

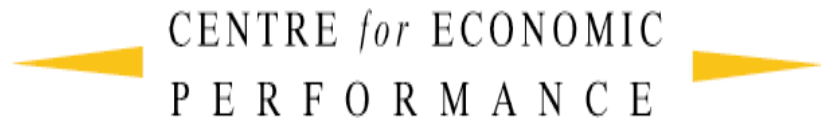
THE ORGANIZATION OF FIRMS ACROSS COUNTRIES

November 2008, RIETI, Tokyo

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THE ORGANIZATION (E.G. DECENTRALIZATION) OF FIRMS LINKS TO THREE LITERATURES

- Large literature on the theory and organization of firms (Gibbons et al (2008)) but very little econometric evidence
- Matters for productivity:
 - complementarity with ICT and decentralization - Bresnahan et al (2002), Bloom-Sadun-Van Reenen (2007)
 - “social capital” may effect growth via firm organization (e.g. Knack & Keefer (1997), La Porta et al. (1997))
- Recent trade theory on multinationals focused on organization/management - e.g. Helpman et al. (2004), Antras et al. (2008)

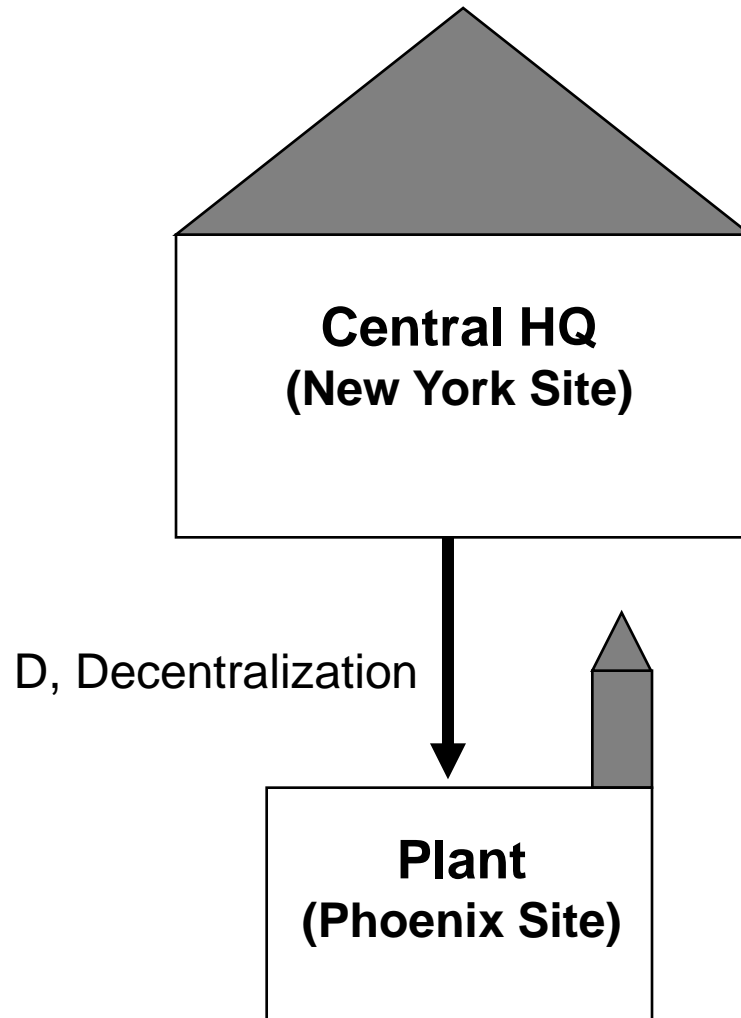
IN SUMMARY WHAT WE DO IN THIS PAPER

- Collect organizational data for 4,000 firms in US, Europe & Asia with a *double-blind* survey (Bloom & Van Reenen, 2007)
- Observe significant cross firm and country variation in the organization of firms, particularly in decentralization
- Focus on three factors to account for this:
 - Competition: *associated* with more decentralization
 - Trust (social capital) : *associated* with more decentralization
 - Religion: “hierarchical” religions *associated* with less decentralization
- Quantitatively important – these 3 factors account for $\approx 30\%$ of the cross country variation in decentralization
- Trust also associated with distribution of firm size and industry composition

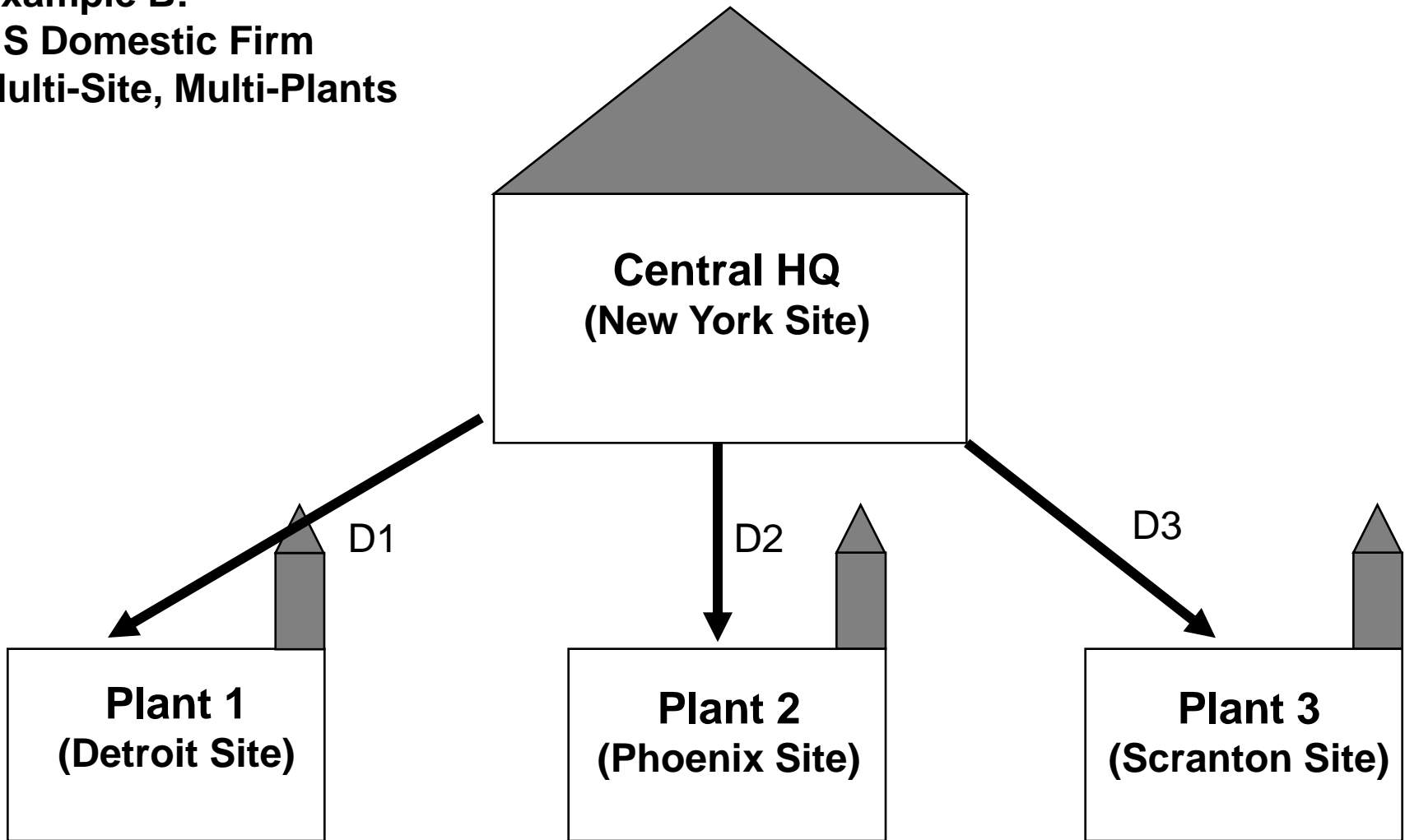
- **Data Collection Methodology**

- Exploring the raw data
- Firm level decentralization

**Example A:
Domestic Firm
2 Sites, Single Plant**



**Example B:
US Domestic Firm
Multi-Site, Multi-Plants**



THE SURVEY METHODOLOGY

1) **Developing organizational questions**

- Questions on decentralization of: hiring, investment, sales and production decisions from CHQ to plant manager
- ≈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, Treasury, RBI , etc.
- Run by 45 MBA types (loud, assertive & business experience)

THE DECENTRALIZATION SURVEY PAGE

Company Name

WUZHILVYU CHEMICAL & ELECTRIC CO.LTD.

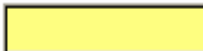
Scoring

1

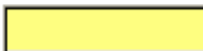
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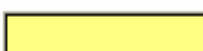
To hire a FULL-TIME PERMANENT SHOPFLOOR worker what agreement would your plant need from CHQ?

