



# Foreign Aid and the Culture of Contracting

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We analyze the relationship between foreign aid and the “culture of contracting.” Contracting culture refers to cultural characteristics — trust, respect, level of self-determination, and level of obedience — which allow for impersonal exchange. Theoretically, aid may affect the culture of contracting for better or worse. We empirically analyze this possibility and find that aid generates negative effects on the culture of contracting. The less aid a country receives, the more likely it is to possess a stronger contracting culture. We view our results as identifying another potential unintended consequence of foreign intervention where aid undermines development potential instead of facilitating it.

*Eastern Economic Journal* (2015) 41, 102–125. doi:10.1057/eej.2013.44;  
published online 23 December 2013

**Keywords:** culture of contracting; informal institutions; foreign aid

**JEL:** F15; O10; P50

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## INTRODUCTION

Foreign aid is a well-known development policy intended to assist poor countries. Advocates of foreign aid argue that effective aid can assist impoverished countries in breaking the poverty trap. Two strands of existing literature independently explore the impact of aid on growth [Hughes 2003; Radelet 2006; Doucouliagos and Paldam 2008; Balamoune-Lutz and Mavrotas 2009; and Mavrotas 2009 for a review] and the importance culture for development [Guiso et al. 2006; Licht et al. 2007; Tabellini 2008a, b; 2010; Williamson and Mathers 2011]. Missing from this literature is an assessment of the relationship between aid and culture. This is an important consideration given that an emerging result in the development literature is that informal institutions underpin economic progress or stagnation.

As such, culture is one channel through which aid can affect economic growth for better or worse. To understand this point, consider that the aforementioned literature has found that culture contributes to securing private property rights, promoting democracy, facilitating improved provision of public goods, and economic growth generally. To the extent that aid has a positive relationship with pro-growth culture it will contribute to sustained development because of increases in the extent of the market. However, if aid undermines pro-growth culture then aid policies could actually have the unintended consequence of undermining long-term development.

One reason why culture is often neglected in empirical analysis is that the term “culture” is often vague and malleable. In order to overcome this problem, we focus on the cultural traits that underpin impersonal contracting between strangers including: trust, respect, individual self-determination, and weak obedience. We refer to the collection of these characteristics as the “culture of contracting.” The culture of contracting is crucial for economic development because it allows people to move beyond their close-knit groups to



take advantage of increases in the extent of the market, which is required for development [Mousseau 2000; 2005]. We are cognizant that the culture of contracting concept captures only a narrow aspect of the broader notion of culture. However, by focusing on this one aspect we are able to gain analytical tractability to examine cultural traits, which are crucial to development.

Employing a measure of culture first identified by Tabellini [2008a, b; 2010] and later expanded on by Williamson and Kerekes [2011], we empirically analyze these alternatives by isolating the effect of aid on the culture of contracting. In doing so, we attempt to explain how an important, well-known development policy may affect cultural traits that are central to development.

Our analysis contributes to three related strands of literature, the first being the aforementioned literature analyzing aid on growth. We contribute to this literature by analyzing how aid can affect the culture of contracting, which underpins growth. Second, we contribute to the empirical literature exploring the connection between culture and economic outcomes [Grier 1997; Kevane and Wydick 2001; Berggren and Jordahl 2006; Guiso et al. 2006; Licht et al. 2007; Tabellini 2008a, b; 2010; Arruñada 2010; Gorodnichenko and Roland 2011; Mathers and Williamson 2011; Williamson and Mathers 2011; Dutta and Roy 2013]. This literature is mainly focused on the link between culture and growth. In contrast, our focus is on how aid influences the culture of contracting for better or worse.<sup>1</sup> In doing so, we contribute to the literature on belief formation [Bénabou and Tirole 2006; Di Tella et al. 2007; Giuliano and Spilimbergo 2009] and cultural transmission [Bisin and Verdier 2001; 2011]. Those working in this area have highlighted the role of “market beliefs” for economic outcomes [Di Tella et al. 2007]. Our contribution to this existing work is to explore the connection between foreign aid and specific cultural beliefs required for markets, and hence economic growth.

Our main findings can be summarized as follows. We find that foreign aid undermines cultural values that are crucial for economic development. Our results are robust to a variety of control variables, cross-sectional and panel estimation as well as instrumental variable (IV) estimation, and alternative culture measures.

We proceed as follows. The next section provides the theory of the culture of contracting and discusses the mechanisms through which aid may affect this culture. The section after that discusses the data used, while the subsequent section presents the results of our empirical analysis. The penultimate section provides a sensitivity analysis including a variety of robustness checks. The final section concludes with the implications of our analysis.

