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LETTER GRADING GOVERNMENT EFFICIENCY

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ABSTRACT

We mailed letters to non-existent business addresses in 159 countries (10 per country), and measured whether they come back to the return address in the US and how long it takes. About 60% of the letters were returned, taking over 6 months, on average. The results provide new objective indicators of government efficiency across countries, based on a simple and universal service, and allow us to shed light on its determinants. The evidence suggests that both technology and management quality influence the quality of government.

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I. Introduction

Most developing countries have poorly performing governments, as evidenced by surveys of citizens, businessmen, foreign investors, or local experts (La Porta et al. 1999, Treisman 2000, Svensson 2005, Kaufmann et al. 2008). Yet the quality of government improves fairly universally as countries grow richer. The question is why? Unfortunately, survey responses make it difficult to disentangle the determinants of the quality of government, since they capture the respondents' combined assessment of government policies, corruption, and productivity. In addition, survey responses often reflect a mixture of personal experiences and policy views (Glaeser et al. 2004).

At the broadest level, there are two reasons for bad government in developing countries: political economy and productivity. The political economy arguments hold that governments in poor countries are less accountable because citizens have few opportunities to exercise their voice, either through voting (Hirschman 1970) or through complaints (Botero et al. 2012). As countries become richer and more educated, government responsiveness to citizen needs and hence its quality improves, in part because politics become more democratic and transparent (Verba and Nie 1972, Barro 1999, Glaeser, Ponzetto, and Shleifer 2007, Papaioannou and Siourounis 2008, Djankov et al. 2010).

An alternative view of bad government in developing countries holds that low productivity of government services is explained by the same factors as that in the private sector. Part of the problem might be inferior inputs, including human and physical capital as well as technology. Part of the problem might also be poor management, including the lack of supervision and monitoring (Bloom et al. 2007, 2010a,b, 2012a,b; Lewis 2004). Low government productivity can show up in a number of outcomes, including public worker absenteeism (Chaudhury et al. 2006), corruption and bureaucratic delays (Treisman 2000, Svensson 2005), or just low quality of public goods (e.g., La Porta et al. 1999).

In this paper, we propose a new objective indicator of government efficiency, and use it to shed light on these two broad theories of the quality of government. Our indicator describes the performance of the mail system in accomplishing one simple task: returning an incorrectly addressed international letter. Focusing on mail follows the proposal of Edward Prescott in the early 1980s that postal economics might be more central to understanding the economy than monetary economics[2].

Between December 2010 and February 2011 we sent letters to non-existent business addresses in 159 countries: 2 letters in each country's largest 5 cities. Each envelope had a typed up address using the Latin alphabet, as required by international postal conventions, and included a return address at the Tuck School of Business in Hanover, New Hampshire, as well as a clear request to "please return to sender if undeliverable." The addresses included an existent city and zip code (where available), but a non-existent business name and street address. The letter inside was a standard one page business letter, written in English and requesting a response from the recipient. We included nothing else in the letter to avoid a temptation to open and steal the content (see Castillo et al. 2011).

All countries subscribe to an international postal convention requiring them to return the letters posted to an incorrect address. We measured the fraction of letters that were actually returned, and how long it took the letters to come back from the date they were posted from Cambridge, MA. We stopped keeping track of returns one year after the final postings that took place on Feb 4, 2011. We do not believe this procedure aroused any concerns or delays at the US post offices. We use the data to construct the share of letters we got back, and how long it took to get them back, in each of 159 countries, and then to analyze a variety of correlates of these measures of postal efficiency.

Our approach to measuring government efficiency has two key advantages. First, we are looking at a fairly simple and universal across countries government service. All countries have post

[2] Personal communications from Edward Prescott, Patrick Kehoe, Timothy Kehoe, and Ellen McGrattan.

office equipment reading zip codes and sometimes addresses, so the letter has to end up in the hands of a postal employee whose job is to initiate the process of returning it but who can alternatively throw the letter out. We are thus looking at government efficiency from the narrow perspective of whether this task is actually performed. Doing so enables us to focus on government productivity and to relate it to that in the private sector.

Second, by design we are looking at a government service where corruption plays no role. It is actually impossible to ask the American sender of the letter for a bribe, since he is not available to pay it. It is possible that postal efficiency is determined by patronage if postal employees in some countries hold political appointments and can throw out letters without fear of dismissal. At the same time, no larger political purpose is served by either returning the letter or throwing it out. It is a simple matter of postal employees doing their job or not doing it, where performance requires a rather small effort and very little human capital. In essence, we are examining a measure of the quality of government largely free from political economy influences. We briefly address the possibility that patronage influences postal efficiency in our empirical specifications.

Once we construct our measures, we can consider some of the determinants of government efficiency, especially as compared to that in the private sector. In particular, we use measures of capital, labor, and technology in the postal system to examine their influence on efficiency. In addition, recent research shows that management practices are a key determinant of productivity (Bloom et al 2007, 2010a,b, 2012a,b). We use survey measures of management quality to examine its impact on mail efficiency for a large sample of countries, but also more precise Bloom/Van Reenen measures of management practices for a smaller sample. We also examine the robustness of our results by adding measures of monopoly in mail delivery and political favoritism. Finally, we briefly consider geographic variation in mail efficiency within countries.

Despite the simplicity of the task, we find enormous variation in government efficiency as measured by the probability and the time of returning the letter. We got 100% of the letters back from 21 out of 159 countries, including from the usual suspects of efficient government such as Canada, Norway, Germany and Japan, but also from Uruguay, Barbados, and Algeria. At the same time, we got 0% of the letters back from 16 countries, most of which are in Africa but also including Tajikistan, Cambodia, and Russia. Overall, we had received 59% of the letters back within a year after they were sent out. Another measure we look at is the percentage of the letters we got back in 90 days. Only 4 countries sent all the letters back in 90 days (United States, El Salvador, Czech Republic, and Luxembourg), while 42 did not manage to deliver any back within 3 months. Overall, only 35% of the letters came back within 3 months. As we understand the postal convention, a country has no more than a month during which it must return the letter, so very few countries complied with the postal convention they signed. In statistical terms, the variation in our measures of postal efficiency is comparable to the variation of per capita incomes across countries.

We then try to understand this impressive level of government inefficiency from a number of perspectives. First, we show that our measures of government efficiency are highly correlated with per capita income and human capital of a country, similarly to the more standard survey measures. They are also correlated with many other measures of the quality of government. Interestingly, when we conduct the principal components analysis that includes our postal variables and several other measures of quality, only the first principal component is significant. It appears that the quality of government is driven by a one factor model.

Second, we estimate a "production function" for mail across countries, where output is returning the letter. Postal efficiency is highly correlated with proxies for resources of the postal system, such as the number of permanent offices per capita or postal stuff per capita (these two are

very highly correlated with each other). In addition, we look at two key "technological" determinants of productivity. Specifically, our measures of postal efficiency are higher in countries that use the Latin alphabet, suggesting that language was a problem despite the fact that the postal convention requires that the addresses be written in Latin letters. In addition, different countries use different postcode data bases for the machines reading the letters, and the Universal Postal Union keeps track of this information. We thus have a proxy for how far beyond the initial machine reading in the country of destination the letter might need to go before the incorrect address is detected. Perhaps not surprisingly, this variable is a strong predictor of postal efficiency. The postal resources variables, the language dummy, and postcode data bases together explain between 41% and 46% of the variation across countries in the fraction of letters we got back, the fraction we got back in 90 days, and the average number of days in took to get the letters back.

Third, we ask whether the determinants of productivity in the private and public sectors are similar by looking at the quality of management. We first look at several cross-country survey-based measures of management quality, as well as census-based measures of prevalence and education of managers. We find that these variables are statistically significant predictors of mail productivity, although the incremental R-squared is small. We then consider the Bloom/Van Reenen management practices variables using a small sample of 16 countries for which we have overlapping data (their sample includes 18 countries). These variables are generally highly significant and add considerable explanatory power. Management practices thus appear to be important for public and not only private sector efficiency. We also show that measures of patronage and market power of the postal system do not materially affect these findings. In conclusion, we discuss some implications of our results.

II. Procedure and Variables.

We sent 2 letters to each of the 5 largest cities in 159 countries. These were airmail, first class letters, with correct international postage of 98 cents. The letters were dropped in street mail boxes in Cambridge, MA between December 8, 2010 and February 4, 2011. Both the letter inside and the information on the envelope used the Latin alphabet and the Arabic numerals, as required by the postal convention. The letter inside, reproduced in Figure 1, was always the same, and written in English. It came from Rafael La Porta at Tuck School of Business at Dartmouth College in Hanover, New Hampshire. The letter stated that it was confidential, confirmed the receipt of previous correspondence, and requested urgent response regarding the recipient's willingness to continue the collaboration project. The idea of such a letter was to add a bit of urgency to the task of returning in the event that a postal employee opened the envelope and read it. At the same time, we made sure there was only one piece of paper inside the envelope to minimize the temptation for postal employees to look for valuables inside (Castillo et al. 2011).

The name of the addressee was chosen as a common name in the country. In addition to the name of the addressee, each address on the front of the envelope had a generic name of a business, such as Computer Management Professionals, Smart Computer Services, Inventory Technology Partners, Professional Management Forum, Inventory Area Management Computer, etc. Following the name of the business, the envelope had a printed address, which had a correct existing zip code for the city in question but a non-existent address. Names of Nobel Laureates in Economics and famous Western composers were used as street names. It is possible but extremely unlikely that, by coincidence, the street address existed in that city at that zip code. For all practical purposes, the street address was non-existent. The addresses were typed following the postal convention. Figure 2 presents the front of the envelope for several of the returned letters.

In addition, each letter contained the return address of Rafael La Porta at the Tuck School of Business at Dartmouth. Under the address, it said in larger bold letters **PLEASE RETURN TO SENDER IF UNDELIVERABLE**. This too was done to encourage the return of the letter.