	▼	No authority - even for replacement hires	Requires sign-off from CHQ based on the business case. Typically agreed (i.e. about 80 or 90% of the time).	Complete authority - it is my decision entirely
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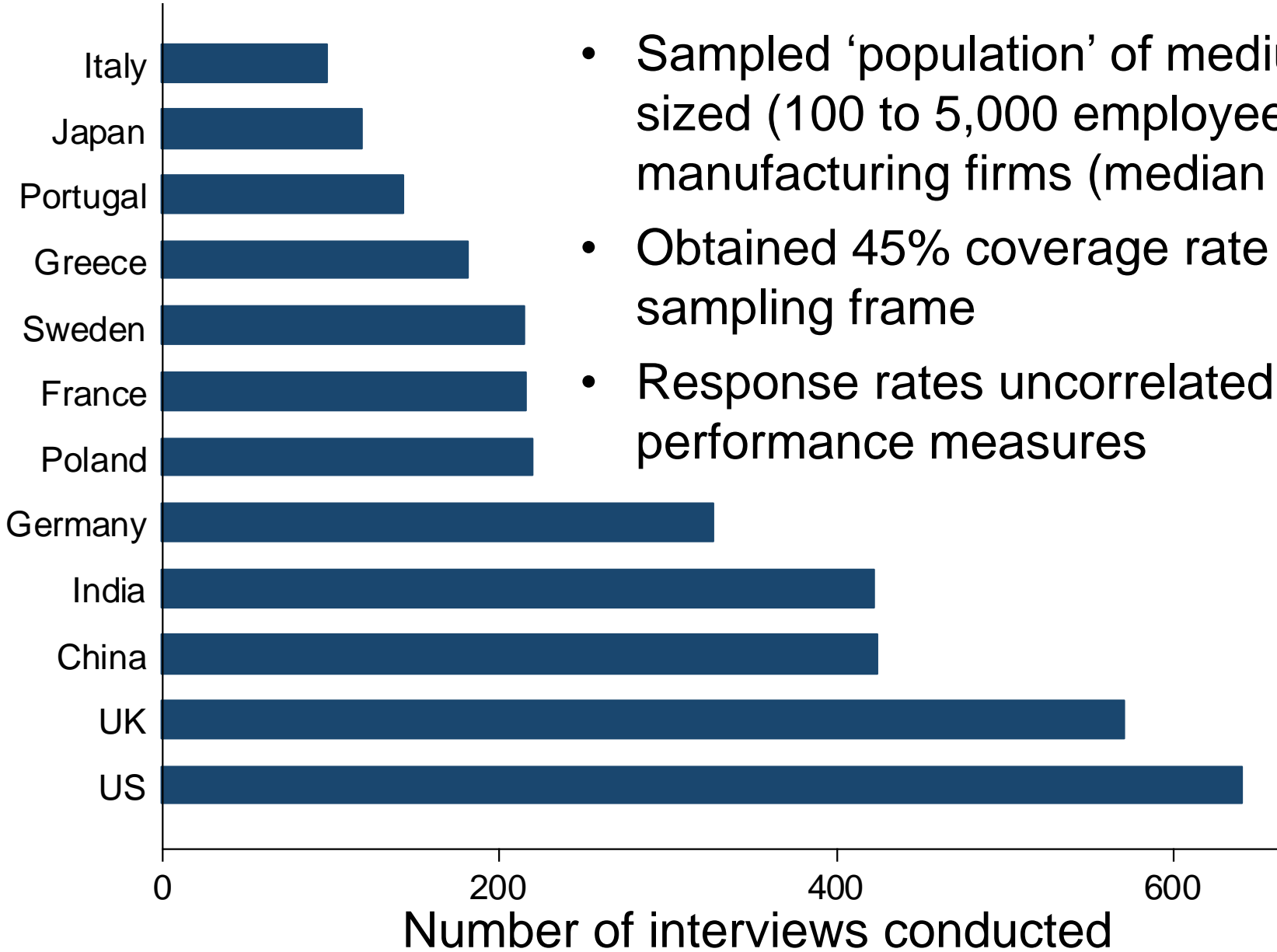
Where are decisions taken on new product introductions - at the plant, at the CHQ or at both?

	▼	All new product introduction decisions taken at the CHQ	New product introductions are jointly determined by the plant and CHQ	All new product introduction decisions take at the plant level
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How much of sales and marketing is carried out at the plant level (rather than at CHQ)?

	▼	None - sales and marketing is all run by CHQ	Sales and marketing decisions are split between the plant and CHQ	The plant runs all sales and marketing
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SURVEYED ABOUT 4,000 FIRMS



- Sampled 'population' of medium sized (100 to 5,000 employees) manufacturing firms (median = 270)
- Obtained 45% coverage rate from sampling frame
- Response rates uncorrelated with performance measures

MBA Call Centre Video

ALSO COLLECTED HR & “NOISE CONTROL” DATA

- Firm demographics, ownership, skills (% college) and other background characteristics
- Recorded a series of “Noise controls” to reduce potential survey bias:
 - *Interview*: Duration, time of day and day of week
 - *Interviewer*: Full set of interviewer fixed effects
 - *Interviewee*: Gender, tenure in firm, tenure in post and seniority

- Data Collection Methodology

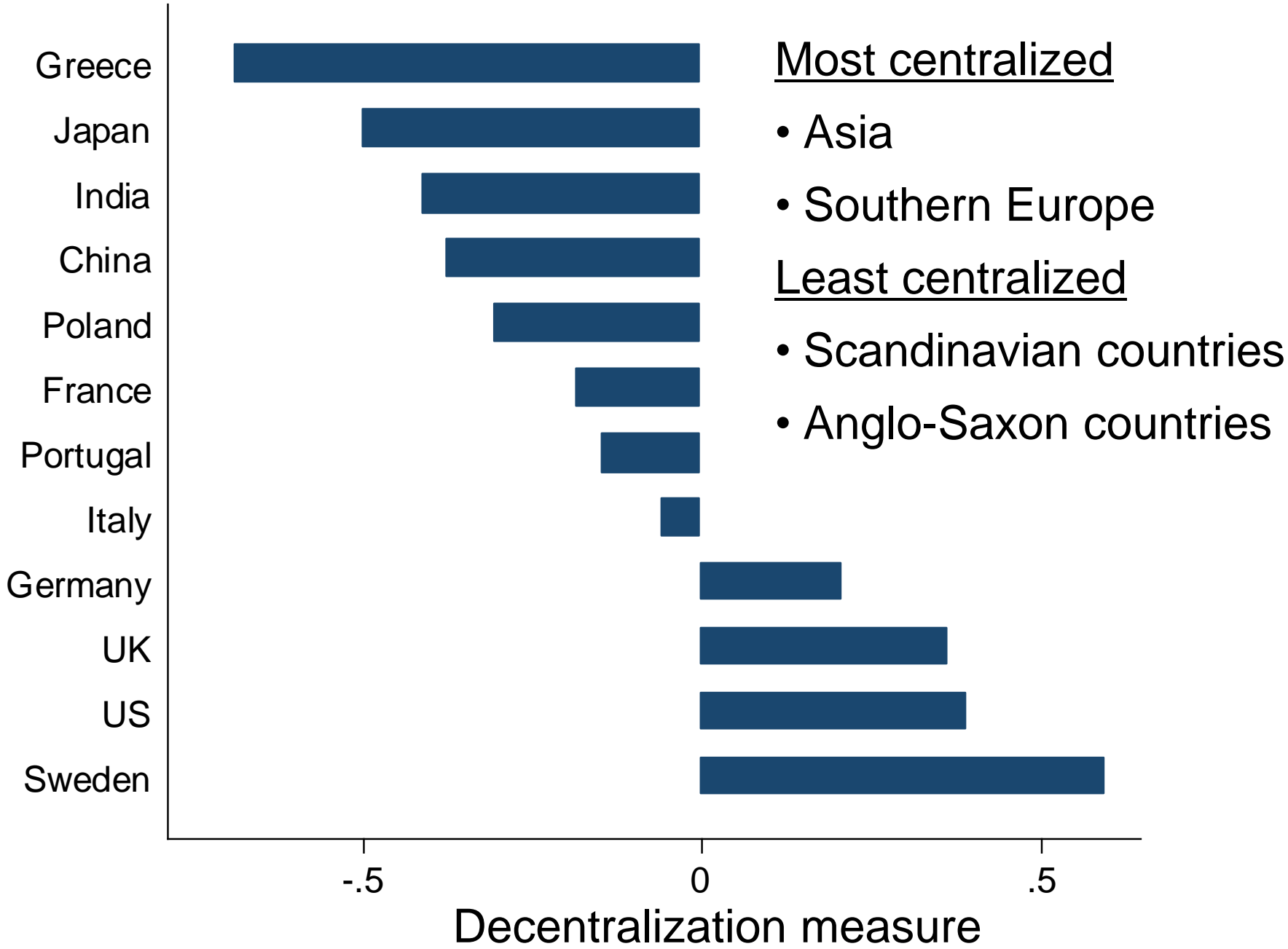
- **Exploring the raw data**

- Firm level decentralization

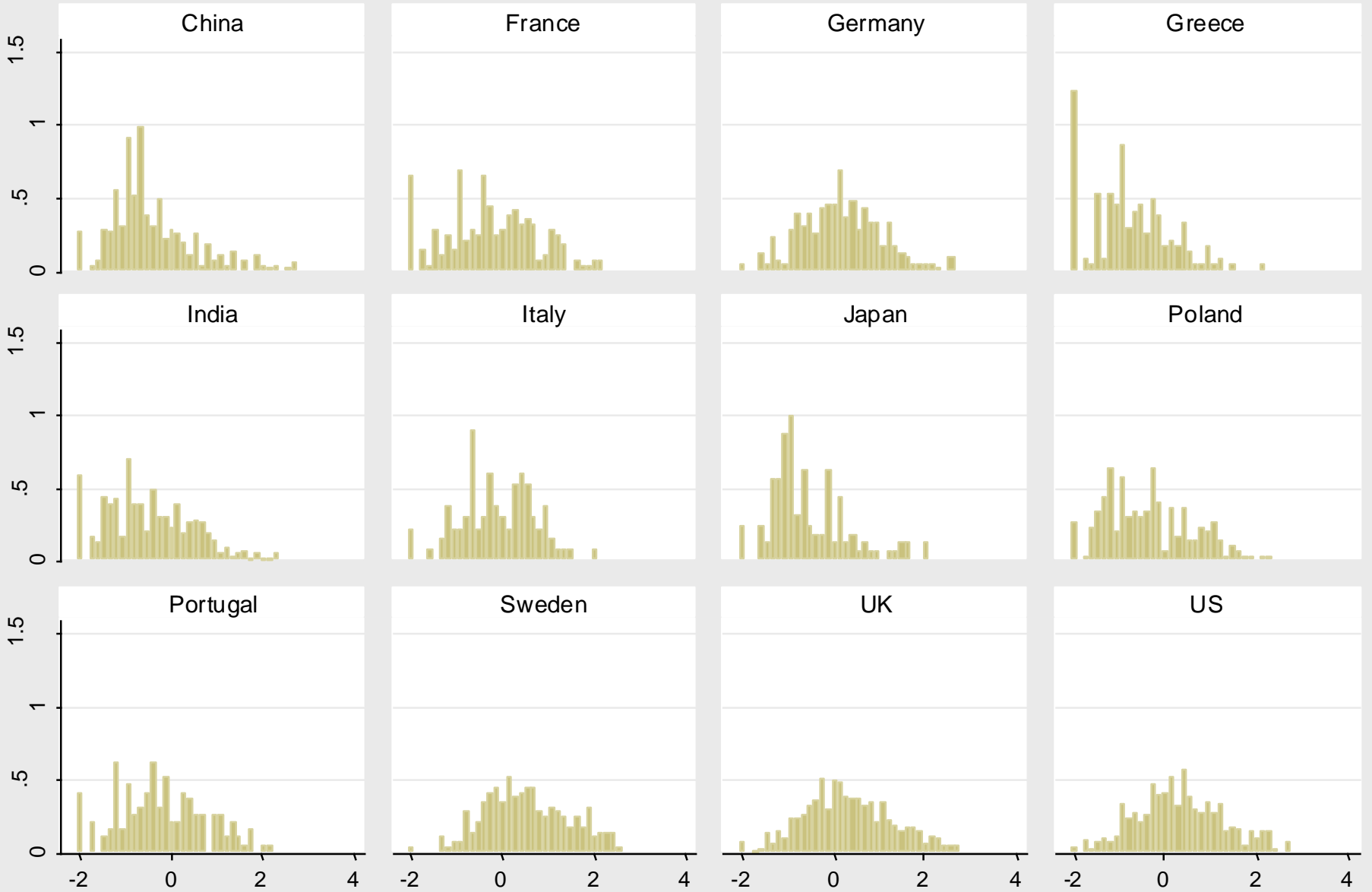
OUR EMPIRICAL DECENTRALIZATION MEASURE

- Main measure averages the z-score (scores normalized to mean 0, standard-deviation 1) of each variable:
 - Hiring senior employees (discrete, 1 to 5)
 - Maximum Capital expenditure (continuous, in \$)
 - Introduction of new products (discrete, 1 to 5)
 - Sales and marketing (discrete, 1 to 5)
- Also show results broadly robust to using just the \$ investment measure or just the 1 to 5 measures

