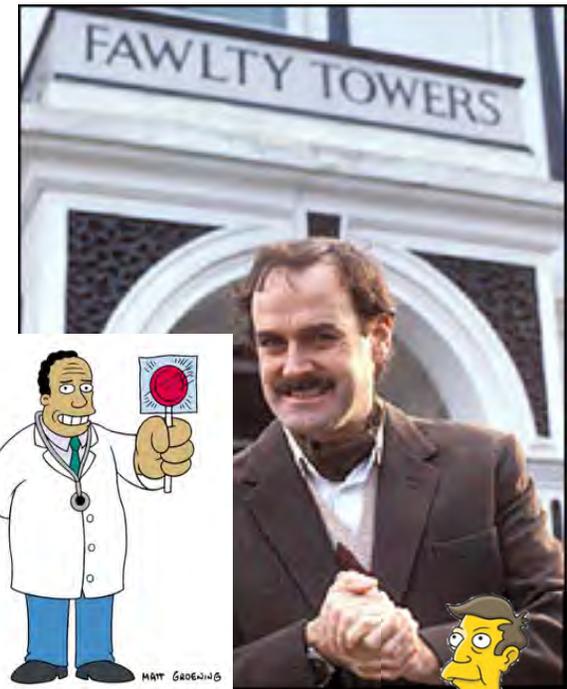


Management Practices and Firm Performance

John Van Reenen

MIT Organizational Economics, March 16th 2021



STRUCTURE

- 4 Papers on management practices
1. **BSV:** Bloom, Nick, Raffaella Sadun and John Van Reenen (2017) “Management as a Technology” CEP DP 1433
 2. **BDDM:** Bloom, Nicholas, Abrijit Mahajan, David McKenzie and John Roberts (2020) “Do Management Interventions Last? Evidence from India”, *AEJ: Applied* 11(4) 198-219
 3. **BBFJEV:** Bloom, Nick, Erik Brynjolfsson, Lucia Foster, Ron Jarmin, Megha Patnaik, Itay Saporta-Eksten and John Van Reenen (2019) “What drives differences in management?” *American Economic Review* 109(5) 1648–1683
 4. **BGP:** Blader, Steve, Claudine Gartenberg and Andrea Pratt (2020) “The Contingent Effect of Management Practices”, *Review of Economic Studies*, 87(2) 721-749

STRUCTURE

- Will approach in slightly non-linear way:
 - Measurement of management practices
 - Impact on firm (and country) performance
 - Drivers of management (**BBFJEV**)
 - (Partially) contingent nature of management practices (**BGP**)
- Papers focus on different parts of these four aspects, but also cut across
 - So I will start with **BSV** and data, but then cut to causal evidence (focus on **BMMR**) before going back to structural model of **BSV**

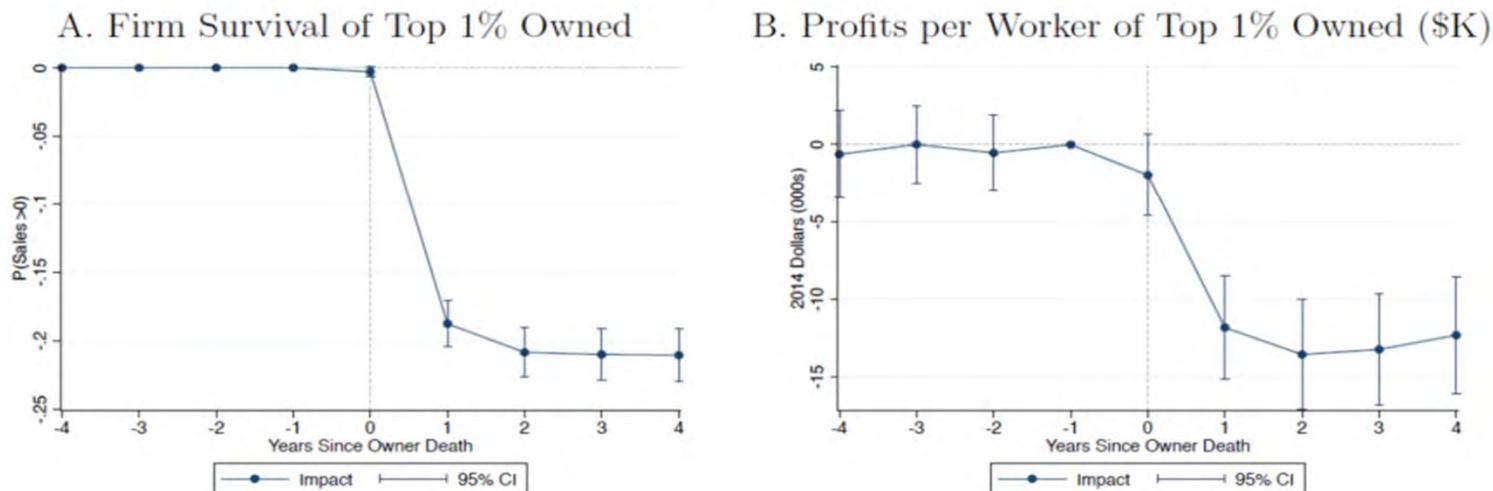
Motivation

- Large degree of heterogeneity in TFP across firms and countries
- Management often hypothesised as a reason for this
 - Technology matters, but big residual remains after controlling for observable tech measures, and impact of tech depends on management
- Empirical evidence?
 - Top CEOs and managers do seem to matter (Sadun's course, e.g. Smith et al, 2019, QJE)
 - But management practices go beyond the identity of a manager (Bender et al, 2017)

CEOs matter (e.g. unexpected deaths)

- **Johnson et al (1985)** event study positive abnormal returns after death of a founder CEO; but negative returns from non-founder
- **Bennedsen et al (2007b)** declines in profitability after CEO death. If relative of CEO takes over after death profits decline by even more (attention/effort reduction by family loss? Or ability issue)
- **Jenter et al (2018)**: 458 deaths (162 sudden cause 2.3% CAR ↓); 1980-2012
- **Smith et al (2019, QJE)** IRS data: Firm (S-Corp) performance down after premature death of owner (2,509 firms of non-elderly top 1% owners)

Figure 5: Impact of Top 1% and Top 0.1% Owner Death on Firm Performance



There is still debate on whether management practices really matter

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

Chad Syverson (*Journal of Economic Literature*)



There is still debate on whether management practices really matter



There is still debate on whether management practices really matter



Enron ex-CEO, Jeff Skilling



There is still debate on whether management practices really matter



BSV: Idea and data

BDDM: Causal Evidence

BSV: Model and Results

Summary of Bloom, Sadun & Van Reenen (2017)

1. Aim: Considers model where **Management** is key source of productivity heterogeneity & measures this explicitly
2. Data: Describes latest World Management Survey (WMS) firm level data (34 countries)
3. Model $Y=AF(K,L,M)$, firms draw initial management (M) as well as TFPQ (A). Invest in M (w. adjustment costs) alongside other factor inputs. Monopolistic competition.
Numerical simulation:
 - a) *Performance*: \uparrow in management
 - b) *Management*: \uparrow with product market *competition*
 - c) *Management*: \uparrow with firm *age* & supply of *skills*
4. Estimate model by SMM and show broadly matches data
5. Given data and model, estimate management may account for roughly 1/3 of cross-country & firm spread in TFP

Two broad views of management

Management As Technology (MAT)

- Some Management practices are “better” or “worse”
- Classic view going back 100 years (e.g. Walker, 1889)
- BSV consider simple model: dynamic equilibrium model with firm heterogeneity in productivity & imperfect competition

Management As Design

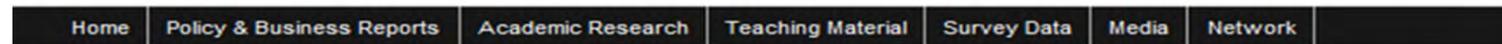
- Styles of management very contingent
- Standard view in Organizational Economics

BSV find that MAT has the best fit with their data (although some evidence for Design model for sub-practices of management score)

World Management Survey (~20k interviews, 34 countries since 2004)



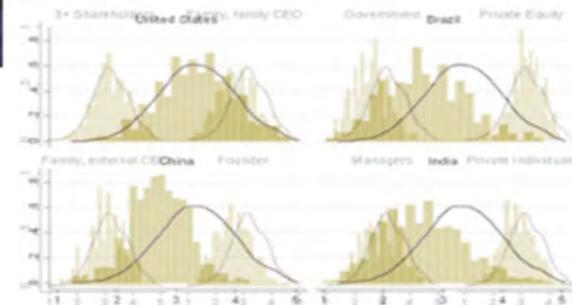
<http://worldmanagementsurvey.org/>



Benchmark your manufacturing firm, hospital, school, or retail outlet against others in your country, industry or size class.

Benchmark your organization

Management scores across firms
WMS team analyses the distribution of management practices within countries by type.

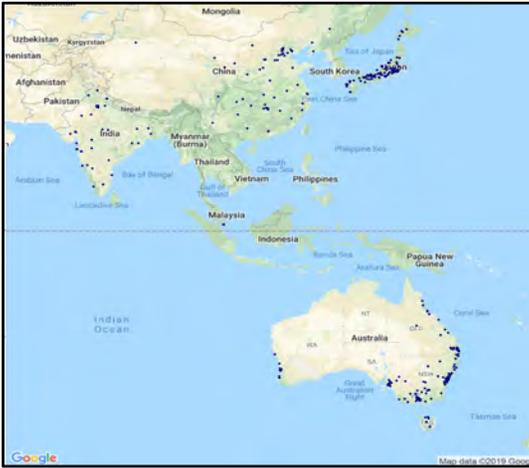
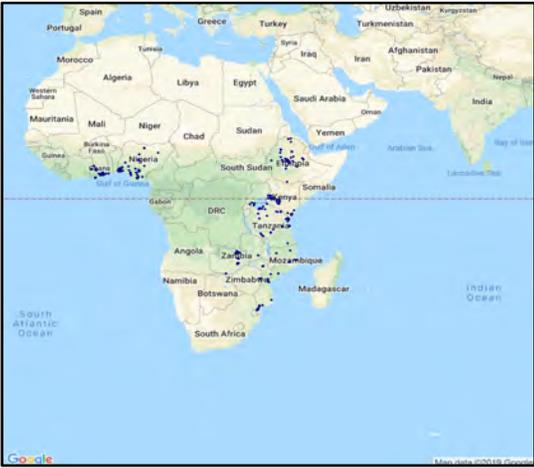
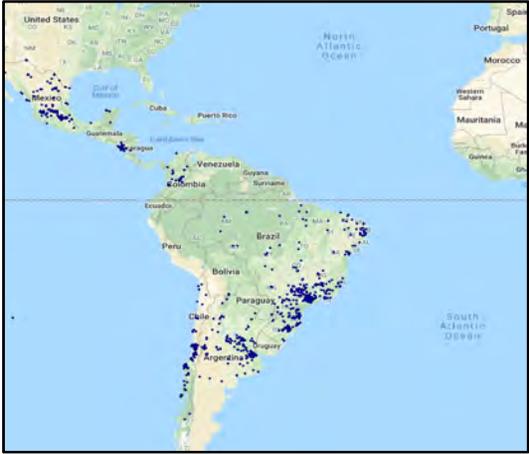
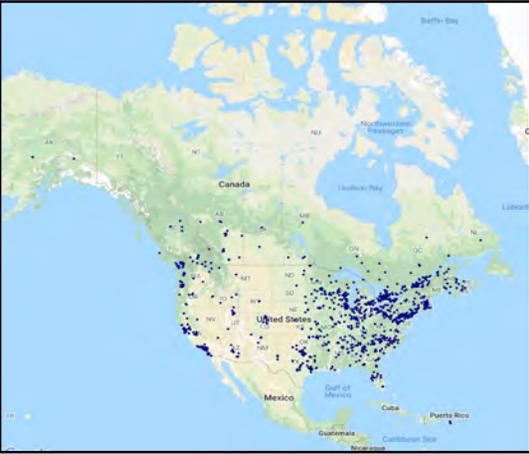


Featured publications

- » [Why do management practices differ across firms and countries?](#)
- » [Management Practice and Productivity: Why They Matter](#)
- » [Management in Healthcare: Why good practice really matters](#)

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

World Management Survey plant coverage countries



Management survey methodology – 3 key steps

1) Scoring management practices

- Scorecard for 18 monitoring, target and incentives practices in ≈45 minute phone interview of manufacturing plant managers

2) Getting firms to participate in the interview

- Introduced as “Lean-manufacturing” interview, no financials
- Endorsement: HM Treasury, Banque de France, RBI, PBC etc.

3) Obtaining unbiased comparable responses, “Double-blind”

- Interviewers do not know the company’s performance
- Managers are not informed (in advance) they are scored

Some typical endorsement letters



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA
www.rbi.org.in

मुख्य महासंचालक
Chief General Manager

RECEIVED
21 APR 2006
ICC

HRDD No. 2843 / 024001/2005-06 April 18, 2006

Dear Prof. Bloom

I would like to confirm the official support of Reserve Bank of India in your joint London School of Economics and Stanford project talking to managers across India. Continually improving our productivity and management practices is important for ensuring economic growth and employment, and we believe this project would be very helpful in pursuing this.

With regards
Yours sincerely
SC Ghose
(Sandip Ghose)

Prof. Nick Bloom
PI Program Director
Centre for Economic Performance
London School of Economics
Houghton Str
London WC2

बनास महासंचालक
मुख्य
191-22
Human Resources Development Dept
Tel: 191-2



MINISTERSTWO SKARBU PAŃSTWA

Warszawa, dnia 17 maja 2006r.

Sekretarz Stanu
Paweł Szalamachin
MSP/000279/06

Prof. Nick Bloom
Director of the Productivity
And Innovation Program
Centre for Economic Performance
London School of Economics

Szanowny Panie Profesorze,

Chciałbym wyrazić poparcie dla badań naukowych prowadzonych przez London School of Economics w porozumieniu z Uniwersytetem w Cambridge i Uniwersytetem Stanforda dotyczących praktyk zarządzania i badania produktywności w małych i średnich firmach. Cieszę się również, że do badań prowadzonych w wielu krajach świata planujecie państwo włączyć około 200 polskich firm.

Uważam, że taki projekt obok oczywistych walorów naukowych, ma odtworzyć wartość praktyczną, a dane uzyskane dotyczące Polskich firm przyczynia się do lepszej ich konkurencyjności na globalnym rynku.

Życzę Panu i Pana zespołowi wielu sukcesów w realizacji tego ambitnego projektu i jestem zainteresowany jego rezultatami.

Z wyrazami szacunku,

Janina

World Bank
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

1818 H Street N.W.
Washington, D.C. 20433
U.S.A.

(202) 473-21
Cable Address
Cable Address

May 28, 2013

Professor Nicholas Bloom
Department of Economics
Stanford University

Dear Nick Bloom, Renata Lemos and Daniela Scur,

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

This study, aimed 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,



BANQUE DE FRANCE

LE SOUS-GOUVERNEUR

Paris, le 8 Février 2006

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 Etats-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.

FROM : FROM NO. : 2007.09.18 09:08 P1



中國人民銀行
THE PEOPLE'S BANK OF CHINA
52 Chungfang Street, West District, Beijing, China 100800

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

September 12, 2007

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 IG Patel 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 acknowledgement would be happy to take part in such a high-level academic survey.

With our best regards,

Basic survey methodology – 3 key steps

1) Developing management questions

- Scorecard for 18 monitoring, target and incentives practices in ≈45 minute phone interview of manufacturing plant managers

2) Getting firms to participate in the interview

- Introduced as “Lean-manufacturing” interview, no financials
- Endorsement: Bundesbank, Banque de France, RBI, PBC etc.

3) Obtaining unbiased comparable responses, “Double-blind”

- Interviewers do not know the company’s performance
- Managers are not informed (in advance) they are scored

Example monitoring question, scored based on a number of questions starting with “*How is performance tracked?*”

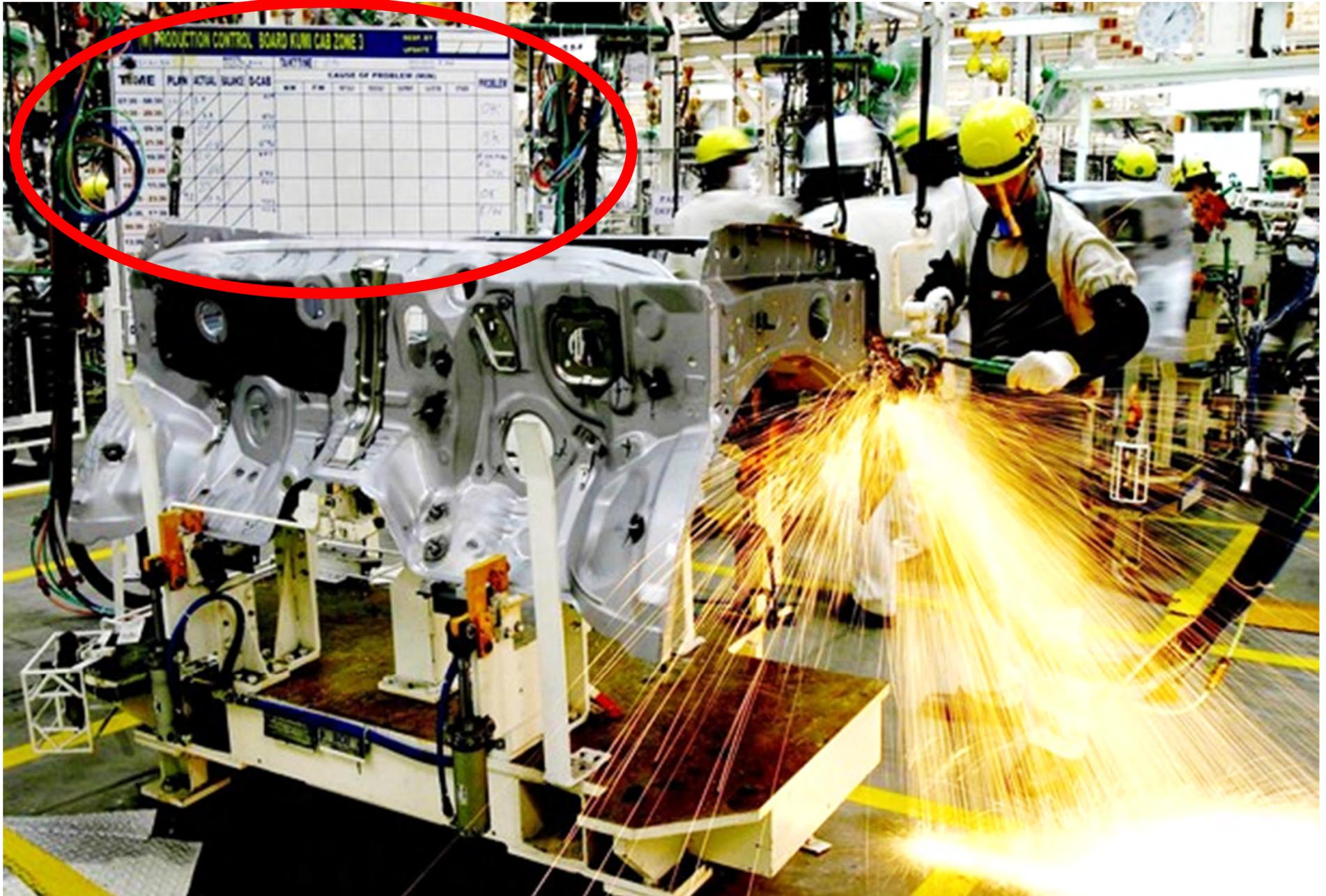
Score

(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

Examples of performance metrics – Car Plant



Examples of a performance metrics – Hospital



Example incentives question, scored based on questions starting with “*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
--------------	---	--	---

INCENTIVES - Removing poor performers

- If you had an employee who could not do her job adequately, what would be done? Could you give me a recent example?
- How long would underperformance be tolerated?
- Do some individuals always just manage to avoid being re-trained/fired?