## **THEORY**

### **The culture of contracting**

The idea that economic development requires increases in the extent of the market can be traced back to Smith [1776]. Increases in the extent of the market allow people to take advantage of the division of labor and gains from exchange. Recognizing the importance of increases in the extent of the market raises an important question: What cultural characteristics underpin the “culture of contracting” that is required for the movement from small-scale exchange with family and friends to impersonal interaction and exchange with strangers? The shift requires norms of trust, respect, and risk taking [Mousseau 2000]. Along these lines, classical sociologists such as Durkheim [1893] and Tönnies [1887] long ago noted that developed economies were characterized by a unique culture of individualism and the rule of law. Individualism allowed for risk taking and the pursuit of people’s self-interest through exchange, while the rule of law meant that individuals were treated as

equals before the law. These norms encourage impersonal exchange, and hence development.

To further grasp the importance of the culture of contracting, Mousseau [2000; 2003] explicitly outlines the characteristics of a society, which benefits from dense markets and impersonal exchange. He describes four distinct aspects of a culture of contracting: (1) trust, (2) respect and equality before the law, (3) bargaining and compromise, and (4) self-determination. We borrow from Mousseau's work to describe the culture of contracting that has the following characteristics.

First, the society would be characterized by a high level of trust. People must be confident that strangers will reciprocate and deliver on the agreed upon terms of the contract despite the fact that each party is aware that the other is pursuing their self-interest. Where trust is absent economic interactions will be constrained to close-knit groups where repeated interactions can serve as a mechanism to ensure cooperation [Fukuyama 1996; Francois and Zabojnik 2005; Knack and Keefer 2005; 1997].

Second, a culture of contracting requires some notion of respect for others. At its core, contracting requires some notion of "mine and thine" whereby people recognize the property of others. Furthermore, at the core of contracting is the process of bargaining and compromise that requires a certain level of respect for competing views. Absent this basic respect of others there can be no voluntary agreements or exchange, and hence no contracting. In short, the culture of contracting requires the development of abstract and generalized rules of respect to guide social actions among anonymous members of society [Platteau 2000].

Third, contracting requires some notion of self-determination. Absent the freedom of the individual to decide which contacts to enter into, there can be no voluntary agreements and hence no increases in the extent of the market. Indeed, what differentiates a society of contracts from one of exploitation is that the latter is grounded in coercion and force, whereas the former is grounded in notions of voluntary choice and self-determination. In short, if individuals have to be obedient to some master, they cannot voluntarily enter into contracts, which will curtail the extent of the market. Along these lines, a recent literature in economic psychology indicates that people perceived "locus of control" over their own lives and actions is a major determinant of entrepreneurial activity [Harper 2003].

Finally, the culture of contracting requires low levels of obedience or deference to authority and hierarchy, which allows individuals to engage in experimentation, discovery, and risk taking. As Tabellini [2010] emphasizes, a lack of obedience represents self-will or an autonomous individual who is willing to create rules or engage in beneficial activities regardless of formal law or authority. Of course obedience in one form or another is present in all social systems, but societies that discourage individualism also discourage feelings of personal control and determination. The result is reduced risk-taking when it comes to social relationships, innovation, and entrepreneurship, which can have adverse effects on social and economic development.

Deference to authority and hierarchy does not just affect economic opportunities in the present, but also in the future through the cultural transmission between parents and children [Bisin and Verdier 2011]. An existing literature in economic psychology indicates that parents play a key role in influencing their children's locus of control and perception of autonomy that directly influences their likelihood of being entrepreneurial as they grow older [Harper 2003, pp. 54–55]. Development ultimately requires the acceptance of the possibility that individuals as entrepreneurs will make choices contrary to the desires of authority figures. If this possibility does not exist because the "... individual is subjected to a network of controls, the society loses the essential engine of economic development ..." [Grondona 2000, p. 48]. This implies that the development, and sustainability, of a culture of contracting requires the ability to reject established hierarchies of authority.



## Aid and the culture of contracting

In order to grow beyond some minimal level, economies require a culture of contracting to realize the benefits of specialization and the division of labor. This means that in order for poor countries to grow, they must possess, to some extent, the culture of contracting described above. The question that interests us is whether foreign aid positively or negatively affects the culture of contracting.

Theoretically, one can envision both a positive and negative feedback loop between aid and the culture of contracting. In the case of a positive feedback loop, aid encourages exchange, even in small amounts, strengthening the culture of contracting, which results in subsequent exchanges and so on. Under this scenario, the positive affect of aid would strengthen the culture of contracting, which in turn would increase the extent of the market. In contrast, in the case of a negative feedback loop, aid would erode or prohibit the emergence of the culture of contracting thereby constraining the extent of the market. A priori, it is unclear which type of feedback loop exists. Indeed, there is reason to believe that aid could have both positive and negative effects under different scenarios.

One possibility is that foreign aid will have a positive affect on the culture of contracting as follows. Proponents of foreign aid often point out that poor countries are locked into a “poverty trap,” whereby low levels of income make it difficult for people to save since all income is spent on consumption goods [Sachs 2005; Collier 2007]. This lack of investment prevents increases in the extent of the market because of the lack of investment in new goods, services, and market relationships. In theory, effective foreign aid can break this trap leading to subsequent investments, which allows people to take advantage of the benefits of the specialization and the division of labor. Under this scenario, aid can have a positive effect on the culture of contracting precisely because it allows people to take advantage of exchange opportunities that are unavailable under subsistence living.

