

# NOT INTENDED FOR PUBLICATION

## APPENDIX A: DATA

This describes the steps for constructing the data used in the paper. Note that the full dataset is also available on-line with all Stata do-files here [www.worldmanagementsurvey.com](http://www.worldmanagementsurvey.com)

### A1. Firm-level Accounting Databases

Our sampling frame was based on the Bureau van Dijk (BVD) Amadeus dataset for Europe (France, Germany, Greece, Italy, Poland, Portugal, and the United Kingdom), on BVD Icarus for the United States, on CMIE Firstsource dataset for India, and on the BVD Oriana dataset for China and Japan. These databases all provide sufficient information on companies to conduct a stratified telephone survey (company name, address, and a size indicator). These databases also typically have accounting information on employment, sales, and capital. Apart from size, we did not insist on having accounting information to form the sampling population, however.

Amadeus and Firstsource are constructed from a range of sources, primarily the National registries of companies (such as Companies House in the United Kingdom and the Registry of Companies in India). Icarus is constructed from the Dun & Bradstreet database, which is a private database of over 5 million U.S. trading locations built up from credit records, business telephone directories, and direct research. Oriana is constructed from Huaxia credit in China and Teikoku Database in Japan, covering all public and all private firms with one of the following: 150 or more employees, 10 million US\$ of sales or 20 million US\$ of assets.

In addition to using these accounting databases for the sampling frame we also use them to conduct the analysis of firm size in Table IV. Since our measure of decentralization focuses on the delegation of power between the company headquarters and the plant manager, firm size is the appropriate concept to use rather than plant size. Census data do not report firm sizes on a consistent basis across countries, which is why we use the BVD and CMIE datasets. We discuss issues of representativeness below in sub-section A2. In Table IV we use the sample of all domestic firms in columns (1) and (2), excluding any firms whose global ultimate parent is a foreign multinational. We use the trust measure in the region of location of the BVD/CMIE firm zipcode, which for domestic firms is the CHQ. We use the same set of regions on which we conduct the analysis in the other Tables. In columns (3) to (5) we instead use only the foreign multinational sample, to exploit the cross-country identification from bilateral trust (as in Table I). We use all country of origin-location pairs where we have information from the Eurobarometer survey on bilateral trust. Both approaches yield a coefficient on trust that is similar in magnitude and significance is very reassuring.

### A2. The Organizational Survey

In every country the sampling frame for the organization survey was all firms with a manufacturing primary industry code with between 100 and 5,000 employees on average over the most recent three years of data (typically 2002 to 2004).<sup>1</sup> In Japan and China we used all manufacturing firms with 150 to 5000 employees since Oriana only samples firms with over 150 employees, while in Portugal we supplemented the sample with firms with 75 to 100 employees.<sup>2</sup> We checked the results by conditioning on common size bands (above 150 in all countries).

Interviewers were each given a randomly selected list of firms from the sampling frame. This should therefore be representative of medium sized manufacturing firms. The size of this sampling frame by country is shown in Table A4, together with information on firm size. Looking at Table A4 two points are worth highlighting on the sampling frame. First, the size of the sampling frame appears broadly proportional to the absolute size of each country's manufacturing base, with China, the United States, and India having the most firms and Sweden, Greece and Portugal the fewest.<sup>3</sup> Second, China has the largest firms on average, presumably reflecting both the higher size cut-off for its sampling frame (150 employees versus 100 employees for other countries) and also the presence of many current and ex state-owned enterprises (11% in the survey are still Government owned). When we condition on the sample of firms with more than 150 employees in all countries, median employment for Chinese firms is still relatively high, but lower than the United States, the United Kingdom, and Sweden. Third, Greece and India have a much higher share of publicly quoted firms than the other countries, with this presumably reflecting their more limited provision of data on privately held firms. Because of this potential bias across countries will control for firm size and listing status in all the main regressions.

In addition to randomly surveying from the sampling frame described above we also resurveyed the firms we interviewed in the 2004 survey wave used in Bloom and Van Reenen (2007). This was a sample of 732 firms from France, Germany, the United Kingdom and the United States, with a manufacturing primary industry code and 50 to 10,000 employees (on average between 2000 and 2003). This sample was drawn from the Amadeus dataset for Europe and the Compustat dataset for the U.S. Only companies with accounting data were selected. So, for the United Kingdom and France this sampling frame was very similar to the 2006 sampling frame. For Germany it is more heavily skewed towards publicly quoted firms since smaller privately held firms do not report balance sheet information. For the United States it comprised only publicly quoted firms. As a result when we present results we always include controls for firm size. As a robustness test we drop the firms that were resurveyed from 2004. These resurveyed firms were randomly distributed among the relevant country interviewers.

### ***The Representativeness of the Sampling Frame***

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<sup>1</sup> In the United States only the most recent year of employment is provided. In India employment is not reported for private firms, so for these companies we used forecast employment, predicted from their total assets (which are reported) using the coefficients from regressing  $\ln(\text{employees})$  on  $\ln(\text{assets})$  for public firms.

<sup>2</sup> Note that the Oriana database does include firms with less than 150 employees if they meet the sales or assets criteria, but we excluded this to avoid using a selected sample.

<sup>3</sup> The size of the manufacturing sector can be obtained from <http://laborsta.ilo.org/>, a database maintained by ILO. Indian data can be obtained from Indiastat, from the "Employment in Industry" table.

The accounting databases are used to generate our organizational survey and also used directly in the analysis of the firm size distribution in Table IV. How does this compare to Census data? Table A5 compares the number of employees for different size bands from our sample with the figures for the corresponding manufacturing populations obtained from national Census Bureau data from each of the twelve countries. Unfortunately, figures for the population distributions are not available from every country in the same format, but all our countries do report the number of employees in enterprises with over 50 or more employees (except the United States, where the threshold is 20 or 100) so we report this.

Note that there are several reasons for mismatch between Census data and firm level accounts. First, even though we only use unconsolidated firm accounts, employment may include some jobs in overseas branches. Second, the time of when employment is recorded in a Census year will differ from that recorded in firm accounts (see base of each column in Table A5). Third, the precise definition of “enterprise” in the Census may not correspond to the “firm” in company accounts (see notes in table for exact definitions). Fourth, we keep firms whose primary industry is manufacturing whereas Census data includes only plants whose primary industry code is manufacturing. Fifth, there may be duplication of employment in accounting databases due to the treatment of consolidated accounts.<sup>4</sup> Finally, reporting of employment is not mandatory for the accounts of all firms in all countries. This was particularly a problem for Indian and Japanese firms, so for these countries we imputed the missing employment numbers using a sales regression.

Despite these potential differences, the broad picture that from Table A5 is that in eight countries the sample matches up reasonably with the population of medium sized manufacturing firms (being within 17% above or below the Census total employment number). This suggests our sampling frame covers near to the population of all firms for most countries.