Score

(1): Poor performers are rarely removed from their positions

(3) Suspected poor performers stay in a position for a few years before action is taken

(5): We move poor performers out of the hospital/department or to less critical roles as soon as a weakness is identified

The full 18 question survey (1/2)...

MANUFACTURING INTERVIEW GUIDE

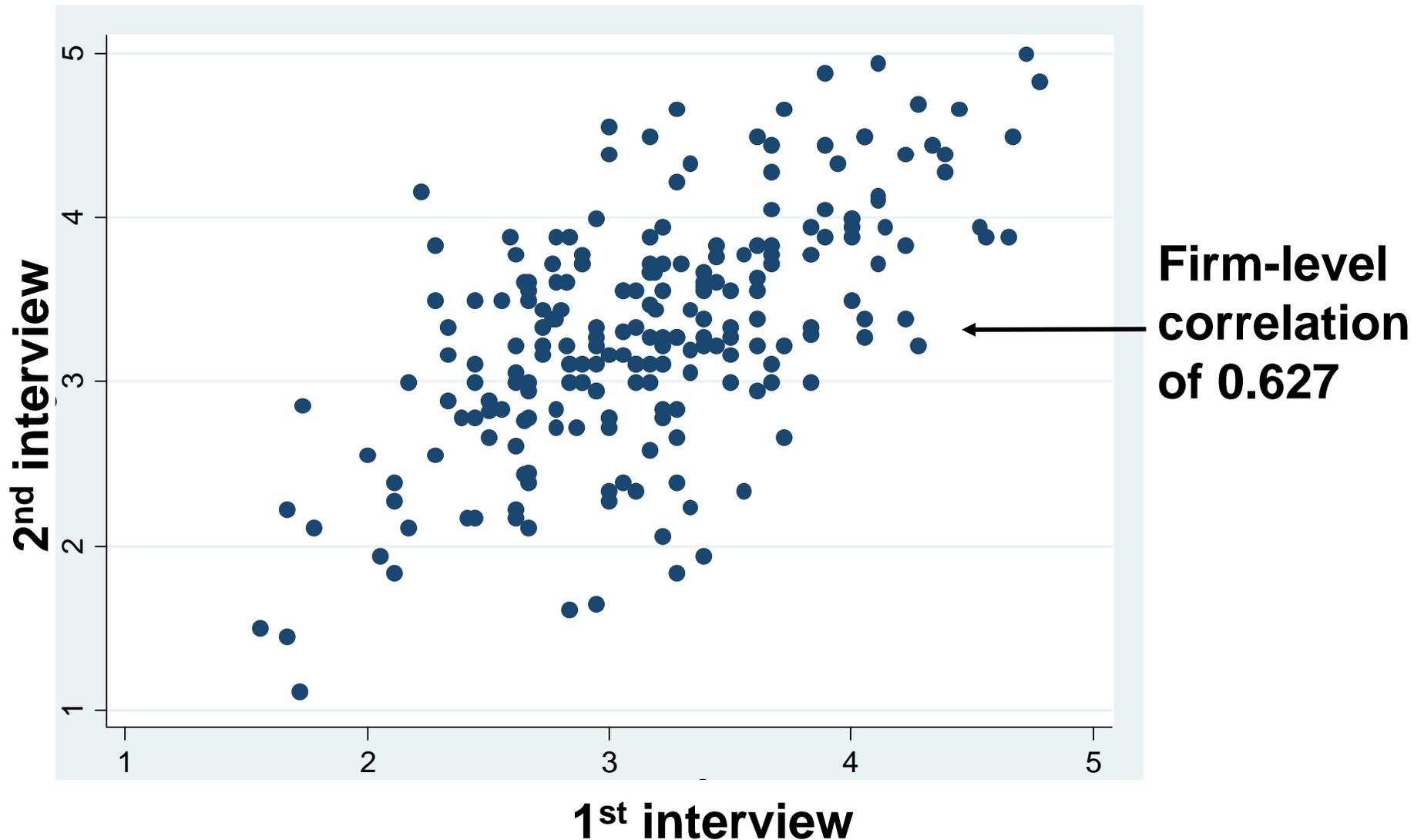
		Score 1	Score 3	Score 5
1	Introduction of lean (modern) manufacturing techniques	Other than JIT delivery from suppliers few modern manufacturing techniques have been introduced, (or have been introduced in an ad-hoc manner)	Some aspects of modern (lean) manufacturing techniques have been introduced, through informal/isolated change programmes	All major aspects of modern/lean manufacturing have been introduced (Just-in-time, automation, flexible manpower, support systems, attitudes and behaviour) in a formal way
2	Rationale for lean (modern) manufacturing techniques	Modern (lean) manufacturing techniques were introduced because others were using them.	Modern (lean) manufacturing techniques were introduced to reduce costs	Modern (lean) manufacturing techniques were introduced to enable us to meet our business objectives (including costs)
3	Process documentation	No, process improvements are made when problems occur.	Improvements are made in 1 week workshops involving all staff, to improve performance in their area of the plant	Exposing problems in a structured way is integral to individuals' responsibilities and resolution occurs as a part of normal business processes rather than by extraordinary effort/teams
4	Performance tracking	Measures tracked do not indicate directly if overall business objectives are being met. Tracking is an ad-hoc process (certain processes aren't tracked at all)	Most key performance indicators are tracked formally. Tracking is overseen by senior management.	Performance is continuously tracked and communicated, both formally and informally, to all staff using a range of visual management tools.
5	Performance review	Performance is reviewed infrequently or in an un-meaningful way e.g. only success or failure is noted.	Performance is reviewed periodically with both successes and failures identified. Results are communicated to senior management. No clear follow-up plan is adopted.	Performance is continually reviewed, based on indicators tracked. All aspects are followed up ensure continuous improvement. Results are communicated to all staff
6	Performance dialogue	The right data or information for a constructive discussion is often not present or conversations overly focus on data that is not meaningful. Clear agenda is not known and purpose is not stated explicitly	Review conversations are held with the appropriate data and information present. Objectives of meetings are clear to all participating and a clear agenda is present. Conversations do not, as a matter of course, drive to the root causes of the problems.	Regular review/performance conversations focus on problem solving and addressing root causes. Purpose, agenda and follow-up steps are clear to all. Meetings are an opportunity for constructive feedback and coaching.
7	Consequence management	Failure to achieve agreed objectives does not carry any consequences	Failure to achieve agreed results is tolerated for a period before action is taken.	A failure to achieve agreed targets drives retraining in identified areas of weakness or moving individuals to where their skills are appropriate
8	Type of targets	Goals are exclusively financial or operational	Goals include non-financial targets, which form part of the performance appraisal of top management only (they are not reinforced throughout the rest of organisation)	Goals are a balance of financial and non-financial targets. Senior managers believe the non-financial targets are often more inspiring and challenging than financials alone (e.g. 60% market share by 2003)

The full 18 question survey (2/2)...

9	Interconnection of goals	Goals are based purely on accounting figures (with no clear connection to shareholder value)	Corporate goals are based on shareholder value but are not clearly cascaded down to individuals	Corporate goals focus on shareholder value. They increase in specificity as they cascade through business units ultimately defining individual performance expectations.
10	Time horizon	Top management's main focus is on short term targets	There are short and long term goals for all levels of the organisation. As they are set independently, they are not necessarily linked to each other	Long term goals are translated into specific short term targets so that short term targets become a "staircase" to reach long term goals
11	Goals are stretching	Goals are either too easy or impossible to achieve; managers low-ball estimates to ensure easy goals	In most areas, top management pushes for aggressive goals based on solid economic rationale. There are a few "sacred cows" that are not held to the same rigorous standard	Goals are genuinely demanding for all divisions. They are grounded in solid, solid economic rationale
12	Clarity of goals and measurement	Performance measures are complex and not clearly understood. Individual performance is not made public	Performance measures are well defined and communicated; performance is public in all levels but comparisons are discouraged	Performance measures are well defined, strongly communicated and reinforced at all reviews; performance and rankings are made public to induce competition
13	Instilling a talent mindset	Senior management do not communicate that attracting, retaining and developing talent throughout the organisation is a top priority	Senior management believe and communicate that having top talent throughout the organisation is a key way to win	Senior managers are evaluated and held accountable on the strength of the talent pool they actively build
14	Building a high performance culture	People within our firm are rewarded equally irrespective of performance level	Our company has an evaluation system for the awarding of performance related rewards	We strive to outperform the competitors by providing ambitious stretch targets with clear performance related accountability and rewards
15	Making room for talent	Poor performers are rarely removed from their positions	Suspected poor performers stay in a position for a few years before action is taken	We move poor performers out of the company or to less critical roles as soon as a weakness is identified
16	Developing talent	People are promoted primarily upon the basis of tenure	People are promoted upon the basis of performance	We actively identify, develop and promote our top performers
17	Creating a distinctive employee value proposition	Our competitors offer stronger reasons for talented people to join their companies	Our value proposition to those joining our company is comparable to those offered by others in the sector	We provide a unique value proposition to encourage talented people join our company above our competitors
18	Retaining talent	We do little to try and keep our top talent.	We usually work hard to keep our top talent.	We do whatever it takes to retain our talent.

Internal Validation

Re-interviewed 5% of the sample to have a different interviewer speak to a different management in the same firm



ADDITIONAL CONTROLS FOR “NOISE”

INTERVIEWEE CONTROLS

- Gender, seniority, tenure in post, tenure in firm, countries worked in, foreign, worked in US, plant location, reliability score

INTERVIEWER CONTROLS

- Set of interviewer dummies, cumulative interviews run, prior firm contacts

TIME CONTROLS

- Day of the week, time of day (interviewer), time of the day (interviewee), duration of interview, days from project start

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...”

MY FAVOURITE QUOTES:

The traditional Indian Chat-Up

Production Manager: “Are you a Brahmin?”

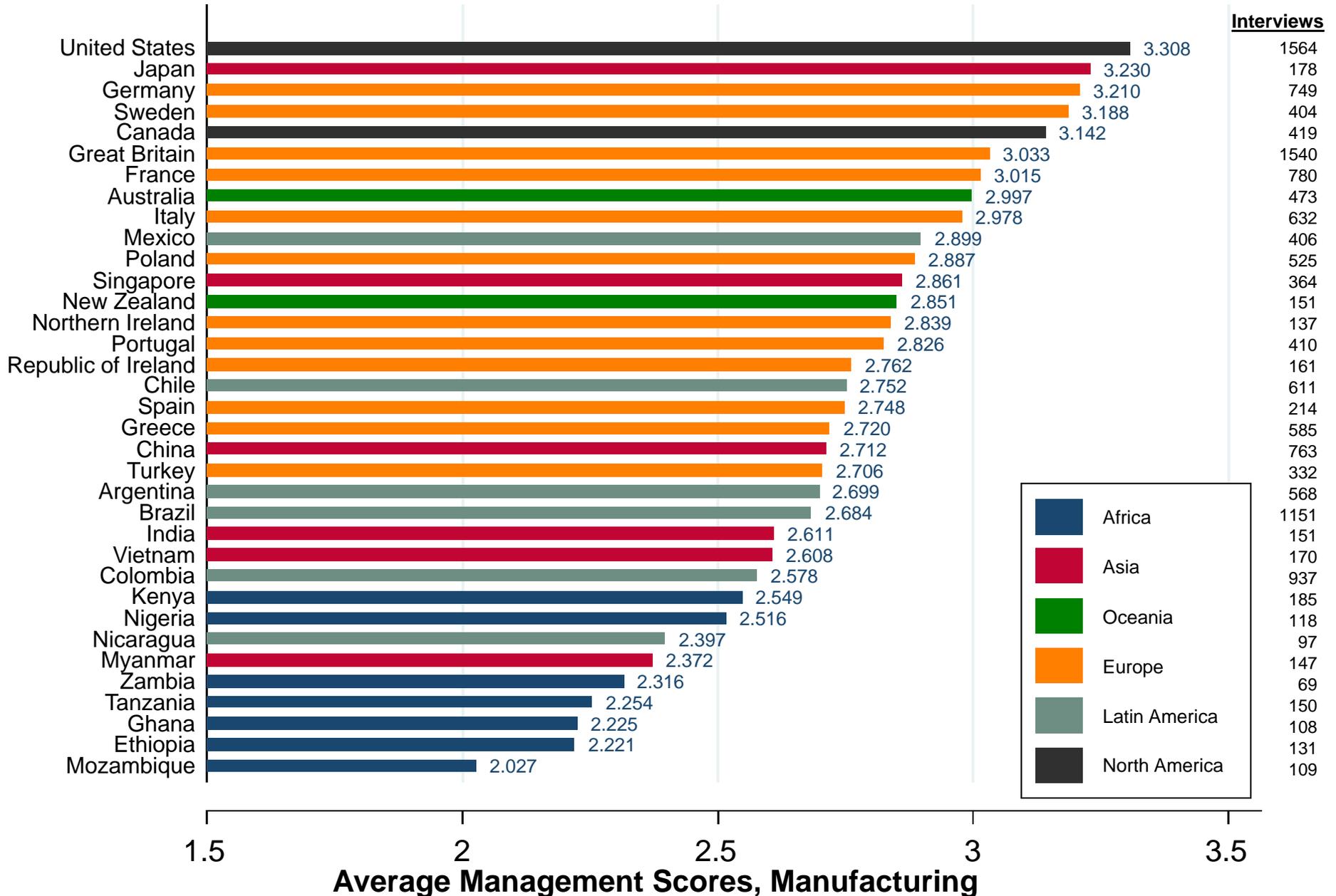
Interviewer “Yes, why do you ask?”

Production manager “And are you married?”

Interviewer “No?”

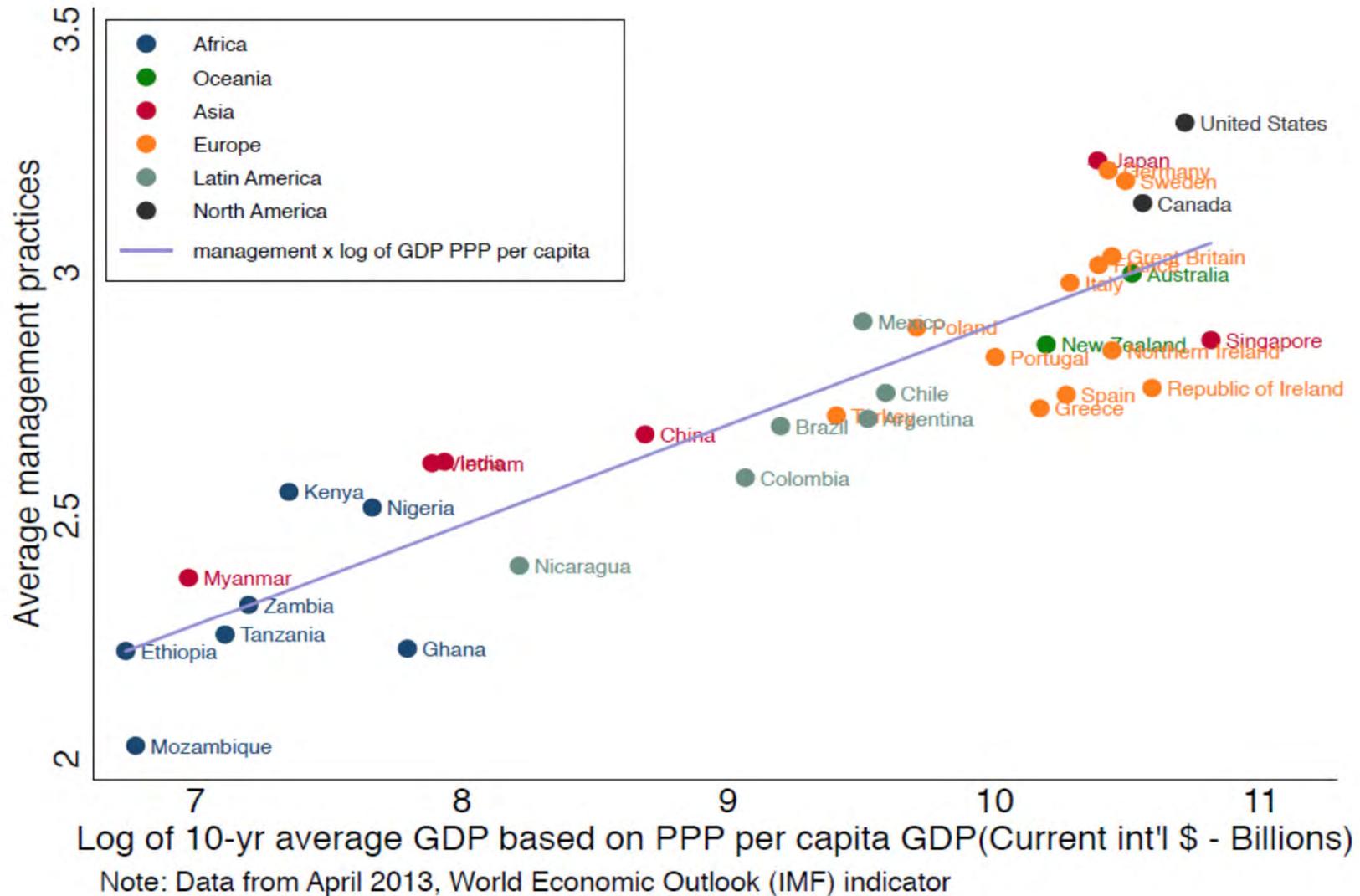
Production manager “Excellent, excellent, my son is looking for a bride and I think you could be perfect. I must contact your parents to discuss this”