All of the countries in the sample subscribe to the Universal Postal Union. Article 147 from the Universal Postal Union Letter Post Regulations Final Protocol of 2009 regulates the return of incorrectly addressed mail, and in particular mandates the return of such mail under normal circumstances (our letters certainly met those circumstances: they did not contain biodegradable or radioactive material, etc.). Moreover, the Regulations require that the letters must be returned within a month of entering the country. The letters met all the requirements, such as how the addresses were typed, postage, return addresses, letter weight, to trigger the return under the Universal Postal Union.

Following the mailing, we kept track of the dates of return of the letters, checking every weekday when mail was delivered. Based on this information, we constructed three variables for each country. The first is the fraction of the 10 letters that were returned. The second is the fraction of 10 letters that were returned within 3 months, as would be (generously) required by postal conventions. The third is the average time to get the letter back using the (equalizing) assumption that the letters than never came back actually did come back on February 4, 2012, the last day we kept track of the data. Appendix A provides a detailed description of all the variables we use in the paper; Appendix B illustrates the construction of the mail variables for two extreme countries: Czech Republic and Russia.

Table 1 presents some statistics on these three variables, and lists the countries with the highest and the lowest share of returned letters. On average, we got 59% of the letters back (i.e., 6 out of 10 per country), although only 35% of the sent letters came back within 3 months. For high income countries, we got almost 85% of the letters back, and 60% within 3 months, while for low income countries these numbers fall to 32% and 9%, respectively. Table 1 also shows that more of the letters

came back, and they came back quicker, from higher education than from lower education countries. Despite our focus on a very simple task, government efficiency measures vary enormously across countries, and in ways roughly related to per capita income and human capital, consistent with the evidence on subjective indicators of the quality of government (La Porta et al 1999, Treisman 2000).

Table 2 correlates our measures of government efficiency with a large number of standard measures, taken from standard data sources (for a sampling of these measures, see La Porta et al. 1999, although here we use the most recent numbers). The correlations are generally quite high. We also conduct a principal components analysis of the share of letters we got back, property rights index, the overall Doing Business Rank, government effectiveness score, infrastructure quality index, ICRG corruption index, and democracy index. The results indicate that only the first principal component is significant. There is only one common factor in the quality of government. Insofar as return of letters is not a corruption driven measure of government quality, this evidence suggests that these other aspects of government quality might also be driven by efficiency considerations[34].

As a final point, we note that the coefficient of variation in our measures of postal productivity is 1.80 for getting the letter back, and 1.11 for getting it back in 30 days (see Appendix A). For comparison, the coefficient of variation for GDP per capita is .90. Despite the simplicity of our measure, it is as variable across countries as the more traditional indicators of development.

[3] Following Putnam (1993) and La Porta et al. (1997), we also checked whether trust is a predictor of mail efficiency. In our data, it is not statistically significant.

[4] Nick Bloom has suggested that, since we send 2 letters to each city, we can use data about return of one as an instrument for return of the other, to correct for the measurement error problem. We have done that, and found that R-squared of regressions of our mail efficiency variables on the quality of government variables in Table 2 in general increases (see Appendix C).

III. Deteriminants of Mail Efficiency

Table 3 presents the determinants of mail efficiency, including resources of the postal system, whether a country uses the Latin alphabet, as well as the extent of postcode databases. We measure resources as the (ln) permanent offices per capita and (ln) postal staff per capita. The correlation between these two variables is .82, so we use them separately. We find that postal resources are strong predictors of efficiency, as one would expect from a production function specification. This result was confirmed using several other measures of postal resources, including geographic area per office, number of sorting offices per capita, and number of full time staff per capita (results not reported).

More interestingly, Table 3 shows that countries that use the Latin alphabet return 12 percentage points more letters (an extra .7 of a letter), and also return 11 percentage points more letters within three months. Although using the Latin alphabet conforms to the postal convention that all countries sign, language is an obstacle to the return of the letter from countries that do not use it.

We also find strong evidence that postcode databases predict our outcomes. The variable equals 1 if postcode database includes street names, in which case the non-existence of the street name, and therefore the incorrectness of the address, would pop out immediately as soon as the envelope is machine read. The variable equals 0 if the postcode database only includes the names of localities, in which case the envelope-reading machine would not detect the wrong address at all, and a person is needed to do it. There are two intermediate values as well (see Appendix D for precise description). We find that going from 0 to 1 on this variable raises by between 18 and 24 percentage points the number of letters that come back or that come back within 3 months. This variable seems to successfully capture technology differences among countries in the processing of letters.

Altogether, these resource and technology variables explain 41-46% of the variation across countries in the share of letters that come back, and in the share of letters that come back within three

months. We do not have data on human capital of postal employees, although the standard years of schooling variable is not significant when added to the specifications in Table 3. Although over half the variance remains unexplained, this evidence shows that, even for this extremely simple service, productivity differences are substantially accounted for by inputs, including technology[5].

Some additional variation in postal efficiency may be explained by management practices, as argued by Lewis (2004) and Bloom et al (2007, 2010a,b, 2012a,b) for the private sector. After all, the issue in returning the mail seems to be how to get a low level postal employee to actually do his job or putting the incorrectly addressed letter into a correct (return) container, rather than throw it out or get rid of it in some other way. This seems to be fundamentally a management task of monitoring employees (it is hard to see how incentives would work).

We address this possibility in two ways. In Table 4, we add to Table 3 regressions 6 "management" variables. The first four are cross-country survey (i.e., subjective) measures of the quality of management we found (see Appendix A for precise definitions): a public management performance score, the will by managers to delegate authority, the quality of management schools, and an indicator of innovative capacity. The second two variables come from national censuses, and measure the prevalence of managers/directors in the labor force and their average education, respectively. Several of these indicators predict postal efficiency across specifications, although their incremental explanatory power is not huge. Figure 3 presents these results on management graphically.

In Table 5, we add to the Table 3 specification the Bloom/Van Reenen management practices index for the overlapping small subsample of 16 countries, as well as the three sub-indexes of monitoring management, targets management, and incentives management. Each of these variables is

[5] We have rerun the regressions in Table 3 using logistic and Tobin specifications. The results do not change materially.

a statistically significant predictor of our mail efficiency measures. In this small subsample, the variables from Table 3 are typically no longer significant.

We have checked the robustness of our findings in a number of ways, and Table 6 presents some of the results. First, including the (logarithm of) per capita income into the Table 3 specification keeps all our variables significant. The income variable is significant as well, but its incremental explanatory power is low. Second, we used a variable "favoritism of government officials" from the 2011 Global Competitiveness Report to see if such favoritism influences postal productivity. Lower favoritism raises the likelihood we get the letter back, and reduces the time it takes to get it back, but other coefficients do not change materially. Patronage as measured by favoritism does not appear to cause the results. Third, we included a dummy equal to 1 if at least some postal services are fully reserved for the state. This variable is not significant. Finally, we explored the geographic variation of return likelihood and time. We used the data from La Porta et al. (2012) to see if per capita income of *the region* to which the letter is addressed correlates with the likelihood of return, holding country fixed effect constant. It does not. However, it does appear that letters are more likely to come back, and come back faster, from capital cities. This finding might reflect the fact that, in most instances, letters initially arrive into the capital city, and are scanned first at the processing centers there.

In summary, it appears that management explains some of the variation in postal productivity across countries, just as it explains variation in private sector productivity. This finding leaves open the deeper question of how countries solve these basic management problems, such as getting a postal employee to get his job done, as they develop. One possibility suggested by the results in Table 4 is that the more developed countries could hire better educated and trained managers, who can provide the necessary supervision of the employees (see Gennaioli et al. 2012). More broadly, an important reason for low quality government in developing countries is low overall productivity.

IV. Conclusion.

This paper has made two contributions. First, we constructed new objective measures for the quality of government in 159 countries, those based on return of incorrectly addressed international mail. These measures correlate with other indicators of the quality of government, yet have the advantage that we know more precisely what goes into them.

Second, we used these measures to argue that an important reason for poor government in developing countries is the same low productivity that plagues the private sector in these countries as well. Such low productivity is related to inputs and technology, but also to management. In some ways, it is not surprising that a measure of the quality of government constructed to be relatively free of political influences in fact correlates with standard determinants of productivity; yet it is still important to recognize that not all bad government is caused by politics.

In fact, our findings could shed light on some fundamental puzzles related to the quality of government. The first puzzle, illustrated by this paper, but seen in other research as well (e.g., La Porta et al 1999, Treisman 2000, Botero et al. 2012) is that the quality of government improves nearly universally as countries grow richer. This fact is surprising if one focuses on the uniqueness of government, but makes perfect sense once it is recognizes that government is subject to the same dynamics as the private sector.

Second, the analysis suggests that perhaps even the more political aspects of poor government, such as corruption, may be a reflection of problems similar to those of the private sector, such as mismanagement. Corruption, for example, might be in part a manifestation of the failure of monitoring and incentive systems. Perhaps our small findings on the post office could be developed into a broader theory of the quality of government and its evolution in the course of economic development.

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Table 1: Measures of mail efficiency

	Got the letter back	Got the letter back in 90 days	Avg. Number of days to get the letter back
	Panel A: Top and bottom countries sorted by "Got the letter back"		
United States	100%	100%	16.20
El Salvador	100%	100%	39.00
Czech Republic	100%	100%	52.30
Luxembourg	100%	100%	68.00
Finland	100%	90%	51.60
Norway	100%	90%	53.30
Canada	100%	90%	54.30
Uruguay	100%	90%	54.00
Colombia	100%	90%	60.20
Barbados	100%	90%	57.90
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Angola	20%	0%	404.00
Malawi	20%	0%	414.70
Mauritania	20%	0%	416.20
Mongolia	10%	10%	383.60
Swaziland	10%	0%	387.40
Fiji	10%	0%	388.20
Congo, Dem. Rep.	10%	0%	397.60
Tonga	10%	0%	398.70
Honduras	10%	0%	408.70
Burundi	10%	0%	410.70
Cambodia	0%	0%	413.50
Russian Federation	0%	0%	418.80
Gabon	0%	0%	418.80
Panama	0%	0%	418.80
Egypt, Arab Rep.	0%	0%	418.80
Nigeria	0%	0%	418.80
Sudan	0%	0%	418.80
Cameroon	0%	0%	418.80
Tajikistan	0%	0%	418.80
Cote d'Ivoire	0%	0%	418.80
Ghana	0%	0%	418.80
Tanzania	0%	0%	418.80
Rwanda	0%	0%	418.80
Liberia	0%	0%	418.80
Myanmar	0%	0%	418.80
Somalia	0%	0%	418.80
	Panel B: Full sample means		
Full sample (159)	0.5931	0.3535	228.22
	Panel C: Means by GDP per capita		
High income (39)	0.8487 [a]	0.6000 [a]	125.91 [a]
Upper middle income (38)	0.6684	0.4316 [c]	196.27 [c]
Lower middle income (39)	0.5590	0.3026	245.99
Low income (38)	0.3211 [a]	0.0921 [a]	336.02 [a]
	Panel D: Means by avgerage number of years of schooling		
Above median years of schooling (72)	0.7528 [a]	0.5208 [a]	164.48 [a]
Below median years of schooling (84)	0.4607	0.2120	281.65

Notes:
Number of countries in parentheses.
Significance levels: (a) if $p<0.01$; (b) if $p<0.05$; (c.) if $p<0.10$.