However, it is also possible that foreign aid can have a negative effect on the culture of contracting. This can occur through two channels. The first is that aid can create a situation of dependency whereby the recipient of aid loses the incentive to become self-sufficient and engage in productive economic activities such as trade and cultivating economic relationships. This is the well-known “Samaritan’s Dilemma,” whereby in assisting those in need the Samaritan unintentionally shifts incentives for the worst [Gibson et al. 2005]. A second, and related, channel is that the provision of aid leads to rent seeking as recipients jockey to secure as much aid as possible. This redirects efforts from productive activities to rent-seeking activities, such as increased corruption, which are zero or negative sum [Svensson 2000; Knack 2001; Mousseau 2003]. Under these scenarios, the provision of aid negatively effects the development of a culture of contracting because it dampens the incentive to engage in productive activities and exchange and instead encourages unproductive activities, which run counter to growth and development.

Aid can have both positive and negative effects on the culture on contracting. Which of these effects dominates is an empirical question. The next sections attempt to provide an answer to this question.

## DATA

In order to create an index, which captures the culture of contracting, we build off the culture variable first identified by Tabellini [2008a, b; 2010] and later expanded by Williamson and Kerekes [2011]. This variable, which is broken into four categories — trust, respect, individual self-determination, and obedience — captures the culture of contracting as discussed above. Trust, respect, and self-determination positively relate to a

culture of contracting, whereas stronger obedience undermines it for the reasons discussed in the section “The culture of contracting”. Data was collected from all five waves of the World Values Surveys (WVSs) to quantify each of these four categories.<sup>2</sup> These surveys capture individual beliefs and values reflecting local norms and customs [The European Values Study Foundation and World Values Survey Association (EVSF–WVSA) 2006]. We aggregate individual survey answers to create a culture index for each country.

One question from the survey is identified that is most closely correlated with each trait of the culture of contracting. For example, trust is measured as the percentage of respondents answering “most can be trusted” to the question, “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?” Self-determination is measured using the question, “Some people feel they have completely free choice and control over what happens to them. Please use this scale (from 1 to 10) where 1 means ‘none at all’ and 10 means ‘a great deal’ to indicate how much freedom of choice and control in life you have over the way your life turns out.” We determine an aggregate control component by averaging all the individual responses and multiplying by ten.

To measure respect, the following question is used: “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five.” The percentage of those surveyed that chose “tolerance and respect for other people” is used to measure respect. The same question is used to measure obedience, but in this case, the percentage of those surveyed that chose obedience as being an important trait for children learning at home.

Individual responses are aggregated for each country. A comprehensive culture of contracting measure is achieved by extracting the first principal components of all four traits. This process extracts the common variation between all four components, reducing the four independent variables into an overall net measure of culture that is conducive to economic interaction and exchange. We use principal component analysis to ensure that our results are not sensitive to the construction of the variable. The benefit of using this technique over simply summing the four cultural components is that we do not have to make rigid assumptions about how each component is related reducing selection biases and measurement error. The index is normalized between zero and ten, with a higher score implying stronger cultural traits (trust, respect, self-determination, and lack of obedience) that are representative of a contracting culture relative to countries with lower scores. Since we are concerned with explaining the general cultural environment, this aggregate variable serves as the main focus of our empirical analysis.

Our main variable of interest, foreign aid, is measured as net development assistance and official aid received divided by GDP (PPP). This is the most common measurement of foreign aid in the current literature. Data is collected from World Development Indicators (WDI) 2012. In all regressions, we always include initial real GDP (PPP) per capita (log form) also collected from WDI 2012.

In addition to foreign aid, we also control for other factors that could possibly influence a country’s culture. We create a main control vector that includes trade openness, urban population, and size of manufacturing sector, as countries that are more developed with a higher propensity for interpersonal exchange will tend to have a culture supportive of contracting. We create a trade openness measure by relying on the most common measure of trade in the literature — simply summing imports plus exports (of goods and services) and dividing it by GDP (PPP) [see Frankel and Romer 1999; Dollar and Kraay 2003; 2004; Rodrik et al. 2004]. Urban is the percentage of the population living in an urban environment and manufacturing represents the value added of manufacturing as a percentage of GDP. All three variables are collected from WDI 2012.



Next, we include controls commonly used in the literature on the determinants of culture. A history of socialism is shown to lead to stronger preferences for state intervention and redistribution policies and could therefore undermine our measure of culture [Alesina and Fuchs-Schündeln 2007]. Socialism is measured as a dummy variable equal to 1 if a county has a socialist legal tradition [La Porta et al. 1997]. Tabellini [2010] argues that political institutions and educational attainment influences culture. Specifically, a history of despotism can lead mistrust, limited morality, and loss of self-control. We use two measures of political institutions — polity and executive constraints — both collected from Polity IV [Marshall et al. 2011]. Polity scores range from  $-10$  to  $10$  with the scale moving from autocratic regimes ( $-10$ ) to strong democracies ( $10$ ). Executive constraints capture institutionalized constraints on the chief executive and are scaled from 1 to 7 with 7 representing strong constraints.