Average Management Scores by Country

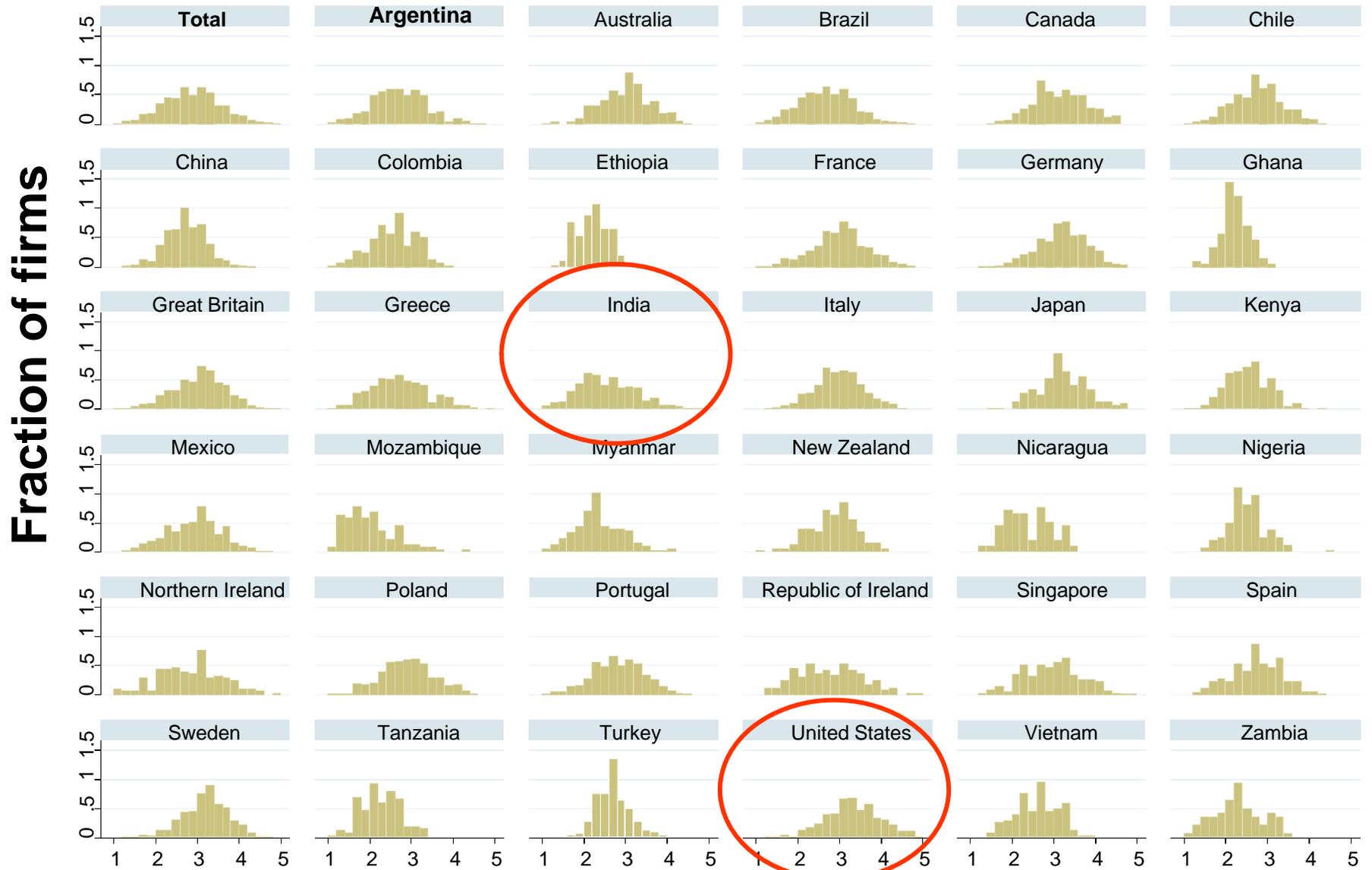


Note: Unweighted average management scores; # interviews in right column (total = 15,489); all waves pooled (2004-2014)

Average management scores across countries are strongly correlated with GDP per capita

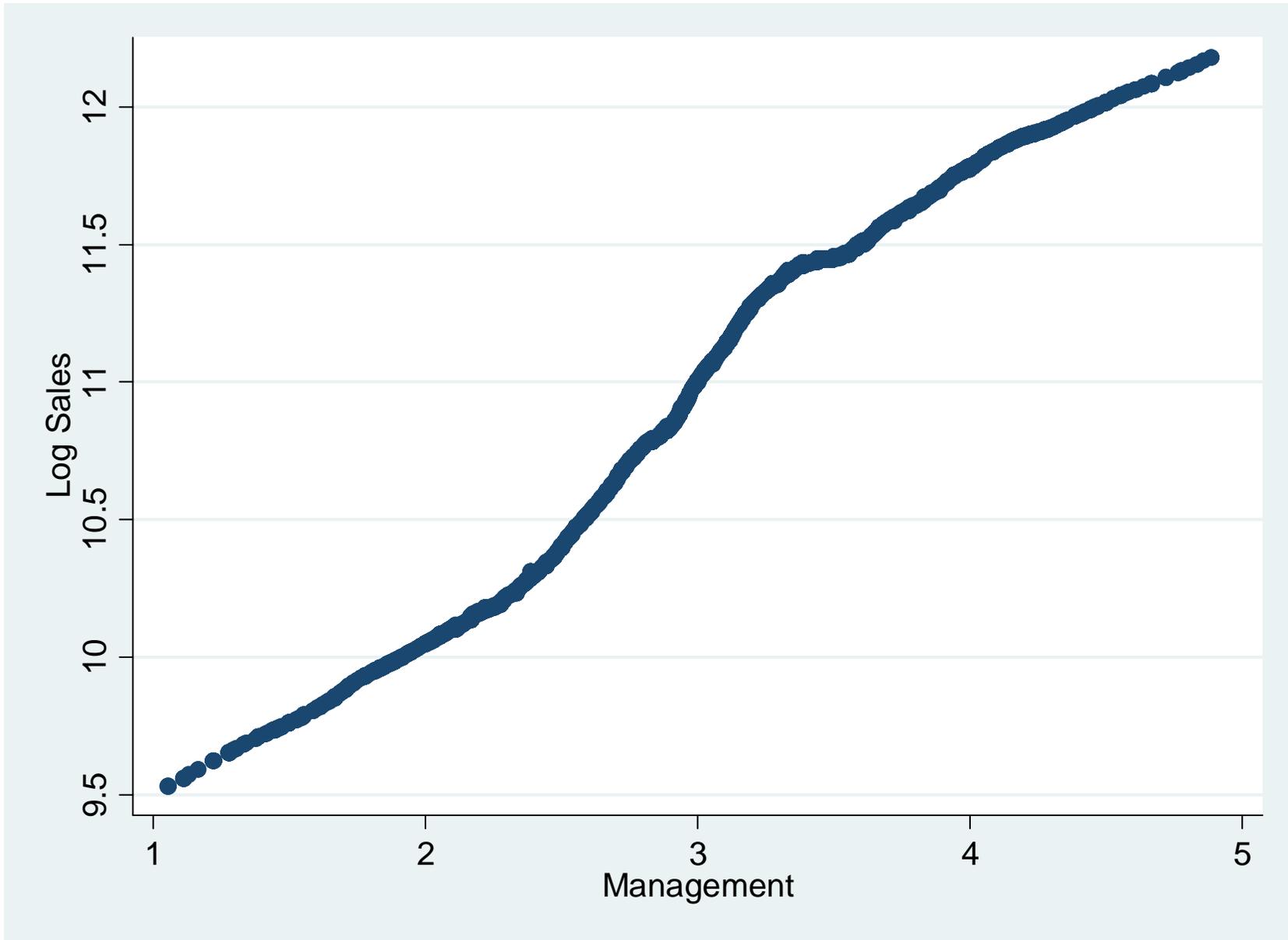


Management also varies heavily within countries



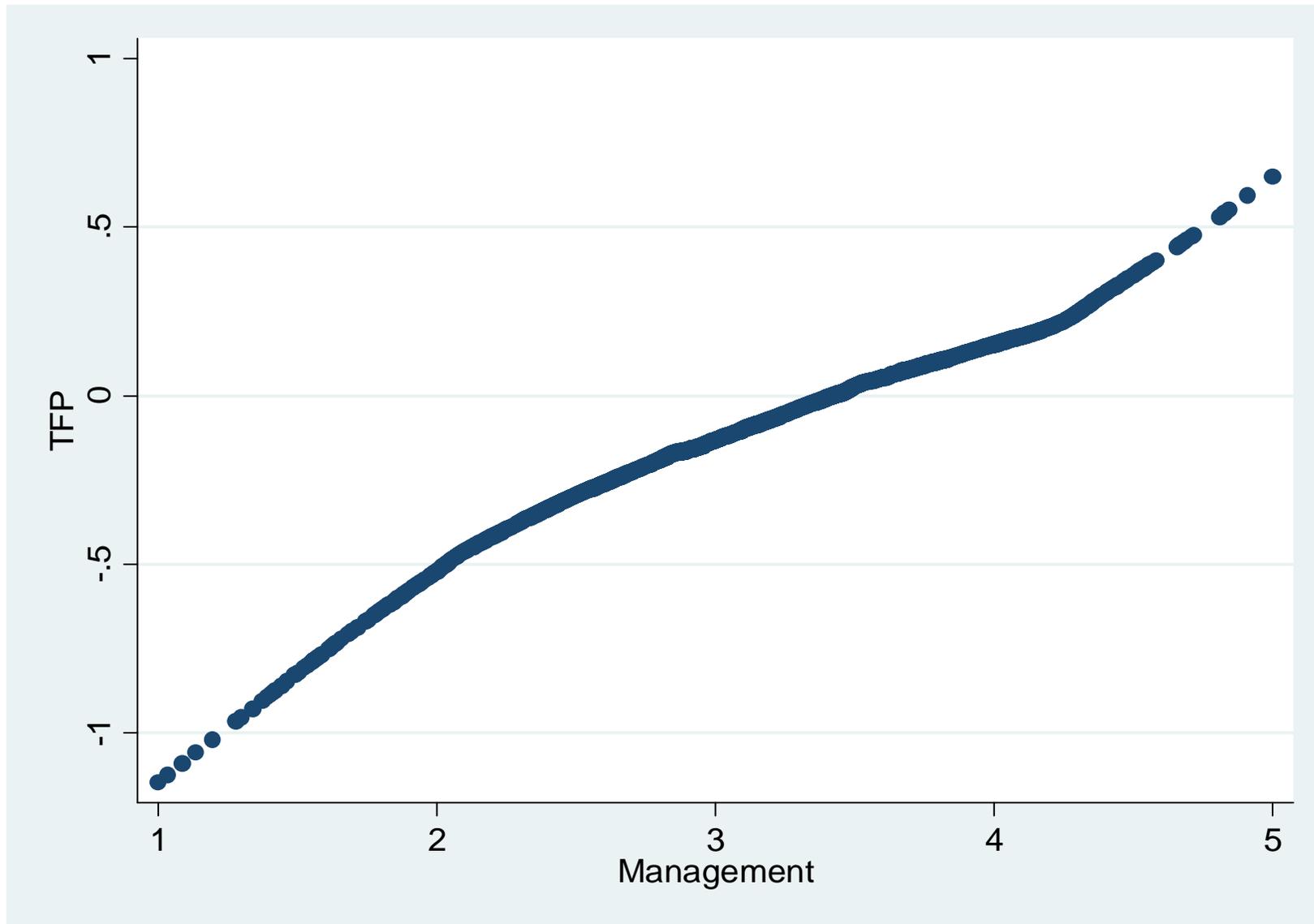
Firm level average management scores, 1 (worst practice) to 5 (best practice)

Fig A2 - Data: Firm Size increasing in management



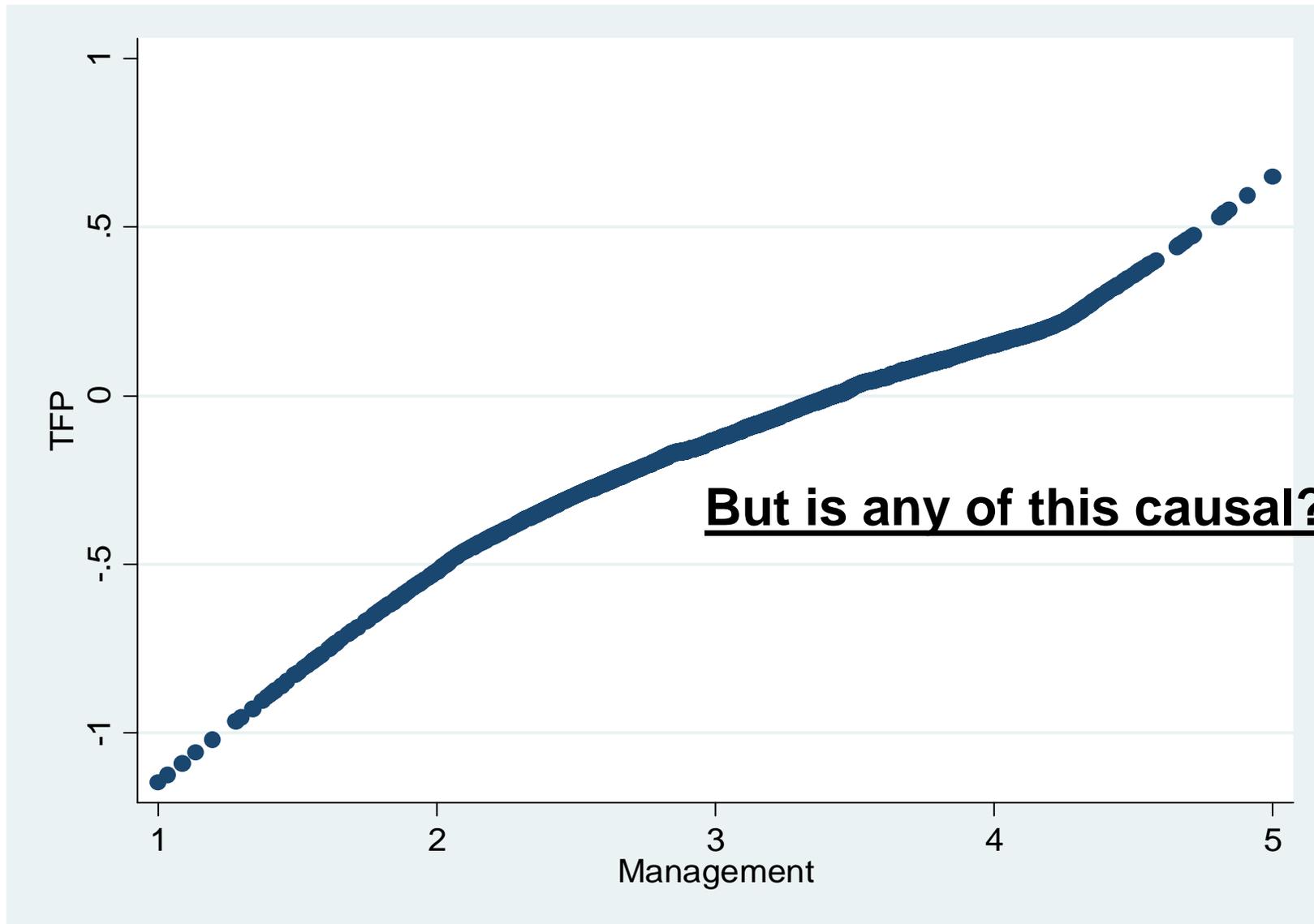
Management is the average of all 18 questions (set to sd=1). Sales is log(sales) in US\$. N=10197

Fig A3 - Data: TFP is increasing in management



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

Fig A3 - Data: TFP is increasing in management



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

BSV: Idea and data

BDDM: Causal Evidence

BSV: Model and Results

Are correlations between performance and management at all causal?

- Many Management Practices have an important causal effect on firm performance
 - **Quasi-experiments** (e.g. Giorcelli, 2019; Huber et al, 2020; Bandiera et al, 2005, 2007)
 - **Randomized Control Trials**: e.g. **Blader et al (2019)**, **Bloom et al (2013, 2020)**; Brooks et al (2018); Bruhn et al, (2018); Cai & Szeidl (2018); Custódio et al (2020); Fryer (2017); Gosnell et al (2019); Higuchi et al (2019); Iacovone et al (2019); Karlan et al (2015); Bandiera et al (2017) meta-study.



Do Management Interventions Last? Evidence from India[†]

By NICHOLAS BLOOM, APRAJIT MAHAJAN, DAVID MCKENZIE,
AND JOHN ROBERTS*

We revisited Indian weaving firms nine years after a randomized experiment that changed their management practices. While about half of the practices adopted in the original experimental plants had been dropped, there was still a large and significant gap in practices between the treatment and control plants, suggesting lasting impacts of effective management interventions. Few practices had spread across the firms in the study, but many had spread within firms. Managerial turnover and the lack of director time were two of the most cited reasons for the drop in management practices, highlighting the importance of key employees. (JEL D22, D24, L67, L84, M11, O14)

THE
QUARTERLY JOURNAL
OF ECONOMICS

Vol. 128 February 2013 Issue 1

DOES MANAGEMENT MATTER? EVIDENCE FROM INDIA*

NICHOLAS BLOOM
BENN EIFERT
APRAJIT MAHAJAN
DAVID MCKENZIE
JOHN ROBERTS

A long-standing question is whether differences in management practices across firms can explain differences in productivity, especially in developing countries where these spreads appear particularly large. To investigate this, we ran a management field experiment on large Indian textile firms. We provided free consulting on management practices to randomly chosen treatment plants and compared their performance to a set of control plants. We find that adopting these management practices raised productivity by 17% in the first year through improved quality and efficiency and reduced inventory, and within three years led to the opening of more production plants. Why had the firms not adopted these profitable practices previously? Our results suggest that informational barriers were the primary factor explaining this lack of

RCT on management (Bloom et al., 2013, 2020).

Management consultancy delivered by Accenture to 20 plants in 17 woven cotton fabric firms near Mumbai, India in 2008.

Average 270 employees and \$7.5m sales

38 practices tied to operations, quality, HR & inventory control

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

Collect weekly data on performance and management for all plants Aug 2008 to Aug 2010 (data collection Nov 2011), and long-run size and management data through 2017

Found: 2 SD increase in management score & 17% higher TFP by 2011. Management advantage persists through 2017.

Exhibit 1: Plants are large compounds, often containing several buildings.



Exhibit 2: Plants operate continuously making cotton fabric from yarn



Fabric weaving

Exhibit 3: Many parts of these Indian plants were dirty and unsafe



Garbage outside the plant



Garbage inside a plant



Flammable garbage in a plant



Chemicals without any covering

Exhibit 4: The plant floors were often disorganized and aisles blocked

Instrument not removed after use, blocking hallway.