Table 2: Mail efficiency and other dimensions of government efficiency and institutional quality

The table shows raw correlations between mail efficiency variables and other measures of government efficiency and institutional quality for the full sample of countries with letters data. The various measures of government efficiency and institutional quality are shown in the first column and the source of each variable in the second column. For each of the three mail efficiency variables, the first column of numbers shows the pairwise correlations between the mail variable and each of the other variables. Significance levels are Bonferonni-adjusted. The second column of numbers shows the number of observations for each correlation.

		Got the letter back		Got the letter back in 90 days		Ln Avg. number of days to get the letter back	
Variables	**Sources**	**Correlation**	**Obs.**	**Correlation**	**Obs.**	**Correlation**	**Obs.**
Government Effectiveness (1996-2007)	Kauffman	0.6314 a	157	0.5952 a	157	-0.6570 a	157
Bureaucratic quality (1995-2008)	BERI	0.5593 a	132	0.5145 a	132	-0.5742 a	132
Extent of bureaucratic red tape	Global Competitiveness Report	-0.6268 a	125	-0.5559 a	125	0.6220 a	125
Overall Ease of doing business rank	Doing Business Report	-0.4933 a	153	-0.4947 a	153	0.5432 a	153
Starting a business procedures	Doing Business Report	-0.2733	153	-0.2852	153	0.3045 b	153
Starting a business days	Doing Business Report	-0.3238 b	153	-0.3173 b	153	0.3423 a	153
Time to import	Doing Business Report	-0.5324 a	153	-0.5506 a	153	0.5913 a	153
Documents to export	Doing Business Report	-0.4545 a	153	-0.4043 a	153	0.4582 a	153
Construction permit days	Doing Business Report	-0.2488	153	-0.2421	153	0.2791	153
Enforcing contracts procedures	Doing Business Report	-0.3161 b	153	-0.2748	153	0.3087 a	153
Paying taxes rank	Doing Business Report	-0.1913	153	-0.2358	153	0.2354	153
Business Freedom	Heritage Foundation	0.5450 a	150	0.5445 a	150	-0.5816 a	150
Time firms spend meeting with tax officialas	WB Enterprise Surveys	-0.3332	99	-0.2078	99	0.2805	99
Regulatory quality (1996-2007)	Kaufman	0.6390 a	157	0.6073 a	157	-0.6629 a	157
Infrastructure quality	Global Competitiveness Report	0.4325 a	134	0.4467 a	134	-0.4769 a	134
% household with running water at home	Gallup 2007	0.5291 a	128	0.5668 a	128	-0.5853 a	128
ICRG corruption index (2000-2008)	ICRG	0.5808 a	132	0.5712 a	132	0.6030 a	132
% firms expect to give gifts for water connection	WB Enterprise Surveys	-0.3839 b	97	-0.3859 b	97	0.4206 a	97
Voice and accountability index (1996-2004)	Kaufman	0.6413 a	156	0.6095 a	156	-0.6640 a	156
Expropriation risk (1982-1997)	BERI	0.5677 a	121	0.5235 a	121	-0.5686 a	121
Protection of property rights and law enforcement	Heritage Foundation	0.5551 a	150	0.5567 a	150	-0.6035 a	150
Judicial independence	Global Competitiveness Report	0.4391 a	134	0.3716 a	134	-0.4325 a	134
Democracy index (1990-2006)	Polity IV	0.5805 a	148	0.5624 a	148	-0.6079 a	148
Executive constraints (1990-2006)	Polity IV	0.5772 a	147	0.5588 a	147	-0.6035 a	147
Freedom of the press	Freedom House	-0.5779 a	157	-0.5705 a	157	0.6090 a	157

Table 3: Postal office characteristics and alphabet as determinants of mail efficiency

	Got it back		Got it back in 90 days		Ln. Avg Number of days to get it back	
Ln permanent offices percapita	0.0971a		0.0963a		-0.2149a	
	[0.015]		[0.015]		[0.032]	
Ln postal staff percapita		0.0957a		0.0919a		-0.2139a
		[0.017]		[0.017]		[0.035]
Postcodes databases	0.2416a	0.1796b	0.2428a	0.1883b	-0.5968a	-0.4546a
	[0.059]	[0.070]	[0.065]	[0.075]	[0.137]	[0.154]
Alphabet used is Latin-based	0.1239a	0.1122b	0.1153a	0.1023b	-0.2465b	-0.2215b
	[0.047]	[0.047]	[0.044]	[0.043]	[0.096]	[0.095]
Constant	0.0060	-0.1316	-0.2272a	-0.3487a	6.3558a	6.6716a
	[0.063]	[0.089]	[0.061]	[0.092]	[0.127]	[0.187]
Observations	157	157	157	157	157	157
R-squared	0.41	0.41	0.42	0.42	0.46	0.46

Robust standard errors in brackets
a p<0.01, b p<0.05, c p<0.1

Table 4: Management quality, postal office characteristics and alphabet as determinants of mail efficiency

	Got it back						Got it back in 90 days						Ln. Avg Number of days to get it back					
Ln permanent offices percapita	0.0614a	0.0918a	0.0905a	0.0774a	0.1007a	0.0769b	0.0528a	0.1005a	0.1016a	0.0944a	0.0644	0.0703	-0.1185a	-0.2136a	-0.2147a	-0.1823a	-0.1198	-0.1221
	[0.018]	[0.017]	[0.016]	[0.018]	[0.037]	[0.031]	[0.016]	[0.017]	[0.017]	[0.019]	[0.046]	[0.057]	[0.034]	[0.035]	[0.035]	[0.039]	[0.091]	[0.103]
Postcodes databases	0.1738b	0.1548b	0.0965	0.1396c	0.1732	0.5004a	0.2662a	0.1755b	0.1563b	0.1793b	0.0247	0.4484b	-0.5541a	-0.4085a	-0.3260b	-0.3792b	-0.2141	-1.2489a
	[0.079]	[0.062]	[0.060]	[0.075]	[0.168]	[0.151]	[0.080]	[0.072]	[0.074]	[0.086]	[0.154]	[0.198]	[0.156]	[0.144]	[0.148]	[0.170]	[0.328]	[0.420]
Alphabet used is latin-based	0.0616	0.1357a	0.1196b	0.1477a	0.2294c	0.1449	0.0363	0.1144b	0.1096b	0.1176b	0.1794	0.0718	-0.0816	-0.2439b	-0.2221b	-0.2511b	-0.4046c	-0.1507
	[0.052]	[0.050]	[0.047]	[0.051]	[0.119]	[0.152]	[0.045]	[0.049]	[0.049]	[0.051]	[0.107]	[0.107]	[0.099]	[0.106]	[0.103]	[0.107]	[0.236]	[0.244]
Public management performance	0.0521a						0.0353a						-0.0977a					
	[0.015]						[0.013]						[0.026]					
Will to delegate authority		0.0643b						0.0586b						-0.1640a				
		[0.026]						[0.024]						[0.055]				
Quality of management schools			0.1150a						0.0649b						-0.2155a			
			[0.024]						[0.027]						[0.055]			
Innovation capacity index				0.0705a						0.0443						-0.1704b		
				[0.025]						[0.028]						[0.067]		
% Directors and officers in the workforce					1.8750						3.9730a						-10.4747a	
					[1.216]						[1.213]						[3.770]	
Ln years education directors & officers in the workforce						0.4480c						0.5110b						-1.3387b
						[0.222]						[0.236]						[0.641]
Constant	-0.1054	-0.1588	-0.3549a	-0.0828	-0.1244	-1.1809b	-0.2416a	-0.4220a	-0.4667a	-0.3240a	-0.1522	-1.4660a	6.4736a	6.8373a	7.0758a	6.6273a	6.2233a	9.5540a
	[0.078]	[0.107]	[0.112]	[0.095]	[0.156]	[0.464]	[0.079]	[0.104]	[0.120]	[0.110]	[0.175]	[0.460]	[0.150]	[0.233]	[0.249]	[0.233]	[0.345]	[1.364]
Observations	116	136	136	133	44	30	116	136	136	133	44	30	116	136	136	133	44	30
R-squared	0.38	0.39	0.44	0.39	0.47	0.70	0.42	0.41	0.42	0.40	0.39	0.58	0.47	0.44	0.47	0.44	0.48	0.63
Adj. R-squared	0.36	0.37	0.42	0.37	0.412	0.651	0.39	0.40	0.40	0.38	0.330	0.508	0.45	0.43	0.45	0.42	0.427	0.575
R2 w/o Management	0.33	0.37	0.37	0.36	0.45	0.65	0.39	0.40	0.40	0.39	0.29	0.52	0.42	0.42	0.42	0.41	0.35	0.56
Adj. R2 w/o Management	0.32	0.35	0.35	0.34	0.406	0.615	0.37	0.38	0.38	0.37	0.239	0.459	0.41	0.40	0.40	0.39	0.306	0.509

Robust standard errors in brackets
a p<0.01, b p<0.05, c p<0.1

Table 5: Management practices, postal office characteristics and alphabet as determinants of mail efficiency

