Management and the Wealth of Nations

John Van Reenen (LSE)

March 3rd 2016
Hong Kong Public Lecture
Draws heavily on joint work with Nick Bloom (Stanford) and Raffaella Sadun (HBS)
OR… “BOSS-ONOMICS”
MOTIVATION

• Big productivity differences between countries determine wealth of nations
LARGE PRODUCTIVITY DIFFERENCES BETWEEN COUNTRIES

Source: Jones and Romer (2010). US=1
MOTIVATION

• Big productivity differences between countries determine wealth of nations

• Also big productivity differences between plants & firms (Top 10% 4x as productive as bottom 10%)

• Argument of this talk:
  – Firm productivity closely related to certain core & measureable management practices
  – Management matters a lot in explaining country-level productivity gaps (~30% on average)
  – Systematic factors drive management. These can be influenced by business & government policies
WHAT ARE REASONS FOR LARGE DIFFERENCES IN FIRM AND COUNTRY PERFORMANCE

• Technological Innovation?
  – R&D, patents, diffusion of ICT (Information and communication technologies), etc.
BUSINESS R&D AS A SHARE OF GDP

BUSINESS R&D AS A SHARE OF GDP: UK IN TROUBLE, BUT THINGS LOOKING GOOD FOR CHINA!

WHAT ARE REASONS FOR LARGE DIFFERENCES IN FIRM AND COUNTRY PERFORMANCE?

• Technological innovation matter a lot, but:
  – After controlling for technology, most productivity differences still unexplained
  – Productivity effects of technology depend on firm management/organization (e.g. Bloom, Sadun & Van Reenen, 2012, AER on Information Technology)

• So are management practices also important?
  – Business case studies
  – History of economic thought
FIRM HETEROGENEITY HAS LONG BEEN RECOGNIZED WITH POSSIBLE LINK TO MANAGEMENT

“It is on account of the wide range [of managerial ability] among the employers of labor that we have the phenomenon in every community and in every trade 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 WITH POSSIBLE LINK TO MANAGEMENT

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Francis Walker (Quarterly Journal of Economics, 1887)
But there is still a wide debate – many people claim management is just “hot air”

“No potential driving factor of productivity has seen a higher ratio of speculation to empirical study”

- Chad Syversson (2011, Journal of Economic Literature)
1. Management as Design

Contingency: No better or worse management: different optimal “styles” (Organizational Econ; Woodward)
“There can be no one best way of organizing a business.

Conformity with the ‘rules’ of management did not result in success or non-conformity in commercial failure. Of the 20 firms assessed as ‘above average’ in success only 9 had an organizational pattern of the orthodox kind”

Joan Woodward (Management and Technology, 1958)

From a detailed survey of 200 UK manufacturing firms
ECONOMIC PERSPECTIVES ON MANAGEMENT

1. Management as Design
   Contingency: No better or worse management: different optimal “styles” (Organizational Econ; Woodward)

2. Management as a Technology (MAT)
   – Management the key driver of firm’s productivity
   – Bloom, Sadun & Van Reenen (2016): analytical & simulation models gives 3 results found in data:
     • Performance increasing in management
     • Competition improves management
     • Management & firm size correlation (“reallocation”) weaker in more distorted economies
   • We find positive evidence for both perspectives, but MAT more important in our data
Measuring Management

Describing Management

Management & Performance

What drives Management?

Policies
1) Developing management questions
   - Scorecard for 18 monitoring (e.g. lean), targets & people (e.g. pay, promotions, retention and hiring). ≈45 minute phone interview of manufacturing plant managers

2) Obtaining unbiased comparable responses (“Double-blind”)
   - Interviewers do not know the company’s performance
   - Managers are not informed (in advance) they are scored
   - Run from LSE, with same training and country rotation

3) Getting firms to participate in the interview
   - Introduced as “Lean-manufacturing” interview, no financials
   - Official Endorsement: Bundesbank, Bank of England, RBI, etc.
   - Run by 200 MBA types (loud, assertive & business experience)
Some typical endorsement letters

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Dear Nick Bloom,

I would like to confirm our enthusiastic support for the joint project between academics at London School of Economics, Stanford University, Harvard Business School, Cambridge University and Oxford University.