Old warp beam, chairs and a desk obstructing the plant floor

Dirty and poorly maintained machines



Tools left on the floor after use



Intervention aimed to improve 38 core textile management practices in 6 areas – for example

Area	Specific practice	Targeted practices in 6 areas: operations, quality, inventory, HR and sales & orders
Factory Operations	<p>Preventive maintenance is carried out for the machines</p> <p>Preventive maintenance is carried out per manufacturer's recommendations</p> <p>The shop floor is marked clearly for where each machine should be</p> <p>The shop floor is clear of waste and obstacles</p> <p>Machine downtime is recorded</p> <p>Machine downtime reasons are monitored daily</p> <p>Machine downtime is analyzed at least fortnightly & action plans created and implemented to try to reduce this</p> <p>Daily meetings take place that discuss efficiency with the production team</p> <p>Written procedures for warping, drawing, weaving & beam gaiting are displayed</p> <p>Visual aids display daily efficiency loomwise and weaverwise</p> <p>These visual aids are updated on a daily basis</p> <p>Spares stored in a systematic basis (labeling and demarked locations)</p> <p>Spares purchases and consumption are recorded and monitored</p> <p>Scientific methods are used to define inventory norms for spares</p>	
Quality Control	<p>Quality defects are recorded</p> <p>Quality defects are recorded defect wise</p> <p>Quality defects are monitored on a daily basis</p> <p>There is an analysis and action plan based on defects data</p> <p>There is a fabric gradation system</p> <p>The gradation system is well defined</p> <p>Daily meetings take place that discuss defects and gradation</p> <p>Standard operating procedures are displayed for quality supervisors & checkers</p>	

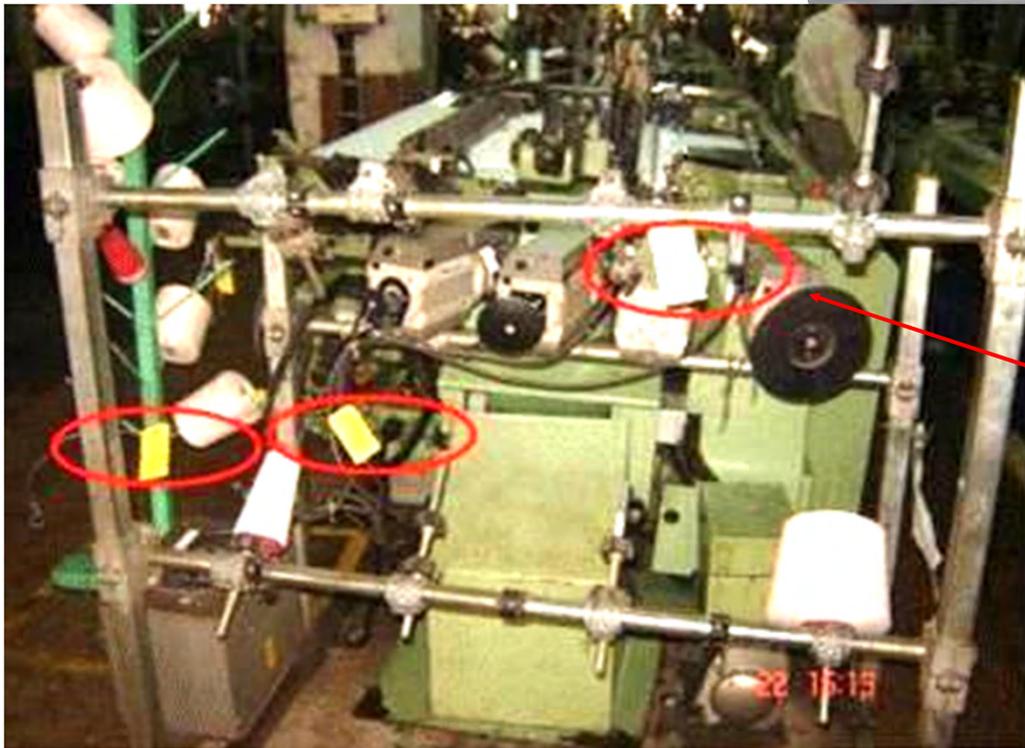
Organizing and racking inventory enables firms to substantially reduce capital stock



Stock is organized, labeled, and entered into the computer with details of the type, age and location.

Many treated firms have also introduced basic initiatives to organize the plant floor

Marking out the area around the model machine



Snag tagging to identify the abnormalities

Production data is now collected in a standardized format, for discussion in the daily meetings

FABRICS PVT. LTD.

Order No. 116000 Beam Length 1500 Cutting Date _____
 Roll No. 123 No. of Pieces 100 Finish Date _____
 Weight 50 Total Ends 1000 Beam Weight _____
 Warp Speed 60 Selvage _____ Warp Weight _____
 Pick _____ Total Quality Weight 1000 Weft Weight _____
 Loom No. 11 Total Quality Weight 1000

WARP PATTERN	DRAWING PATTERN	PIG PLAN
21-A	1-2-3-4-5-X4	1-2-3-4-5-7
1-B	6-7-8-9-10	10-11-12-13
1-A	1-2-3-4-5-X4	1-2-3-4-5-7
1-B	6-7-8-9-10	10-11-12-13
1-C	11-12-13-14	14-15-16-17
1-D	18-19-20-21	22-23-24-25
1-E	26-27-28-29	30-31-32-33
1-F	34-35-36-37	38-39-40-41
1-G	42-43-44-45	46-47-48-49
1-H	50-51-52-53	54-55-56-57
1-I	58-59-60-61	62-63-64-65
1-J	66-67-68-69	70-71-72-73
1-K	74-75-76-77	78-79-80-81
1-L	82-83-84-85	86-87-88-89
1-M	90-91-92-93	94-95-96-97
1-N	98-99-100-101	102-103-104-105

Selvage
 12 text = 26.470 (100)
 8 text = 20.112
 11 text = 1.115
 2 text = 100 ends

TEXTILE MILLS (P) LTD.
 LOG BOOK & EFFICIENCY BOOK

Class	Design No.	RS	SR	CR	CP	Flts	Remarks	WIP	Waste %
11	11000	62	500	400	500	50			
12	11001	63	510	410	510	50	Warp break stop	1	10%
13	11002	64	520	420	520	50			
14	11003	65	530	430	530	50			
15	11004	66	540	440	540	50			
16	11005	67	550	450	550	50			
17	11006	68	560	460	560	50			
18	11007	69	570	470	570	50			
19	11008	70	580	480	580	50			
20	11009	71	590	490	590	50			
21	11010	72	600	500	600	50			
22	11011	73	610	510	610	50			
23	11012	74	620	520	620	50			
24	11013	75	630	530	630	50			
25	11014	76	640	540	640	50			
26	11015	77	650	550	650	50			
27	11016	78	660	560	660	50			
28	11017	79	670	570	670	50			
29	11018	80	680	580	680	50			
30	11019	81	690	590	690	50			
31	11020	82	700	600	700	50			
32	11021	83	710	610	710	50			
33	11022	84	720	620	720	50			
34	11023	85	730	630	730	50			
35	11024	86	740	640	740	50			
36	11025	87	750	650	750	50			
37	11026	88	760	660	760	50			
38	11027	89	770	670	770	50			
39	11028	90	780	680	780	50			
40	11029	91	790	690	790	50			
41	11030	92	800	700	800	50			
42	11031	93	810	710	810	50			
43	11032	94	820	720	820	50			
44	11033	95	830	730	830	50			
45	11034	96	840	740	840	50			
46	11035	97	850	750	850	50			
47	11036	98	860	760	860	50			
48	11037	99	870	770	870	50			
49	11038	100	880	780	880	50			
50	11039	101	890	790	890	50			
51	11040	102	900	800	900	50			
52	11041	103	910	810	910	50			
53	11042	104	920	820	920	50			
54	11043	105	930	830	930	50			
55	11044	106	940	840	940	50			
56	11045	107	950	850	950	50			
57	11046	108	960	860	960	50			
58	11047	109	970	870	970	50			
59	11048	110	980	880	980	50			
60	11049	111	990	890	990	50			
61	11050	112	1000	900	1000	50			

Warp Stop			Weft Stop			Other Stop		
WIP	DIFF	WIP	DIFF	WIP	DIFF	WIP	DIFF	WIP
10	1000	10	1000	10	1000	10	1000	10
20	2000	20	2000	20	2000	20	2000	20
30	3000	30	3000	30	3000	30	3000	30
40	4000	40	4000	40	4000	40	4000	40
50	5000	50	5000	50	5000	50	5000	50
60	6000	60	6000	60	6000	60	6000	60
70	7000	70	7000	70	7000	70	7000	70
80	8000	80	8000	80	8000	80	8000	80
90	9000	90	9000	90	9000	90	9000	90
100	10000	100	10000	100	10000	100	10000	100

Handwritten notes on loose pieces of paper, including calculations and patterns, such as:

1-2-3-4-5-7
 10-11-12-13
 14-15-16-17
 18-19-20-21
 22-23-24-25
 26-27-28-29
 30-31-32-33
 34-35-36-37
 38-39-40-41
 42-43-44-45
 46-47-48-49
 50-51-52-53
 54-55-56-57
 58-59-60-61
 62-63-64-65
 66-67-68-69
 70-71-72-73
 74-75-76-77
 78-79-80-81
 82-83-84-85
 86-87-88-89
 90-91-92-93
 94-95-96-97
 98-99-100-101
 102-103-104-105

Before

(not standardized, on loose pieces of paper)

After

(standardized, so easy to enter daily into a computer)

Spare parts were also organized, reducing downtime (parts can be found quickly)



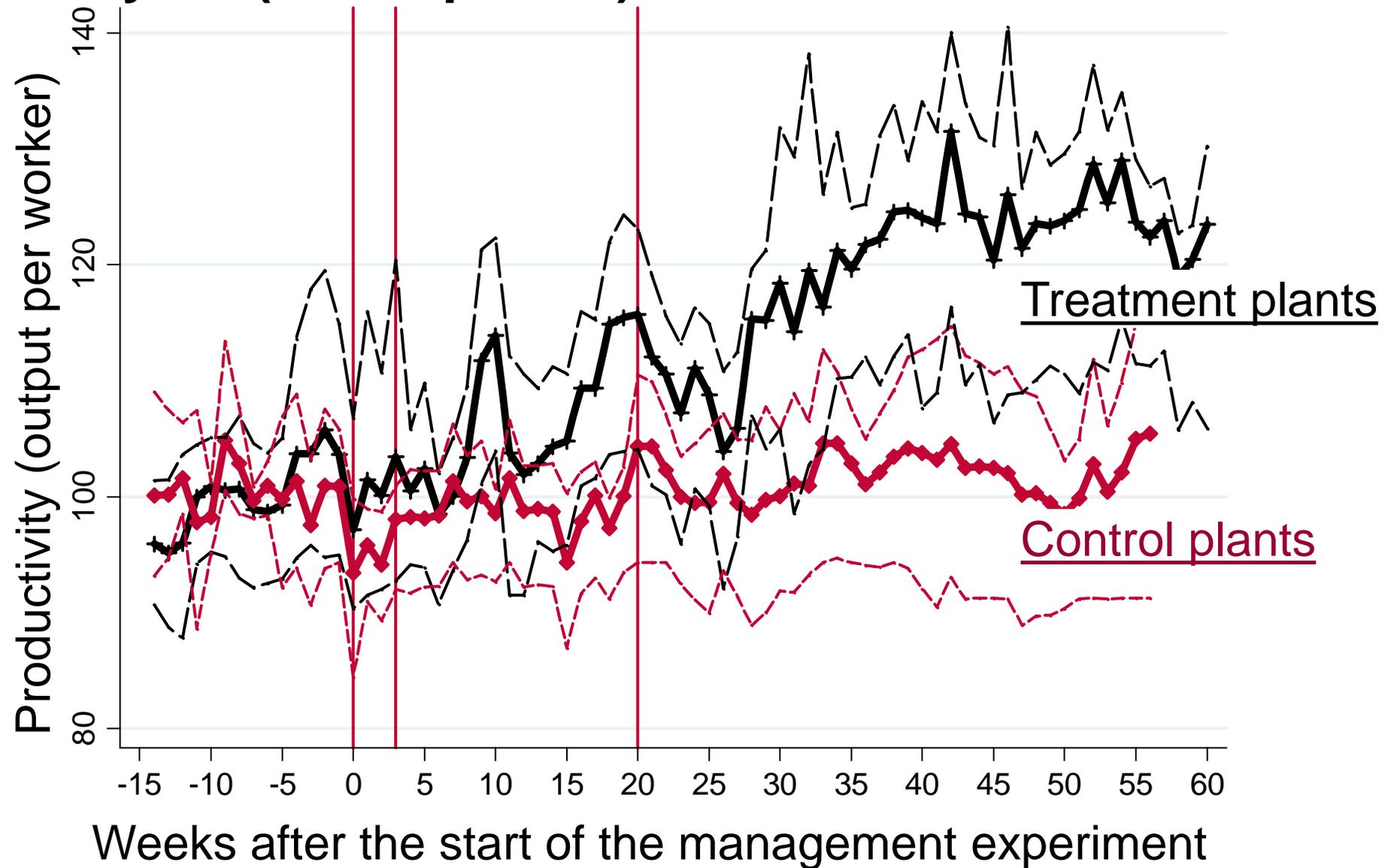
Nuts & bolts

Spare parts

Tools



Intervention increased productivity by 17% within one year (\$325k profits)

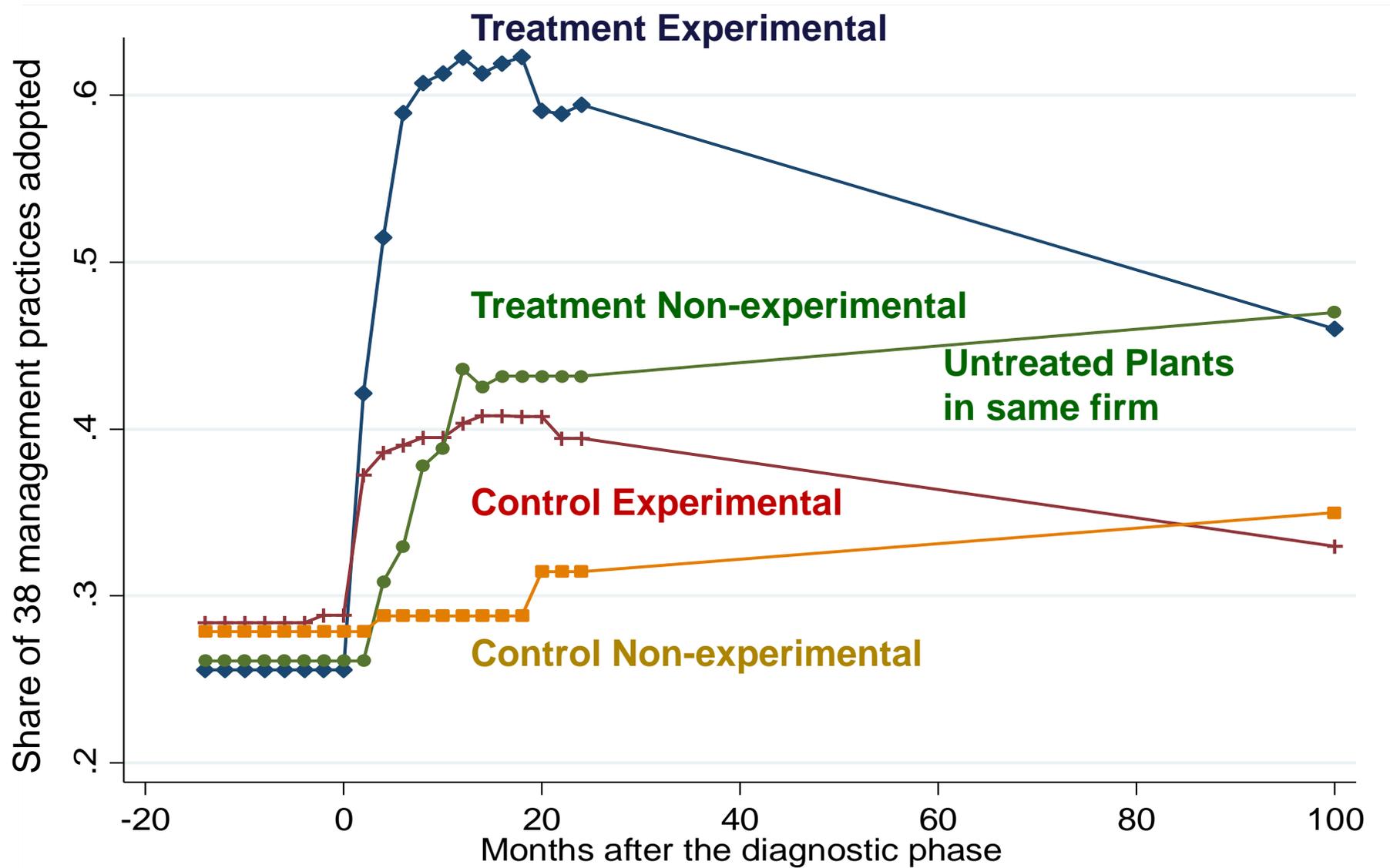


Source: Bloom, Eifert, Mahajan, McKenzie & Roberts (2013)

Bloom et al (2020)

- Went back to same plants in 2017 and collected information on the same management practices as well as some other basic information (one firm had exited)
- Continued to find positive treatment effects on management compared to control
- Also found practices had spread to other plants of the same treated firms (consistent with within-firm learning)
- Treated plants more likely to have invested in capital (looms per worker); to be exporters; improved loom quality, to use consultants & to have upgraded marketing practices

Share of management practices adopted 2008-17



Notes: Sample comprised of the balanced panel of plants from 2008 to 2017 (11 treatment experimental, 6 treatment non-experimental, 6 control experimental and 2 control non-experimental). **Source:** Bloom et al (2018)

TABLE 2—SHORT- AND LONG-RUN IMPACT ON MANAGEMENT PRACTICES

Dependent variable: proportion of management practices implemented	(1)	(2)
Treatment \times year = 2011	0.206 (0.042) [0.003]	0.249 (0.038) [0.001]
Treatment \times year = 2017	0.197 (0.062) [0.007]	0.218 (0.057) [0.004]
Year = 2017	-0.122 (0.016) [0.732]	-0.122 (0.016) [0.694]
Baseline 2008 management score	0.668 (0.219) [0.022]	0.878 (0.176) [0.006]
<i>p</i> -value of test of equality of treatment in 2011 and 2017	0.802	0.457
Sample size	37	34

Notes: Robust standard errors are in parentheses, and permutation test *p*-values are in brackets. Both are clustered at the firm level. Permutation tests report the *p*-value for testing the null hypothesis that the treatment had no effect by constructing the permutation distribution of the estimator using 4,000 possible permutations of firm-level random assignment. The second column limits the sample from column 1 to plants that were present in both years with no missing management scores.

RCT on management

- Both treatment and control had dropped some of the practices
- Practices more likely to be dropped when
 - Change in plant manager
 - Less time devoted by Director to plant
 - Some deemed to be not worthwhile
 - Plant initially had a lower management score in 2008
- Quality/inventory management practices were “Stickiest”
- Treated plants more likely to have invested in capital (looms per worker); to be exporters; improved loom quality, to use consultants & to have upgraded marketing practices

TABLE 5—LONGER-RUN FIRM PERFORMANCE AND MANAGEMENT CHANGES

Dependent variable	Exporter dummy (1)	Exports (in logs) (2)	Looms upgraded (3)	Looms (in logs) (4)	Employees (in logs) (5)	Looms per employee (in logs) (6)	Any consultant days (7)	Marketing practices (score) (8)
$Treat_i \times (Year \geq 2011)_t$	0.189 (0.106) [0.24]	0.416 (0.110) [0.02]	10.275 (5.106) [0.19]	-0.032 (0.226) [0.87]	-0.269 (0.277) [0.28]	0.237 (0.090) [0.03]	0.206 (0.109) [0.18]	1.361 (0.618) [0.07]
Control group mean	0.514	3.09	1.875	4.271	5.021	-0.750	0.067	0.583
Observations	109	66	28	66	66	66	66	66

Notes: Data are from pretreatment (2008) and posttreatment (2011, 2014, and 2017) years, except for plants/firms for which basic performance data were missing or zero, and column 3, which is just for 2017. Export data are collected at the plant level, while all other variables are measured at the firm level because of the changing number of plants per firm. Marketing practices is a discrete variable from 0 to 10 defined as the count of ten 0/1 sales and marketing practice indicators like “attending trade shows,” “hiring sales and marketing professionals,” “analyzing product portfolios,” and “setting up a firm brand.” Any consultant days is a binary variable equal to 1 if the firm hired any consultants in the relevant period. Regressions are clustered at the firm level, and standard errors are in parentheses. Permutation tests, in brackets, report the p -value for testing the sharp null hypothesis of no treatment effect by constructing the permutation distribution of the estimator, using 4,000 possible permutations of firm-level random assignment.