DECENTRALIZATION VARIES ACROSS COUNTRIES



DECENTRALIZATION ALSO VARIES ACROSS FIRMS



Decentralization measure (higher number is more decentralized)

- Data Collection Methodology
- Exploring the raw data
- **Firm level decentralization**
- Firm size

GENERAL MODELLING FRAMEWORK

- Principal-agent
 - Principal is the Corporate Head Quarters (CHQ)
 - Agent is the plant manager
- Optimal decentralization depends on trade-off between:
 - Managers typically have better local information than CHQ
 - Manager's incentives diverge from firm's (agency problem)
- This can of course be extended in many ways – for example:
 - Need for coordination
 - Incentives to communicate
 - Multi-level agency problems with CEO and owners

COMPETITION AND DECENTRALIZATION

- Competition may affect information:
 - Improves the value of timely responses to local conditions (e.g. Aghion & Tirole, 1997)
 - But, reduces value of local information as more firms for the principal to learn from (e.g. Acemoglu et al. 2007)
- Competition may also affect incentives:
 - Lower risk of manager abusing autonomy as incentives more aligned with firm (e.g. Schmidt 1997, Vives 2005)
 - Less incentive to co-ordinate prices (Alonso et al. 2008)
- So theoretically ambiguous, but empirically we find strong positive relationship between decentralization and competition

TABLE 2: DECENTRALIZATION AND COMPETITION

Import Penetration	0.131*** (0.050)	0.184*** (0.073)				
1 – Lerner Index			6.537*** (1.176)	2.265*** (1.081)		
Number of competitors					0.134*** (0.036)	0.094** (0.034)
Plant Skills		0.081*** (0.018)		0.090*** (0.016)		0.090*** (0.016)
Ln(Firm Size)		0.076** (0.026)		0.068*** (0.017)		0.066*** (0.018)
Ln(Plant size)		0.119** (0.024)		0.091** (0.022)		0.090** (0.022)
Observations	2,497	2,497	3,587	3,587	3,587	3,587
Country & Ind. dummies	no	yes	no	yes	no	yes
Clustering	Cty * Sic2	Cty * Sic2	Cty * Sic3	Cty * Sic3	Firm	Firm

Notes: Other controls are SIC3 dummies, 12 country dummies, noise controls (interviewer dummies, Interviewee tenure and seniority, etc.), public listing, CEO onsite, plant size, Number of competitors (0=none, 1=between 1 and 4, 2=5 or more (as reported by plant manager)).

TRUST AND DECENTRALIZATION

- Trust may also affect optimal decentralization
 - Facilitate cooperative solutions in repeated game settings: e.g. Kreps et al. (1982) and Baker, Gibbons and Murphy (1999)
 - Proxy the congruence of incentives: e.g. Aghion and Tirole (1997)
- We find evidence of robust positive relationship between trust in region where plant is located and decentralization

MEASUREMENT AND IDENTIFICATION

- Measure trust using the World Value Survey, from the question:

“Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?”

Trust by region of the country defined as % of people answering “yes” to first part of the trust question

- Experimental studies show this question linked with trust/trusting behavior (Glaeser et al, 2000, Sapienza et al, 2007)
- Used in prior social capital literature: e.g. Knack & Keefer (1997); Guiso, Sapienza, Zingales (2004);

TABLE 3: TRUST AND DECENTRALIZATION

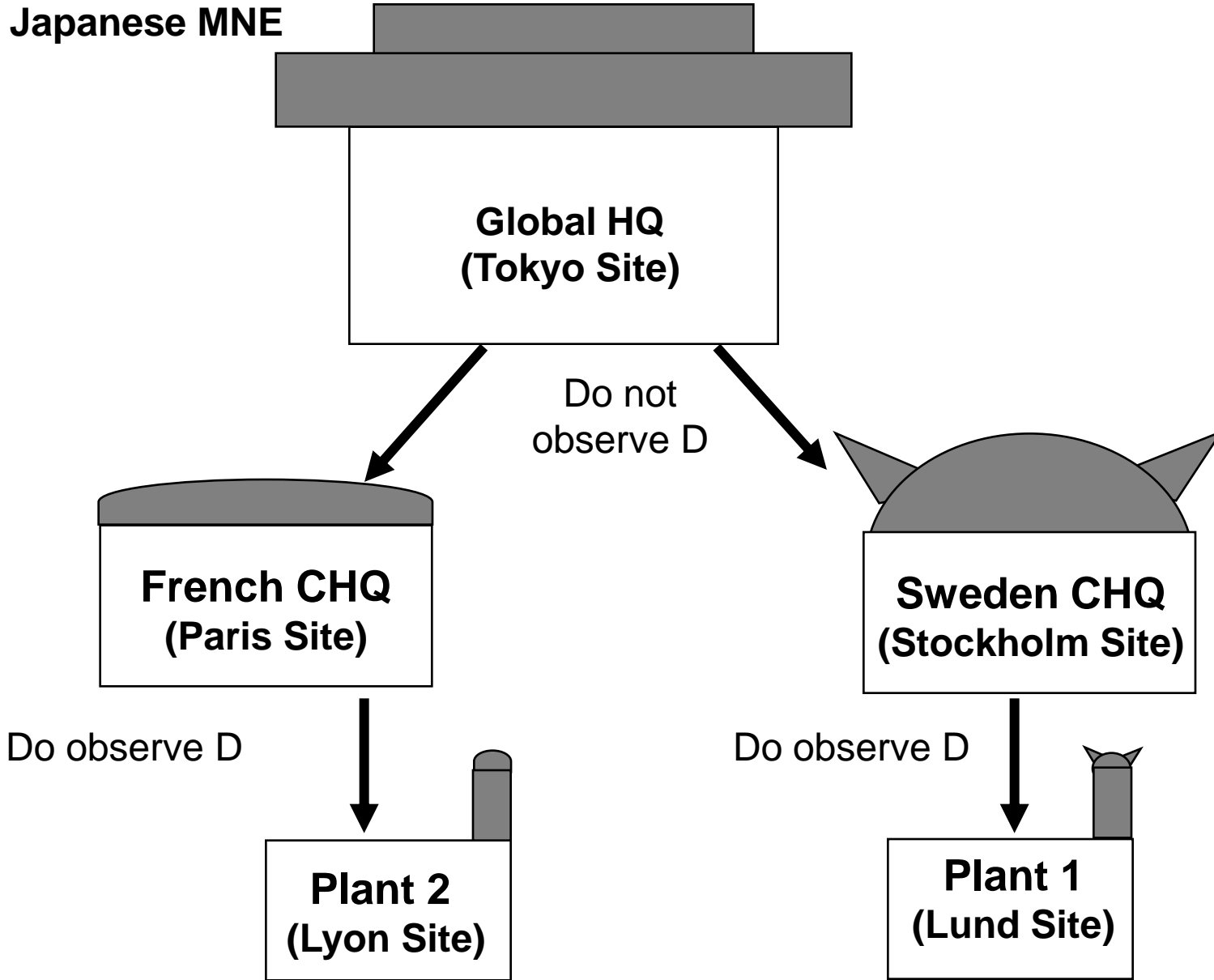
Trust (region)	1.196*** (0.429)	0.825*** (0.290)	0.732** (0.298)
Rule of law (country)		0.473*** (0.102)	
No. Competitors			
Plant Skills			0.094*** (0.016)
Firm Size			0.044* (0.021)
Plant Size			0.091*** (0.029)
Observations	3549	3549	3549
Country dummies	no	no	yes
Other controls	no	no	yes

Notes: Other controls are SIC3 dummies, noise Controls (interviewer dummies, Interviewee tenure and seniority, etc.), public Listing, CEO onsite, plant size, **regional GDP/head, Regional population,** domestic multinational. Weighted by % of WVS respondents in region in country. SE clustered by 112 regions.

USE MULTINATIONALS AS A SECOND TEST FOR IMPORTANCE OF TRUST

- Could worry about bias due to trust proxying for other country/regional variables
- So look at affiliates of foreign multinationals and investigate whether trust in their home country also matters
- Find that characteristics in both region of location and country of origin matter
- Parallels literature showing individuals behavior based on origin and location: e.g. Ichino & Maggi (2000), Guliano (2007) and Fisman & Miguel (2008)

Example D
Japanese MNE



TAB 4: DECENTRALIZATION AND TRUST IN COUNTRY OF ORIGIN

Sample:	Multinational Firms				
Trust (region of location)	0.609 (0.592)	0.563 (0.843)		0.446 (1.908)	
Trust (country of origin)		0.749*** (0.301)	0.698*** (0.331)	0.152 (0.152)	
Trust (bilateral from origin cty to location cty)				1.809*** (0.768)	2.101*** (1.035)
Full set of controls	Yes	Yes	Yes	Yes	Yes
Regional dummies (105)	No	No	Yes	No	Yes
Country origin dummies	No	No	No	No	Yes
Clustering	Region	Region	Origin country	Origin country	Origin country
Observations	867	867	867	280	280

DECENTRALIZATION AND RELIGION

- Religion may affect decentralization via trust
 - Putnam (1993), La Porta et al (1997), Guiso et al. (2004) argue that hierarchical religions may inhibit formation of horizontal bonds between people, lowering trust
- But religion could still play an independent role, as it could reflect preferences for autonomy:
 - *Proxy* for regional variations in preference for autonomy
 - *Cause* regional variations in preferences for autonomy (e.g. Guiso, Sapienza, Zingales, 2003, on Vatican II)