In two countries the coverage from accounting databases underestimates the aggregate: the Swedish data covers only 62% of Census data and the Portuguese accounting database covers 72%. This is due to incomplete coverage in ORBIS of these smaller nations. In the United States and Japan the accounting databases appears to overestimate the employment of manufacturing firms compared to Census data, by about 36%. We think this is due to some double counting of the employment of subsidiaries due to imperfect recording of the consolidation markers in Japanese and U.S. accounts.

These issues will be a problem if our sampling frame is non-randomly omitting firms—for example under-representing smaller firms—because it would bias our cross-country comparisons. We try a couple of approaches to try and address this. First, in almost all the tables of results we include country fixed-effects to try to control for any differences across countries in sample selection bias. Hence, our key results are identified by within country and region variation. Second, in our quantification analysis when we compare across countries we control for size, public listing status, and industry. This should help to condition on the types of factors that lead to

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<sup>4</sup> Table A5 is built omitting all consolidated accounts to avoid duplications. Still, for some companies the consolidated accounts marker is sometimes missing so that duplications might still be present causing a “double counting” problem.

under/over sampling of firms. Since these factors explain only a limited share of cross country variation in decentralization this suggests this differential sampling bias is not likely to be particularly severe. Finally, we also present experiments where we drop the four possibly problematic countries (Japan, Portugal, Sweden, and the United States) from the analysis to show that the results are robust. In the specification of column (2) in Table IV the coefficient on trust actually rose to 2.428 (standard error = 0.903) even though we now have only 81 regions.

### ***The Survey Response Rate***

As shown in Table A6 of the firms we contacted 44.9% took part in the survey: a high success rate given the voluntary nature of participation. Of the remaining firms 16.8% refused to be surveyed, while the remaining 38.3% were in the process of being scheduled when the survey ended.

The reason for this high share of “scheduling in progress” firms was the need for interviewers to keep a portfolio of firms who they cycle through when trying to set up interviews. Since interviewers only ran an average of 2.8 interviews a day the majority of their time was spent trying to contact managers to schedule future interviews. For scheduling it was efficient for interviewers to keep a stock of between 100 to 500 firms to cycle through. The optimal level of this stock varied by the country—in the United States and the United Kingdom many managers operated voicemail, so that large stocks of firms were needed. In Japan after two weeks the team switched from working Japanese hours (midnight to 8am GMT) to Japanese afternoons and the UK morning (4am till midday GMT), which left large stocks of contacted firms in Japan.<sup>5</sup> In Continental Europe, in contrast, managers typically had personnel assistants rather than voicemail, who wanted to see Government endorsement materials before connecting with the managers. So each approach was more time consuming, requiring a smaller stock of firms.

The ratio of successful interviews to rejections (ignoring “scheduling in progress”) is above 1 in every country. Hence, managers typically agreed to the survey proposition when interviewers were able to connect with them. This agreement ratio is lowest in China and Japan. There were two reasons for this: first, the Chinese and Japanese firms were less willing to be interviewed; and second, the time-zone meant that our interviewers could not talk during the Chinese or Japanese morning; which sometimes led to rejections if managers were too busy to talk in the afternoon.

Table A7 analyses the probability of being interviewed.<sup>6</sup> In all columns, we compare the probability of running an interview conditional on contacting the firm, so include rejections and “scheduling in progress” firms in the baseline. The decision to accept is uncorrelated with revenues per worker, firm age and listed status. The probability of being interviewed is also uncorrelated with the average level of trust and the percentage of hierarchical religions in the region. Large firms and multinationals did appear to be more predisposed to agree to be interviewed, although the size of this effect if not large—multinationals were about 11 percentage

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<sup>5</sup> After two weeks of the Japanese team working midnight to 8am it became clear this schedule was not sustainable due to the unsociability of the hours, with one of the Japanese interviewers quitting. The rest of the team then switched to working 4am until noon.

<sup>6</sup> Note this sample is smaller than the total survey sample because some firms do not report data for certain explanatory variables, for example U.S. private firms do not report sales.

points more likely to agree to the interview and firms about 10 percentage points more likely for a doubling in size. Firms that were contacted earlier on in the survey were also significantly more likely to end up being interviewed, with firms contacted at the beginning of the survey over 8 percentage points more likely to be interviewed than those contacted towards the end (3 months later). The reason is that firms contacted early on in the survey were subsequently contacted many more times as interviewers cycled through their stocks of “scheduling in progress firms.” Finally, compared to the United States, France, Germany, Greece, India, Italy, Poland, Portugal, and Sweden had significantly higher conditional acceptance rate—while China had a significantly lower acceptance rate. Column (2) shows that the likelihood of a contacted firm eventually being interviewed is also uncorrelated with return on capital employed, a basic profits measure.

So, in summary, respondents were not significantly more productive or profitable than non-responders. Firms contacted earlier on in the survey process were more likely to end up being interviewed. Respondents did tend to be slightly larger and more likely to be a multinational subsidiary, but were not more likely to be stock-market listed or older. Chinese and Japanese firms were less likely to respond and European firms were more likely to respond. Note, however, that we address this potential source of bias including in all regressions controls for size, multinational status, and country dummies.

#### ***Firm-level variables***

Our firm accounting data on sales, employment, capital, profits, shareholder equity, long-term debt, market values (for quoted firms), and wages (where available) came from BVD Amadeus dataset for Europe (France, Germany, Greece, Italy, Poland, Portugal and the United Kingdom.), from BVD Icarus for the United States, from CMIE Firstsource dataset for India, and from the BVD Oriana dataset for China and Japan. Sales are deflated by a three digit industry producer price index.

BVD and CMIE also have extensive information on ownership structure, so we can use this to identify whether the firm was part of a multinational enterprise. We also asked specific questions on the multinational status of the firm (whether it owned plants abroad and the country where the parent company is headquartered) to be able to distinguish domestic multinationals from foreign multinationals.

We collected many variables through our survey including information on plant size, skills, organization, etc. as described in the main text. We asked the manager to estimate how many competitors he thought he faced (top-coded at 10 or more), which was used to construct the firm-level competition variable. We also collected management practices data in the survey. These were scored following the methodology of Bloom and Van Reenen (2007), with practices grouped into four areas: *operations* (three practices), *monitoring* (five practices), *targets* (five practices), and *incentives* (five practices). The shop-floor operations section focuses on the introduction of lean manufacturing techniques, the documentation of processes improvements, and the rationale behind introductions of improvements. The monitoring section focuses on the tracking of performance of individuals, reviewing performance, and consequence management. The targets section examines the type of targets, the realism of the targets, the transparency of targets, and the range and interconnection of targets. Finally, the incentives section includes promotion criteria, pay and bonuses, and fixing or firing bad performers, where best practice is deemed the approach

that gives strong rewards for those with both ability and effort. Our management measure uses the un-weighted average of the z-scores of all 18 dimensions.