Issues with India experiment

- Hawthorne effects? Both groups have a treatment: difference is between high & low intensity.
- After treatment, Management improves & productivity up.
Possible that it wasn't management that increased productivity
- Small sample size (28 plants)
 - Some earlier studies had little treatment effect. But these mainly on micro-enterprises, low intensity & classroom rather than onsite.
- Not scalable from a policy perspective, as market cost of intervention were \$100k-\$200k per plant.
 - More recent interventions more scalable (e.g. Iacovone et al, 2019; Bruhn et al, 2017). Group learning helps.
- No model – does not formally explain why firms do not adopt, nor macro implications

BSV: Idea and data

BDDM: Causal Evidence

BSV: Model and Results

Measuring Data

Management Models

Examining the Model's Predictions

- Performance
- Competition
- Skills
- Age

Management and cross-country TFP

***Stylized* Management As a Technology (MAT) model**

Production Function: $Y = AK^\alpha L^\beta M^\gamma$ where M = management

Firms invest in M (intangible capital) which depreciates like K , but unlike K , firms draw an endowment at entry (Hopenhayn, 1992; Melitz, 2003)

Other key assumptions:

- a) A also drawn randomly at entry ($K_0=0$) from known distribution. Hit by ongoing AR(1) A shocks
- b) Changing M & K involves adjustment costs (L flexible)
- c) Monopolistic competition (Iso-elastic CES demand, ρ)
- d) Sunk entry cost (κ) & fixed per period operating cost (F)

Timing of firm decisions

1. Entrants pay a sunk cost κ for a draw on (A, M) . Free entry condition determines number of firms
2. Each period firm gets TFP shock, ε_{it} ; $\ln A_{it} = \rho \ln A_{it-1} + \varepsilon_{it}$
3. Pay fixed operating cost F per period (or exit)
4. Invest in M & K (investment “price” + quadratic adjust cost)
5. Choose labor (fully flexible)

Tab 1: Model has 14 parameters – 9 taken from prior literature, 2 normalized and 3 estimated by SMM

9 Predefined parameters

Parameter		value	Rationale
Capital – output elasticity	α	0.3	NIPA factor share
Labor – output elasticity	β	0.6	NIPA factor share
Management–output elasticity	γ	0.1	Bloom et al (2013)
Demand elasticity	ρ	5	Bartelsman et al (2013)
Standard deviation of ln(TFP)	σ_A	0.31	Bloom (2009)
AR(1) parameter on ln(TFP)	ρ_A	0.885	Cooper and Haltiwanger(2006)
Discount Factor	ϕ	0.91	Standard 10% interest rate
Capital depreciation rate	δ_K	10%	Bond and Van Reenen (2007)
Capital resale loss	ϕ_K	50%	Ramey and Shapiro (2001)

Estimate the four remaining parameters by SMM

3 Structurally estimated parameter values

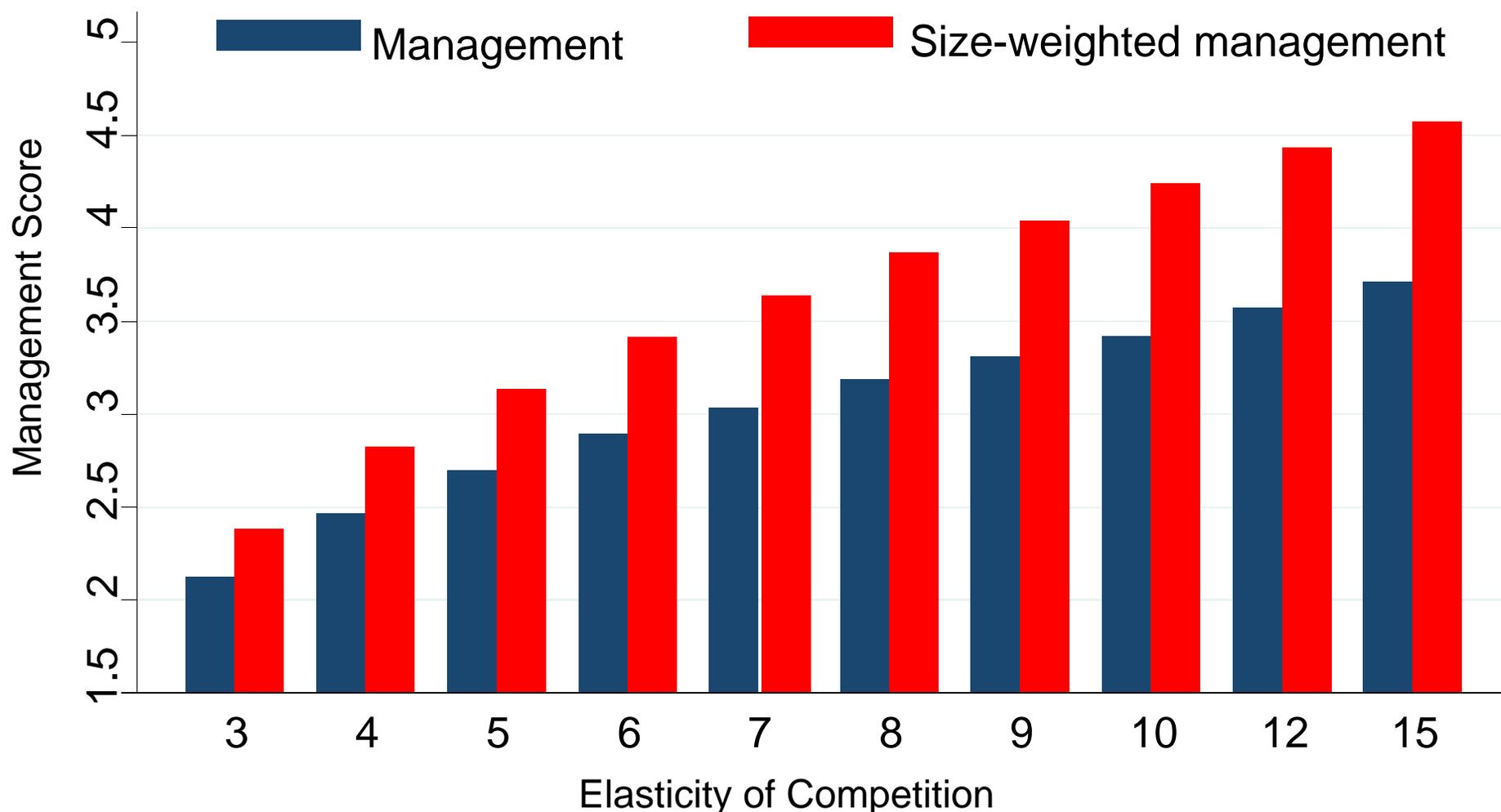
Parameter	Symbol	Value
Depreciation rate of management	δ_M	0.119 (0.053)
Adjustment cost parameter for management	γ_M	0.212 (0.062)
Adjustment cost parameter for capital	γ_K	0.195 (0.047)

3 Empirical Moments used

Moment	Data Value	Estimated value
Standard deviation of 5 year management growth	0.554	0.564
Standard deviation of 5 year sales growth	0.929	0.948
Standard deviation of 5 year capital growth	0.870	0.875

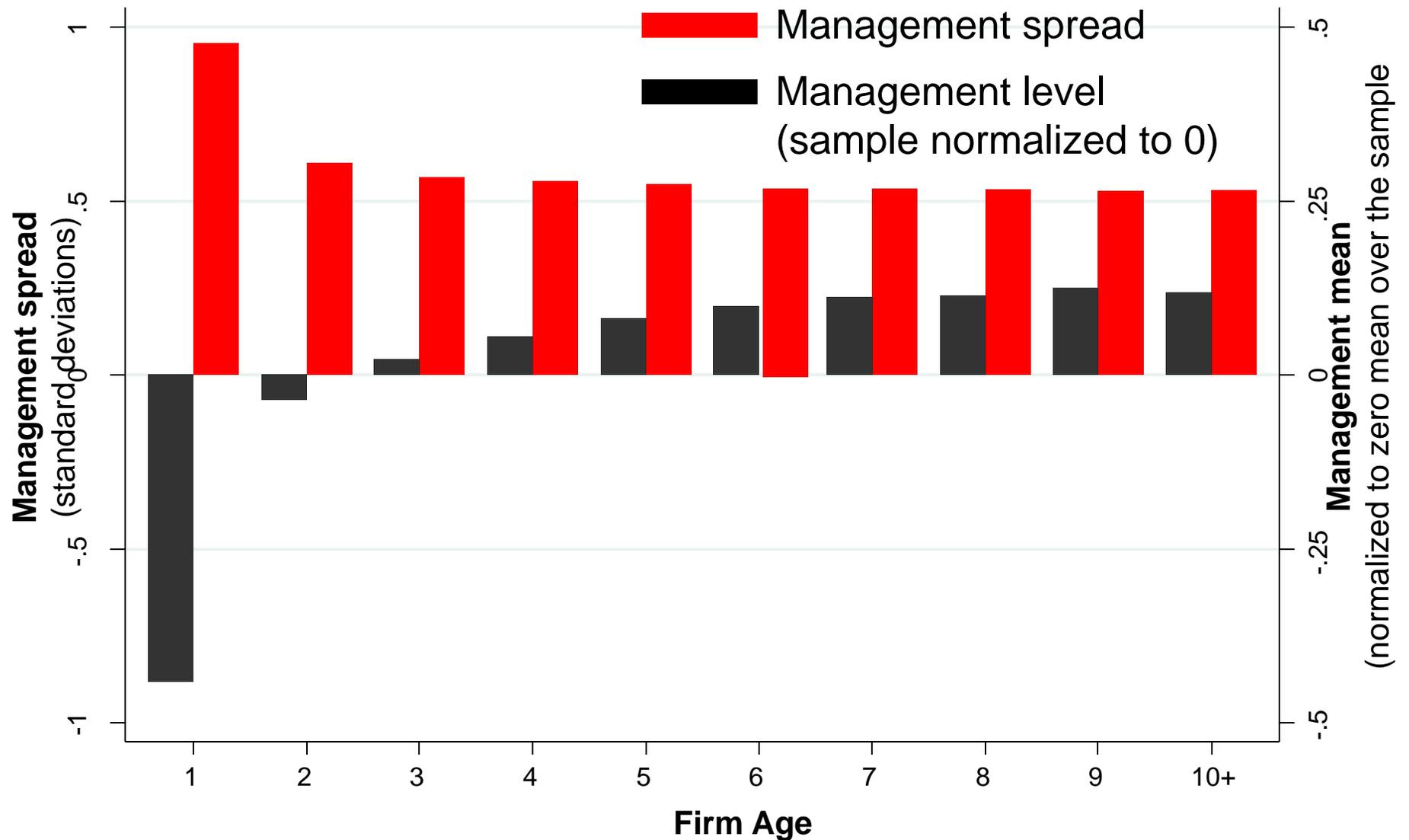
Notes: Estimation by SMM using management panel data 2004-2014 (4,907 firms). Calibrate 9 parameters – see Table 1: 9 from literature and two normalizations (Fixed cost=100 and mean of $\ln A=1$). Run 100 years until steady state. Keep last 10 years of data

Predictions from numerical MAT model: Competition



Notes: Results from our estimated MAT model to simulate 5,000 firms per year in the steady state taking the last 10 years of data. Plots $\log(\text{management})$ in the simulation data normalized onto a 1 to 5 scale, and $\log(\text{sales})$. Lowess plots shown with Stata defaults (bandwidth of 0.8 and tricube weighting). See text for more details. Competition is index by demand elasticity ($e=5$) in baseline. Blue bar is unweighted mean across firms, red bar is weighted by firm size (employees).

Predictions from numerical MAT model: Age



Notes: Plots $\ln(\text{management})$ scores weighted by age. Results from simulating 5,000 firms per year in the steady state taking the last 10 years of data and defining age based on the number of observed years. For ease of display management have been normalized to zero across the entire sample.

Measuring Data

Management Models

Examining the Model's Predictions

- **Performance**
- Competition
- Skills
- Age

Management and cross-country TFP

TABLE 3: Firm Performance robustly *correlated* with management

Dependent variable	Ln(sales)	TFP	Ln(employment)	Profit rate ROCE	5yr Sales growth	Ln(Tobins Q)	Survival
	OLS	(Olley-Pakes)	OLS	OLS	OLS	OLS	OLS
Firm sample	All	2+ surveys	All	All	All	All	All
Management(SD=1)	0.148*** (0.015)	0.102*** (0.013)	0.404*** (0.013)	0.989*** (0.297)	0.040*** (0.013)	0.028* (0.014)	0.006*** (0.002)
Ln(emp)	0.662*** (0.026)	0.593*** (0.025)					
Ln(capital)	0.274*** (0.019)	0.403*** (0.009)					
Obs	11,465	8,701	25,947	13,255	12,046	6,628	7,726

M, Management Index is z-score of average 18 questions z-scored (sd=1). Other controls include % employees with college, av hours, firm age, 3-digit industry, country & time dummies & noise controls (e.g. interviewer dummies). Standard errors clustered by firm. In OP coefficients on L and K are from first & second stage estimation procedure

Measuring Data

Management Models

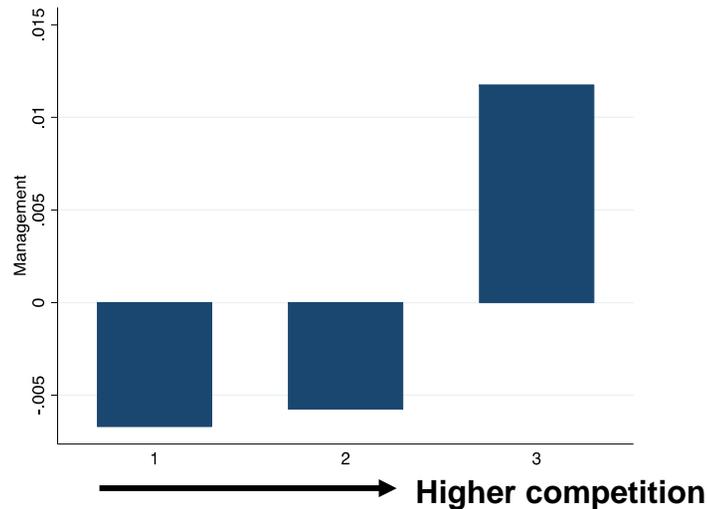
Examining the Model's Predictions

- Performance
- **Competition**
- Skills
- Age

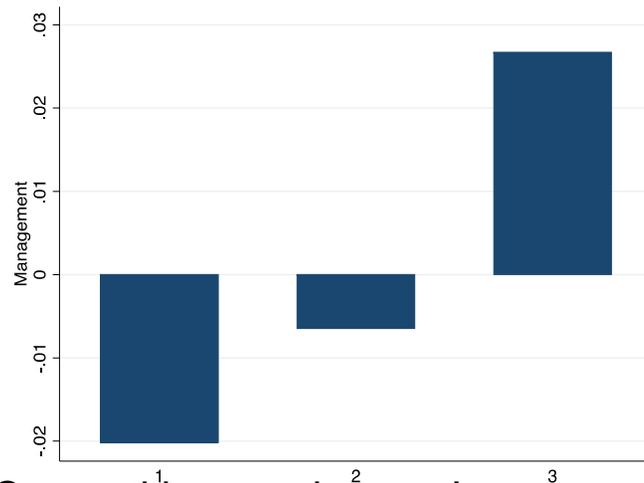
Management and cross-country TFP

Management increases with Competition (Raw Data)

Panel A: Management & 1-Lerner: *Level*



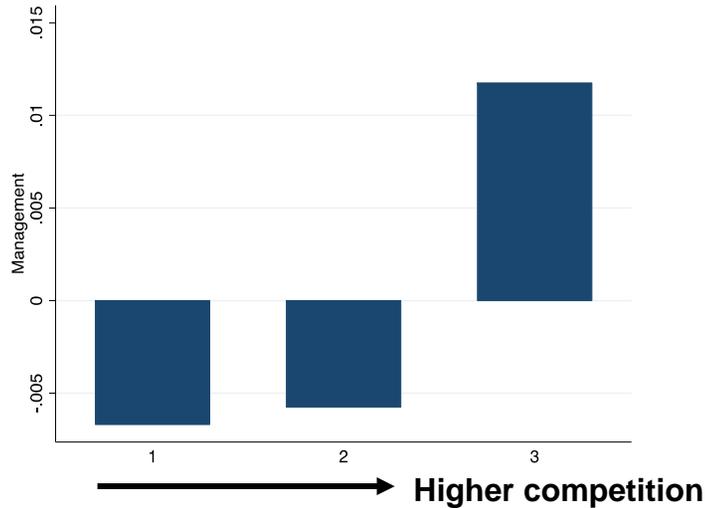
Panel C: Management & Imports: *Level*



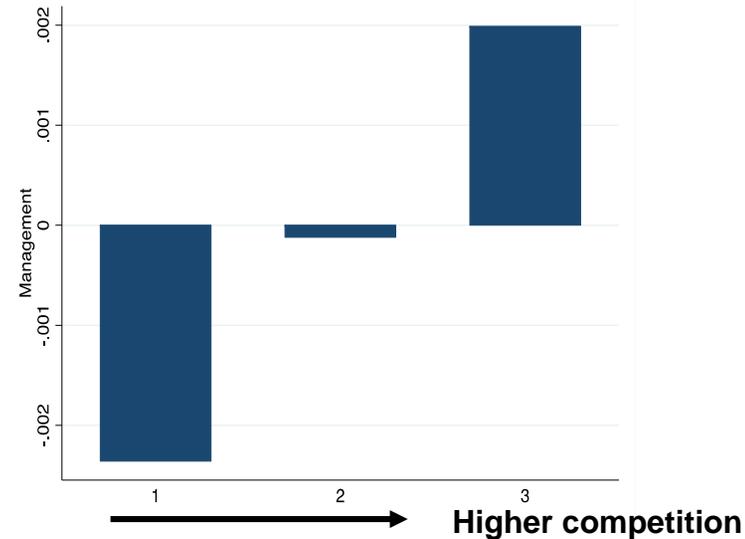
Notes: Competition proxies are Lerner = median firm profits/sales & Imports = imports/production, both in industry by country cell. In “levels” panels control for linear country & industry average. “Changes” are in deviations from time-specific country by industry dummies.