DECENTRALIZATION AND RELIGION

- Measure religion using World Values Survey
- Follow La Porta et al. (1997) in defining a “*Hierarchical religion*” variable which is % people in the region that are Catholic, Orthodox or Muslim
- Acceptable restriction from more general model

TABLE 5: DECENTRALIZATION & RELIGION

Sample:	All Firms		Multinationals
Hierarchical Religion (region)	-0.560*** (0.161)	-0.552*** (0.205)	
Hierarchical (country of origin)			-0.368*** (0.149)
Trust (region)		0.866*** (0.305)	
Full set of controls	No	Yes	Yes
Country dummies	No	Yes	Yes
Regional dummies	No	No	Yes
Clustering	Region	Region	Origin Country
Observations	3549	3549	867

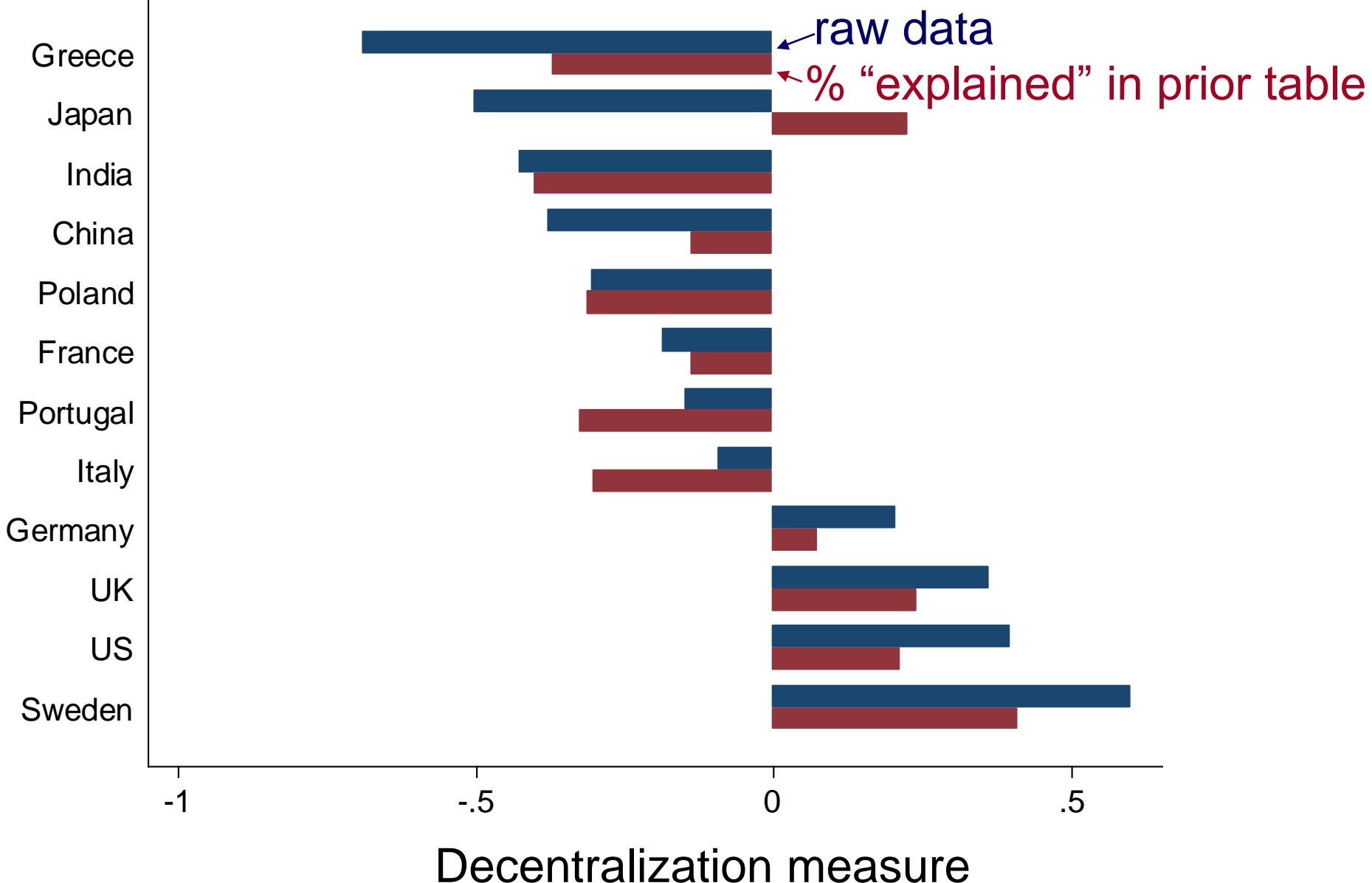
Note: Hierarchical religion is % Catholic, Christian Orthodox or Islam

QUANTIFICATION IN TERMS OF CROSS COUNTRY DIFFERENCES

Number of Competitors		0.186***	0.158***	0.139***	0.099***
		(0.040)	(0.054)	(0.044)	(0.028)
Trust (region)			0.964***	0.429	0.801**
			(0.336)	(0.380)	(0.353)
Hierarchical (region)				-0.469***	-0.542***
				(0.161)	(0.218)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Firm size, plant size & listed	Yes	Yes	Yes	Yes	Yes
Noise controls	Yes	Yes	Yes	Yes	Yes
Country controls	No	No	No	No	Yes
Observations	3549	3549	3549	3549	3549
R², no country controls	0.144	0.152	0.163	0.180	
R², country controls	0.250	0.251	0.251	0.255	
Additional R² country controls	0.106	0.099	0.088	0.075	

$(0.106 - 0.075) / 0.106 = 30\%$ of cross country variation accounted for by 3 factors

ACROSS COUNTRIES THE IMPLIED FIT LOOKS REASONABLE, EXCEPT IN JAPAN



ROBUSTNESS/EXTENSIONS

Size

- We find larger firms more decentralized (Penrose (1959), Chandler (1962)) & trust fosters size

Firm structure and other characteristics

- Between firm effect of trust on size/industry
- Single/Multi plant firm
- CEO on-site/off-site
- Multinational size control
- Management quality

Sample and other controls

- Sample selection issues: size, industry
- OECD/non-OECD
- Outsourcing
- Nationality of multinational's managers
- Incentive Pay

SUMMARY AND NEXT STEPS

New data showing substantial cross-firm and country variation in decentralization. We find that:

(A) Competition, trust and religion account for about 30% of cross-country variation (*within* firm effect)

(B) Trust also associated with larger firms and manufacturing share of overall employment (*between* firm effect). A mechanism through which social capital affects productivity?

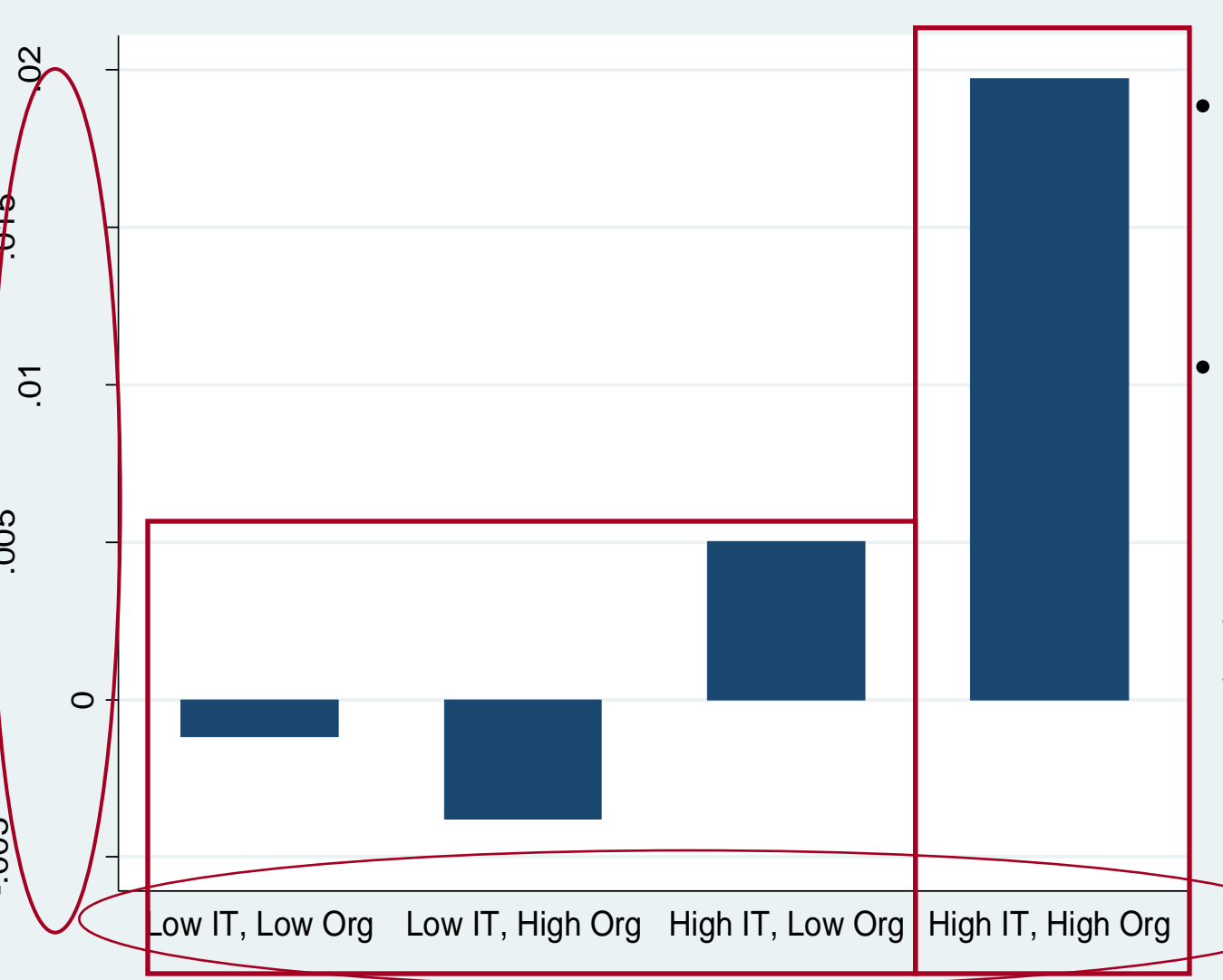
(C) Multinationals “export” their organizational type abroad

Next steps are to look at:

- Outsourcing/Industry structure
- Firm hierarchy (span of control, etc.)
- Worker autonomy

Quotes & Back-up

PRODUCTIVITY IMPLICATIONS



- Decentralization and IT appear Complementary
- Difference significant at the 5% level)

Source: Bloom, Sadun & Van Reenen “Americans do I.T. Better”

Notes: The graph plots average 3 year annual differences of labor productivity growth (relative to median in the three digit industry, country, year cell for four groups. IT is PC/worker growth. High and low of IT and decentralisation are defined relative to country, year, and sic3 medians. 463 firms across 7 EU countries (France, Germany, Italy, Poland, Portugal, Sweden, UK). Time period is 2002-2005.

