiring, junior manager hiring, spare parts purchasing authority, and days the director does not visit the factory (see Online Appendix A.I for details). Columns (1)–(3) are run at the firm level (because firm-size is a firm-level variable) and columns (4)–(6) are run at the plant level (because decentralization is a plant-level variable). Management is the adoption share of the 16 management practices starred in Appendix Table A.I and discussed in Online Appendix A.I, averaged across all plants within the same firm in columns (1)–(3). Male family members is the number of adult sons and brothers of the interviewed director, which includes all male family members currently working (even working in another firm) but excludes those in school of university. This is designed to measure the supply of male family members that could work in the firm. Post treatment takes the value 1 for a treatment firm/plant after the implementation phase and 0 otherwise. Plant manager related reports if the plant manager is related to the director, including cousins, uncles, and other indirect family members. Plant manager tenure measures the number of years the plant manager has been working at the firm. Time FEs report the number of calendar week time fixed effects. Firm/Plant FEs reports the number of firm-level fixed effects (columns (1)–(3)) or plant level fixed effects (columns (4)–(6)). Standard errors clustered at the firm level in all columns. Permutation test reports the p-values for testing the null hypothesis that the treatment has no effect for the ITT parameter by constructing a permutation distribution of the ITT estimate using the 12,376 possible permutations of treatment assignment. *** denotes 1%, ** denotes 5%, * denotes 10%, † denotes 15% significance.
Why doesn’t competition fix badly managed firms?

Reallocation appears limited: Owners take all decisions as they worry about managers stealing. But owners time is constrained – they already work 72.4 hours average a week – limiting growth. As a result firm size is more linked to number of male family members (corr=0.689) than management scores (corr=0.223)

Entry appears limited: capital intensive due to minimum scale (for a warping loom and 30 weaving looms at least $1m)

Trade is restricted: 50% tariff on fabric imports from China
Why don’t these firms improve themselves (even worthwhile reducing costs for a monopolist…)?

Asked the consultants to investigate the non-adoption of each of the 38 practices, in each plant, every other month.

Did this by discussion with the owners, managers, observation of the factory, and from trying to change management practices.

Find this is primarily an information problem
- Wrong information (do not believe worth doing)
- No information (never heard of the practices)
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 families or Government), human capital & some degree of labor flexibility.

- There is “good” and “bad” management, in that monitoring, targets and incentives appear to causally improve performance.

- Change appears slow with many badly run firms. Informational barriers to adoption appear one reason why.
Our five outstanding research questions

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

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

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

4. Are different management practices complementary, or are their impacts more or less additive?

5. What broad types of management practices are universally good and what types of contingent on firm’s environment?
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
Different measures of productivity

Labor Productivity:

$$LP_{i,t} = va_{i,t} - l_{i,t}$$

“Three factor” TFP:

$$TFP_{i,t}^3 = y_{i,t} - \alpha_l l_{i,t} - \alpha_k k_{i,t} - \alpha_m m_{i,t}$$

Can expand factors – e.g. can split capital ($k$) into ICT and non-ICT

Note: $y=\log($output$)$, $va=\log($value added$)$, $l=\log($labor$)$, $k=\log($capital$)$, $m=\log($intermediate inputs$)$
Ownership differences are another factor behind cross-country variations in management practices.
Multinational presence also linked to cross-country differences in average management practices
Figure 3: Hospital, School & Retail Management Practices Also Vary Across Countries, With the US Top Except in Schools

Note: Averages taken across all organizations within each country. 1,183 hospitals, 780 schools and 661 retail sites.