Tabellini [2010] also argues that educational attainment could influence our culture variable of interest by encouraging general morality and providing a sense of control over one's life. Given this, we control for total enrollment in primary and secondary school or literacy rates. Both variables are collected from WDI 2012. We also control for genetic distance from the United Kingdom — a measure associated with the time elapsed since two populations had common ancestors [Spolaore and Wacziarg 2009]. Genetic distance proxies for differences in parental transmission of values and is correlated with measures of individualism [Gorodnichenko and Roland 2010; 2011]. Davis [2012] finds a negative correlation between rainfall variation and individualism. He argues that environments with a historical record of more adverse shocks tend to be more collectivist in order to risk share. We also control for the log of the coefficient of variation of monthly precipitation [Davis 2012].<sup>3</sup>

We also include a control vector derived from the institutions and development literature [Levine and Renelt 1992; La Porta et al. 1997; 2004; Dawson 1998; Jagers and Marshall 2000; Acemoglu et al. 2001; 2002; Sachs 2001; Acemoglu and Johnson 2005; Tabellini 2010; Gwartney et al. 2010]. This includes a dummy variable for English legal origin, latitude (distance from the equator) to control for geographic effects, religion measured as the percentage of the population that is catholic, inequality as captured by the ethnolinguistic fractionalization (ELF) index, and macroeconomic stability measured by the inflation rate and government consumption. Appendix A provides a summary description of all data used in the analysis along with their sources.

## EMPIRICAL ANALYSIS

We attempt to isolate the impact of aid policies on the culture of contracting through a variety of empirical strategies including both panel and cross-sectional analysis. We do so because of restricted data availability and limitations surrounding the culture variable and aid data. In order to maximize sample size for panel estimation, we pool all countries surveyed in any of the five waves over the time periods 1981–1984, 1989–1993, 1994–1999, 1999–2004, and 2005–2007. The panel data covers the time from 1980 to 2007, using 5-year averages creating 5 time periods.<sup>4</sup> The cross-sectional analysis covers the same time period (unless otherwise noted), but averages the data across all years in order to include additional control variables. Appendix B provides a list of all countries in our sample and the year for which each was surveyed from WVS.

Given our empirical setup, we recognize possible reverse causality concerns. We want to emphasize the difficulty in claiming causal mechanisms and focus on identifying possible

underlying associations between aid and the culture of contracting. This is a first attempt to understanding how aid may affect culture and caution the reader from drawing causal conclusions from our results. However, as part of our sensitivity analysis, we do provide IV regression results in an attempt to address reverse causality and endogeneity issues.

Summary statistics for all variables in both the cross-sectional and panel analysis are provided below in Table 1. The data set includes 67 countries covering the time period of 1981–2007 with income per capita ranging from US\$247 to \$29,000 in the cross section and \$602 to \$34,348 in the panel data. The culture index ranges from 0 to 8.62 with a mean of 3.91 for the panel and 0 to 8.04 with a mean of 3.55 for the cross section. Foreign aid averages 1.86 percent of GDP with a standard deviation of 3.32 for the cross section and averages 3.65 percent of GDP with a standard deviation of 7.16 for the panel.<sup>5</sup> A correlation matrix is provided in Appendix C.

### Benchmark results

As a benchmark, we first show the basic relationship between aid with each of the four individual components of culture, as well as the overall culture index, using our cross-sectional data. Throughout the cross-sectional analysis, we use robust regressions with iteratively reweighted least squares (RLS) to minimize possible effects from outliers. The regression is identified as:

$$C_i = \mu + aF_i + Z_i'\delta + \varepsilon_i$$

where  $C$  equals each component (trust, self-control, respect, and obedience) of culture or the overall index,  $F$  is foreign aid, and  $Z$  represents the control vector. For the benchmark regressions, we only control for initial income. The benchmark RLS regressions are shown in Table 2.

As shown in Table 2 Column 1, foreign aid has a negative and significant relationship with trust.<sup>6</sup> This result is reversed for obedience where aid is positive and significant. This implies foreign aid is associated with a decrease in trust and an increase in obedience. For example, a 1 percent increase in aid is associated with a 1.35 percentage point decrease in trust, while a one standard deviation increase in foreign aid (3.32 percent) is associated with an approximately 4.48 percentage point decrease in trust illustrating the negative consequences from aid in our sample of countries. Further, aid is associated with an increase on the level of tolerance and respect which is significant.<sup>7</sup> Aid does not have a significant relationship with self-control.