### **A.3 Industries and Industry level data**

Our basic industry code is the U.S. SIC (1997) three digit level—which is our common industry definition in all countries. We allocate each firm to its main three digit sector (based on sales). For the 3,655 firms in the sample we have 134 unique three-digit industries. There are at least ten sampled firms in each industry for 96.9% of the sample.

### **A.4 Regional and National Data**

#### ***Trust: the World Values Survey***

The regional trust and religion variables have been calculated from the World Values Survey (WVS). The WVS is a cross-country project coordinated by the Institute for Social Research of the University of Michigan. Each wave carries out representative surveys of the basic values and beliefs of individuals in a large cross-section of countries. The questionnaire contains answers to specific questions about religion and social attitudes, including several question on generalized and specific trust (e.g. trust in the family, government etc.), as well as detailed information on the social and education background of the respondents (age, income, and education). The key question we use is the standard one: “*Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?*”

The WVS data can be downloaded from the WVS website ([www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)). For the purposes of our analysis, we pool together four successive waves of data collection (1981–1984, 1989–1993, 1994–1999 and 1999–2004), and we use only individual entries with information on the respondents’ region of residence (this information was non-missing for 41,233 observations out of 50,905 observations, or 81% of the sample). We compute the regional level of trust by taking the simple average over all observations available for the region across all WVS waves. While combining the different waves is consistent with the notion that trust is unlikely to vary much within short time horizons, this approach also allows us to maximize the regional representation by country. In fact, although the regional coverage is stable over time for the majority of countries included in our sample (Germany, Italy, Japan, Poland, U.K. and U.S.), we found that the regional coverage in the WVS varied quite substantially across different waves in China (4 areas surveyed in the 1994-1999 wave, vs. the more comprehensive coverage of 11 provinces in the 1989-1993 wave) and, to a much lesser extent, in France (7 regions in 1989-1993 and 8 regions in 1999-2004), India (14 states surveyed in both 1989-1993 and 1994-1999, 18 states in 1999-2004), Portugal (7 regions surveyed in 1989-1993, 5 regions in 1999-2005) and Sweden (8 regions surveyed in 1989-1993, 6 regions in 1999-2004). We weight the main regressions by the share of WVS respondents in each country to deal with random sampling variation (weighting by the simple number of respondents gave similar results, but gives much larger weight to larger countries like the US where there were more WVS respondents). For foreign multinationals we use a weight of unity as the entire country is used for the WVS trust value.

We use the WVS for all countries with the exception of Greece, for which the regional breakdown provided by the WVS is poor. Luckily, we can build regional aggregates of trust and religion using the European Social Survey (ESS, <http://www.europeansocialsurvey.org>), a biennial multi-country survey covering over 30 European nations, and including questions on trust and religion. The wording of the trust question is identical to the one used by the WVS, although the answers are coded on a scale from 1 to 10, instead of the discrete 0/1 choices adopted by the WVS. To ensure comparability between countries, we convert into 1's all the answers greater than 5. The first round of the ESS was fielded in 2002/2003, the second in 2004/2005 and the third in 2006/2007. We pool across all waves of the ESS.

The frequencies of individual responses used to build the trust measure by country and wave are shown in Table A8.

### ***European Commission Bilateral Trust Data***

This comes directly from Table 1; panel B of Guiso et al. (2009). They averaged over multiple waves of a Eurobarometer survey carried out for the European Commission from the 1970s onwards. The question is: “*I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust, or no trust at all.*” This was asked to all European Union Member States about each other and a number of other countries (including the United States, China, and Japan). We allocated the bilateral trust measure across the multinational subsidiaries included in our sample using information on the country where the parent company is headquartered and on the country where the subsidiary itself is located. So, for example, the measure of bilateral trust reported by Swedish people towards Italians would be allocated to the subsidiary of a Swedish multinational located in Italy.

### ***Regional Firm Size and Share of Manufacturing Employment***

Average regional firm size and the industry share of employment in each region by two digit industry were computed using employment data on the population of all public and private firms included in the BVD and CMIE accounting databases described above. The data refers mostly to 2006 (earlier years of the accounting data have been used whenever 2006 was not available, as long as the firm appeared to be still active). Since the accounting databases did not always provide information on the region of location of the firm, each firm was allocated to a region or state according to the headquarter postcode whenever this was available. If the postcode was not available, information on the city of location was used to map the firm into a specific region or state. With this procedure, we obtained regional information for virtually all firms included in the databases.

### ***GDP per Capita and Population***

The regional GDP per capita and population variables are drawn from the following sources: Europe: Eurostat, Regional Statistics,<sup>7</sup> United States: Bureau of Economic Analysis, regional Statistics,<sup>8</sup> Japan: Japan Statistic Bureau, Prefectural Statistics,<sup>9</sup> China: Province data from

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<sup>7</sup> [http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=0,1136162,0\\_45572076&\\_dad=portal&\\_schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136162,0_45572076&_dad=portal&_schema=PORTAL)

<sup>8</sup> <http://www.bea.gov/regional/gsp/>

Chinadataonline.org,<sup>10</sup> and India: State level data from the Central Statistical Organization (CSO).<sup>11</sup> The data refers to 2006 and is expressed in national currencies (country dummies are included in all regressions).

### ***Rule of Law***

The Rule of Law variable measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. The index is compiled by the World Bank (Kauffman et al., 2007), and ranges between -2.5 and 2.5. The data can be downloaded from: <http://info.worldbank.org/governance/wgi2007/resources.htm>.

### ***Bilateral-trust instrumental variables:***

Religious distance: Again, this is obtained from Guiso et al. (2009) for most of our European countries, and their methodology to extend to the rest of Europe, China, and the United States. Quoting from their paper:

*“The first proxy for culture is an indicator of religious similarity equal to the empirical probability that two randomly chosen individuals in two countries will share the same religion. We obtain this measure by taking the product of the fraction of individuals in country j and in country i who have religion k and then we sum across all religions k (k = Catholic, Protestant, Jewish, Muslim, Hindu, Buddhist, Orthodox, no-religion, other affiliation). To calculate this variable we use the percentage of people belonging to each religious denomination from the World Values Survey”* (quoted page # here).

We extend this to all other necessary country-pairs using the World Values Survey.

Somatic distance: This is obtained using the data from Guiso et al. (2009) for most of our Europeans countries, and their methodology to extend to the rest of Europe, China, and the United States. Quoting from their paper:

*“We derive an indicator of somatic distance, based on the average frequency of specific traits in the indigenous population reported in Biasutti (1954). For height, hair color (pigmentation), and cephalic index (the ratio of the length and width of the skull), Biasutti (1954) draws a map of the prevailing traits in each country in Europe. For each trait, European Union countries fall into three different categories. For hair color we have “Blond prevails,” “Mix of blond and dark,” and “Dark prevails.” We arbitrarily assign the score of 1 to the first, 2 to the second and 3 to the third. When one’s country somatic characteristics belong to more than one category, we take the country’s most prevalent category. We then compute the somatic distance between two countries as the sum of the absolute value of the difference in each of these traits”* (quoted page # here).