	Got it back				Got it back in 90 days				Ln. Avg Number of days to get it back			
Ln permanent offices percapita	0.1272	0.1035	0.1205	0.1592	-0.1017	-0.1560	-0.1154	-0.0303	0.2392	0.3559	0.2884	-0.0104
	[0.090]	[0.087]	[0.086]	[0.095]	[0.102]	[0.109]	[0.108]	[0.095]	[0.304]	[0.353]	[0.366]	[0.303]
Postcodes databases	0.1152	0.1347	0.1298	0.1526	-0.1579	-0.1177	-0.1199	-0.0743	0.0269	-0.2132	-0.0648	-0.0793
	[0.128]	[0.110]	[0.122]	[0.170]	[0.148]	[0.128]	[0.142]	[0.179]	[0.358]	[0.315]	[0.390]	[0.635]
Alphabet used is latin-based	0.0196	0.0062	0.0420	0.0265	0.0994	0.0678	0.1497	0.1147	-0.0086	0.0367	-0.1631	-0.0107
	[0.085]	[0.073]	[0.089]	[0.113]	[0.084]	[0.077]	[0.086]	[0.119]	[0.228]	[0.212]	[0.284]	[0.415]
Management practices	0.3814b				0.8517b				-2.6442a			
	[0.145]				[0.277]				[0.744]			
Monitoring management		0.3492a				0.7917a				-2.0260a		
		[0.107]				[0.237]				[0.571]		
Targets management			0.2639c				0.5745c				-1.8546b	
			[0.132]				[0.265]				[0.768]	
Incentives management				0.2888				0.6447b				-2.5905a
				[0.183]				[0.231]				[0.789]
Constant	-1.0365	-0.8894	-0.6799	-0.9229	-1.3773c	-1.0749c	-0.5496	-1.1226	10.9898a	9.1025a	8.5706a	11.8322a
	[0.672]	[0.563]	[0.540]	[0.776]	[0.762]	[0.586]	[0.517]	[0.822]	[1.931]	[1.425]	[1.519]	[2.636]
Observations	16	16	16	16	16	16	16	16	16	16	16	16
R-squared	0.65	0.70	0.61	0.59	0.42	0.55	0.29	0.26	0.64	0.62	0.46	0.57
Adj. R-squared	0.53	0.59	0.46	0.44	0.21	0.38	0.03	0.00	0.51	0.48	0.27	0.41
R-squared w/o Management	0.53	0.53	0.53	0.53	0.10	0.10	0.10	0.10	0.17	0.17	0.17	0.17
Adj. R-squared w/o Management	0.41	0.41	0.41	0.41	-0.12	-0.12	-0.12	-0.12	-0.04	-0.04	-0.04	-0.04

Robust standard errors in brackets
a p<0.01, b p<0.05, c p<0.1

Table 6: Robustness checks with GDP per capita, favoritism by politicians and state monopoly

	Got it back		Got it back in 90 days		Ln. Avg Number of days to get it back	
			Panel A: Controlling for GDP per capita			
Ln permanent offices percapita	0.0757a		0.0747a		-0.1599a	
	[0.016]		[0.015]		[0.034]	
Ln postal staff percapita		0.0762a		0.0703a		-0.1577a
		[0.021]		[0.020]		[0.043]
Postcodes databases	0.1569b	0.1415c	0.1558b	0.1458c	-0.3756b	-0.3466b
	[0.067]	[0.073]	[0.074]	[0.078]	[0.150]	[0.159]
Alphabet used is latin-based	0.1318a	0.1148b	0.1308a	0.1132b	-0.2827a	-0.2462b
	[0.047]	[0.048]	[0.044]	[0.045]	[0.095]	[0.097]
Ln GDP per capita	0.0573a	0.0387c	0.0598a	0.0447b	-0.1512a	-0.1141b
	[0.019]	[0.021]	[0.017]	[0.019]	[0.041]	[0.045]
Constant	-0.3709b	-0.3339b	-0.6307a	-0.5957a	7.3705a	7.2934a
	[0.144]	[0.142]	[0.135]	[0.135]	[0.307]	[0.300]
Observations	154	154	154	154	154	154
R-squared	0.44	0.42	0.46	0.44	0.51	0.49
			Panel B: Controlling for favoritism of government officials			
Ln permanent offices percapita	0.0845a		0.0934a		-0.1952a	
	[0.017]		[0.017]		[0.035]	
Ln postal staff percapita		0.0936a		0.0952a		-0.2114a
		[0.019]		[0.020]		[0.040]
Postcodes databases	0.1975a	0.1395b	0.2205a	0.1736b	-0.5241a	-0.4001b
	[0.064]	[0.069]	[0.076]	[0.082]	[0.153]	[0.158]
Alphabet used is latin-based	0.1560a	0.1508a	0.1226b	0.1128b	-0.2689b	-0.2545b
	[0.052]	[0.050]	[0.052]	[0.051]	[0.110]	[0.108]
Favoritism of government officials	0.0529b	0.0246	0.0352	0.0071	-0.1128a	-0.0493
	[0.021]	[0.021]	[0.021]	[0.022]	[0.042]	[0.042]
Constant	-0.099	-0.1915c	-0.3174a	-0.3855a	6.5953a	6.7889a
	[0.090]	[0.101]	[0.104]	[0.120]	[0.206]	[0.235]
Observations	133	133	133	133	133	133
R-squared	0.41	0.43	0.41	0.42	0.45	0.47
			Panel C: Controlling for state monopoly			
Ln permanent offices percapita	0.0881a		0.0884a		-0.1909a	
	[0.017]		[0.017]		[0.035]	
Ln postal staff percapita		0.0815a		0.0819a		-0.1866a
		[0.018]		[0.018]		[0.038]
Postcodes databases	0.2565a	0.2136a	0.2749a	0.2315a	-0.6715a	-0.5536a
	[0.067]	[0.078]	[0.070]	[0.081]	[0.147]	[0.165]
Alphabet used is latin-based	0.1477a	0.1329b	0.1038b	0.0890c	-0.2487b	-0.2204b
	[0.050]	[0.051]	[0.047]	[0.046]	[0.103]	[0.102]
State monopoly	0.0996	-0.0685	0.0244	0.0168	-0.0798	-0.0599
	[0.105]	[0.115]	[0.048]	[0.051]	[0.111]	[0.114]
Constant	-0.0322	-0.1263	-0.2256a	-0.3208a	6.3680a	6.6194a
	[0.072]	[0.093]	[0.072]	[0.102]	[0.147]	[0.205]
Observations	141	141	141	141	141	141
R-squared	0.44	0.43	0.44	0.44	0.48	0.49

Robust standard errors in brackets
a p<0.01, b p<0.05, c p<0.1

Figure 1

This figure presents the text of the one-page letter that was sent to each of the 10 recipients in the largest 5 cities in all 159 countries

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December 1, 2010
Re: Confidential

URGENT RESPONSE REQUESTED

Rafael La Porta
Tuck School of Business at Dartmouth
100 Tuck Hall
Hanover, NH 03755, USA

Dear Mr. XXXXX,

I hereby confirm receipt of the previous correspondence.

Please let me know if you would like to continue with the collaboration project.

I will wait to hear from you, but please respond as soon as possible as this matter is of absolute importance.

Regards,

Rafael La Porta

Figure 2

This figure presents the front of the envelope of several returned letters.

Professor Rafael La Porta
Tuck School of Business at Dartmouth
100 Tuck Hall
Hanover, NH 03755

PLEASE RETURN TO SENDER IF UNDELIVERABLE

BOSTON MA 021
04 FEB 2011 PM 14 L

USA

1-5

Insoff. Addess

Madzimoyo Mia
Services Professionals United
Tinbergen Rd 6
Lilongwe
MALAWI

NIXIE 100 12-30-11

RETURN TO SENDER
NOT DELIVERABLE AS ADDRESSED
UNABLE TO FORWARD

00247/0001

La Porta
Business at Dartmouth
755[illegible]

RN TO SENDER IF UNDELIVERABLE

10-17

BOSTON MA 021
31 DEC 2010 PM 12 T

USA

Abjit Handique
Smart Company Supply Services
4 Klein Rd
Baghazar
Kolkata - 700002
INDIA

00174/0001

a Porta
siness at Dartmouth
5
TO SENDER IF UNDELIVERABLE

11-3

BOSTON MA 021

USA

Julio Hernández
Supply Management United
71 Avenida Simon
Myrdal y Stigler
Camagüey 3
CP 70200 Camagüey
CUBA

INT

00470/0001

ɔrta
ɛss at Dartmouth

BOSTON MA 021

31 DEC 2010 PM 14 T

'O SENDER IF UNDELIVERABLE

CORREOS DE COSTA RICA S.A.
Sucursal o Centro: CCP
Cartero Nº 6
☐ Cambio de Domicilio ☐ Falleció
☐ Perdió el Apartado ☐ Rehusado
☒ Dirección Insuficiente ☐ Ausente
☐ Desconocido
☐ No pertenece al Apartado

Braulio Hernández
Smart Company Supply Services
Avenida Sharpe 2860
Puntarenas
60101
Costa Rica

10-13

NIXIE 100 SE 1 00 10/10/11
RETURN TO SENDER

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a Porta
iness at Dartmouth
5
) SENDER IF UNDELIVERABLE

BOSTON MA 021

RTS/ANK
9-20-11

Harsallah Kohistani
Business Management Specialists [بازرگـان تیـری متخصـص]
7436 Meade str
Herāt
AFGHANISTAN

10-10

NIXIE 100 5C 1 00 10/02/11
RETURN TO SENDER
NOT DELIVERABLE AS ADDRESSED
UNABLE TO FORWARD
BC: 03755900000 *1421-21454-09-43

Professor Rafael La Porta
Tuck School of Business at Dartmouth
100 Tuck Hall
Hanover, NH 03755