This study, aiming at understanding management practices across a range of organizations in African countries and at comparing these practices to practices in North American, European, Asian and Latin American countries, provides a valuable and timely contribution to sectoral competitiveness and overall regional development.

We will follow your results with great interest.

Sincerely,

[Signature]

May 28, 2013

Professor Nicholas Bloom
Department of Economics
Stanford University

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Monsieur le Professeur,

Je vous remercie de m’avoir tenu informé de votre projet de recherche sur les pratiques managériales des entreprises en France, en Allemagne, au Royaume-Uni et aux États-Unis.

Décrire scientifiquement ces pratiques et évaluer leur impact sur la productivité est d’un intérêt manifeste pour les entreprises et pour les politiques publiques qui visent à les soutenir en France et en Europe.

Convaincu de la grande portée de ces travaux, je tiens donc à vous assurer de mon total soutien dans la conduite de votre enquête auprès des entreprises françaises.

[Signature]

LE SOUS-GOUVERNEUR

BANQUE DE FRANCE

Paris, le 8 Février 2006

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Dear Professor Nicholas Stern,

Thank you for your email of August 20 addressed to Governor Zhou. On his behalf, I would like to congratulate you on your appointment as the first holder of the Sir Paul Chair at the London School of Economics and the Director of the Asia Research Centre.

Governor Zhou thanks you for informing him of the joint London School of Economics and Stanford research project led by Professor John Van Reenen. He agrees with you that improving productivity and management practices is important for ensuring economic growth and employment, and believes that this project would be valuable in understanding managerial strengths and weaknesses. Personally he welcomes this project. He suggests that Professor Van Reenen approach the concerned firms directly. I believe many Chinese firms looking for international advice would be happy to take part in such a high-level academic survey.

Best wishes,

[Signature]

Professor Nicholas Stern
Director of the Asia Research Centre
London School of Economics

September 12, 2007

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Professor Nicholas Bloom
Department of Economics
Stanford University
| 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 18 questions and over 50 examples in Bloom & Van Reenen (2007) [http://worldmanagementsurvey.org/](http://worldmanagementsurvey.org/)
Examples of performance metrics – Car Plant
Examples of performance metrics – Retail (Ctrip)
### INCENTIVES - e.g. “HOW DOES THE PROMOTION SYSTEM WORK?”

| Score  | (1) People are promoted primarily upon the basis of tenure, irrespective of performance (ability & effort) | (3) People are promoted primarily upon the basis of performance | (5) We actively identify, develop and promote our top performers |

**Note:** All 18 questions and over 50 examples in Bloom & Van Reenen (2007)

[http://worldmanagementsurvey.org/](http://worldmanagementsurvey.org/)
World Management Survey (~12,000 firms, ~20k managers in 4 major waves: 2004, 2006, 2009, 2014; 34 countries)

Medium sized manufacturing firms (50-5,000 workers, median ≈ 250)
Now extended to Hospitals, Retail, Schools, etc.
[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”
Describing Management

Management & Performance

What drives Management?

Policies
Average Management Scores by Country

Note: Unweighted average management scores (raw data) with number of observations All waves pooled (2004-2014), 15,105 interviews
Average management scores across countries are strongly correlated with GDP per capita

Note: Unweighted average management scores (raw data) with number of observations. All waves pooled (2004-2014)
Large variation of firm management within countries

Firm level average management scores, 1 (worst practice) to 5 (best practice)

Note: Bars are the histogram of the actual density. 15,489 surveys from 11,383 firms.
Schools and Hospitals: spread on 16 identical questions

Graphs by Country

US

Sweden

India

Italy

Schools

Hospitals

Manufacturing

- US
- Sweden
- India
- Italy

Schools

Hospitals

Manufacturing

Legend:

- Schools
- Hospitals
- Manufacturing
Measuring Management

Describing Management

Management & Performance

What drives Management?