MY FAVOURITE QUOTES:

The 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....”

MY FAVOURITE QUOTES:

The 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”

MY FAVOURITE QUOTES:

Staff retention the American way

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

The difficulties of coding 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*” ?”

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”

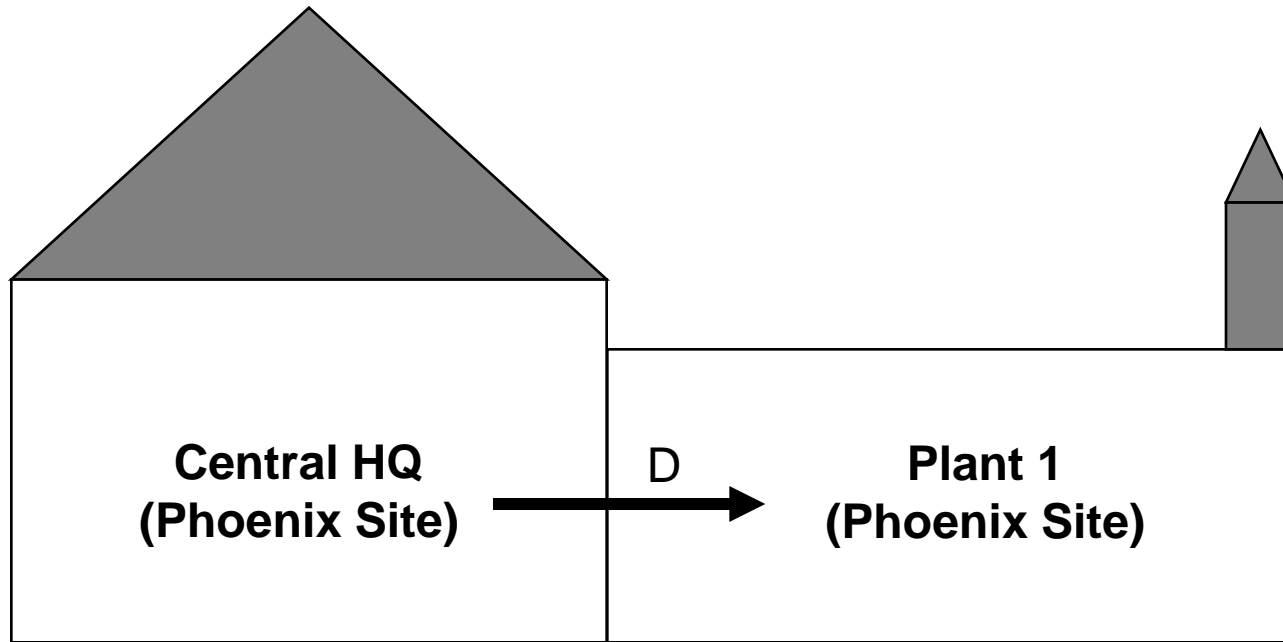
The unbelievable

[Male manager speaking to a female interviewer]

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

[End of interview...]

Example C:
US Domestic Firm
Single site, Single plant



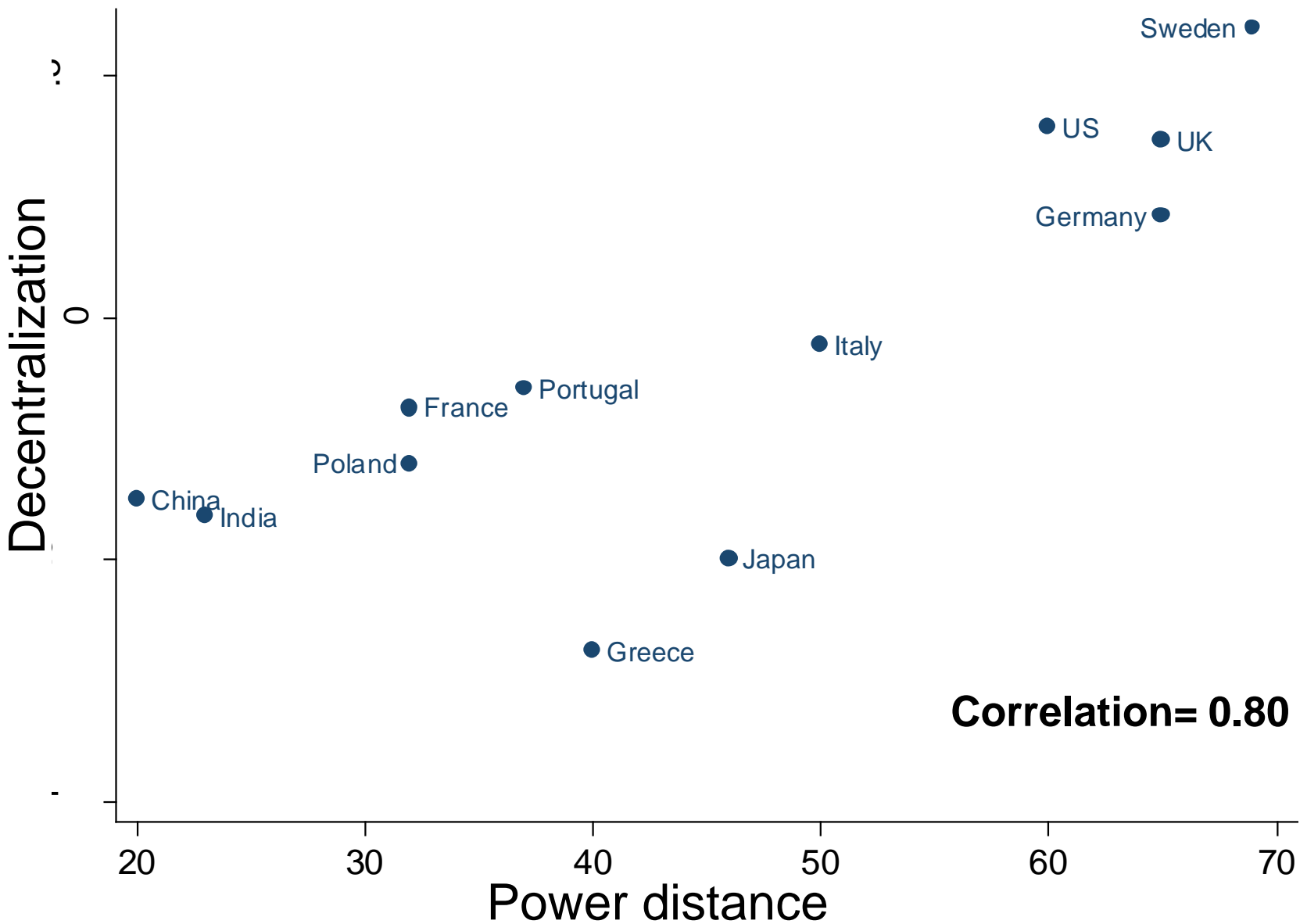
Drop any firms in which the CEO is the plant manager.

Also test robustness to dropping same-site firms.

EXTERNAL VALIDATION (1)

- Do these cross-country values look sensible?
- Only prior firm decentralization measure to cross-check against we are aware of is from Hofstede (1980)
 - Surveyed c.100,000 IBM employees across 50 countries during the 1970s & early 1980s
 - Questions on management style (autocratic/paternalistic or consultative) and *preferences* for delegation
 - Combined into *Power Distance* index (1-100), low means limited (preference for) delegation

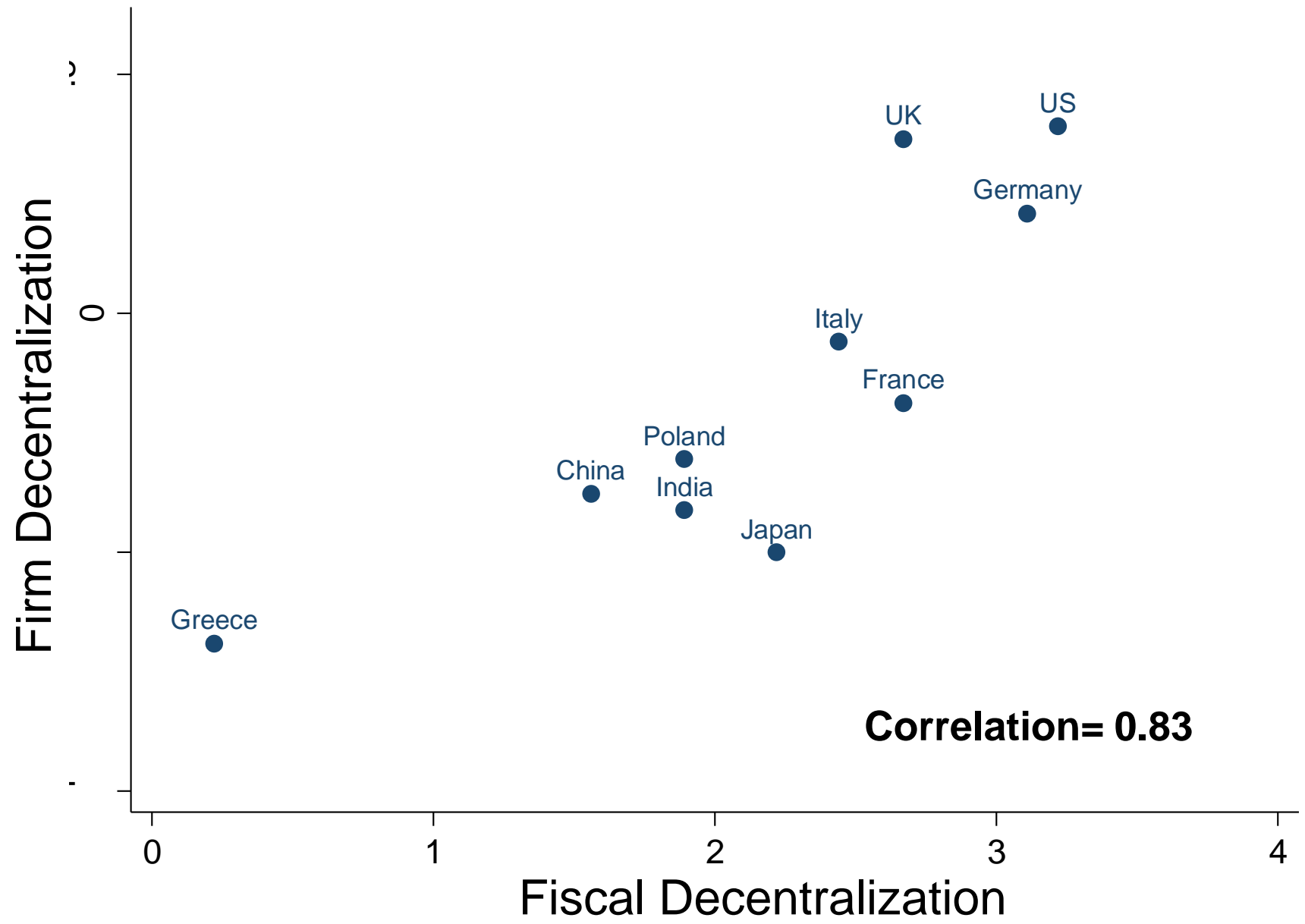
'POWER DISTANCE' SEEMS CORRELATED WITH OUR DECENTRALIZATION MEASURE



EXTERNAL VALIDATION (2)