PLEASE RETURN TO SENDER IF UNDELIVERABLE

1-3-2012

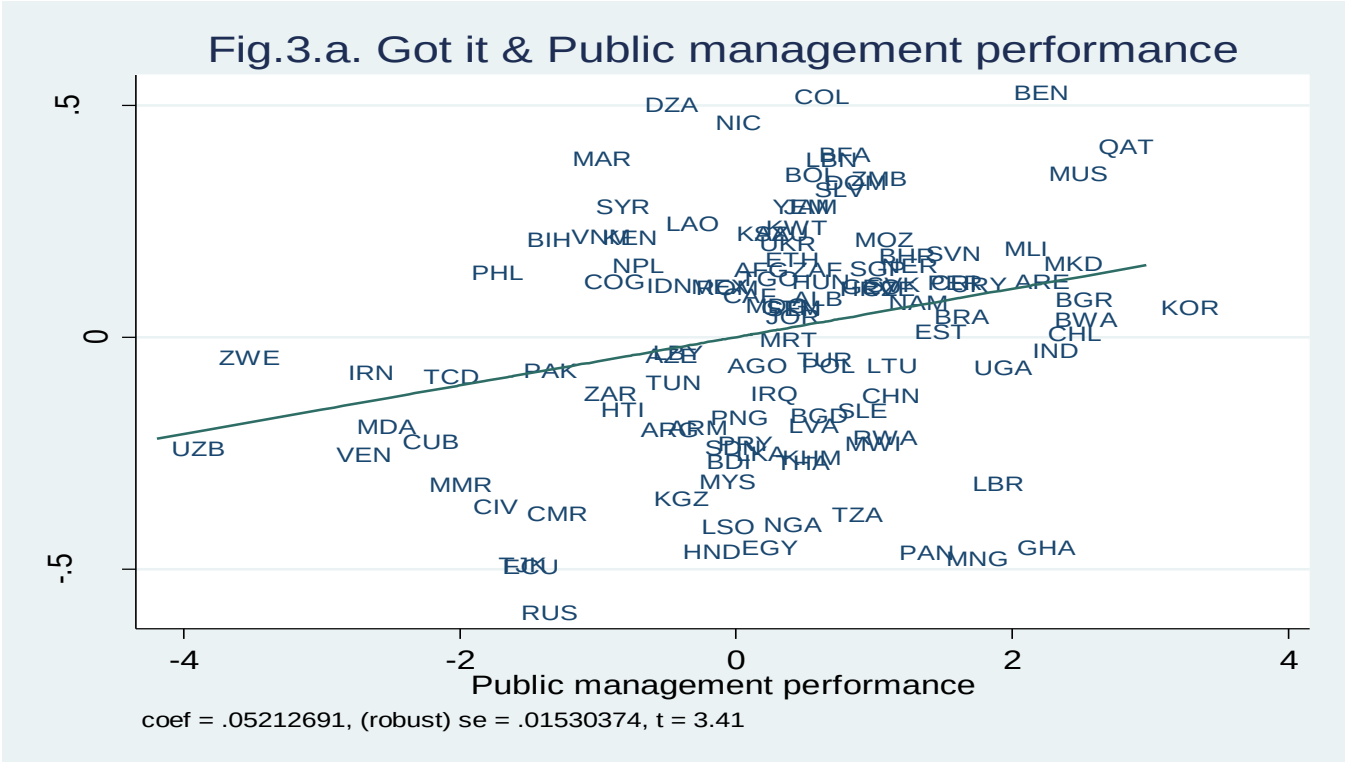
Reagan Urbano
Services Professionals United
Avenida Kantorovich 8
Luanda
REPÚBLICA DE ANGOLA

Retour

NIXIE 100 SE 1 00 12/29/11
RETURN TO SENDER
NOT DELIVERABLE AS ADDRESSED
UNABLE TO FORWARD
BC: 03755900000 *1021-09246-31-44

Figure 3. Got it back and measures of management quality

The following four graphs show the partial scatter plot of "got the letter back" and the measures of management quality used in Table 4 of the paper for the sample of countries with available data. These plots correspond to the first four regressions in Table 4 of the paper.



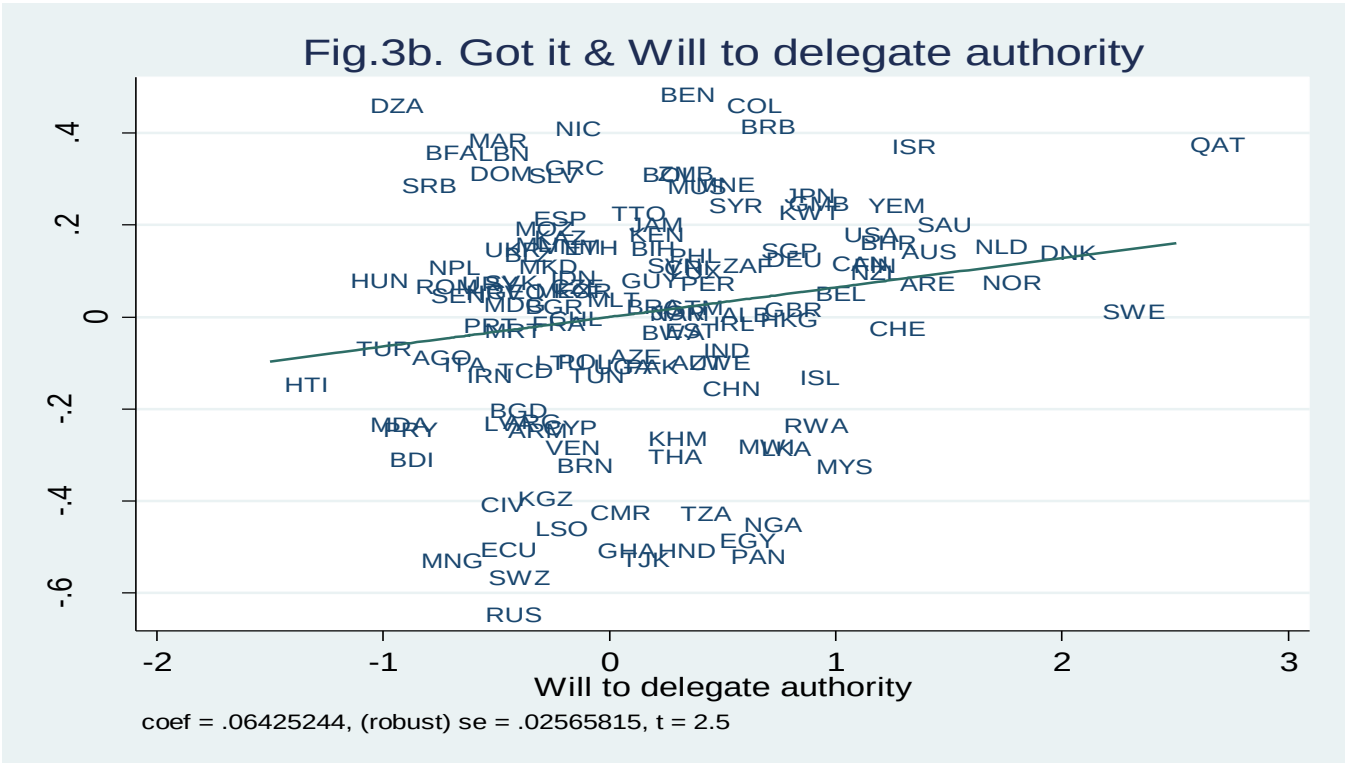
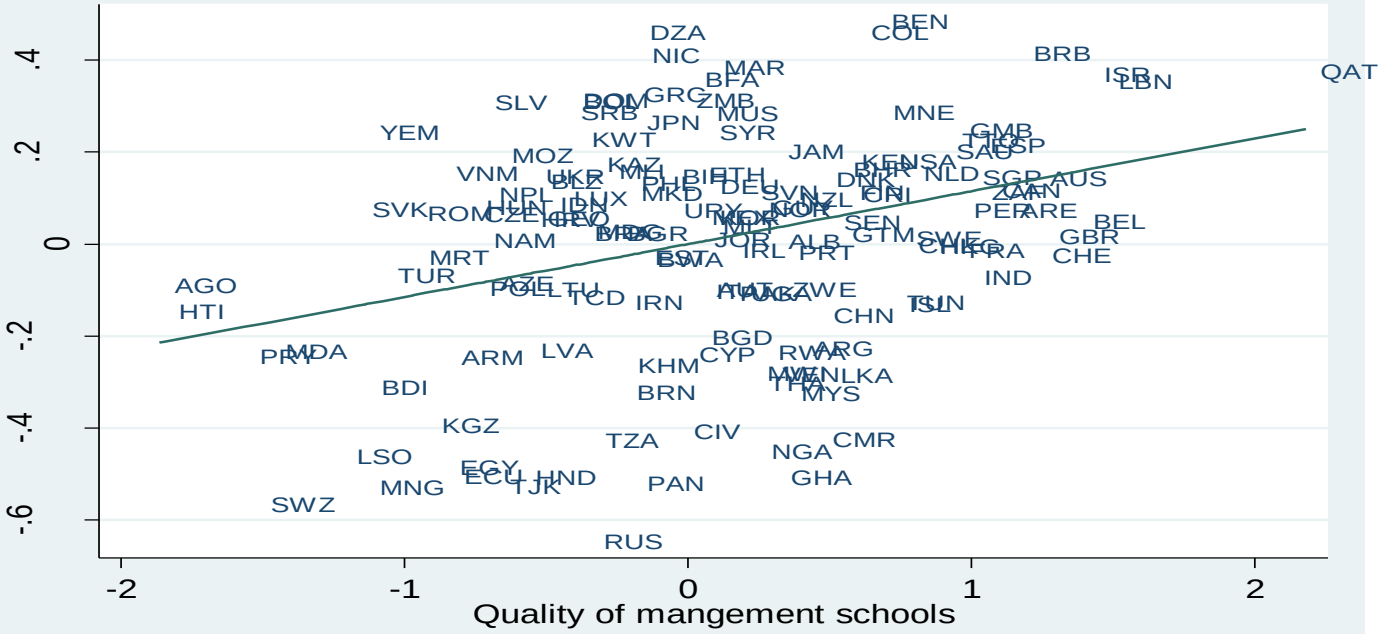
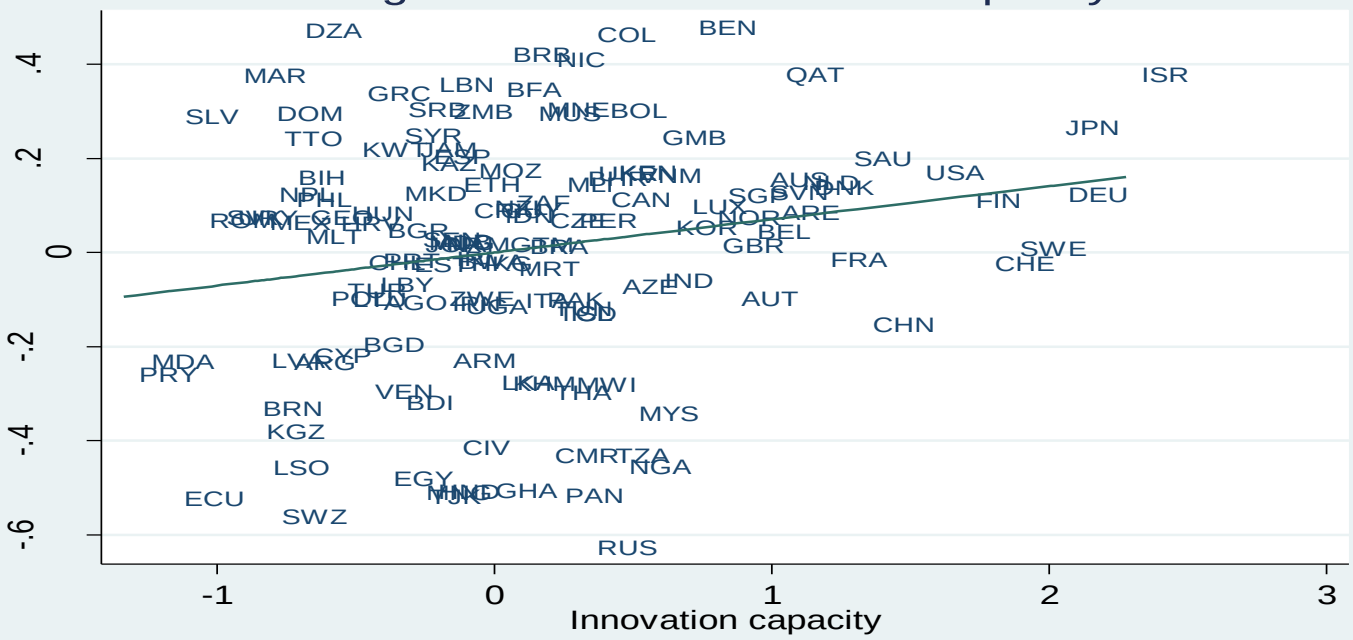