We now turn to the overall culture index based on the common variation between all four individual components. The culture variable can be understood as an aggregate measure of the culture of contracting that is conducive to exchange as opposed to a measure of individual components of culture. Since we are mainly concerned with the relationship between aid and the culture of contracting, the aggregate index serves as the focus for the remaining empirical analysis. As reported in Table 2 Column 5, foreign aid has a negative and significant relationship with the overall culture index. A 1 percent increase in aid is associated with an approximate decrease of 0.15 in the culture index. A 1 standard deviation increase in aid is associated with an approximate decrease of 0.50 standard deviations in the culture of contracting. This also implies that moving from the lowest aid-receiving country (South Korea) to the highest aid-receiving country (Zimbabwe) in our sample decreases culture by 2.85, approximately a 2 standard deviation decrease in the culture index.

**Table 1** Summary statistics

<i>Variables</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Cross-sectional summary statistics</i>					
Culture index	66	3.55	1.44	0.00	8.04
Trust	67	21.64	10.69	3.80	53.43
Respect	67	63.62	11.05	14.23	82.12
Self-control	66	65.57	7.64	46.80	81.35
Obedience	67	42.42	18.69	2.24	81.74
Aid/GDP	67	1.86	3.32	0.00	19.31
Log GDP per capita 1980	47	8.26	1.13	5.59	10.44
Trade/GDP	65	0.33	0.32	0.08	2.14
Manufacture	66	18.17	7.16	1.11	33.64
Urban	67	54.91	22.43	9.65	100
Education 1960	43	48.95	27.94	1.50	96.80
Polity	57	-0.38	4.98	-10.00	10.00
Executive constraints	57	3.77	1.70	1.00	7.00
Government consumption	65	14.86	5.09	5.84	29.87
Inflation	67	73.99	122.34	2.77	593.92
Socialism	65	0.35	0.48	0.00	1.00
Latitude	65	0.32	0.18	0.01	0.67
ELF	47	0.31	0.29	0.00	0.86
Percentage of catholic	65	28.90	36.81	0.00	97.30
Rainfall variation (log)	64	-0.12	0.47	-0.76	0.95
Genetic distance from the United Kingdom	65	699.24	581.57	35.99	2,255.29
Log population	67	16.53	1.58	12.84	20.89
Log population <sup>2</sup>	67	275.67	53.13	164.75	436.24
Infant mortality 1980	63	60.01	38.76	11.50	160.40
Arms imports (millions) 1980	62	308.89	471.04	2.08	2,132.15
Franz zone	67	0.03	0.17	0.00	1.00
Central America	67	0.01	0.12	0.00	1.00
Egypt	67	0.01	0.12	0.00	1.00
GDP per capita 1980–2007	67	7,498	6,385	247	29,037
<i>Panel summary statistics</i>					
Culture index	132	3.91	1.33	0.00	8.62
Trust	137	22.23	11.53	2.80	60.30
Respect	136	64.06	11.59	14.23	85.19
Self-control	133	65.73	9.97	0.00	83.83
Obedience	136	40.86	18.00	2.24	81.74
Aid/GDP	137	3.65	7.16	-0.04	36.17
Log GDP per capita (lagged)	120	8.48	0.96	6.24	10.27
Trade/GDP	134	73.54	48.60	13.04	336.66
Manufacture	122	20.41	7.64	0.70	37.48
Urban	137	58.49	20.52	11.74	100
Literacy	64	82.01	19.68	24.70	99.65
Polity	130	3.87	5.71	-10.00	10.00
Executive constraints	129	5.11	1.79	1.00	7.00
Government consumption	128	14.81	5.09	4.08	27.63
Inflation	126	153.29	536.57	-0.80	4,447.87
Log population	137	16.92	1.71	12.69	20.98
Log population <sup>2</sup>	137	289.22	58.40	161.04	440.12
Infant mortality lagged	136	39.03	29.67	5.10	129.66
Arms imports (millions) lagged	109	368.17	570.28	0.00	3,820
Franz zone	137	0.01	0.12	0.00	1.00
Central America	137	0.01	0.09	0.00	1.00
Egypt	137	0.01	0.12	0.00	1.00
GDP per capita	136	7,563	6,032	602	34,348





**Table 2** Robust RLS cross-sectional regressions — Sub-components of culture index

<i>Dependent Variance:</i>	<i>Trust</i>	<i>Respect</i>	<i>Self-control</i>	<i>Obedience</i>	<i>Culture index</i>
	(1)	(2)	(3)	(4)	(5)
Aid	-1.353** (0.527)	0.827* (0.469)	-0.055 (0.382)	1.799* (0.983)	-0.150*** (0.067)
Initial income	-3.373* (1.778)	2.776* (1.583)	2.310* (1.310)	-1.005 (3.316)	0.264 (0.229)
Constant	50.541*** (15.438)	40.714*** (14.749)	48.611*** (11.332)	51.304* (28.792)	1.145 (1.980)
Observations	47	47	46	47	46
Adjusted $R^2$	0.093	0.038	0.078	0.095	0.240

*Note:* Robust standard errors are in parentheses. Significance level: \* at 10 percent, \*\* at 5 percent, \*\*\* at 1 percent.