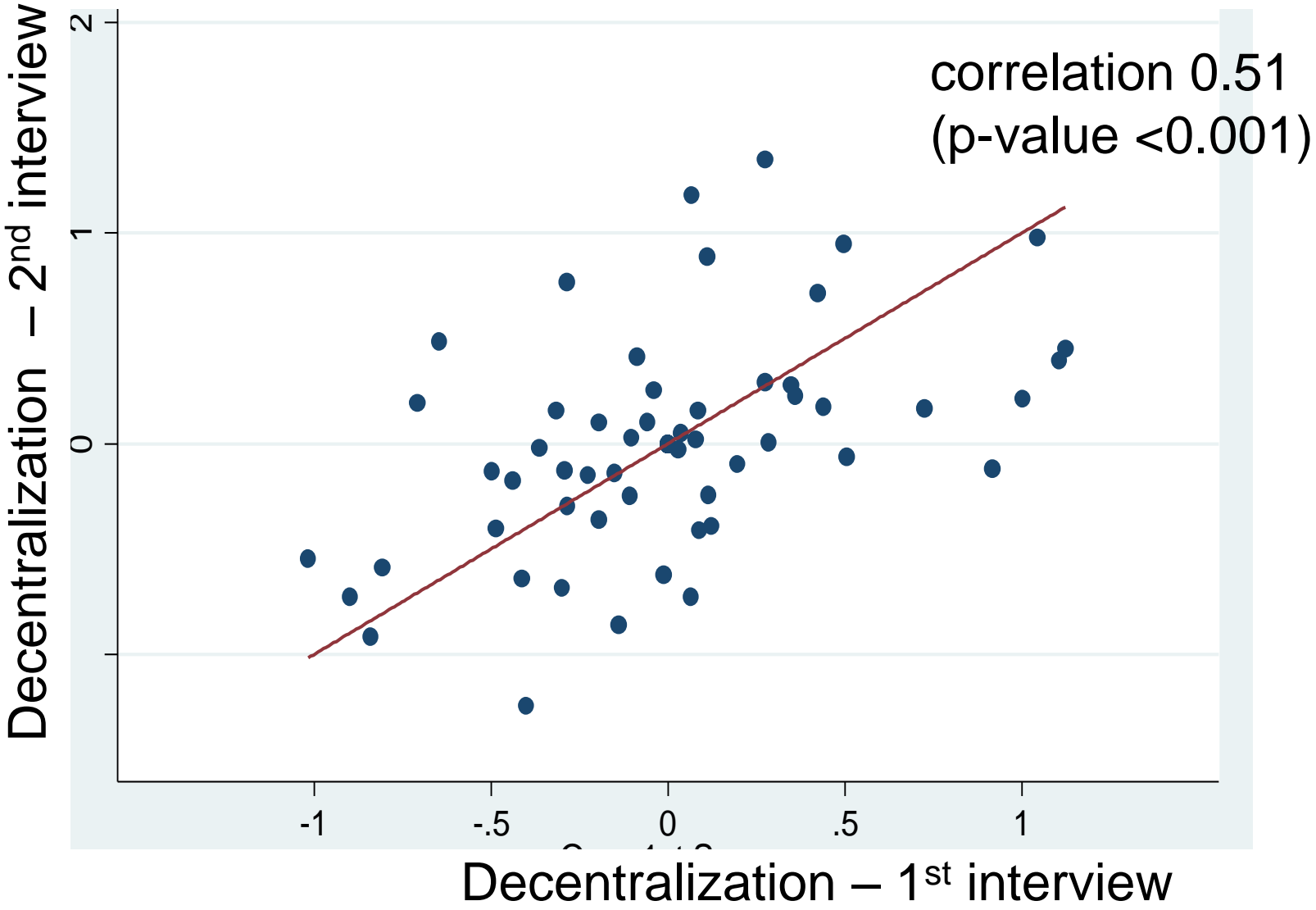
- There is also a cross-country index of Fiscal Decentralization from Arzaghi and Henderson (2005, JPubE)
- Index of Fiscal Decentralization based on 9 factors including:
 - Government structure (e.g. unitary v federal)
 - Local (regional/municipal) democratization & autonomy
 - Local (regional/municipal) control over taxation and spending (education, police, transport etc.)
- Surveyed every country with >10 million people (in 1995)

'FISCAL DECENTRALIZATION' IS CORRELATED WITH OUR DECENTRALIZATION MEASURE



INTERNAL VALIDATION OF FIRM LEVELS SCORES

Correlation between 1st and 2nd interviews (72 firms)



PAIRWISE CORRELATIONS OF DIFFERENT VARIABLES

	Decentral- ization	Bonus	Promotion	Ln(Layers)	Plant Skills
Bonus <i>Manager's Bonus as a % of Salary</i>	0.0767*** (0.000)	1			
Promotion <i>% Salary Increase on Promotion</i>	0.0634*** (0.005)	0.071*** (0.002)	1		
Ln(Layers) <i>Layers between CEO and Plant Manager</i>	-0.0336* (0.052)	0.0166 (0.373)	0.0347 (0.128)	1	
Plant Skills	0.074*** (0.000)	0.0677*** (0.000)	0.0301 (0.199)	0.0161 (0.373)	1
Management	0.1261*** (0.000)	0.1255*** (0.000)	0.0853*** (0.000)	0.0038 (0.823)	0.1968*** (0.000)

Notes: p-values in brackets. The variables are residuals from regressions including controls for firm size, plant size, multinational status (domestic/foreign MNE), listed status, CEO on site, noise controls (44 interviewer dummies, day of the week, reliability score, respondent's seniority and tenure, interview duration)

TABLE A1: ROBUSTNESS (1/3)

	All	Single Plant Firms	Multi Plant Firms	CEO on site	CEO not on site	250 - 5000 workers	OECD country
Competitors	0.100*** (0.031)	0.038 (0.057)	0.166*** (0.045)	0.105** (0.046)	0.110** (0.055)	0.133** (0.054)	0.094*** (0.035)
Trust	0.867*** (0.305)	0.290 (0.479)	1.194*** (0.389)	0.347 (0.395)	1.334** (0.517)	0.735* (0.407)	1.353*** (0.401)
HIER religion	-0.551*** (0.205)	-0.510 (0.476)	-0.605*** (0.177)	-0.455* (0.246)	-0.627** (0.298)	-0.615*** (0.229)	-0.580*** (0.217)
Observations	3,549	1,399	2,150	2,185	1,364	2,002	2,725

TABLE A1: ROBUSTNESS TESTS-CONT. (2/3)

TABLE A1. DECENTRALIZATION REGRESSION ROBUSTNESS CHECKS (CONTINUED)

Sample/Experiment	Controlling for Management	Decentralization Excluding Investment Question	Decentralization based only on Investment Question	Domestic Firms	Multinationals	Below Skills Median	Above Skills Median
	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Number of Competitors (0=none, 1=between 1 and 4, 2=5 or more)	0.073*** (0.028)	0.056** (0.023)	0.083* (0.046)	0.099* (0.053)	0.105** (0.049)	0.092 (0.062)	0.120** (0.056)
Trust (region) Trust measured in firm's region of location	0.829*** (0.301)	0.610*** (0.217)	0.235 (0.370)	0.776* (0.403)	1.147** (0.509)	0.760* (0.451)	0.711 (0.431)
Hierarchical (region) % of Catholics, Muslims and Orthodox in firm's region of location	-0.504** (0.200)	-0.409** (0.168)	-0.265 (0.182)	-0.508* (0.297)	-0.608*** (0.220)	-0.388 (0.355)	-0.437* (0.241)
Plant Skills % Plant employees with a College degree	0.076*** (0.015)	0.063*** (0.013)	0.063*** (0.019)	0.062*** (0.019)	0.142*** (0.030)	0.136*** (0.034)	0.102* (0.052)
Ln(Firm N) Firm Size	0.015 (0.024)	0.009 (0.015)	0.077*** (0.023)	0.044* (0.026)	0.038 (0.038)	0.049 (0.036)	0.044* (0.025)
Ln(Plant N) Plant employees as a % of firm	0.072** (0.029)	0.054** (0.021)	0.062** (0.029)	0.081** (0.036)	0.088* (0.051)	0.081* (0.041)	0.085* (0.043)
Foreign MNE Dummy=1 if firm belongs to a foreign multinational	0.111** (0.050)	0.076** (0.036)	0.229*** (0.057)			0.082 (0.085)	0.296*** (0.070)
Domestic MNE Dummy=1 if firm belongs to a domestic multinational	0.014 (0.044)	0.032 (0.031)	0.009 (0.062)		-0.180*** (0.064)	0.042 (0.062)	0.074 (0.078)
Management Management score based on 18 questions	0.171*** (0.040)						
Observations	3548	3549	3280	1892	1657	1641	1607
Regional controls (2)	yes	yes	yes	yes	yes	yes	yes
Industry dummies (112)	yes	yes	yes	yes	yes	yes	yes
Country dummies (12)	yes	yes	yes	yes	yes	yes	yes
Other controls (69)	yes	yes	yes	yes	yes	yes	yes
Weights	yes	yes	yes	yes	yes	yes	yes
Clusters	Region	Region	Region	Region	Region	Region	Region