We extend this by collecting data for China and Poland from Biasutti (1954), assuming Luxembourg has the average values for France and Germany, and the United States has the values of its European immigrants, weighted by their ancestry shares reported in 1999 U.S. Census. We

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<sup>9</sup> <http://www.stat.go.jp>

<sup>10</sup> <http://chinadataonline.org/member/macroyr/macroyrtshow.asp?code=A0101>

<sup>11</sup> [http://mospi.nic.in/cso\\_test1.htm](http://mospi.nic.in/cso_test1.htm)

use only European immigrants because they appear overwhelmingly to be the owners and managers of the types of medium sized manufacturing firms in our survey.

## APPENDIX B: ADDITIONAL ANALYSIS

### *Industry structure and decentralization*

The factors that facilitate greater decentralization within firms should also influence industry composition across regions and countries. If some industries require greater decentralization for efficient production—for example if they are technologically fast moving—then we should see these located in higher trust areas. To investigate this we calculated an “implied industry decentralization,”  $ID_j$ , for each region as follows:

$$ID_j = \sum_k E_{jk} \times D_k$$

where  $j$  denotes region and  $k$  denotes two digit industry,  $E_{jk}$  is the share of employment in each two digit industry in each region calculated from the population of all public and private firms in that region (see Appendix A), and  $D_k$  is the average decentralization value for that industry in our sample in the United Kingdom. We choose the United Kingdom as the base country because (a) it is a high-trust and Rule of Law country where firms are likely to be closer to being optimally decentralized, and (b) we have a large sample of firms in the United Kingdom spread across every industry enabling us to generate industry level decentralization measures.<sup>12</sup> In the regressions we then drop the United Kingdom, so that our survey data used to generate industry implied decentralization does not overlap with the regions in the regression.

In Table B1 we regress  $ID_k$  the implied industry decentralization measure against trust in the region in column (1) and obtain a significant and positive impact. This implies that high trust regions tend to specialize in industries that are more decentralized. In column (2) we add Rule of Law, which varies only by country, and find a similar result: strong Rule of Law countries have more employment in decentralized industries. In column (3) we include a full set of country controls, and the trust variable, finding similar point estimates but larger standard errors.

In summary, an interpretation of our results is that trust fosters greater decentralization through enabling countries to specialize in industries where decentralization matters more, through fostering FDI and larger firms. Furthermore, even *conditional* on industry, size, and multinational status, high trust regions have more decentralized organizations. Before linking these relations with productivity in the next section, we will examine other determinants of decentralization.

### *Further Robustness tests*

We present some further robustness tests of the effect of trust on decentralization in Tables B2–B4 as discussed in sub-section V.C. Column (1) of Table B2 has the baseline results which correspond to column (4) of Table I. As noted in sub-section V.A, the difference in the trust

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<sup>12</sup> We have 570 observations in the United Kingdom. The other potential base-country to use is the United States with 643 observations. We choose the United Kingdom as: (i) it has a more even coverage across industries than the United States, which has some industries with small firm numbers; and (ii) it has fewer regions than the United States, so since we drop the base country this allows for a larger regression sample. Re-estimating using the United States numbers also gives significant trust and rule-of-law results, with for example, the standard errors (point estimates) 0.209 (.037) and 0.059 (0.011) respectively in columns (1) and (2).

coefficients between plants where the CEO was on-site and off-site (see last two columns of Table I) was not simply due to firm size. When we split the sample into large firms (column (2)) and small firms (column (3)) the trust coefficient is positive and significant and similar in magnitude both sub-samples. We also tested the robustness of the main results to the inclusion of other variables related to the social capital literature, such as the strength of norms of civic cooperation. To this end, we looked at the correlation between decentralization and the variable CIVIC (Knack and Keefer, 1997), which records the degree to which several “uncivil” behaviors (such as claiming government benefits even if not entitled to, avoiding a fare on public transport, cheating taxes, etc.) are perceived to be justified by the population. We did not find any evidence of a significant relationship between CIVIC and decentralization, and the inclusion of the variable had no virtually no effect on the trust coefficient (see column (4)). Similarly, we tested whether the decision to decentralize could be influenced by local preferences for autonomy, rather than trust per se. For this purpose, we examined the effect of the variable AUTONOMY, which is derived in the World Values Survey from questions assessing the perceived importance of religious faith and obedience vs. independence and perseverance in children education. The variable AUTONOMY had no significant correlation with decentralization, and it also hardly affected the coefficient on trust, which remained substantially unchanged and strongly significant (see column (5)).<sup>13</sup>

Next we analyzed whether the results could be driven by the measurement of trust. In column (6) of Table B2 we use the latest wave of the WVS and in column (7) we use just the largest wave of the WVS.<sup>14</sup> The coefficient remains positive and significant, but is a little smaller in magnitude than when we use the baseline. This is consistent with the fact that we are using less data to estimate trust in the region and this could generate some attenuation bias towards zero. In column (8) we drop Greece as the Greek data were obtained from a different survey from the WVS as the geographical coverage was so poor.<sup>15</sup> The trust coefficient is a little larger than in the baseline results.

In Table B3 we again present the baseline in column (1), but then analyze the extent to which the association between trust and decentralization could be affected by measurement problems in our decentralization variable. We first disaggregate the decentralization measure into its four component parts. Column (2) presents the index in terms of hiring autonomy and column (3) in terms of “investment autonomy” (i.e. the question on the amount a plant manager could spend on capital equipment without getting approval from the headquarters). In both regressions trust is positive and significant. Since there is censoring at zero for autonomy over investment we also present a Tobit estimation in column (4), which also shows a significant relationship. Autonomy over marketing is in column (5), and new product introduction in column (6). Only the marketing decentralization indicator is insignificant, but this is an item that plant managers rarely have any control over, so perhaps this is not too surprising. We also considered different binary representations of the dependent variable. In column (7) we defined a binary dummy for

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<sup>13</sup> CIVIC and AUTONOMY were not correlated with decentralization even when we omitted trust from the set of regressors.

<sup>14</sup> In these regressions we also included fixed effects for the years in which the WVS waves were conducted, which would differ across countries.

<sup>15</sup> For Greece we used instead the European Values Survey, which provided a richer regional coverage than the WVS. See Appendix A for details.

decentralization if a firm was in the top quartile of the autonomy distribution across all four indicators and zero otherwise. Probit estimation of this regression also revealed a positive and significant correlation of this indicator with trust. The final column drops the continuous investment question and uses z-scores solely on the categorical measures, again revealing a positive correlation. In short, Table B3 suggests that the results are not driven by the functional form of our decentralization measure.