## Main results

We report our main results where we include additional controls in our RLS cross-sectional regressions and also report results from random effects panel estimation.<sup>8</sup> The main control vector includes initial income (in 1981 for the cross section and lagged one period for the panel), along with trade openness (percentage of GDP), urban population (percentage of total population) and manufacturing sector.

Additional controls are added sequentially in order to maximize the number of observations and minimize the effects of collinearity among our independent variables as many of the controls are correlated with one another (see Appendix C). We also use IV estimation in order to minimize the endogeneity effect (discussed in the following section).

For the cross-sectional analysis, in addition to the main control vector, our controls include a dummy variable for a history of socialism, educational attainment in 1960, two different indices for political constraints, genetic distance from the United Kingdom, rainfall variation, English legal origin, latitude, percentage of the population that is catholic, the ELF index, the inflation rate, and government consumption.<sup>9</sup>

Table 3 presents our main robust RLS regression results.

In eight out of nine regressions, foreign aid has a negative and significant relationship with our culture index. On the basis of the average of the significant coefficients, a 1 standard deviation increase in aid is associated with a 0.70 decrease in the culture of contracting (difference between Indonesia and Hong Kong). This implies that moving from the lowest to highest aid-receiving country decreases the culture of contracting by approximately 4.00 units — the difference in culture between Mali and South Korea. Aid loses significance in the last specification, which is not surprising since it includes several additional controls simultaneously.

Among the controls, trade openness has a positive and significant effect, as expected, in six specifications. Urban and manufacturing have the expected positive sign but is not robustly significant. History of socialism has a positive and significant effect on the culture index as report in Column 4. The only other two significant controls are percentages of catholic and government consumption. Both have a negative relationship with the culture of contracting. The inclusion of the controls does increase the explanatory power of the model as the adjusted  $R^2$  range from 0.29 to 0.54.

**Table 3** Main robust RLS cross-sectional regressions — Additional controls

	<i>Dependent variance: Culture index</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Aid	-0.190** (0.070)	-0.256*** (0.068)	-0.210** (0.084)	-0.229** (0.068)	-0.195** (0.081)	-0.240** (0.084)	-0.140* (0.080)	-0.172** (0.079)	-0.052 (0.071)
Initial income	-0.200 (0.316)	-0.710** (0.329)	-0.370 (0.483)	-0.507 (0.314)	-0.011 (0.409)	-0.251 (0.430)	-0.084 (0.316)	-0.207 (0.336)	0.239 (0.299)
Trade	0.011* (0.006)	0.016** (0.006)	0.012* (0.007)	0.012** (0.006)	0.018 (0.012)	0.021* (0.012)	0.012* (0.006)	0.732 (0.955)	-0.0004 (0.006)
Urban	0.016 (0.014)	0.011 (0.014)	0.018 (0.015)	0.019 (0.014)	0.008 (0.019)	0.012 (0.020)	0.013 (0.015)	0.017 (0.015)	0.040** (0.014)
Manufacture	0.050 (0.030)	0.077** (0.031)	0.052 (0.046)	0.051 (0.031)	0.035 (0.033)	0.048 (0.034)	0.047 (0.030)	0.051 (0.039)	0.056* (0.028)
ELF		-1.045 (0.782)							
Education 1960			-0.002 (0.014)						
Socialism				1.028* (0.553)					
Executive constraints					-0.007 (0.142)				
Polity						-0.044 (0.051)			

Table 3 continued

	<i>Dependent variance: Culture index</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Genetic distance							-0.0004 (0.0005)		
Rainfall								-0.223 (0.507)	
English legal origin									-0.309 (0.433)
Latitude									-0.580 (1.419)
Percentage of catholic									-0.024** (0.007)
Inflation									-0.004 (0.003)
Government consumption									-0.116** (0.052)
Constant	3.219 (2.418)	7.403** (2.637)	4.556 (3.765)	5.506** (2.399)	2.211 (2.884)	3.707 (2.957)	2.648 (2.394)	3.274 (2.695)	0.990 (2.137)
Observations	45	41	35	45	40	40	45	44	44
Adjusted $R^2$	0.353	0.452	0.292	0.413	0.297	0.312	0.354	0.282	0.544

Note: Robust standard errors are in parentheses. Significance level: \* at 10 percent, \*\* at 5 percent, \*\*\* at 1 percent.