Robust standard errors in parentheses. Dependent variable is decentralization. * significant at 10%; ** significant at 5%; *** significant at 1%. "Number of competitors" is taken from the survey and is the number of rivals the manager perceives he faces. HIERARCHICAL is the percentage of Catholics, Muslims and Orthodox Christians living in the country, region of country of origin. TRUST measures the percentage of individuals in the firm's country of location who agreed with the statement "most people can be trusted". Other controls include a dummy for whether the firm is publicly listed, a dummy for whether the CEO is on the same site as the plant ("CEO onsite") and "Noise controls" (these include 44 interviewer dummies, 6 dummies to control for the day of the week the interview took place, an interview reliability score, the manager's seniority and tenure, the duration of the interview, and 4 dummies for missing values in seniority, tenure, duration and reliability). Regional controls are GDP per capita and population in the region. Standard errors are clustered as detailed in the table. All columns weighted by the share of World Values Survey respondents in the region in the country

TABLE A1: ROBUSTNESS TESTS-CONT. (3/3)

TABLE A1. DECENTRALIZATION REGRESSION ROBUSTNESS CHECKS (CONTINUED)

Sample/Experiment	Foreign MNEs (17)	Foreign MNEs (18)	Foreign MNEs, all managers local (19)	Drop muslims from hierachical religion group (20)	Dependent variable is worker autonomy (21)
Global assets of the ultimate owner		0.060** (0.021)			
World Bank rigidity index cty origin					
Trust (country of origin)	1.597***	1.807***	1.147***		
Trust measured in firm's country of origin	(0.548)	(0.518)	(0.508)		
Trust (region)	0.488	0.235	1.065	0.878***	0.568*
Trust measured in firm's region of location	(1.100)	(1.204)	(1.109)	(0.307)	(0.341)
Number of Competitors (0=none, 1=between 1 and 4, 2=5 or more)					0.080** (0.031)
Hierarchical (region) % of Catholics and Orthodox in firm's region of location				-0.556*** (0.208)	-0.194 (0.209)
Plant Skills	0.163***	0.165***	0.174***	0.093***	0.079***
% Plant employees with a College degree	(0.050)	(0.046)	(0.034)	(0.016)	(0.020)
Ln(Firm N)	0.051	0.013	0.050	0.043**	0.036
Firm Size	(0.047)	(0.049)	(0.058)	(0.021)	(0.026)
Ln(Plant N)	0.047	0.033	0.043	0.089***	0.035
Plant employees as a % of firm	(0.101)	(0.098)	(0.055)	(0.029)	(0.022)
Foreign MNE Dummy=1 if firm belongs to a foreign multinational				0.169*** (0.056)	0.087 (0.054)
Domestic MNE Dummy=1 if firm belongs to a domestic multinational				0.032 (0.044)	0.006 (0.056)
Observations	323	323	439	3549	3456
R-squared	0.52	0.53	0.39	0.32	0.24

- Data Collection Methodology
- Exploring the raw data
- Firm level decentralization

- **Firm size**

FIRM SIZE AND DECENTRALIZATION

Some decentralization is required for large firms (as in our data)

Suggests trust and religion should influence firm size by enabling larger firms (region/firm level version of La Porta et al. 1997)

We look at this in two ways:

- Average size of all firms in the region
- Share of manufacturing employment in region
(manufacturing firms and plants 2x to 4x bigger than sectors)

Find trust associated larger firms (particularly in 100+ size group where should matter most) and manufacturing share

TABLE 6: FIRM SIZE AND TRUST

Dep Var: log(mean firm size)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample:	Firms 100+ employees	Firms 100+ employees	Firms 100+ employees	Firms 50+ employees	Firms 25+ employees	Firms 10+ employees	All firms
Trust	2.197*** (0.501)	2.216*** (0.478)	1.652** (0.656)	1.468** (0.630)	1.365** (0.613)	1.307** (0.609)	1.112* (0.615)
Rule of Law		0.476*** (0.079)					
Country Controls	No	No	Yes	Yes	Yes	Yes	Yes
Regional controls for GDP per capita, Skills and Population	No	No	Yes	Yes	Yes	Yes	Yes
SIC2 industry composition controls	No	No	Yes	Yes	Yes	Yes	Yes
N	110	110	110	110	111	112	113

Clustering by region, weighting by WVS survey share of obs within country

Cells with 250+ firms

Date: population of 1.3m manufacturing firms in these regions (AMADEUS, D&B, FIRSTSOURCE and ORBIS datasets)

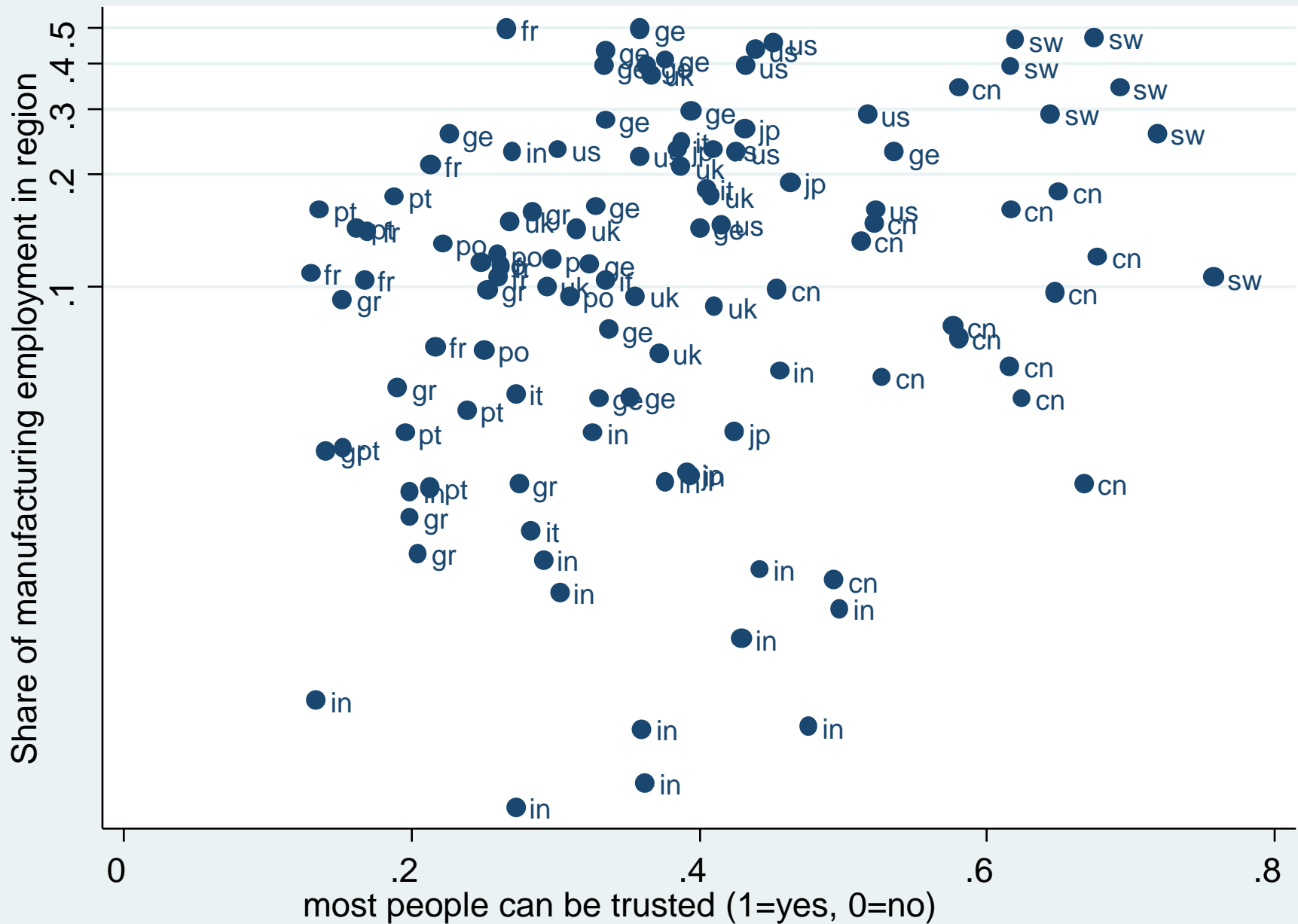
TABLE 7: MANUFACTURING SHARE AND TRUST

Dep Var: Log(% employment in manufacturing)	(1)	(2)	(4)	(5)	(6)
	Basic	Rule of Law	Full Controls	Drop India & US	Drop capitals
Trust	1.766** (0.746)	1.789*** (0.627)	2.507** (1.079)	2.261** (1.100)	3.312** (1.371)
Rule of law		0.829*** (0.122)			
Log (Mean firm size)					
Country Controls	No	No	Yes	Yes	Yes
Regional controls for GDP per capita, Skills and Population	No	No	Yes	Yes	Yes
N	111	111	111	85	99

Clustering by region, weighting by WVS survey share of obs within country

Date: population of 1.3m manufacturing firms in these regions (AMADEUS, D&B, FIRSTSOURCE and ORBIS datasets)