Finally in Table B4, we investigated whether the bilateral trust results shown in Table II were robust to the introduction of other geographical, historical, and institutional variables specific to the country of origin and country of location match, and that could be correlated with bilateral trust and affect decentralization. We begin by reproducing the baseline OLS estimates from column (6) in Table II. Column (2) then includes several of the key controls from the trade literature on gravity: physical distance between the country of the headquarters and the subsidiary, whether the countries are contiguous, whether they are tied by a common language and whether they are tied by a colonial past or common legal origin. Column (3) reproduces our baseline IV estimates from column (7) of Table II and column (4) then adds in the same controls as column (2).

Table B4 shows that within multinationals, decentralization was not significantly affected by geographical distance, although contiguity between countries was associated with less decentralization perhaps because monitoring was easier. Sharing the same language or the same legal origin (La Porta et al., 1999) appears to be positively but insignificantly correlated with decentralization. We also find that decentralization was significantly higher when the multinational country of origin and the country of plant location shared a colonial tie in the past, a finding that might reflect the importance of long run business ties between countries. Reassuringly, we find that the coefficient on bilateral trust was hardly affected by these additional covariates, both in the OLS and IV estimates, when we included the additional controls individually or all simultaneously.<sup>16</sup>

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<sup>16</sup> When we examined the individual effect of the controls for geographical, institutional, or legal proximity, the strongest effect on the significance of bilateral trust was found when we introduced the variables capturing similarities in legal origins and language. This is unsurprising, given the importance of law and language in shaping cultural beliefs, including trust between countries.

**APPENDIX TABLE A1  
DETAILS OF THE DECENTRALIZATION SURVEY QUESTIONS**

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For Questions D1, D3, and D4 any score can be given, but the scoring guide is only provided for scores of 1, 3, and 5.

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**Question D1: “To hire a FULL-TIME PERMANENT SHOPFLOOR worker what agreement would your plant need from CHQ (Central Head Quarters)?”**

Probe until you can accurately score the question—for example if they say “It is my decision, but I need sign-off from corporate HQ.” ask “How often would sign-off be given?”

	Score 1	Score 3	Score 5
Scoring grid:	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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**Question D2: “What is the largest CAPITAL INVESTMENT your plant could make without prior authorization from CHQ?”**

Notes: (a) Ignore form-filling

(b) Please cross check any zero response by asking “What about buying a new computer—would that be possible?” and then probe....

(c) Challenge any very large numbers (e.g. >\$¼m in US) by asking “To confirm your plant could spend \$X on a new piece of equipment without prior clearance from CHQ?”

(d) Use the national currency and do not omit zeros (i.e. for a U.S. firm twenty thousand dollars would be 20000).

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**Question D3: “Where are decisions taken on new product introductions—at the plant, at the CHQ or both?”**

Probe until you can accurately score the question—for example if they say “It is complex, we both play a role,” ask “Could you talk me through the process for a recent product innovation?”

	Score 1	Score 3	Score 5
Scoring grid:	All new product introduction decisions are taken at the CHQ	New product introductions are jointly determined by the plant and CHQ	All new product introduction decisions taken at the plant level

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**Question D4: “How much of sales and marketing is carried out at the plant level (rather than at the CHQ)?”**

Probe until you can accurately score the question. Also take an average score for sales and marketing if they are taken at different levels.

	Score 1	Score 3	Score 5
Scoring grid:	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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**Question D5: “Is the CHQ on the site being interviewed?”**

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Notes: The electronic survey, training materials and survey video footage are available on [www.worldmanagementsurvey.com](http://www.worldmanagementsurvey.com)

**TABLE A2**  
**DECENTRALIZATION: INDIVIDUAL COMPONENTS BY COUNTRY**

	<b>Hiring (1 to 5)</b>	<b>Marketing (1 to 5)</b>	<b>Product Introduction (1 to 5)</b>	<b>Investment (Median, in \$)</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
China	3.20	1.43	1.75	604
France	2.80	1.98	2.21	9,375
Germany	2.93	2.17	2.57	12,500
Greece	2.44	1.39	1.80	1,250
India	2.77	1.79	2.16	220
Italy	2.84	1.93	2.38	6,250
Japan	1.96	1.70	1.91	1,720
Poland	2.86	2.04	2.30	310
Portugal	3.03	1.76	2.37	3,125
Sweden	3.57	2.47	2.83	13,800
United Kingdom	3.46	2.53	2.53	9,150
United States	3.86	2.17	2.58	7,500

Notes: Averages of the individual components of the decentralization variable by country (N=3,655)

**TABLE A3 - THE SURVEY SAMPLE DESCRIPTIVE STATISTICS**

	All	CN	FR	GE	GR	IN	IT	JP	PO	PT	SW	UK	US	Missing, #
<b>Observations, #</b>	4,038	325	323	348	187	470	204	122	239	177	286	649	694	n/a
<b>Firms, #</b>	3,902	319	313	308	187	467	207	121	239	177	259	609	682	n/a
<b>Firms, excluding 2004 resurvey, #</b>			242	225								560	535	n/a
<b>Firm employees (median)</b>	270	700	240	500	230	250	185	310	250	183	267	250	375	0
<b>Firm employees excl. 2004 resurvey</b>			200	325								250	300	n/a
<b>Plant employees (median)</b>	150	500	150	225	120	150	150	150	150	125	150	140	150	0
<b>Production sites (median), #</b>	2	1	3	2	1	1	2	2	1	1	2	2	3	94
<b>Age of firm (median, years)</b>	34	12	39	40	32	22	33	57	31	35	62	34	33	101
<b>Listed firm, %</b>	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
<b>Share of workforce with degrees %</b>	17.3	8	17.3	14.9	11.9	22	16.3	30.9	20	9.6	19.8	12.9	20.1	436
<b>Share of managers native of country of plant location* (%)</b>	93.70	89.19	95.47	92.81	94.84	99.68	93.59	93.72	79.24	96.05	94.91	92.69	93.70	2942
<b>Management (mean)</b>	2.99	2.61	2.99	3.18	2.64	2.54	3	3.15	2.88	2.73	3.15	3	3.31	0
<b>1-Lerner index</b>	0.957	0.95	0.965	0.949	0.935	0.923	0.965	0.966	0.967	0.972	0.98	0.968	0.94	111
<b>Foreign multinationals, %</b>	0.25	0.2	0.46	0.31	0.19	0.1	0.25	0.03	0.35	0.18	0.44	0.38	0.14	0
<b>Domestic multinationals, %</b>	0.22	0.01	0.34	0.36	0.13	0.02	0.22	0.32	0.04	0.2	0.39	0.25	0.33	0
<b>Interview duration (minutes)</b>	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
<b>Trust</b>	0.39	0.54	0.21	0.35	0.23	0.39	0.38	0.42	0.26	0.16	0.66	0.34	0.43	0
<b>Hierarchy</b>	0.34	0.01	0.56	0.38	0.91	0.11	0.79	0.03	0.94	0.82	0.01	0.18	0.27	395
<b>GDP per capita (in 2006 US\$)</b>	29,380	333	39,525	40,132	20,871	356	35,812	24,695	7,987	20,926	45,977	49,864	89,968	23
<b>Regional Pop (*000)</b>	41,468	161,445	8,077	10,072	2,325	66,085	12,744	27,369	6,663	2,892	1,284	8,467	34,603	23