Management increases with Competition (Raw Data)

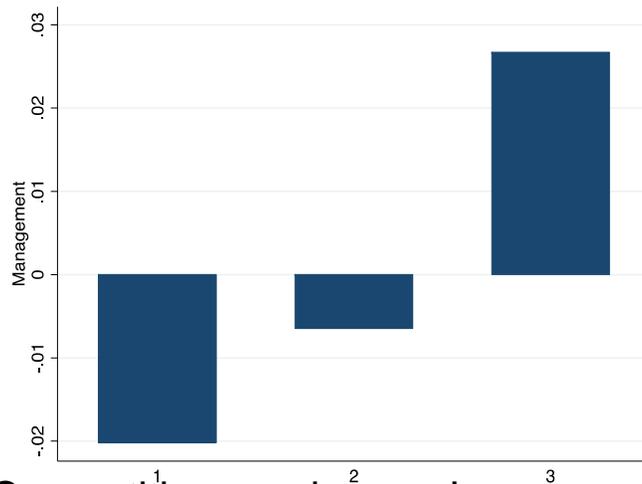
Panel A: Management & 1-Lerner: *Level*



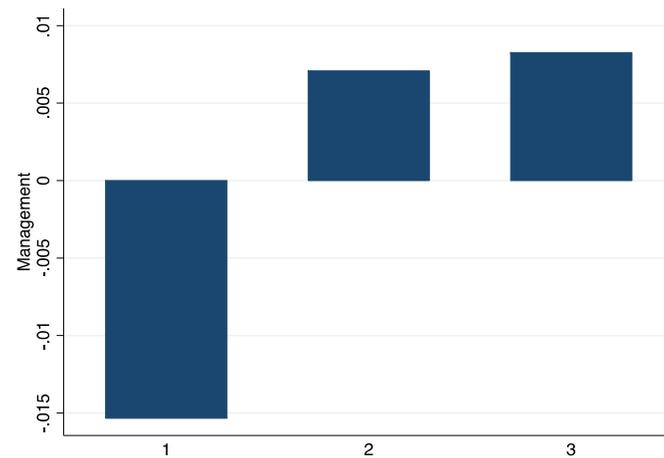
Panel B: Management & 1-Lerner: *Change*



Panel C: Management & Imports: *Level*



Panel D: Management & Imports: *Change*



Notes: Competition proxies are Lerner = median firm profits/sales & Imports = imports/production, both in industry by country cell. In “levels” panels control for linear country & industry average. “Changes” are in deviations from time-specific country by industry dummies.

Table 4: Management increases with competition, especially when weighted by firm size (all with country by industry fixed effects)

Dependent variable:	MNG	MNG	MNG	MNG	MNG	MNG
1- Lerner Index	0.990*** (0.366)	1.751*** (0.443)				
Import Penetration			0.398** (0.170)	0.830** (0.327)		
Chinese Import Penetration					2.090** (0.972)	2.204* (1.137)
Size-Weighted?	No	Yes	No	Yes	No	Yes

Notes: 8,630 obs; Includes SIC-3 industry * country dummies, firm-size, public and interview noise (interviewer, time, date & manager characteristic) controls. Clustered by industry*country

Countries and Industries with less competitive frictions reallocate more to better managed firms

$$FirmSize_{it} = \gamma (M * COMPETITION)_{it} + \delta_1 M_{it} \\ + \delta_2 COMPETITION_i + \delta_3 x_{ijt} + \nu_{ijt}$$

where: M is management, firm= i , industry= j and country= k

Key test is $\gamma > 0$ (more competition = more reallocation)

Table 5: We find that the US has the most reallocation (where markets generally most competitive)

Dependent Variable	Employees	Employees	
Management (US=base)	182.6*** (20.8)	268.4*** (40.1)	
MNG*Africa		-144.6*** (52.1)	} Reallocation towards better managed firms significantly worse in other countries than in US
MNG*Americas		-96.3** (43.9)	
MNG*(“Northern” EU)		-46.6 (58.5)	
MNG*(“Southern” EU)		-199.5*** (46.1)	
MNG*Asia		-64.3 (52.3)	
Observations	8,991	8,991	

Notes: US is the omitted country in columns 2 and 3. Includes year, country, 3-digit SIC dummies, firm and noise controls

Tab 5: Countries & industries with lower trade frictions (more competition) have greater reallocation to well managed firms

Dependent Variable:	Employment	Employment	Employment
Management (M)	285.09*** (45.53)	463.23*** (105.09)	289.40*** (71.54)
Management*Trade Costs (World Bank Country Cost)	-0.10*** (0.03)	-0.16*** (0.05)	
Management*Job Regulation		-59.21* (30.66)	
Management*Tariff (country x industry)			-45.14* (24.65)
Fixed Effects	Industry, country	Industry, country	Industry* country
Observations	8,918	7,272	8,087

Notes: OLS, clustered by firm; Domestic firms only. Controls for firm age, skills, noise, SIC3, country dummies, Employment Protection is “difficulty of hiring” from World Bank (1=low, 100=high). Trade cost is the cost in \$ to export to the country (World Bank). Tariffs are MFN country-by-industry rates (in deviations from country & industry mean) from Feenstra and Romalis (2012).

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)

Measuring Data

Management Models

Examining the Model's Predictions

- Performance
- Competition
- **Age**
- **Skills**

Management and cross-country TFP

Measuring Data

Management Models

Examining the Model's Predictions

- Performance
- Competition
- Skills
- Age

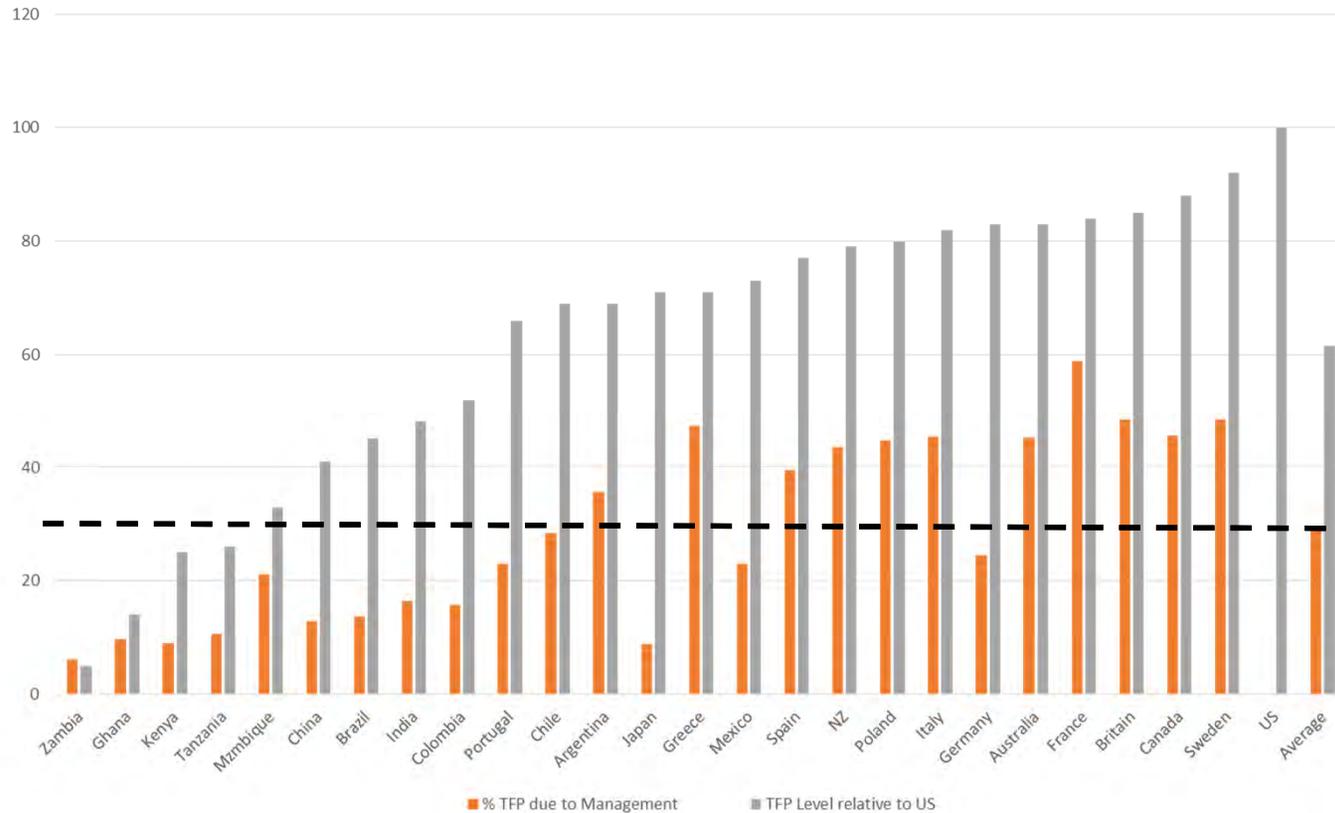
Management and cross-country TFP

Following MAT we can estimate contribution of management to cross-country TFP differences

1. Estimate country differences in size weighted management
2. Impute impact of size weighted management on TFP

Requires many assumptions so rough magnitude calculation
(in spirit of Development Accounting, Caselli, 2005)

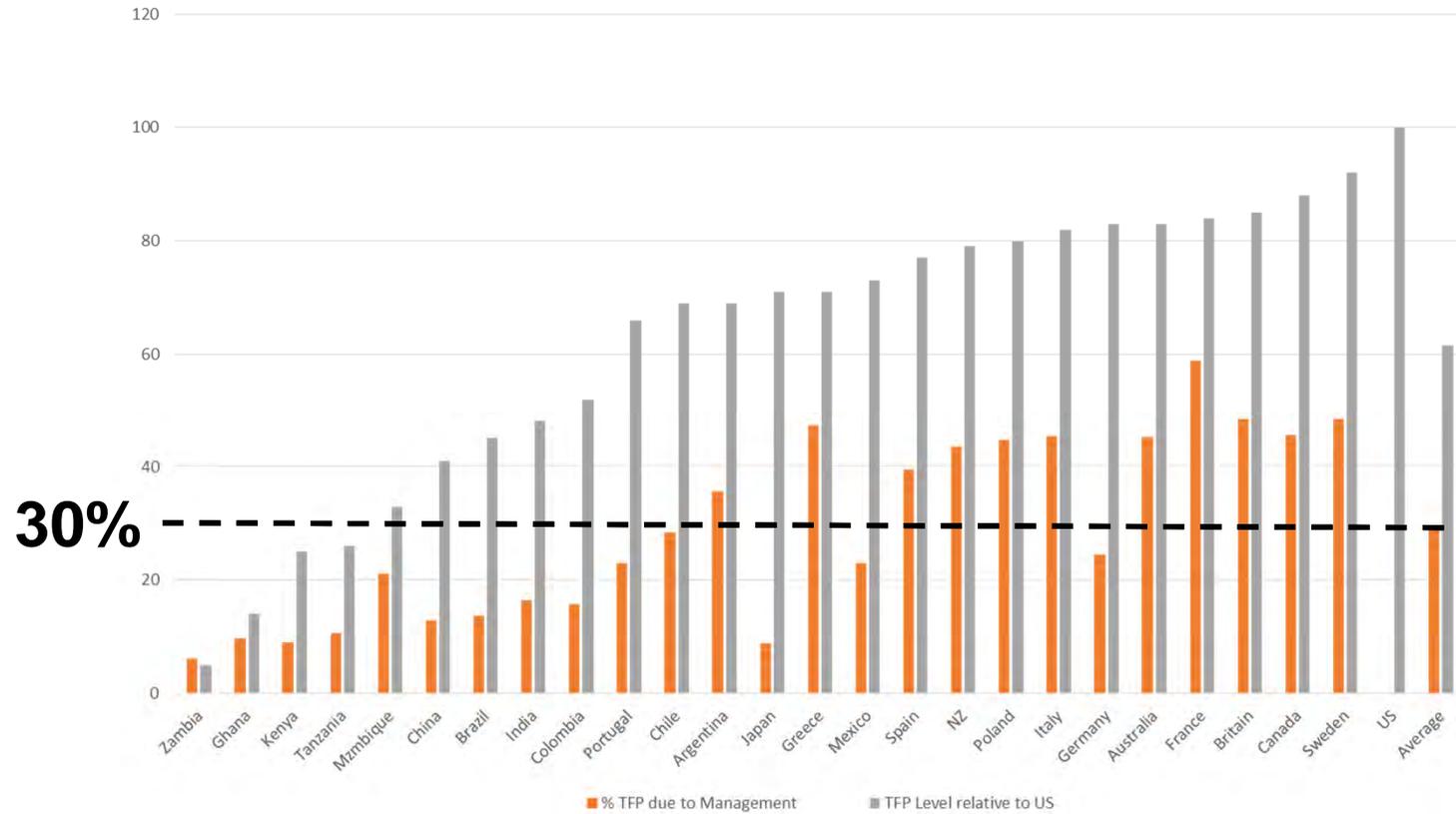
Grey bars are TFP levels relative to US (=100); Orange bars are % of these TFP gaps accounted for by management



Source: Bloom, Sadun & Van Reenen (2017) “Management as a Technology”

Notes: Productivity = TFP from Penn World Tables;

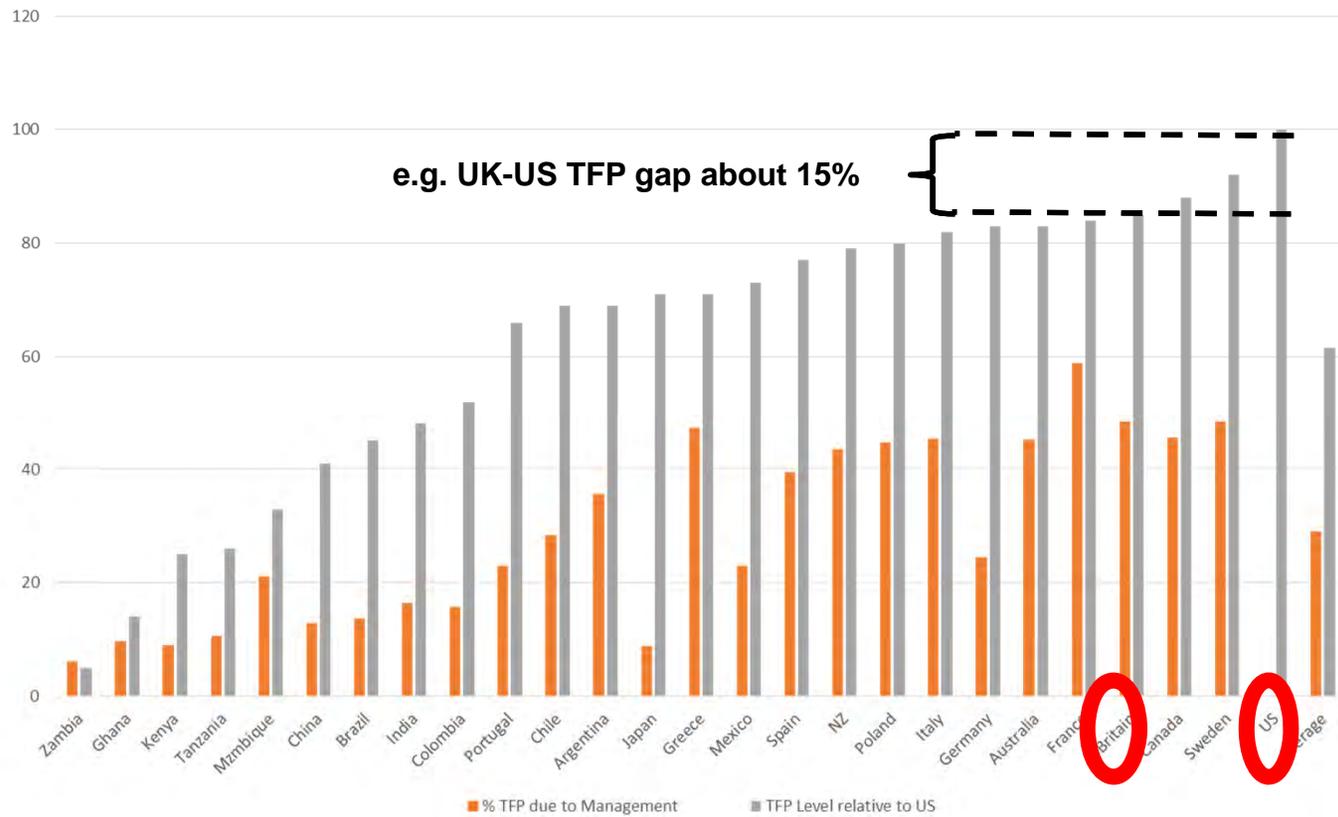
On average, management account for 30% of TFP gaps with US across countries (less in developing countries, more for OECD).