**Table 4** Random effects model — Additional controls

	<i>Dependent variance: Culture index</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Aid	-0.041** (1.829)	-0.040* (2.232)	-0.046 (2.800)	-0.045* (2.491)	-0.043* (2.479)	-0.041 (2.624)
Lagged income	0.122 (0.164)	-0.294 (0.247)	-0.410 (0.335)	-0.297 (0.256)	-0.248 (0.255)	-0.157 (0.270)
Trade		0.005** (0.003)	0.004 (0.004)	0.004 (0.003)	0.003 (0.003)	0.004 (0.003)
Urban		0.010 (0.010)	-0.003 (0.011)	0.010 (0.010)	0.010 (0.010)	0.006 (0.011)
Manufacture		0.058** (0.018)	0.059** (0.029)	0.064*** (0.019)	0.062*** (0.019)	0.071*** (0.020)
Literacy			0.021* (0.012)			
Executive constraints				-0.044 (0.074)		
Polity					-0.033 (0.024)	
Inflation						-0.0003 (0.0003)
Gov ernment consumption						-0.011 (0.029)
Constant	2.996** (1.454)	4.443** (1.789)	4.372* (2.332)	4.697** (1.810)	4.209** (1.839)	3.535* (1.924)
Observations	116	104	56	100	100	96
Number of countries	61	58	42	55	55	55
Adjusted $R^2$	0.10	0.29	0.40	0.33	0.36	0.34

*Note:* Robust standard errors clustered by country are in parentheses. Significance level: \* at 10 percent, \*\* at 5 percent, \*\*\* at 1 percent.

Table 4 reports the random effects model results. For the panel estimation, our controls include income lagged by one period, urban population, manufacturing, literacy rates, two different indices for political constraints, the inflation rate, and government consumption, as well as year dummies. Aid has a negative and significant coefficient in four out of six regressions. It loses significance when controlling for literacy and the institutions control vector — similar to the above results. One notable difference between the RLS results and the panel estimation is the size of the coefficients. On average, a 1 standard deviation increase in aid is associated with a decrease in the culture index by 0.13 units compared with 0.70 above. Trade displays a positive relationship but is significant in only one specification. Manufacturing has a positive and significant relationship in four out of five regressions. Literacy is also positive and significant. The adjusted  $R^2$  are lower than the cross section results ranging from 0.10 to 0.40. The panel estimation results are weaker than the cross-sectional findings; however, we are somewhat surprised to find any significant change over time as most of the literature suggests that culture slowly evolves over a long period of time — longer than our time period [e.g., Williamson 2000].

Overall, we view our benchmark and core analysis as providing evidence that receiving aid from foreigners has a negative relationship with the culture of contracting.<sup>10</sup> This lends support to the hypothesis that policies regarding foreign aid may have unintended consequences on the culture of contracting. This suggests that as countries become more dependent on



foreign aid, an indirect consequence is the erosion of norms and beliefs conducive to the culture of contracting necessary for economic development.

## SENSITIVITY ANALYSIS

### Correlation or causation?

Our first robustness check attempts to minimize endogeneity and reverse causality biases that may be present in our results. It is possible that countries lacking a culture of contracting that supports economic development also receive large quantities of aid. Given this, it may be the case that our strong results above are because of the fact that countries with low-culture scores rely heavily on foreign aid. In order to provide robustness to our main results, we use IV analysis with both the cross section and panel data. We rely on the standard instruments for foreign aid commonly found in the development literature [Burnside and Dollar 2000; Djankov et al. 2008]. These instruments include population (log), population<sup>2</sup> (log), infant mortality (in 1980 for the cross section and lagged one period for the panel), arms imports (in 1980 for the cross section and lagged one period for the panel), and dummy variables for strategic interests zones (Franc zone, Central America, and Egypt). The instruments appear to be valid as they satisfy the exclusion restrictions as reported by the insignificant Hansen *J*-statistics; however, the *F*-statistics and the adjusted *R*<sup>2</sup> are lower than preferred. The first stage results are presented in Appendix D.<sup>11</sup> We acknowledge that this robustness check is imperfect and does not guarantee that we are capturing the causal relationships between aid and the culture of contracting.

The IV regressions are presented in Tables 5 and 6.

As shown in Table 5, in the instrumented cross-sectional analysis aid is negative and significant in all regression specifications. The average coefficient is  $-0.32$  — an increase in size from the previous results (the RLS regression average is  $-0.21$ ). This implies that moving from the lowest to highest aid recipient country decreases culture by 6 units — a difference equal to three-fourths of the entire index. The results from the panel IV estimation also confirm our previous results where aid is robustly negative and significant (in five out of six specifications). The average coefficient for foreign aid also increases from the previous panel estimation (from  $-0.04$  to  $-0.11$ ) but is lower than the cross-sectional results. The sign and significance for the control variables are consistent with the previous findings as are the adjusted *R*<sup>2</sup> in both the cross section and panel estimations. These results support our findings above. Although these results add validity to the main findings, we are still cautious about making overly strong causal arguments as it is difficult to establish the exact mechanisms at play.

### Alternative culture measures

Our last robustness check replaces the previous measure of the culture of contracting with several different measures of culture commonly found in the literature. The results are not reported, but are summarized below and are available upon request.