Fig.3c. Got it & Quality of mangement schools



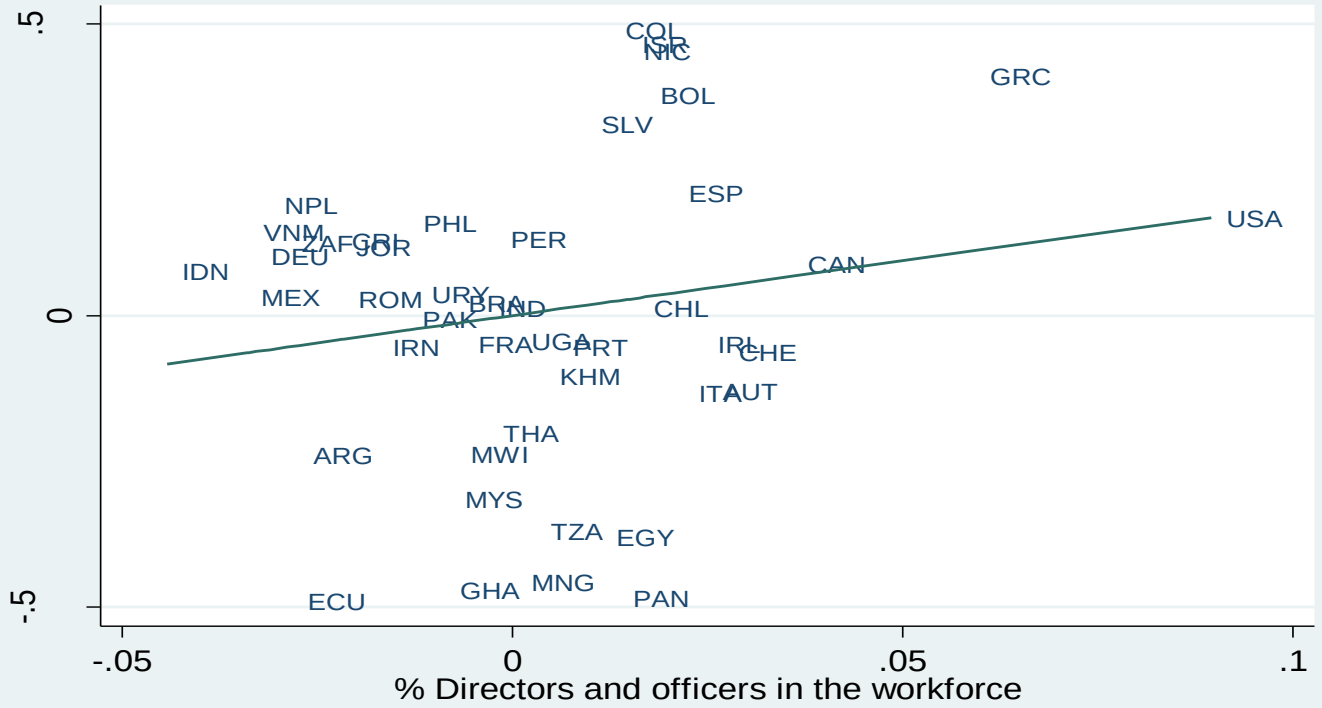
coef = .11503741, (robust) se = .02396721, t = 4.8

Fig.3d. Got it & Innovation capacity



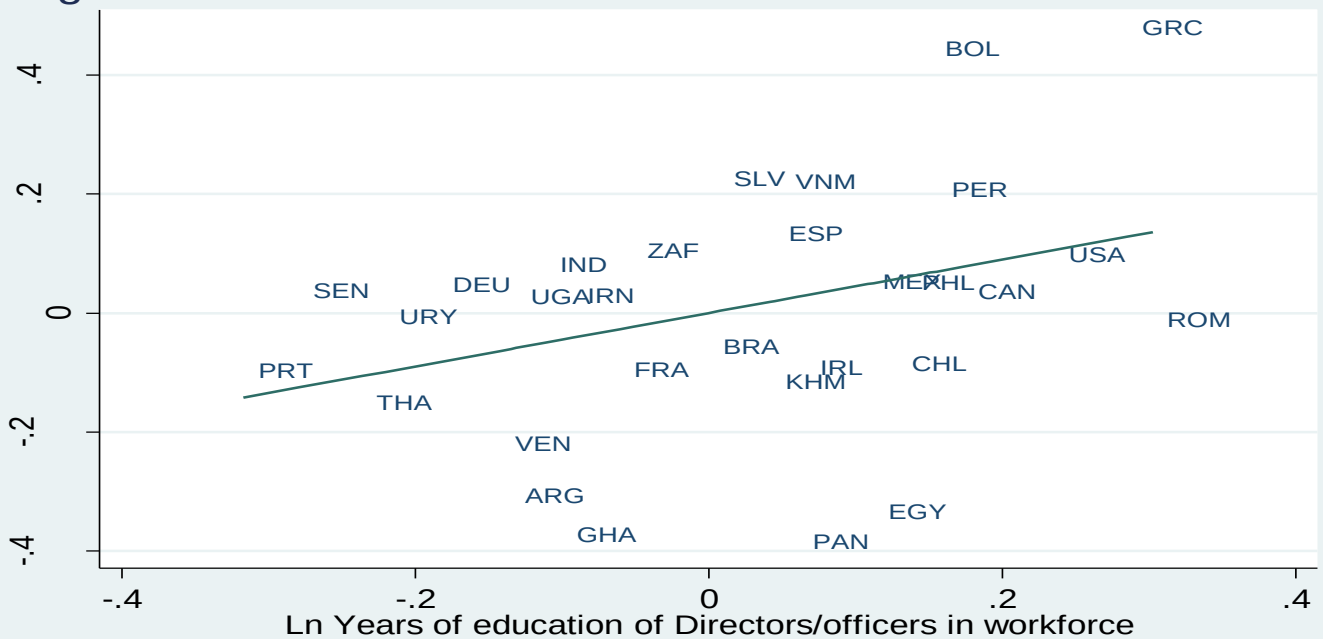
coef = .07051067, (robust) se = .02516035, t = 2.8