Notes: All=All countries combined, CN=China, FR=France, GE=Germany, GR=Greece, IN=India, IT=Italy, JP=Japan, PO=Poland, PT=Portugal, SW=Sweden, UK=United Kingdom, US=United States. 3902 firms with 4038 observations, since 136 firms were interviewed twice. \* This variable is available only for multinational subsidiaries.

**TABLE A4**  
**THE 2006 SAMPLING FRAME**

	<b>CN</b>	<b>FR</b>	<b>GE</b>	<b>GR</b>	<b>IN</b>	<b>IT</b>	<b>JP</b>	<b>PO</b>	<b>PT</b>	<b>SW</b>	<b>UK</b>	<b>US</b>	<b>All</b>
<b>Sampling frame, number of firms (#)</b>	86,733	4,683	9,722	522	31,699	5,182	3,546	3,684	1,687	1,034	5,953	27,795	15,187
<b>Employees (median, sampling frame)</b>	290	201	198	180	175	183	240	200	127	206	219	200	202
<b>Employees (median, conditioning on firms with 150+ employees)</b>	290	291	285	269	229	262	240	260	239	315	311	300	274
<b>Publicly listed (%)</b>	1	4	1	17	11	1	1	3	1	6	4	4	4

Notes: CN=China, FR=France, GE=Germany, GR=Greece, IN=India, IT=Italy, JP=Japan, PO=Poland, PT=Portugal, SW=Sweden, UK=United Kingdom, US=United States. **Sampling frame** is the total number of eligible firms for the survey. The sampling frame includes all firms between 100 and 5,000 employees in the population accounting databases for all countries, excluding China and Japan (for which the employment bracket is 150 to 5,000 employees) and Portugal (for which the employment bracket is 75 to 5,000 employees). **Employees** are the median number of employees in the firm. **Publicly listed** is the percentage of firms which are directly publicly listed (note that some firms may be privately incorporate subsidiaries of publicly listed parents). Indian and Japanese employment numbers are predicted from balance sheet information for privately held firms (India) and unconsolidated accounts (Japan).

**TABLE A5**  
**THE COVERAGE OF THE FIRM ACCOUNTING DATABASES**

	CN	FR	GE	GR	IN	IT	JP	PO	PT	SW	UK	US
<i>Employees in firms in accounting databases with 50+ employees, 000's</i>	56,742	2,223	6,453	153	6,773	1,754	9,214	1,224	380	331	2,188	15,150
<i>Employees in firms with 50+ employees in the accounting databases as % of Census data</i>	84%	89%	117%	92%	103%	89%	137%	72%	96%	62%	100%	135%
<i>Sample median year</i>	2007	2006	2006	2006	2004	2006	2007	2006	2006	2006	2006	2007
<i>Census year</i>	2004	2006	2006	2006	2005	2006	2006	2006	2006	2006	2006	2006

Notes: CN=China, FR=France, GE=Germany, GR=Greece, IN=India, IT=Italy, JP=Japan, PO=Poland, PT=Portugal, SW=Sweden, UK=United Kingdom, US=United States. This compares total employment in our accounting database (from which the sampling frame was drawn) that should cover the population of manufacturing firms with Census Bureau data (from mandatory government surveys). All census units are firms except India which is plant level. **Employees in firms in the accounting databases with 50+ employees, 000's** reports the number of employees in firms in the accounting databases with 50 or more employees (in thousands). **Employees in firms with 50+ in the accounting databases as % of Census data** reports the share of employees in the accounting databases in firms with 50 or more employees as a proportion of the values reported in national Census data (except for the United States, where we report the share of employees in firms with 20 or more employees as the 50 or more cut-off is not available). Census data is drawn from Eurostat Structural Business Statistics for the European countries, Bureau of the Census for the United States, Statistics Bureau for Japan, Annual Survey of Industries for India, and Chinese Industrial Survey. For China and India, Census calculations done by Albert Bollard on data provided by Pete Klenow. Consolidated accounts are excluded from accounting data to avoid duplications. Eurostat defines an enterprise as the “smallest combination of legal units that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, and an enterprise carries out one or more activities at one or more locations.” The Bureau of the Census defines an enterprise as “a business organization consisting of one or more domestic establishments under common ownership or control.” The Statistics Bureau of Japan defines an enterprise as “an entity composed of the head office and branch establishments, if any, whose legal organization is a stock company, limited company, limited or unlimited partnership, limited liability company, or mutual insurance company.” In the Indian Annual Survey of Industries a factory “refers to any whereon ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or whereon twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on.” In the Chinese Industrial Survey “industrial establishments refer to economic units which are located in one single place and engage entirely or primarily in one kind of industrial activity, including financially independent industrial enterprises and units engaged in industrial activities under the non industrial enterprises (or financially dependent). Industrial establishments generally meet the following requirements: They have each one location and are engaged in one kind of industrial activity each; they operate and manage their industrial production activities separately; they have accounts of income and expenditures separately.”

**TABLE A6**  
**THE SURVEY RESPONSE RATE**

	All	CN	FR	GE	GR	IN	IT	JP	PO	PT	SW	UK	US
<b>Interviews completed (%)</b>	44.9	43.9	59.3	58.6	53.4	61.4	68.2	21.5	37.5	60.5	68.2	32.9	37.2
<b>Interviews refused (%)</b>	16.8	13.7	13.7	27.2	10.7	13.7	20.0	20.1	16.5	15.8	16.9	19.6	13.7
<b>Scheduling in progress (%)</b>	38.3	40.1	27.0	14.2	35.9	25.0	11.8	58.4	46.0	23.7	14.9	47.4	49.1
<b>Survey sample, number firms (#)</b>	8,690	727	528	526	350	761	304	563	637	293	380	1,851	1,833
<b>Interviews completed (#)</b>	3,902	319	313	308	187	467	207	121	239	177	259	609	682

Notes: All=All countries combined, CN=China, FR=France, GE=Germany, GR=Greece, IN=India, IT=Italy, JP=Japan, PO=Poland, PT=Portugal, SW=Sweden, UK=United Kingdom, US=United States. **Interviews completed** reports the percentage of companies contacted for which a management interview was completed. **Interviews refused** reports the percentage of companies contacted in which the manager contacted refused to take part in the interview. **Scheduling in progress** reports the percentage of companies contacted for which the scheduling was still in progress at the end of the survey period (so the firm had been contacted, with no interview run nor any manager refusing to be interviewed). **Survey sample** is the total number of firms that were randomly selected from the complete sampling frame.