Source: Bloom, Sadun & Van Reenen (2017) “Management as a Technology”

Notes: Productivity = TFP from Penn World Tables;

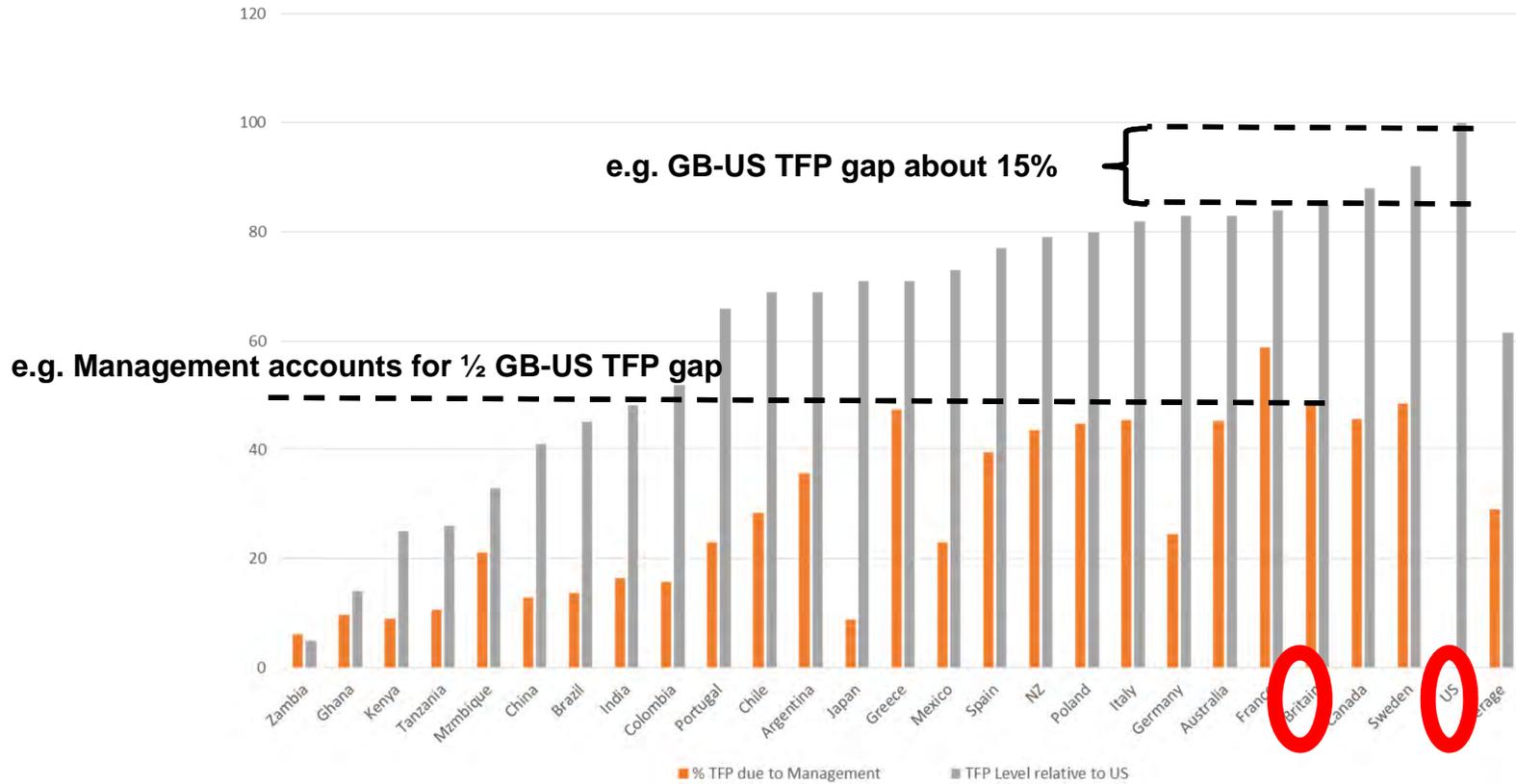
For example, GB vs. US TFP gap is about 15%



Source: Bloom, Sadun & Van Reenen (2017) "Management as a Technology"

Notes: Productivity = TFP from Penn World Tables;

About half of the GB-US gap is due to management



Source: Bloom, Sadun & Van Reenen (2017) “Management as a Technology”

Notes: Productivity = TFP from Penn World Tables;

Summary of BSV

~1/3 cross-country (& firm TFP) spread due to management

Data fits management as a “technology”, $Y=AK^\alpha L^\beta M^\gamma$

- Management improves firm performance
- Competition improves average management
- Skills positively correlated with M
- Age dynamics fit MAT model

Some Issues with BSV

- One specific model of management as intangible capital
- What role for contingency? (Table 6 in BSV)
- Does not deal with spillovers & diffusion of management. A critical part of technology
- Does not address plant vs. firm differences
 - How to think about exit and entry via M&A as well as conventional exit/entry of plants?
 - Relational contracts within and between firm
- Management & managers
- No strong causal evidence on managerial “drivers”

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”

MY FAVOURITE QUOTES:

Don't get sick in Britian

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”

Don't do Business in Indian hospitals

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

Hospital Manager: “Oh no, this hospital is only for loss making”

MY FAVOURITE QUOTES:

Don't get sick in India

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”

Contingency: More focus on people management in high R&D, skills & low capital sectors (Tab 6)

	(1) People Management (P)	(2) Monitoring & Targets (MT)	(3) Relative People (P-MT)	(4) People Management (P)	(5) Monitoring &Targets (MT)	(6) Relative People (P-MT)	(7) People Management (P)	(8) Monitoring &Targets (MT)	(9) Relative People (P-MT)
Panel A: Using US Four digit industry (NBER, NSF)									
ln(K/L)	0.018 (0.015)	0.107*** (0.016)	-0.118*** (0.018)				-0.000 (0.014)	0.096*** (0.016)	-0.125*** (0.019)
R&D Intensity				0.136** (0.064)	0.041 (0.087)	0.114 (0.089)	0.031 (0.062)	-0.125* (0.072)	0.201*** (0.074)
ln(%degree)							0.139*** (0.008)	0.123*** (0.007)	0.011 (0.010)
Observations	13,681	13,681	13,681	13,681	13,681	13,681	13,681	13,681	13,681
Panel B: Two-Digit industry by county specific value (KLEMS, OECD)									
ln(K/L)	-0.044 (0.040)	0.039 (0.032)	-0.104** (0.040)				-0.062 (0.040)	0.038 (0.034)	-0.126*** (0.037)
R&D Intensity				0.496 (0.358)	0.100 (0.260)	0.476* (0.249)	0.584 (0.413)	-0.004 (0.254)	0.721** (0.306)
ln(%degree)							0.132*** (0.015)	0.071*** (0.012)	0.070*** (0.019)
Observations	4,855	4,855	4,855	4,855	4,855	4,855	4,855	4,855	4,855

Controls: firm & plant size; firm age, competition, Country by year dummies, SIC-2

BACK UP

Paper an example of “Micro to macro” papers:

Much of this focuses on how distortions generate misallocation

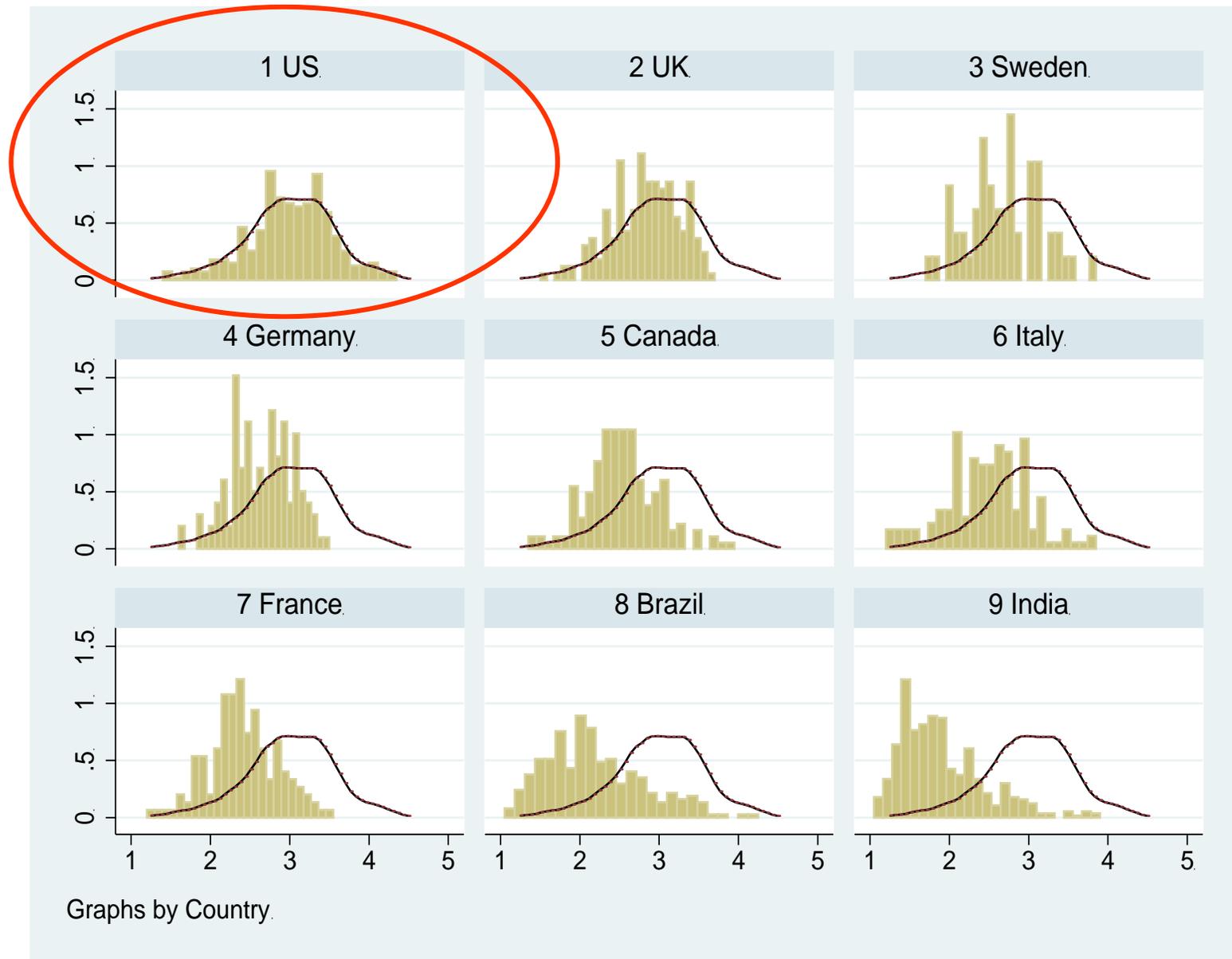
- **Hsieh and Klenow (2009, 2014)**. Market distortions modelled as a firm-specific tax/subsidy that drives wedge between opportunity cost and MRP. If distortions in India were the same as US, productivity would rise by 40-50%
- **Bartelsman, Scarpetta & Haltiwanger (2013)** relax some of HS assumptions (allow for fixed costs of labor), so that TFPR is correlated with TFPQ. Similarly conclude that big role for misallocation among OECD countries
- **Hurst et al (2019)** focus on gender and racial discrimination as a distortion. Find that 40% of US output growth 1960-2010 due to reduction in this distortion
- **Bell et al (2019)** “Lost Einsteins”: under-represented groups (class, race, gender) held back from becoming inventors by under-exposure to innovation when kids
- **Akcigit et al (2020)** “Lack of Selection & limits to delegation”. When managerial talent low, hard to delegate & grow

Also been looking at other sectors: hospitals



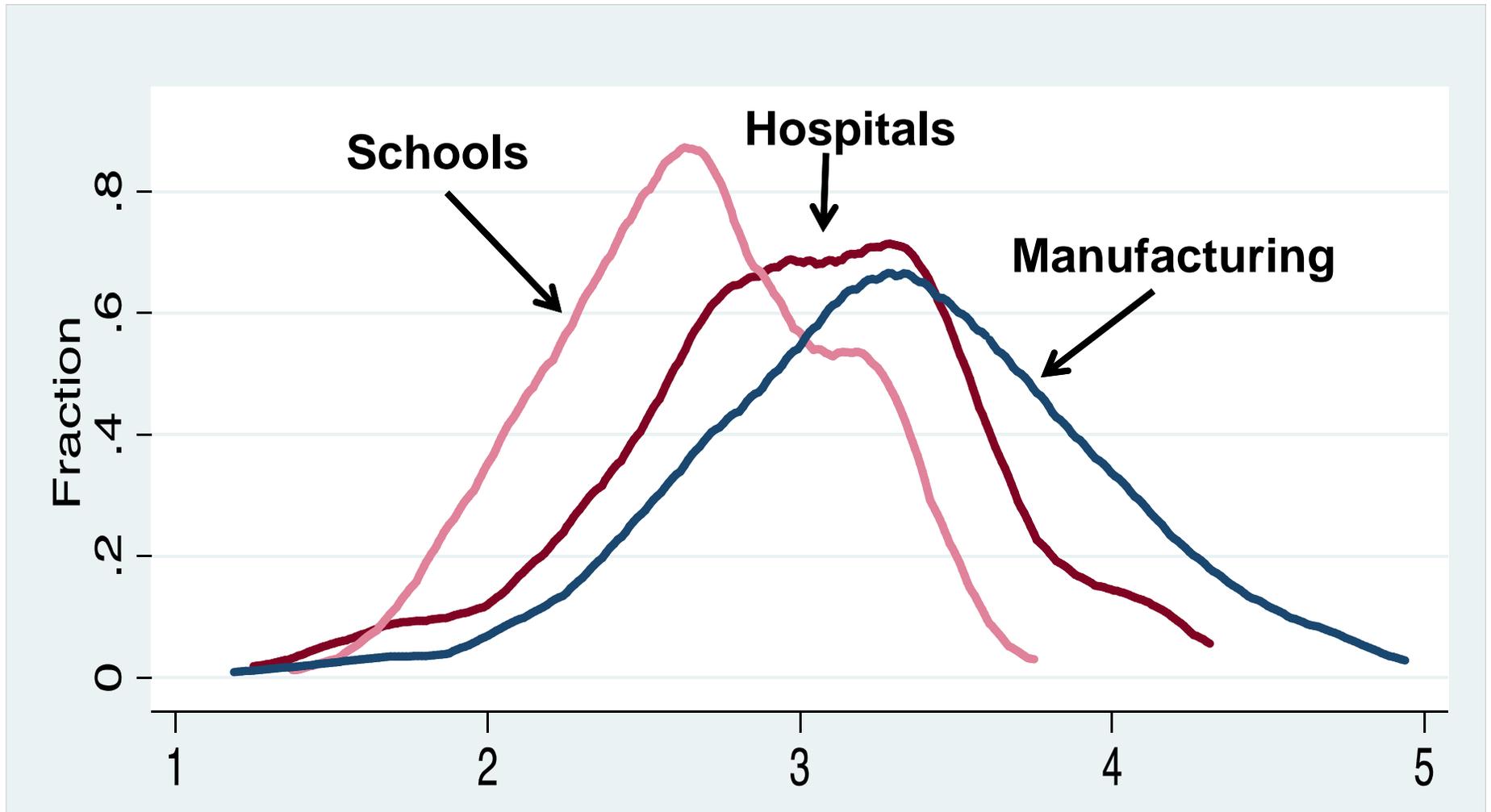
Source: Bloom, Lemos, Sadun & Van Reenen (2019); Randomly surveyed population of hospitals in each country that offer acute care and have orthopaedics and/or cardiology department. Total of 1687 hospitals.

Again see a very wide spread in hospitals



Source: Bloom, Lemos, Sadun & Van Reenen (2019)

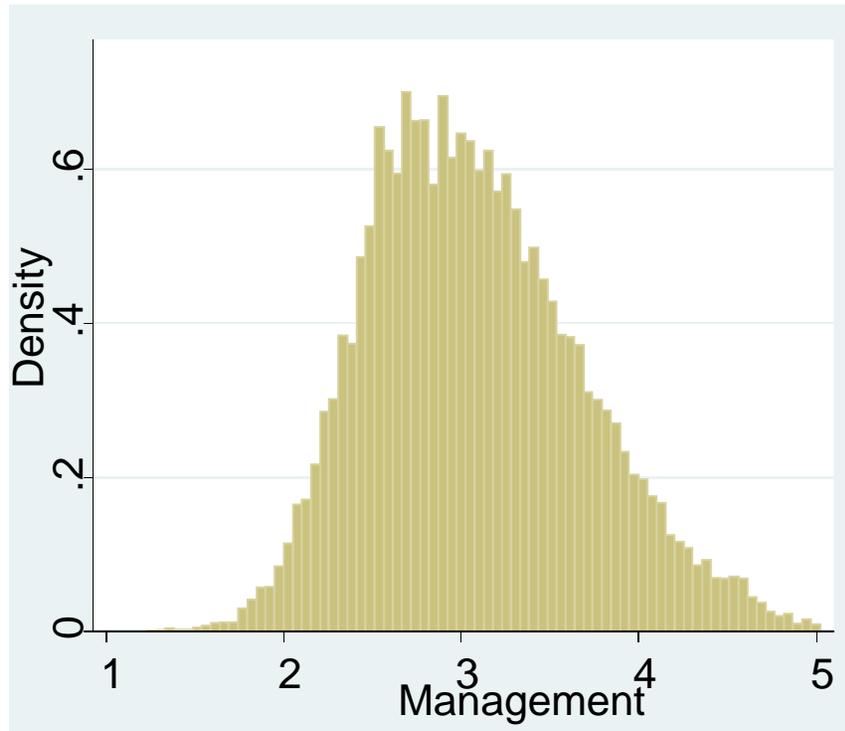
On the subset of identical questions in the US can compare across industries of the same practices



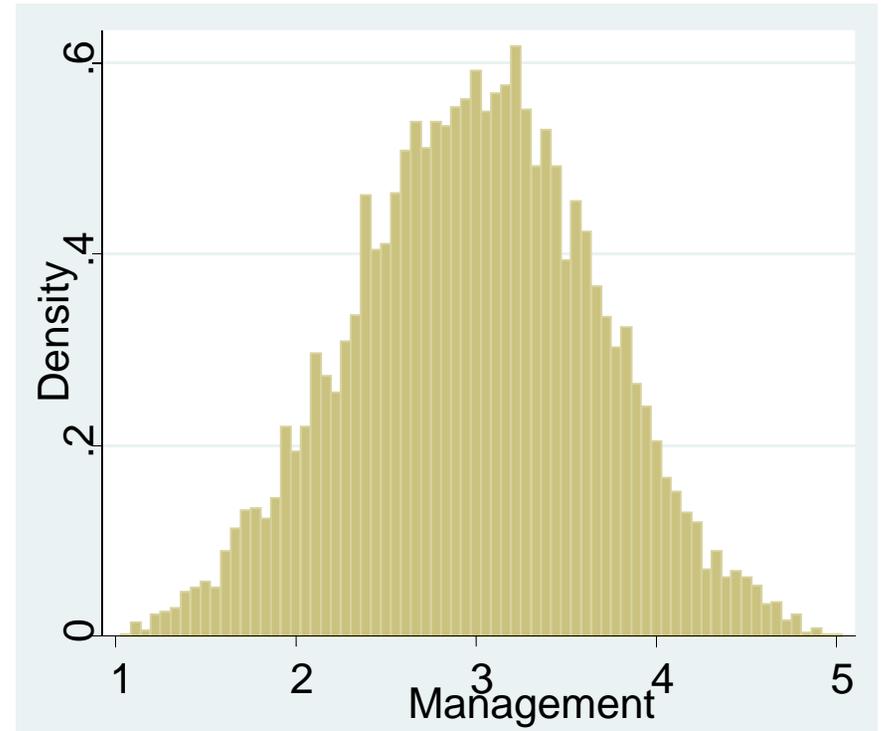
Source: Bloom, Lemos, Sadun, Scur & Van Reenen (2014)

Fig 3 - Predictions from numerical MAT model (Note not directly used in structural SMM estimation)

Simulation management spread



Data management spread



Notes: Simulation: 2,500 firms per year for 10 years. Data: 15,154 firms.

INFORMATION: ARE FIRMS AWARE OF THEIR MANAGEMENT PRACTICES BEING GOOD/BAD?