Fig.3e. Got the letter back & % Directors/officers in workforce



coef = 1.8750327, (robust) se = 1.2157478, t = 1.54

Fig.3f. Got the letter back & Ln Years education Directors/officers



coef = .44796317, (robust) se = .22156204, t = 2.02

Appendix A: Variable definitions and basic descriptive statistics

Variable name	No. Obs	Mean	Std. Dev.	Coeff. Variation	Min	Max	Definition
Got the letter back	159	0.59	0.33	1.80	0.00	1.00	Percentage of the number of letters that were received back as "return to sender." We sent 10 letters to 5 different cities in each country. This variable is scaled to have values between zero (i.e., no letters were received back), to 1 (i.e., all letters were received back).
Got the letter back in 90 days	159	0.35	0.32	1.11	0.00	1.00	Percentage of the number of letters that were received back as "return to sender" in 90 days. We sent 10 letters to 5 different cities in each country. This variable is scaled to have values between zero (i.e., no letters were received back in 90 days), to 1 (i.e., all letters were received back in 90 days).
Ln number of days to get the letter back	159	5.04	0.71	7.09	2.69	6.04	Natural logarithm of the average number of calendar days that took to get back all the letters that returned as "return to sender." We sent 10 letters to 5 different cities in each country. This number is calculated for all the letters. For those letters which we did not get back, we calculated this number as the number of calendar days between our cutoff date (February 4, 2012) and the date when we sent the letter.
Ln permanent offices percapita	157	4.04	1.36	2.97	0.58	6.35	Natural logarithm of the number of permanent post offices per million people in a given country in 2010. If the data for 2010 is unavailable, we use the most recent value between 2005 and 2009. Source: Universal Postal Union, except for Taiwan, who does not belong to the UPU Postal Union and for which we used the its Post Office annual Report.
Ln postal staff percapita	157	5.94	1.56	3.81	2.29	8.97	Natural logarithm of the number of postal staff per million people in a given country in 2010. If the data for 2010 is unavailable, we use the most recent value between 2005 and 2009. Source: Universal Postal UnionSource: Universal Postal Union, except for Taiwan, who does not belong to the UPU Postal Union and for which we used the its Post Office annual Report.
Poscode databse	158	0.46	0.41	1.13	0.00	1.00	The type of postcode database used in each country in 2011. We elaborated this data using the information of the classification of postcode databases that countries have according to the Universal Postal Union. The data is based on the classification made by the Universal Postal Union of the type of postcode databse that each country sends them. With these datasets, UPU creates a Universal DataBase which is the world database of raw postcodes containing all available information on the postal addressing data. This database contains the postcode data to town locality, street and delivery point level, depending on the particular country's system. UPU classifies countries in four groups: (A) the database of teh counry contains postcodes for localities and streets, to which we assign a value of 1; (B) the database containd postcodes for localities and districts, to which we assigned a value of 0.66; (C) the database contains postcodes for localities, to which we assigned a value of 0.33; and (D) the database only contains names of localities only, to which we assigned the value of 0.
Alphabet used is Latin-based	159	0.66	0.48	1.39	0.00	1.00	The variable equals one if the alphabet used in the country is derived from the latin alphabet, and zero otherwise. The classification was done based on the classificaiton of alphabets in wikipedia.org
Public Mgmt performance	118	5.65	1.76	3.21	1.62	9.23	Management performance index from the Bertelsmann Stiftung BTI Bertelsmann Transformation Index. This index focuses on the steering and management of development and transformation processes. The index reviews and evaluates the reform activities of political decision makers, thus providing valuable information on the key factors of success and failures for states on their way to a market-based economy. The values range from 0 to 10.
Will to delegate authority	137	3.74	0.79	4.72	2.30	6.30	An index of the willingness to delegate authority. This index is constructed from the answers to the question "in your country, how do you assess the willingness to delegate authority to subordinates? The values go from 1, in situations where top management controls important decisions to 7, where authority is mostly delegated to business unit heads and other lower-level management.
Quality of management schools	137	4.20	0.85	4.94	1.80	6.10	An index of thequality of the business schools in the country. This index is constructed from the answers to the question "how would you assess the quality of the business schools in your country? The values go from 1, poor to 7, excellent.
Innovation capacity index	134	3.20	0.92	3.47	1.72	5.88	An index of the innovation capacity in the country. This index is constructed from the answers to the question "how would you assess the innovation capacity your country? The values go from 1, poor to 7, excellent.
% Directors and officers in workforce	44	0.03	0.03	1.07	0.00	0.14	Percentage of the economically-active population aged 15 years through 65 that most closely matches the employment category of company officers and general directors in the most recent population census. (http://international.ipums.org/international)
Ln years of education of directors and officers in workforce	30	2.43	0.18	13.21	2.09	2.76	Natural logaritm of the average years of schooling from primary onwards for the economically-active population aged 15 years through 65 that most closely matches the employment category of company officers and general directors in the most recent population census. (http://international.ipums.org/international)
Management practices	16	2.94	0.22	13.52	2.64	3.33	Index of firm overall management practices in each country. The index is based on an interview-based evaluation that defines and scores 1 (worst practice) to 5 (best practice) 18 basic management practices of a sample of firms in the country. The practices fall in three broad areas: (1) monitoring; (2) targets; and (3) incentives. (Bloom and Van Reenen, 2010).
Monitoring	16	3.12	0.28	11.26	2.63	3.53	Sub-index of firm "monitoring management practices" in each country. Monitoring practices measure how well companies monitor what goes on inside their firms and use this for coninuous improvement. The subiindex is the average of six of the 18 basic management practices in the overall management practices index. (Bloom and Van Reenen, 2010).
Targets	16	2.92	0.25	11.78	2.53	3.24	Sub-index of firm "targets in management practices" in each country. The questions included in this sub-index measure if companies set the right targets, track the right outcomes and take the appropriate action if the two are inconsistent. The subiindex is the average of five of the 18 basic management practices in the overall management practices index. (Bloom and Van Reenen, 2010).
Incentives	16	2.81	0.19	14.67	2.50	3.30	Sub-index of firm "incentive management practices" in each country. Incentive management practices measure if companies are promoting and rewarding employees based on performance, and if they are trying to hire and keep their best employees. The subiindex is the average of seven of the 18 basic management practices i n the overall management practices index. (Bloom and Van Reenen, 2010).

Appendix A: Variable definitions and basic descriptive statistics

Variable name	No. Obs	Mean	Std. Dev.	Coeff. Variation	Min	Max	Definition
Ln GDP per capita	153	8.76	1.40	6.24	2.15	####	Natural logarithm of gross domestic product per capita in PPP constant 2005 international dollars in 2010. When data for 2010 is not available, we use the most recent information available for the period 2004-2009. (World Development Indicators 2011)
Favoritism of government officials	134	3.22	0.91	3.54	1.70	6.00	Favoritism in decisions of government officials withrespect to well-connected firms and individuals when deciding upon policies and contracts. The variables is an index which goes from 1 to 7 where higher numbers mean lower extent of favoritism. (Global Competitiveness Report 2011)
Full state monopoly or some service reserved for the state	141	0.74	0.44	1.70	0.00	1.00	Dummy variable equal to one if the state postal service has complete monopoly over all parcels or over letters and/or packages up to a certain weight, and zero otherwise.

Appendix B: Letters' data for the Czech Republic and Russia

Letter ID	Name	Street Address	Postcode and City	Date letter sent	Date letter received	Date of limit (02/04/2012)	Got it back	Got it back in 90 days	Number of days (up to limit of 04/02/2012)	Ln Number of days (up to limit of 04/02/2012)	Number of days (missing if not returned)	Ln Number of days (missing if not returned)
Panel A: Letters sent to the Czech Republic												
CZE_0	Zdenek Dvořák	Debreuská 1	110 00 Praha	09/12/2010	07/03/2011	04/02/2012	1	1	88.00	4.4773	88.00	4.4773
CZE_2	Vaclav Veselý	Meadeská 4	602 00 Brno	09/12/2010	08/03/2011	04/02/2012	1	1	89.00	4.4886	89.00	4.4886
CZE_6	Milan Růžička	Haavelmoská 2	301 00 Plzeň-Jižní	11/12/2010	04/01/2011	04/02/2012	1	1	24.00	3.1781	24.00	3.1781
CZE_3	Petr Svoboda	Buchananova 1704	602 00 Brno	14/12/2010	04/03/2011	04/02/2012	1	1	80.00	4.3820	80.00	4.3820
CZE_1	Jiri Kučera	Frischova 7526	120 00 Praha 2	15/12/2010	03/02/2011	04/02/2012	1	1	50.00	3.9120	50.00	3.9120
CZE_8	Milos Novotný	Millerská 7400	460 01 Liberec IV-Perštýn	29/12/2010	25/01/2011	04/02/2012	1	1	27.00	3.2958	27.00	3.2958
CZE_5	Jan Sedlářek	Lewisova 4051	702 00 Moravská Ostrava	29/12/2010	08/03/2011	04/02/2012	1	1	69.00	4.2341	69.00	4.2341
CZE_9	Kazimir Svoboda	Markowitzova 6404	460 07 Liberec III	31/12/2010	31/01/2011	04/02/2012	1	1	31.00	3.4340	31.00	3.4340
CZE_7	Kazimir Pospíšil	Hayekova 7	301 00 Plzeň-Jižní	31/12/2010	02/02/2011	04/02/2012	1	1	33.00	3.4965	33.00	3.4965
CZE_4	Zdenek Pokorný	Arrowská 48	713 00 Slezská Ostrava	04/02/2011	08/03/2011	04/02/2012	1	1	32.00	3.4657	32.00	3.4657
Average							**1.00**	**1.00**	**52.30**	**3.8364**	**52.30**	**3.8364**
Panel B: Letters sent to Russia												
RUS_0	Roman Avdeyev	Ulitsa Debreuska 8689	gorod Moskva 115487	08/12/2010	.	04/02/2012	0	0	423.00	6.0474	.	.
RUS_2	Ivan Zhakov	Ulitsa Modiglianaya 6802	Sankt-Peterburg 199178	09/12/2010	.	04/02/2012	0	0	422.00	6.0450	.	.
RUS_4	Oleg Golikova	Ulitsa Arrowlok 8547	Novosibirsk, Novosibirskaya Obl	10/12/2010	.	04/02/2012	0	0	421.00	6.0426	.	.
RUS_6	Fillyp Zubkov	Ulitsa Haavelmo ave 3	Ekaterinburg, Sverdlovskaya Obl	11/12/2010	.	04/02/2012	0	0	420.00	6.0403	.	.
RUS_3	Dmitri Avdeyev	Ulitsa Ohlinov 2	Sankt-Peterburg 199178	13/12/2010	.	04/02/2012	0	0	418.00	6.0355	.	.
RUS_8	Oleg Skryannik	Ulitsa Myrdalok 983	Nizhnij Novgorod, Nizhegorodskaya Obl	13/12/2010	.	04/02/2012	0	0	418.00	6.0355	.	.
RUS_5	Pavel Ivanov	Ulitsa Allaiska 45	Novoe Devyatkino, Leningradskaya Obl	14/12/2010	.	04/02/2012	0	0	417.00	6.0331	.	.
RUS_7	Ivan Zhakov	Ulitsa Hayeka 63	Ekaterinburg, Sverdlovskaya Obl	14/12/2010	.	04/02/2012	0	0	417.00	6.0331	.	.
RUS_1	Eduard Zhakov	Ulitsa Frischpik 402	gorod Moskva 101000	15/12/2010	.	04/02/2012	0	0	416.00	6.0307	.	.
RUS_9	Ludvig Sobyanin	Ulitsa Stiglerova 2709	Nizhnij Novgorod, Nizhegorodskaya Obl	15/12/2010	.	04/02/2012	0	0	416.00	6.0307	.	.
Average							**0.00**	**0.00**	**418.80**	**6.0374**	**.**	**.**