**TABLE A7**  
**SELECTION ANALYSIS**

Sample	(1) All firms contacted	(2) All firms contacted
Log (Sales/employee)	0.029 (0.031)	
Return on Capital Employed (ROCE) §		0.025 (0.043)
Trust (region) <sup>§§</sup>	-0.226 (0.457)	0.310 (0.580)
Hierarchical (region) <sup>§§</sup>	-0.356 (0.266)	-0.301 (0.423)
Log (employment)	0.099*** (0.025)	0.073** (0.031)
Listed	-0.042 (0.075)	0.060 (0.106)
Log (Age of firm), in years	0.021 (0.028)	0.029 (0.034)
Multinational subsidiary	0.118** (0.051)	0.125** (0.056)
Days from the start of the survey until firm contacted <sup>§</sup>	-0.087*** (0.023)	-0.101** (0.041)
Country is China	-1.465*** (0.444)	n/a
Country is France	0.886*** (0.219)	0.837*** (0.247)
Country is Germany	0.902*** (0.171)	1.109*** (0.216)
Country is Greece	0.512* (0.275)	0.468 (0.382)
Country is India	0.583*** (0.218)	n/a
Country is Italy	0.955*** (0.276)	0.859** (0.359)
Country is Japan	-0.123 (0.207)	n/a
Country is Poland	0.726** (0.286)	0.470 (0.402)
Country is Portugal	0.905** (0.369)	1.016** (0.445)
Country is Sweden	0.929*** (0.236)	0.597** (0.256)
Country is United Kingdom	0.114 (0.105)	Baseline
Country is United States	Baseline	n/a
<b>Number of firms</b>	<b>6,679</b>	<b>4,308</b>

Notes: The dependent variable is a dummy for a completed interview. All columns estimated by probit with robust standard errors in parentheses (marginal effects reported). All columns include a full set of 44 interviewer dummies, and 142 three digit industry dummies. The dependent variable takes value one if the firm was interviewed, and zero if the interview was refused, or if scheduling was still in progress as the end of the project. In column (2) firms are dropped if Return on Capital Employed data is available. § Coefficient and standard-errors multiplied by 100. §§ Refers to region where the company is headquartered. Regressions weighted by the share of World Values Survey respondents in the region in the country.

**TABLE A8**  
**WORLD VALUES SURVEY SAMPLE**

<b>WVS Wave</b>	<b>1981–1984</b>	<b>1989–1993</b>	<b>1994–1999</b>	<b>1999–2004</b>	<b>Total</b>
<b>China</b>	0	983	1,064	0	2,047
<b>France</b>	0	939	0	1,560	2,499
<b>Germany</b>	1,084	2,893	1,956	1,937	7,870
<b>Greece</b>	0	0	0	4,972	4,972
<b>India</b>	0	2,365	1,769	1,898	6,032
<b>Italy</b>	0	1,931	0	1,946	3,877
<b>Japan</b>	1,099	911	990	1,254	4,254
<b>Poland</b>	0	1,709	0	1,059	2,768
<b>Portugal</b>	0	1,149	0	975	2,124
<b>Sweden</b>	0	944	0	974	1,918
<b>United Kingdom</b>	0	1,440	1,073	921	3,434
<b>United States</b>	0	1,764	1,458	1,188	4,410
<b>Total</b>	2,183	17,028	8,310	13,712	41,233

Notes: Number of respondents used to build regional trust and religion aggregates by country and World Values Survey wave. Data relative to Greece are built from the ESS, using all available waves between 2000 and 2005.

**TABLE B1**  
**IMPLIED INDUSTRY DECENTRALIZATION**

<b>Dependent variable: implied industry decentralization</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
<b>Trust (region)</b>	0.157**	0.100**	0.100***	0.095
Trust measured in plant's region of location	(0.043)	(0.029)	(0.031)	(0.073)
<b>Rule of Law (country)</b>			0.027**	
(-2.5=low, 2.5=high)			(0.014)	
<b>Observations</b>	98	98	98	98
<b>Regional controls</b>	no	yes	yes	yes
<b>Country dummies</b>	no	no	no	yes

Notes: \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. The dependent variable is “implied industry decentralization,” measured as the industry share of employment in each region by SIC2 multiplied by that decentralization value for that SIC2 industry in the United Kingdom. The regression sample is all countries except the United Kingdom. Hence, a high value indicates a large share of employment in the region in industries which are decentralized in the United Kingdom. Estimation by OLS with heteroskedasticity robust standard errors. TRUST measures the percentage of individuals in the region’s country of location who agreed with the statement “most people can be trusted.” RULE OF LAW measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence in the firm’s country of location. The index is compiled by the World Bank (Kauffman et al., 2007), and ranges between -2.5 and 2.5. REGIONAL CONTROLS are GDP per capita, population in the region, Research and Development expenditure in the region, and the % of employees with a degree.

**TABLE B2: ROBUSTNESS CHECKS ON THE DECENTRALIZATION REGRESSION**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Experiment</b>	<b>Baseline</b>	<b>Firm Employment ≥250</b>	<b>Firm Employment &lt;250</b>	<b>Adding civic</b>	<b>Adding taste for autonomy</b>	<b>Trust using just latest wave of WVS</b>	<b>Trust using just largest wave of WVS</b>	<b>Dropping Greece</b>
<b>Trust</b>	0.596***	0.824***	0.883**	0.972***	0.547**	0.356*	0.531**	0.602***
Trust measured in HQ region/country of location	(0.219)	(0.280)	(0.435)	(0.356)	(0.223)	(0.185)	(0.228)	(0.231)
<b>CIVIC</b>				0.034 (0.023)				
<b>AUTONOMY</b>					0.070 (0.221)			
<b>Observations</b>	3,655	2,316	1,339	3,439	3,507	3,655	3,655	3,472
<b>Country of CHQ location controls (2)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Country of plant location dummies (11)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Region of plant location controls (2)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Industry dummies (148)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Other controls (57)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Clustering</b>	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location
<b>Number of clusters</b>	146	143	123	130	138	146	146	138