Policies
Measuring Management

Describing Management

Management & Performance
- Firm Level
- Country Level

What drives Management?
Policies
Data: Firm Size is increasing in management

Management is the average of all 18 questions (set to sd=1). Sales is log(sales) in US$. N=10197
Management is an average of all 18 questions (set to sd=1). TFP residuals of sales on capital, labor, skills controls plus a full set of SIC-3 industry, country and year dummies controls. N=8314
These management scores positively **correlated** with many other measures of firm performance.
Relation ship between management & performance is strong – even with many controls

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Ln(sales)</th>
<th>Ln(employment)</th>
<th>Profit rate ROCE</th>
<th>5yr Sales growth</th>
<th>Ln(Market to Book value)</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management (SD=1)</td>
<td>16.6***</td>
<td>49.2***</td>
<td>1.01***</td>
<td>4.3***</td>
<td>3.0**</td>
<td>-9.1***</td>
</tr>
<tr>
<td>Obs</td>
<td>8,877</td>
<td>24,501</td>
<td>12,578</td>
<td>11,291</td>
<td>6,572</td>
<td>7,507</td>
</tr>
</tbody>
</table>

Notes: Implied percentage changes from OLS regressions. ***significant at 1% level, **5% level. Controls include labor, capital, industry, time, country & survey noise.
Performance: results from randomized control trials also supportive of MAT (Bloom et al, 2013)

- Experimented on plants in Indian textile firms outside Mumbai

- Randomized treatment plants got heavy management consulting (as in the practices discussed here), control plants got very light consulting

- Collected weekly data & found:
  - Management score improved by 2sd & TFP up by 20%
  - Implies: 1 SD increase in management index caused 10% increase in TFP
MANY PARTS OF THE FACTORIES ARE DIRTY AND UNSAFE
THE FACTORIES ARE ALSO DISORGANIZED

Instrument not removed after use, blocking hallway.

Oil leaking from the machine

Cotton lying on the floor

Instrument blocking the hallway
THE TREATED FIRMS INTRODUCED BASIC INITIATIVES

Worker involved in “5S” initiative on the shop floor, marking out the area around the model machine.

Snag tagging to identify the abnormalities on & around the machines, such as redundant materials, broken equipment, or accident areas. The operator and the maintenance team is responsible for removing these abnormalities.
Performance: causal results from randomized control trials also supportive of MAT

Weeks after the start of the management experiment

1 SD in management caused 10% increase in productivity
Performance: results from randomized control trials also supportive of MAT (Bloom et al, 2013)

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Describing Management

Management & Performance
- Firm Level
- Country Level

What drives Management?
Policies
Management accounts for ~30% of TFP Gap with US

Source: Bloom, Sadun & Van Reenen (2015)

Notes: TFP gaps from Penn World Tables; fraction accounted for by management uses the weighted average management scores and an assumed 10% impact of management on TFP.
Country Total Factor Productivity (TFP) relative to US

Source: Bloom, Sadun & Van Reenen (2015)

Notes: TFP gaps from Penn World Tables; fraction accounted for by management uses the weighted average management scores and an assumed 10% impact of management on TFP
In China management accounts for ~10% of TFP Gap with US

Source: Bloom, Sadun & Van Reenen (2015)

Notes: TFP gaps from Penn World Tables; fraction accounted for by management uses the weighted average management scores and an assumed 10% impact of management on TFP.
Measuring Management

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What drives Management?

Policies
So why don’t firms just improve their management practices – one reason is they cannot self assess.
We asked at the end of the survey:

“Excluding yourself, how well managed would you say your firm is on a scale of 1 to 10, where 1 is worst practice, 5 is average and 10 is best practice”
...and found firms are too optimistic on management.

“Average”
...and self-scores show no link to performance
So if firms struggle to improve management are their levers for Government to help?

- Ownership & governance
- Competition
- Education
Foreign Multinationals appear to transplant management overseas

Notes: These are the simple unweighted means of management scores by companies belonging to foreign multinationals vs. domestic firms. Domestic multinationals not shown (but available on request) lie between the two bars. 12,189 interviews.
Management varies heavily by ownership type

Notes: Data from 14,686 firm interviews. Created May 2015. Source: www.worldmanagementsurvey.com
Sample of 9469 manufacturing and 661 retail firms (private sector panel) Reported competitors defined from the response to the question “How many competitors does your [organization] face?”
IS COMPETITION EFFECT CAUSAL?