Appendix C: Mail efficiency and other dimensions of government efficiency and institutional quality (OLS and Instrumental Variables)
(Instrumenting the average of the second letter sent to each of the 5 cities in each country with the average of the first letter sent to each of the 5 cities in each country)

This table shows the results of robust OLS and robust Instrumental Variables regressions using the full sample of countries with letters data. Each row shows regression results using each of our three mail efficiency variables on the measure of government efficiency or quality of institutions shown in the first column. For each of the three mail efficiency variables, the first two columns show the results of robust OLS regressions. The first column shows the coefficient and significance level for the mail variable used as regressor and the second column the R-squared of the specification. The third and fourth columns show the results of robust Instrumental Variables regressions. For the Instrumental Variables regressions, each mail efficiency variables is calculated as the average of the second letter sent to each of the five different cities in each country, and is instrumented by the average of the first letter sent to each of the five different cities in each country. For each of the three mail efficiency variables, the last column shows the number of observations used in the regressions. All OLS and IV regressions

			Got the letter back				Got the letter back in 90 days				Ln Avg. number of days to get the letter back			
			OLS		IV		OLS		IV		OLS		IV	
Dependent Variables:	**Source**	**Obs.**	**Coeff.**	**R-sq.**	**Coeff.**	**R-sq.**	**Coeff.**	**R-sq.**	**Coeff.**	**R-sq.**	**Coeff.**	**R-sq.**	**Coeff.**	**R-sq.**
Government Effectiveness (1996-2007)	Kauffman	157	0.5853a	0.13	2.0767a	0.39	0.8301a	0.12	1.9801a	0.34	-0.3812a	0.15	-0.9654a	0.41
Bureaucratic quality (1995-2008)	BERI	132	1.8898a	0.31	2.0301a	0.30	1.7299a	0.26	1.8236a	0.26	-0.8742a	0.33	-0.8979a	0.32
Extent of bureaucratic red tape	Global Competitiveness Report	125	-0.9881a	0.39	-1.0928a	0.34	-0.8384a	0.31	-0.9377a	0.25	0.4344a	0.39	0.4620a	0.34
Overall Ease of doing business rank	Doing Business Report	153	-81.1293a	0.24	-85.1687a	0.25	-83.3686a	0.24	-88.4979a	0.23	41.2116a	0.30	43.0253a	0.28
Starting a business procedures	Doing Business Report	153	-0.4285a	0.07	-0.4762a	0.07	-0.4582a	0.08	-0.5439a	0.05	0.2203a	0.09	0.2485a	0.07
Starting a business days	Doing Business Report	153	-0.9323a	0.10	-0.9960a	0.10	-0.9361a	0.10	-1.0127a	0.09	0.4547a	0.12	0.4884a	0.10
Time to import	Doing Business Report	153	-1.1583a	0.28	-1.2637a	0.27	-1.2273a	0.30	-1.3667a	0.25	0.5933a	0.35	0.6406a	0.30
Documents to export	Doing Business Report	153	-0.4714a	0.21	-0.4538a	0.25	-0.4297a	0.16	-0.4420a	0.17	0.2192a	0.21	0.2198a	0.21
Construction permit procedures	Doing Business Report	153	-0.1887b	0.03	-0.5273a	0.06	-0.0943	0.01	-0.5456a	0.05	0.0459	0.01	0.2721a	0.06
Enforcing contracts procedures	Doing Business Report	153	-0.1831a	0.10	-0.1732a	0.12	-0.1631a	0.08	-0.1572a	0.09	0.0825a	0.10	0.0807a	0.10
Paying taxes rank	Doing Business Report	153	-31.5491a	0.04	-28.6898c	0.05	-39.8463a	0.06	-47.5501a	0.03	17.9055a	0.06	18.7081a	0.05
Business Freedom	Heritage Foundation	150	29.6077a	0.30	32.6790a	0.27	29.7538a	0.30	33.1393a	0.24	-14.3761a	0.34	-15.3428a	0.30
Time firms spend meeting with tax officialas	WB Enterprise Surveys	99	-2.5590b	0.11	-2.3291b	0.14	-1.7566b	0.04	-1.2245	0.06	1.0960b	0.08	0.8721c	0.10
Regulatory quality (1996-2007)	Kaufman	157	1.8674a	0.41	2.0054a	0.40	1.8298a	0.37	1.9103a	0.36	-0.8954a	0.44	-0.9290a	0.41
Infrastructure quality	Global Competitiveness Report	134	1.6612a	0.19	1.9282a	0.14	1.6805a	0.20	1.8136a	0.18	-0.8237a	0.23	-0.9064a	0.18
% household with running water at home	Gallup 2007	128	0.5701a	0.28	0.5970a	0.28	0.6010a	0.32	0.6535a	0.29	-0.2776a	0.34	-0.2859a	0.32
ICRG corruption index (2000-2008)	ICRG	132	2.0529a	0.34	2.2900a	0.29	2.0093a	0.33	2.2891a	0.25	-0.9605a	0.36	-1.0588a	0.28
% firms expect to give gifts for water connection	WB Enterprise Surveys	97	-20.7020a	0.15	-20.2490a	0.17	-22.5085a	0.15	-22.2472a	0.15	11.2498a	0.18	11.4327a	0.17
Voice and accountability index (1996-2004)	Kaufman	156	1.8754a	0.41	1.9104a	0.45	1.8361a	0.37	1.8650a	0.39	-0.8967a	0.44	-0.8983a	0.45
Expropriation risk (1982-1997)	BERI	121	3.0557a	0.32	3.3799a	0.28	2.8650a	0.27	2.9921a	0.27	-1.3875a	0.32	-1.4362a	0.31
Protection of property rights and law enforcement	Heritage Foundation	150	41.3822a	0.31	45.2872a	0.29	41.7462a	0.31	45.2848a	0.28	-20.4708a	0.36	-21.7600a	0.32
Judicial independence	Global Competitiveness Report	134	1.8588a	0.19	2.1888a	0.13	1.5409a	0.14	1.7350a	0.11	-0.8232a	0.19	-0.9129a	0.14
Democracy index (1990-2006)	Polity IV	148	6.5761a	0.34	6.3533a	0.39	6.6012a	0.32	6.5924a	0.33	-3.1880a	0.37	-3.0668a	0.39
Executive constraints (1990-2006)	Polity IV	147	3.4875a	0.33	3.3581a	0.39	3.5303a	0.31	3.4414a	0.34	-1.6872a	0.36	-1.6010a	0.40
Freedom of the press	Freedom House	157	-40.2230a	0.33	-41.6523a	0.35	-40.9366a	0.33	-42.4134a	0.32	19.5688a	0.37	19.6868a	0.37

Appendix D: The UPU Universal Database and Our Postcodes

Letter ID	Name	Company	Street Address	District	Postcode	City	Country	UPU Universal Database		Postcode database
								Data level		(our variable)
JAM_1	Steven Taylor	Computer Management Professionals	7444 Stone Rd			**Kingston**	**Jamaica**	Names of localities only	C	0.00
AGO_9	Soleymane Umbelina	Os profissionais de gerenciamento de inventário	Avenida Miller 4294			**Kuito**	**República de Angola**	Names of localities only	C	0.00
ARE_2	Hakeem al-Otaiba	Business Inventory Management	1 Modigliani St			**Ash-Shariqah**	**United Arab Emirates**	Names of localities only	C	0.00
DZA_2	Intizara Cham	Business Management Specialists	6123 Rue Meade		**31017**	**Ouahran**	**Algeria**	Postcodes for localities	B	0.33
ISR_1	Yuval Goldblatt	Computer Management Professionals	6 Frisch Rd		**91999**	**Jerusalem**	**Israel**	Postcodes for localities	B	0.33
ARM_6	Oshin Yeritsian	Business Manufacturing Group International	Schultz Ave 349		**901**	**Vagharshapat, Armavir**	**Armenia**	Postcodes for localities	B	0.33
MEX_8	Eber Vega	Servicios Informáticos Inteligentes	Av Tobin 659	**Col Real de Guadalupe**	**72016**	**Puebla, Puebla**	**Mexico**	Postcodes for localities and districts	B+	0.66
LKA_1	Baba Senaviratne	Supply Area Partners	1 Stone St	**Horagala**	**10502**	**Colombo**	**Sri Lanka**	Postcodes for localities and districts	B+	0.66
VEN_3	Raúl Ortega	Socios De Tecnología Profesional	Avenida Ohlin 324	**Las Acacias**	**1040**	**Caracas, DF**	**Venezuela**	Postcodes for localities and districts	B+	0.66
CAN_1	Aaron Macay	Supply Area Partners	**213 Friedman St**		**ON M5C 1R6**	**Toronto**	**Canada**	Postcodes for localities and streets	A	1.00
JPN_4	Akihito Ozawa	Supply Management United	**Simonuki**	**Chuo-ku**	**541-0045**	**Osaka-shi, Osaka-fu**	**Japan**	Postcodes for localities and streets	A	1.00
SWE_1	Leo Jönsson	Försörjningsområde Grupp	**Frischgatan 1047**		**111 47**	**Stockholm**	**Sweden**	Postcodes for localities and streets	A	1.00
USA_3	Ethan Brown	Technology Professional Partners	**626 Kuznets St**		**90033**	**Los Angeles, CA**	**United States**	Postcodes for localities and streets	A	1.00
ESP_8	Rafael Fernández	Profesionales De La Gestión De Inventario	**Carrer de Tobin 65**		**29015**	**Málaga**	**Espana**	Postcodes for localities and streets	A	1.00