REGIONAL MANUFACTURING SHARE AND TRUST PLOT



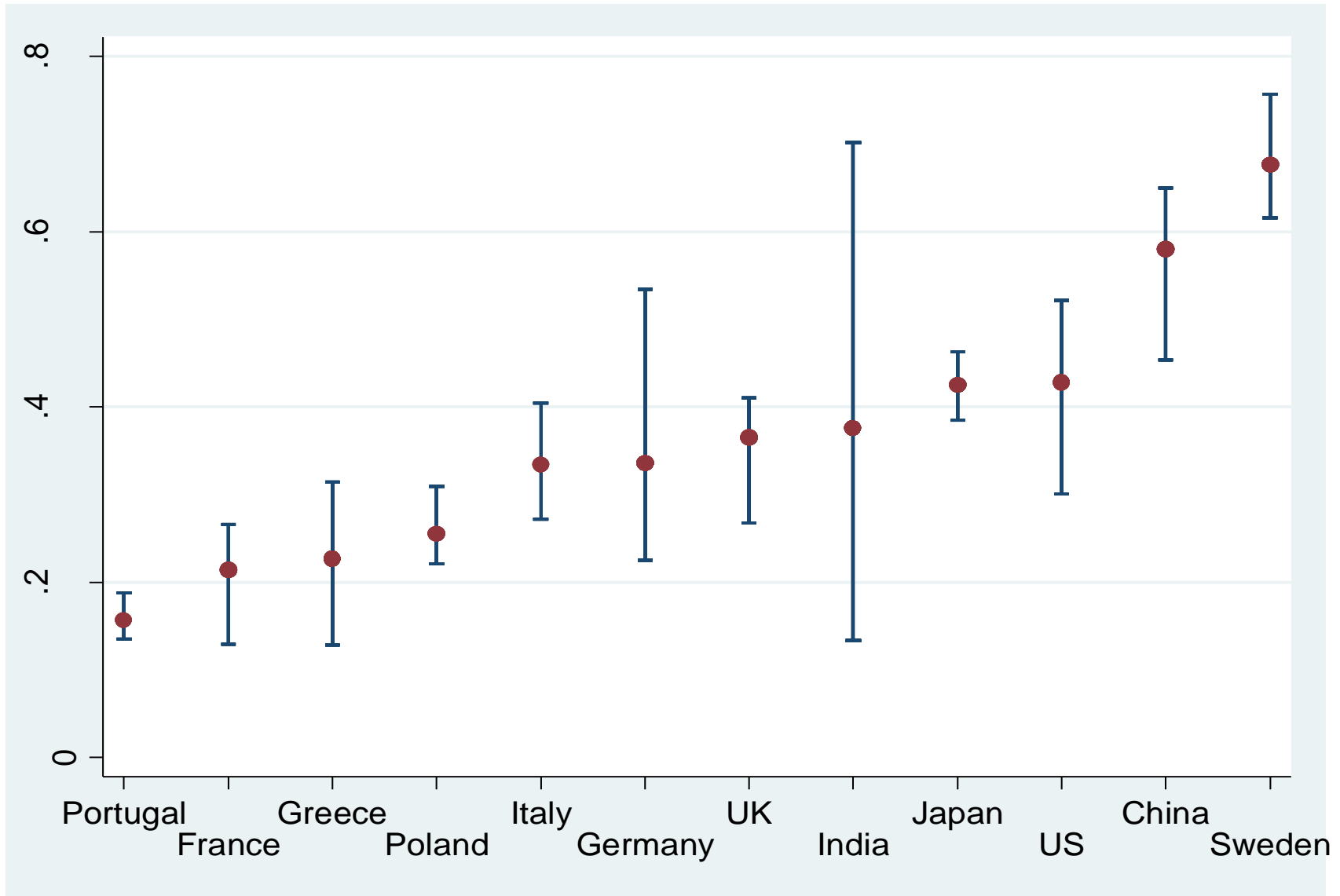
OUTSOURCING AND TRUST

Dependent variable = % of production outsourced

Number of Competitors			-0.001 (0.011)
Trust	0.351*** (0.135)	0.310** (0.135)	0.290** (0.139)
Hierarchical Religion			0.095 (0.075)
Observations	1957	1957	1957
Other controls	No	yes	yes

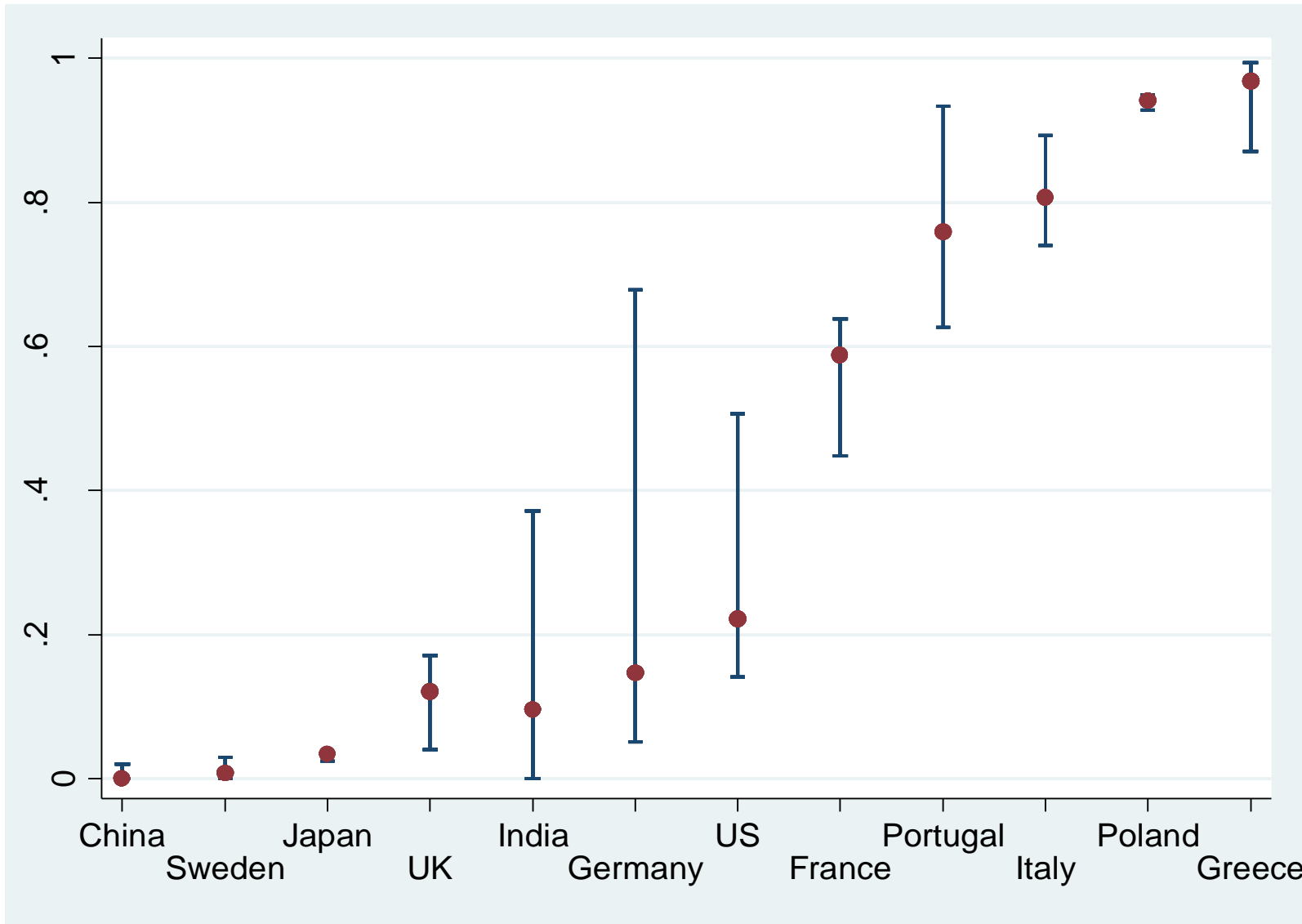
Notes: Tobit estimation. Other controls are SIC2 dummies, 12 country dummies, noise Controls (interviewee dummies Interviewer tenure and seniority, etc.), public Listing, CEO onsite, plant size, regional GDP/head, Regional population, domestic & foreign multinational dummy. Weighted by % of WVS respondents in region in country, SE clustered by region. 43% observations are left censored; mean of Dependent variable=12%

TRUST BY COUNTRY AND REGIONAL DISPERSION



The graph shows median level of trust. The vertical bars denote minimum and maximum levels.

RELIGION BY COUNTRY & REGIONAL DISPERSION



The graph shows median level of shares of hierarchical religion. The vertical bars denote minimum and maximum levels.

TABLE B4 – DESCRIPTIVE STATISTICS BY COUNTRY

	All	CN	FR	GE	GR	IN	IT	JP	PO	PT	SW	UK	US	Missing, #
Observations, #	4,038	325	323	348	187	470	204	122	239	177	286	649	694	n/a
Firms, #	3,902	319	313	308	187	467	207	121	239	177	259	609	682	n/a
Firm employees (median)	270	700	240	500	230	250	185	310	250	183	267	250	375	0
Plant employees (median)	150	500	150	225	120	150	150	150	150	125	150	140	150	0
Production sites (median), #	2	1	3	2	1	1	2	2	1	1	2	2	3	94
Age of firm (median, years)	34	12	39	40	32	22	33	57	31	35	62	34	33	101
Listed firm, %	14.5	6.4	4.6	16.4	18.7	26.2	1.4	28.3	2.3	5.6	1.7	6.5	30.1	121
Share of workforce with degrees, %	17.3	8	17.3	14.9	11.9	22.0	16.3	30.9	20.0	9.6	19.8	12.9	20.1	436
Decentralization (mean z-score)	-.01	-.39	-.14	.11	-.47	-.27	-.04	-.41	-.21	-.11	-.34	-.19	.22	344
Management (mean z-score)	2.99	2.61	2.99	3.18	2.64	2.54	3.00	3.15	2.88	2.73	3.15	3.00	3.31	0
Trust (%)	38	65	17	33	15	39	40	43	31	16	72	36	42	48
Lerner index	.957	.950	.965	.949	.935	.923	.965	.966	.967	.972	.980	.968	.940	111
% of Foreign MNE's	0.25	0.20	0.46	0.31	0.19	0.10	0.25	0.03	0.35	0.18	0.44	0.38	0.14	0
% of Domestic MNE's	0.22	0.01	0.34	0.36	0.13	0.02	0.22	0.32	0.04	0.20	0.39	0.25	0.33	0
Interview duration (minutes)	47.9	48.6	46.3	44.7	49.8	59.8	46.6	58.4	47.8	54.5	56.3	43.5	46.8	34

NO RELATIONSHIP BETWEEN THE PROBABILITY OF RESPONDING TO THE SURVEY AND TRUST/RELIGION IN THE REGION

	(1)	(2)	(3)	(4)
Trust	0.082 (0.109)	-0.018 (0.119)		
Hierarchical			-0.032 (0.122)	-0.104 (0.064)
Country dummies?	Yes	Yes	Yes	Yes
General controls	No	Yes	No	Yes
Number of regions	9304	9304	8552	8552

General controls are size, age, listed status, multinational dummy, time since survey started.

Examples of Regional breakdown: US

US1	California	
US2	East North Central	Illinois, Indiana, Michigan, Ohio, Wisconsin
US3	East South Central	Alabama, Kentucky, Tennessee
US4	Middle Atlantic States	New Jersey, New York, Pennsylvania
US5	New England	Connecticut, Massachusetts, Vermont, New Heaven, Rhode Island,
US6	Northwest	Alaska, Oregon, Washington
US7	Rocky Mountain State	Wyoming, Colorado, Idaho, Utah, Arizona, Nevada,
US8	South Atlantic	Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
US9	West North Central	Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota
US10	West South Central	Arkansas, Louisiana, Oklahoma, Texas

Examples of Regional breakdown: India

IN1	Andhra Pradesh
IN2	Assam
IN3	Bihar
IN4	Chhatisgarh
IN5	Gujarat
IN6	Haryana
IN7	Jharkhand
IN8	Karnataka
IN9	Kerala
IN10	Madhya Pradesh
IN11	Maharashtra
IN12	Orrisa
IN13	Punjab
IN14	Rajasthan
IN15	Tamil Nadu
IN16	Uttar Pradesh
IN17	West Bengal