• Also use natural experiments to generate exogenous increases in competition

• Trade liberalization following China accession to WTO & subsequent phase out of MFA quotas in textiles & apparel industries in 2005. Bloom, Draca & Van Reenen (2015, ReStud)
  — Strong first stage on Chinese imports into EU
  — Big improvement in management & productivity in more affected sectors

• Hospital competition in UK under Blair reforms (Bloom, Propper, Seiler & Van Reenen, ReStud, 2015)
Education (for managers and non-managers) in the raw data is correlated with better management.

Source: www.worldmanagementsurvey.com
IMPLICATIONS – FOR BUSINESS

• Positive message: many ways to improve!

• FDI shows that even in tough circumstances some firms can thrive

• Succession planning for family firms
IMPLICATIONS – FOR POLICY-MAKERS

• Again, big prize for improvement in terms of income

• Openness to FDI

• Strengthening Competition

• Human capital

• Role for advice/information
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…”
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”

Interviewer: “Is this hospital for profit or not for profit”

Hospital Manager: “Oh no, this hospital is only for loss making”
Interviewer: “Do you offer acute care?”

Switchboard: “Yes ma’am we do”

Interviewer: “Do you have an orthopaedic department?”

Switchboard: “Yes ma’am we do”

Interviewer: “What about a cardiology department?”

Switchboard: “Yes ma’am”

Interviewer: “Great – can you connect me to the ortho department”

Switchboard?: “Sorry ma’am – I’m a patient here”
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…]
Some quotes illustrate the African management approach

_Interviewer_ “What kind of Key Performance Indicators do you use for performance tracking?”

_Manager:_ “Performance tracking? That is the first I hear of this. Why should we spend money to track our performance? It is a waste of money!”

_Interviewer_ “How do you identify production problems?”

_Production Manager:_ “With my own eyes. It is very easy”
Does Management Really Work?

How three essential practices can address even the most complex global problems

by Nicholas Bloom, Raffiea Zadra, and John Van Reenan

Further reading for business
Further reading for researchers

THE NEW EMPIRICAL ECONOMICS OF MANAGEMENT
Nicholas Bloom
Renata Lemos
Raffaella Sadun
Daniela Scur
John Van Reenen

Working Paper 20102
http://www.nber.org/papers/w20102

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
May 2014

IT and Management in America
Nicholas Bloom¹, Erik Brynjolfsson², Lucia Foster³, Ron Jarmin⁴,
Megha Patnaik⁵, Itay Saporta-Eksten⁶ and John Van Reenen⁷

February 2014

The Census Bureau recently conducted a survey of management practices in over 50,000 establishments across the US, the first large-scale survey of management in America. Analyzing the survey's results reveals several striking results. First, more structured management practices are tightly associated with higher levels of IT intensity in terms of a higher expenditure on IT and more on-line access to customers. Second, more structured management is strongly linked with superior performance: establishments adopting more structured practices for performance monitoring, target setting and tracking enjoin greater productivity and profitability. Firms adopting these practices enjoy higher rates of innovation and faster rates of revenue growth. Second, there is a substantial dispersion of management practices across the sample. We find that 18% of establishments have adopted at least 75% of these more structured management practices, while 27% of establishments adopted less than 50% of them.

Management, Product Quality and Trade: Evidence from China
Nick Bloom, Stanford University and NBER
Kalina Manova, Stanford University and NBER
John Van Reenen, London School of Economics and CEP
Zhihong Yu, Nottingham University

Abstract

Are some management practices akin to a technology that can explain company and national productivity, or do they simply capture alternative styles? We exploit cross sectional panel data on management practices across 8,000 firms in 20 countries in the Americas, Europe and Asia. We find the US has the highest weighted average management score, with around a quarter of this advantage due to more powerful reallocation effects.
Typical survey rooms (London 2006)
Management and Reallocation by Country

Notes: Share-weighted management score differences relative to the US (in terms of management score standard deviations). Length of bar shows total deficit, composed of the sum of the (i) the unweighted average management scores (black bar) and the Olley-Pakes reallocation effect (red bar). Domestic firms only with management scores corrected for sampling selection bias.
REGULATIONS: LABOR REGULATIONS CORRELATED WITH LESS EFFECTIVE INCENTIVES MANAGEMENT PRACTICES

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/)