Notes: \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. The dependent variable is the decentralization z-score index, measured by plant manager's autonomy over hiring, investment, products, and marketing. Estimation by OLS with robust standard errors in parentheses. Standard errors clustered by the firm's headquarter region of location (country of origin if the plant belongs to a foreign multinational). TRUST measures the percentage of individuals who agreed with the statement "most people can be trusted" in the firm's headquarter region of location (country of origin if the plant belongs to a foreign multinational). CIVIC is derived from the WVS and measures the average leniency towards "uncivil" behavior in the region of plant location (country of origin if the plant belongs to a foreign multinational, see text for details). AUTONOMY is derived from the WVS and measures the taste for autonomy in the region of plant location (country of origin if the plant belongs to a foreign multinational, see text for details). In Column 6 TRUST is measured using only the latest wave of the WVS available for the region of plant location (country of origin if the plant belongs to a foreign multinational). In Column 7 TRUST is measured using only the wave of the WVS with the largest number of observations available for the region of plant location (country of origin if the plant belongs to a foreign multinational). "Country of CHQ location controls" are the log of GDP per capita and population in the country of CHQ location. "Region of plant location" controls are the log of GDP per capita and population in the region where the plant is located. "Industry dummies" are three digit industry dummies. "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"), the fraction of managers native of the country of plant location, 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, and the duration of the interview. Regressions weighted by the share of World Values Survey respondents in the region in the country, with the weight set to one if the plant belongs to a foreign multinational.

**TABLE B3: ROBUSTNESS CHECKS ON THE DECENTRALIZATION REGRESSION:  
ALTERNATIVE FUNCTIONAL FORMS OF THE DECENTRALIZATION MEASURE**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Experiment	Baseline	Hiring autonomy (zscored)	Investment Autonomy (zscored)	Investment Autonomy (levels)	Marketing Autonomy (zscored)	New product introduction Autonomy (zscored)	Defining Autonomy using top 25th percentile across all 4 question Probit	Autonomy without budget over investments OLS
	OLS	OLS	OLS	Tobit <sup>#</sup>	OLS	OLS		
<b>Trust</b>	0.596***	0.561***	0.676**	1.394***	0.040	0.589*	0.121***	0.334**
Trust measured in HQ region/country of location	(0.219)	(0.212)	(0.311)	(0.463)	(0.258)	(0.304)	(0.043)	(0.157)
<b>Observations</b>	3,655	3,260	3,260	3,260	3,260	3,260	2,882	3,655
<b>Country of CHQ location controls (2)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Country of plant location dummies (11)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Region of plant location controls (2)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Industry dummies (148)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Other controls (57)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Clustering</b>	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location
<b>Number of clusters</b>	146	146	146	146	146	146	139	146

Notes: \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. The dependent variable in column 1 is the decentralization z-score index, measured by plant manager's autonomy over hiring, investment, marketing, and product introduction. The dependent variables in columns 2–6 are the individual questions for autonomy over hiring, investment, marketing, and product introduction. The dependent variable in column 7 is a dummy taking value one if the firm appears to be in the 25<sup>th</sup> top percentile for all individual autonomy questions. The dependent variable in column 8 is the decentralization z-score index, measured by plant manager's autonomy over hiring, marketing, and product introduction. Estimation by OLS with robust standard errors in parentheses in all columns, except for column 4 which is estimated by Tobit, and column 7 estimated by Probit (marginal effects reported in both columns). Standard errors clustered by the firm's headquarter region of location (country of origin if the plant belongs to a foreign multinational). TRUST measures the percentage of individuals who agreed with the statement "most people can be trusted" in the firm's headquarter region of location (country of origin if the plant belongs to a foreign multinational). "Country of CHQ location controls" are the log of GDP per capita and population in the country of CHQ location. "Region of plant location" controls are the log of GDP per capita and population in the region where the plant is located. "Industry dummies" are 3 digits SIC dummies. "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"), the fraction of managers native of the country of plant location, 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, and the duration of the interview.. Regressions weighted by the share of World Values Survey respondents in the region in the country, with the weight set to one if the plant belongs to a foreign multinational. <sup>#</sup>Coefficient and standard error in column 4 have been rescaled dividing by 10,000.

**TABLE B4: ROBUSTNESS CHECKS ON THE DECENTRALIZATION REGRESSION:  
INCLUDING ADDITIONAL “GRAVITY” VARIABLES IN THE REGRESSIONS USING BILATERAL TRUST**

<b>Dependent variable: Decentralization</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
<b>Estimation method</b>	<b>OLS</b>	<b>OLS</b>	<b>IV</b>	<b>IV</b>
<b>Bilateral trust</b>	1.669**	1.637*	3.071**	3.999**
Trust of people from country of origin to country of location	(0.789)	(0.912)	(1.253)	(1.641)
<b>Distance</b>		-0.032		-0.064
Log(geographical distance between HQ and plant location country)		(0.107)		(0.093)
<b>Geographical contiguity</b>		-0.328*		-0.439**
Dummy=1 if country of origin and location are contiguous		(0.196)		(0.192)
<b>Colony</b>		0.446*		0.585**
Dummy=1 if country of origin and location share a colonial past		(0.245)		(0.249)
<b>Common Language</b>		0.042		-0.039
At least 9% speaks same language in country of origin & location		(0.269)		(0.220)
<b>Legal Origin</b>		0.085		-0.060
Dummy=1 if at country of origin and location share legal origin		(0.211)		(0.209)
<b>Observations</b>	422	422	422	422
<b>Country of CHQ location controls (2)</b>	Yes	Yes	Yes	Yes
<b>Country of plant location dummies (11)</b>	Yes	Yes	Yes	Yes
<b>Region of plant location controls (2)</b>	Yes	Yes	Yes	Yes
<b>Industry dummies (23)</b>	Yes	Yes	Yes	Yes
<b>Other controls (56)</b>	Yes	Yes	Yes	Yes
<b>Region of plant location dummies (111)</b>	Yes	Yes	Yes	Yes
<b>Country of CHQ country location dummies (32)</b>	Yes	Yes	Yes	Yes
<b>Clustering</b>	CHQ by plant location	CHQ by plant location	CHQ by plant location	CHQ by plant location
<b>Number of clusters</b>	97	97	97	97
<b>Instruments</b>			Religious similarity	Religious similarity
<b>First stage F-test</b>			28.56	15.21

Notes: \* significant at 10%; \*\* 5%; \*\*\* 1%. Dependent variable is the decentralization z-score index. All columns include only foreign multinationals for which the bilateral trust data is available. Instrument is “religious diversity” between each country pair. Standard errors (in parentheses) are clustered by country within each country origin by country of location cell. BILATERAL TRUST measures the percentage of people from country of origin who report to “trust a lot” people living in the country of firm’s location. “Country of CHQ location controls” are the log of GDP per capita and population in the country of CHQ location. “Region of plant location” controls are the log of GDP per capita and population in the region where the plant is located. “Industry dummies” are 2 digits SIC dummies. “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”), the fraction of managers native of the country of plant location, 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 and the duration of the interview).