We asked:

“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”

We also asked them to give themselves scores on operations and people management separately

Evidence from micro-enterprises in developing countries



Evidence from micro-enterprises in developing countries

- Examples: Karlan and Valdivia (2011) in Peru; Bruhn, Karlan and Schoar (2018, JPE) in Mexico; Karlan, Knight and Udry (2015, JEBO) Ghanaian tailors; Higuchi et al (2019) on Tanzanian manufacturers
- Surveys in Karlan, Knight & Udry (2012); McKenzie & Woodruff (2013); Bandiera et al (2017) meta-study
- These usually provide a limited amount (≈ 50 hours) of basic training 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

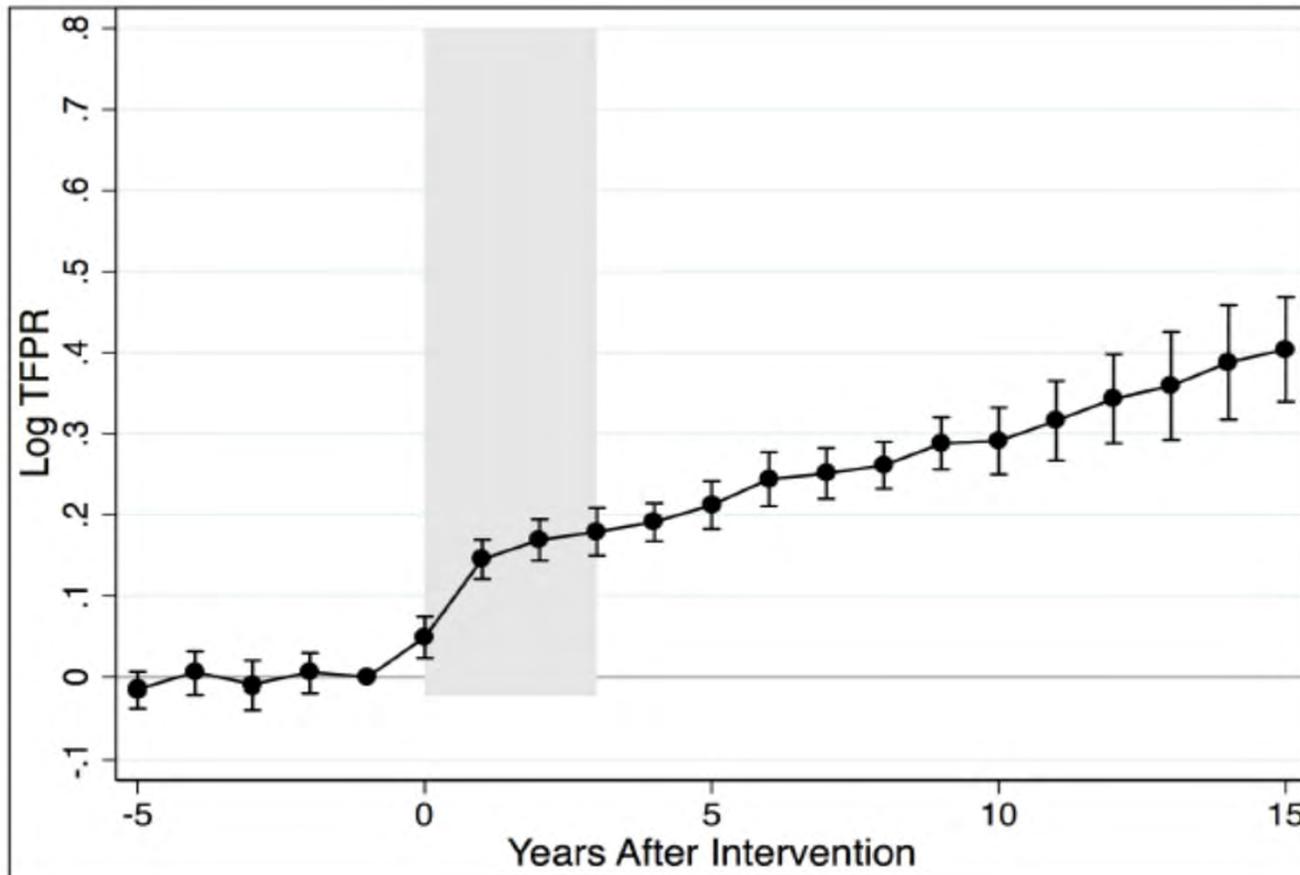
- Some studies find evidence of impact of management training on performance (e.g. Bruhn et al, 2016); Higuchi et al (2019), others do not (Karlan et al, 2015)
- Maybe management does not matter in these small firms, or the intervention is very poor quality?
 - Brooks et al (2018) RCT on Kenyan entrepreneurs. Formal management training (like Karlan et al, 2015) doesn't affect performance, but mentorship ↑ profits 20%
- McKenzie & Woodruff (2013, 2017) argue that most of these RCTs do not have enough power to reject positive effects. Their WMS style SME management survey more positive

Summary of Giorcelli (2019, AER)

- Transfer of US management to Europe (1952-1958)
- Management-training trips for European managers in US firms
- 6,065 Italian firms eligible to participate in the program; Balance sheets from 5 years before to 15 after. Applicants to program
- **Identification strategy:** Unexpected US budget cut before program started. She compares: (i) Firms that eventually participated vs. (ii) Firms initially eligible, excluded after the cut that applied for the *same* US transfer before the cut

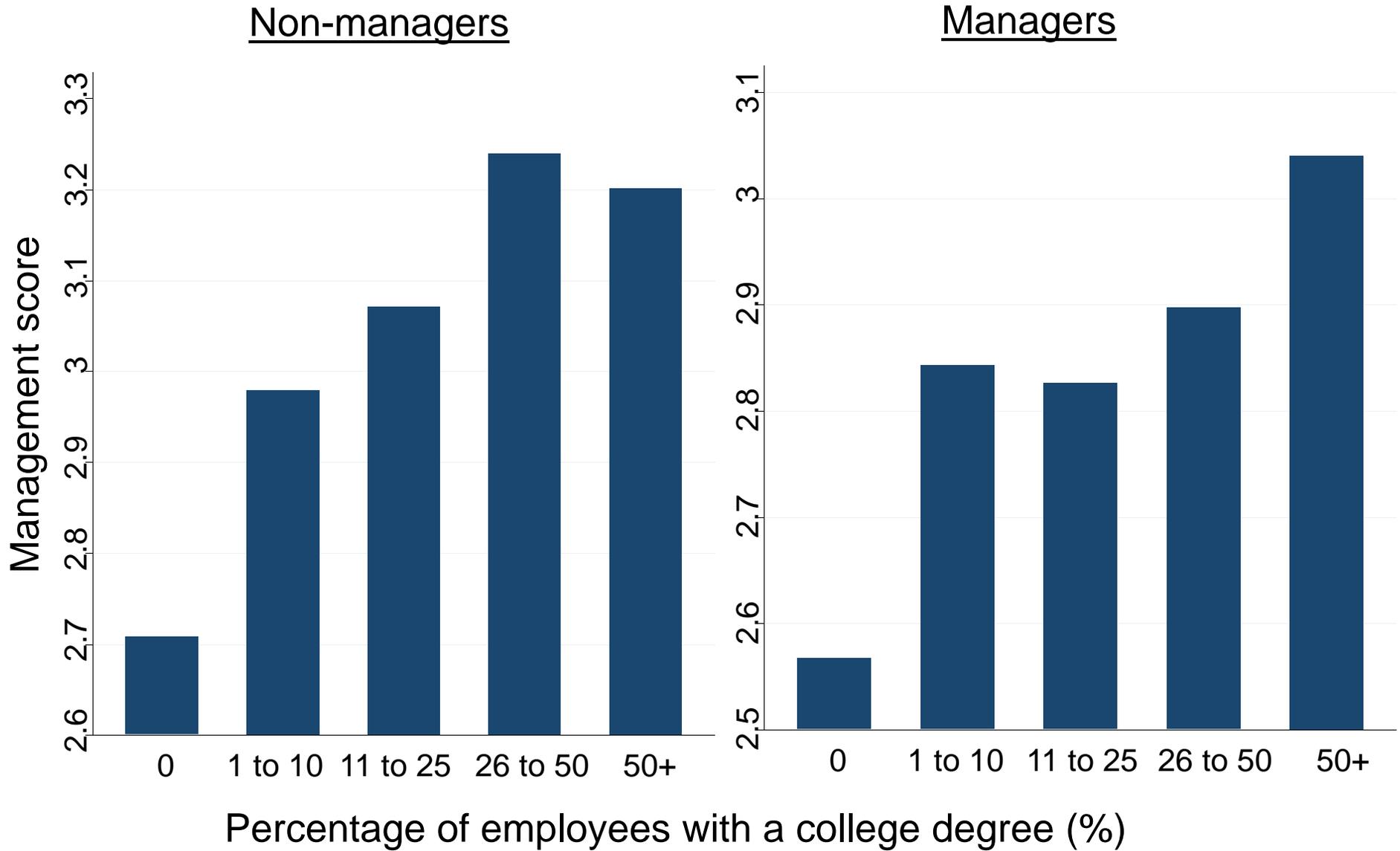
Positive effects on Productivity

Management: 46.3% Increase in TFPR after 15 Years



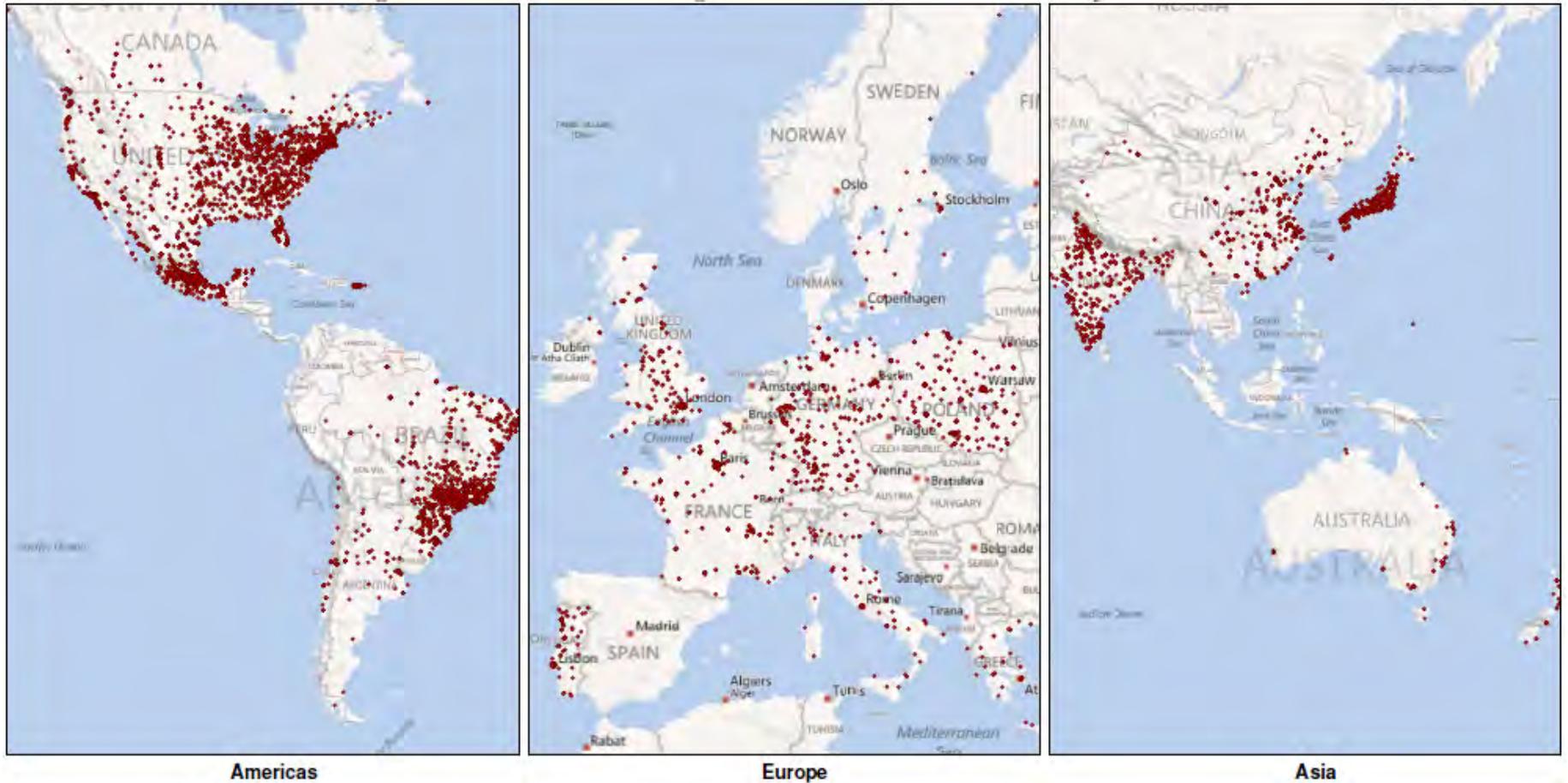
Notes. The dependent variables are logged TFPR, estimated with the Akerberg et al. (2006) method. Standard errors are clustered at the province level.

Education (for managers and non-managers) in the raw data is correlated with better management



Source: www.worldmanagementsurvey.com

Management and Education: UNESCO World Higher Education Database university locations (N=9,081)



Having a university near by is correlated with higher levels of firm skills and management scores

Dependent Variable:	Management	% firm employees with degree	Management	Management
	OLS	OLS	OLS	IV
Drive time to nearest university	-0.044*** (0.016)	-1.634*** (0.359)		
% employees with degree in the firm			0.0089*** (0.001)	0.027*** (0.008)
Observations	6,406	6,406	6,406	6,406

Notes: Clustered by 313 regions. In final column proportion skilled is instrumented with distance to university. Controls include industry, regional (e.g. US state), local population density, distance to coast, weather and full set of firm and noise controls. Based on Feng (2013)

Preliminary estimates of contribution of management to within-country TFP spread ~1/3

Country	90-10 gap in: TFP	Management	% accounted for by management	TFP spread source:
US	90%	2.7 SDs	30%	Syverson (2004)
UK	110%	3.0 SDs	38%	Criscuolo, Haskel and Martin (2003)

Note: Management share imputed assuming that $\uparrow 1$ SD management $\approx \uparrow 10\%$ TFP
Using US MOPs on entire firm size distribution US figure is 21%

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!!”

Decomposition of the size weighted management (M) in each country we surveyed

Employment Share of firm i

Management score of firm i

$$M \equiv \sum_i s_i M_i$$

Decomposition of the size weighted management (M) in each country we surveyed

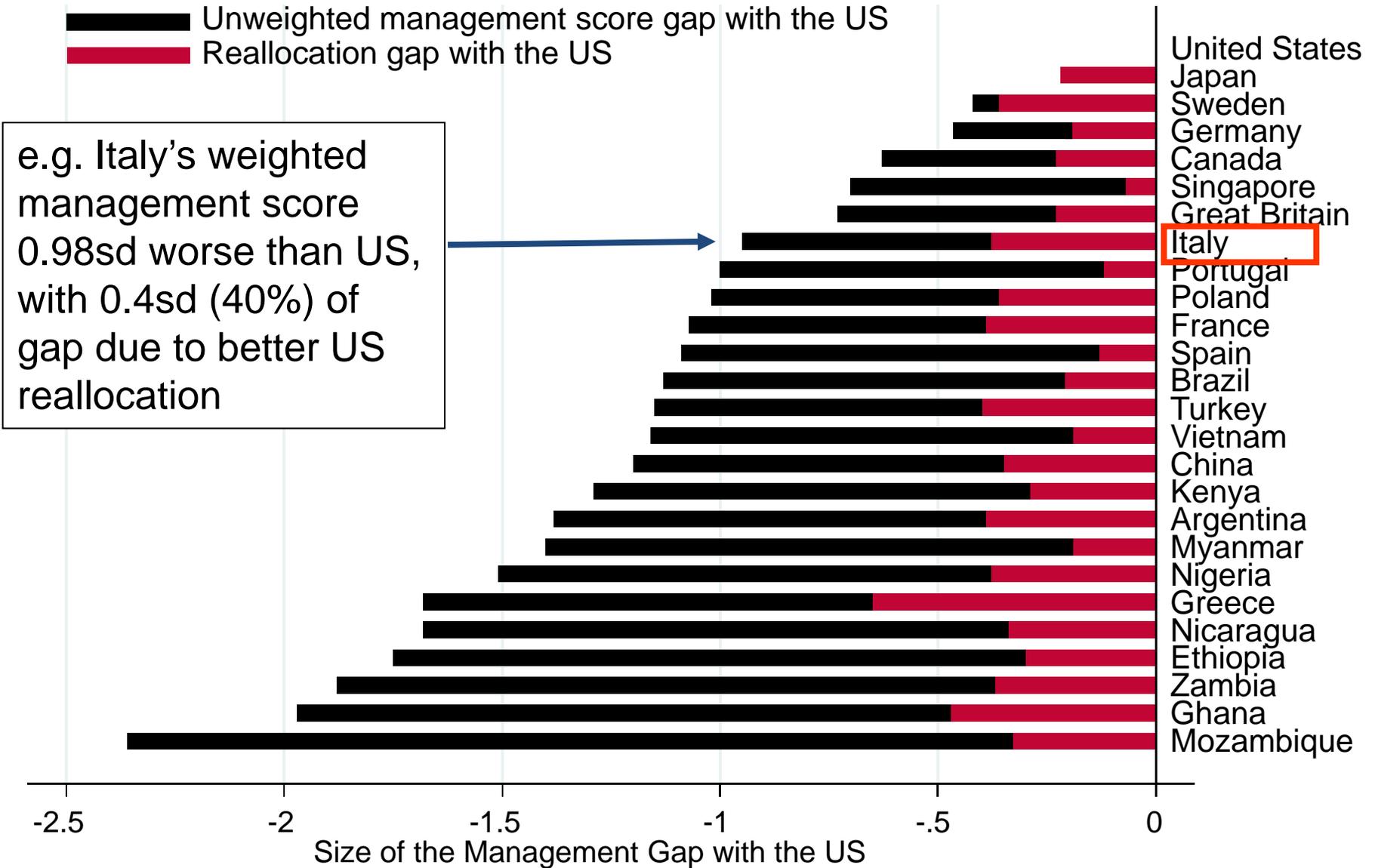
Employment Share of firm i Management score of firm i

$$M \equiv \sum_i s_i M_i$$
$$= \sum_i [(s_i - \bar{s})(M_i - \bar{M})] + \bar{M}$$
$$= OP + \bar{M}$$

“**Between Firm**”
Covariance
(Olley-Pakes, 1996,
reallocation term)

“**Within Firm**” Unweighted mean
of management score

Fig 9 - 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.

Step 2: What fraction of country's TFP gap (with the US) can this management gap explain?

$$\begin{array}{l} \text{\% TFP gap accounted} \\ \text{for by management} \end{array} = \gamma \times \frac{(\bar{M}^k / \bar{M}^{US})}{TFP^k / TFP^{US}}$$

where γ = impact of M on TFP

Management accounts $\approx 30\%$ cross-country TFP gap

country	Weighted Management	Un-weighted Management	Covariance	Mng. Gap vs. US	% Reallocation	TFP Gap with US	% TFP due to Management
Average				-1.14	29.7		29.9
US	0.90	0.40	0.50	0		0	
Japan	0.57	0.26	0.31	-0.33	56.64	-0.34	9.71
Sweden	0.55	0.38	0.17	-0.35	93.39	-0.08	43.49
Germany	0.36	0.18	0.19	-0.54	57.91	-0.19	28.72
Canada	0.27	0.04	0.24	-0.63	41.92	-0.13	48.64
UK	0.10	-0.11	0.21	-0.81	35.88	-0.15	55.34
Poland	0.04	-0.20	0.23	-0.86	30.69	-0.22	39.26
France	-0.01	-0.19	0.18	-0.91	35.29	-0.17	52.52
Mexico	-0.07	-0.30	0.23	-0.97	28.21	-0.32	30.20
Australia	-0.08	-0.18	0.10	-0.98	40.24	-0.19	51.56
Italy	-0.08	-0.18	0.10	-0.98	41.05	-0.20	48.90
Spain	-0.14	-0.50	0.36	-1.04	13.19	-0.27	39.03
Chile	-0.19	-0.48	0.29	-1.09	18.81	-0.37	29.48
Portugal	-0.22	-0.43	0.20	-1.13	26.27	-0.41	27.41
Colombia	-0.23	-0.51	0.28	-1.13	19.28	-0.66	17.21
Brazil	-0.26	-0.51	0.25	-1.16	21.20	-0.79	14.63
China	-0.31	-0.41	0.11	-1.21	32.49	-0.90	13.44
NZ	-0.33	-0.48	0.15	-1.23	28.44	-0.24	51.00