First, we rerun our all regressions using only trust as the dependent variable and find that aid is robustly negative and significantly related to generalized levels of trust. This implies that countries receiving more foreign aid have lower levels of trust.<sup>12</sup> Next, we rerun our main regressions replacing the dependent culture variable with Schwartz's three main cultural dimensions: embeddedness, harmony, and hierarchy [Schwartz 1994; 1999; Licht et al. 2007].<sup>13</sup> We find that aid only has a significant (and negative) relationship with "affective autonomy" supporting previous findings that aid is associated with a culture of

**Table 5** Cross-sectional IV model

	<i>Dependent variance: Culture index</i>									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Aid	-0.306*	-0.331**	-0.312**	-0.199*	-0.328**	-0.414**	-0.403**	-0.342**	-0.403**	-0.299**
	(0.155)	(0.135)	(0.103)	(0.098)	(0.109)	(0.141)	(0.129)	(0.167)	(0.165)	(0.143)
Initial income	-0.290	-0.650	-0.900**	-0.371	-0.756**	-0.765	-0.829*	-0.660	-0.817	-0.675
	(0.459)	(0.422)	(0.348)	(0.432)	(0.354)	(0.490)	(0.483)	(0.452)	(0.442)	(0.493)
Trade		0.014	0.013	0.007	0.013	0.035**	0.033**	0.014	1.847	0.007
		(0.012)	(0.011)	(0.010)	(0.011)	(0.015)	(0.012)	(0.012)	(1.347)	(0.011)
Urban		0.014	0.010	0.017*	0.018*	0.012	0.017	0.015	0.014	0.024*
		(0.009)	(0.009)	(0.009)	(0.009)	(0.015)	(0.015)	(0.010)	(0.010)	(0.014)
Manufacture		0.062*	0.081**	0.062	0.043	0.046	0.048	0.059	0.052	0.070**
		(0.033)	(0.029)	(0.039)	(0.033)	(0.039)	(0.037)	(0.035)	(0.037)	(0.032)
ELF			-1.108							
			(0.727)							
Education 1960				-0.002						
				(0.012)						
Socialism					1.120**					
					(0.360)					
Executive constraints						-0.181				
						(0.150)				
Polity							-0.085			
							(0.051)			

Table 5 continued

	<i>Dependent variance: Culture index</i>									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Genetic distance								0.000 (0.001)		
Rainfall									0.008 (0.471)	
English legal origin										-0.077 (0.531)
Latitude										0.799 (1.352)
Percentage of catholic										-0.010 (0.009)
Inflation										-0.003 (0.003)
Government consumption										0.023 (0.094)
Constant	6.328 (4.122)	7.060** (3.470)	9.088** (2.961)	4.559 (3.506)	7.850** (2.913)	8.612** (4.018)	8.116** (3.575)	6.993** (3.403)	8.618** (3.869)	6.624* (3.376)
Observations	45	44	40	34	44	40	40	44	44	43
Adjusted R <sup>2</sup>	0.210	0.352	0.459	0.312	0.411	0.321	0.363	0.329	0.366	0.408

Note: Robust standard errors are in parentheses. Significance level: \* at 10 percent, \*\* at 5 percent, \*\*\* at 1 percent. Aid is instrumented with log population, log population<sup>2</sup>, infant mortality in 1980, arms imports in 1980, and strategic interests (dummy variables=1 for Central America, Egypt, and Franc zone).



**Table 6** Random effects IV model

	<i>Dependent variance: Culture index</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Aid	-0.075** (3.422)	-0.063 (4.907)	-0.116** (4.945)	-0.118** (5.325)	-0.111** (5.364)	-0.120** (5.735)
Lagged income	-0.089 (0.217)	-0.357 (0.355)	-0.531 (0.423)	-0.541 (0.362)	-0.499 (0.362)	-0.520 (0.415)
Trade		0.003 (0.004)	0.008 (0.005)	0.004 (0.004)	0.003 (0.004)	0.003 (0.004)
Urban		0.004 (0.013)	-0.015 (0.015)	0.005 (0.014)	0.006 (0.014)	0.001 (0.015)
Manufacture		0.069** (0.029)	0.011 (0.042)	0.057* (0.030)	0.058** (0.029)	0.056* (0.032)
Literacy			0.024* (0.014)			
Executive constraints				-0.056 (0.079)		
Polity					-0.031 (0.026)	
Inflation						-0.0004 (0.0004)
Government consumption						0.010 (0.037)
Constant	4.905** (1.951)	5.316* (2.904)	6.769** (3.139)	7.561** (2.864)	6.963** (2.928)	7.210** (3.151)
Observations	97	91	51	88	88	84
Number of countries	51	49	37	47	47	46
Adjusted R <sup>2</sup>	0.12	0.33	0.40	0.33	0.35	0.33

*Note:* Robust standard errors clustered by country are in parentheses. Significance level: \* at 10 percent, \*\* at 5 percent, \*\*\* at 1 percent. Aid is instrumented with log population, log population<sup>2</sup>, infant mortality lagged one period, arms imports lagged one period, and strategic interests (dummy variables=1 for Central America, Egypt, and Franc zone).

obedience. The other dimensions of culture and aid appear to be unrelated as the results are not significant. Another common measure of culture comes from Hofstede [1980; 2001] and includes individualism, power distance, masculinity, and uncertainty avoidance. We rerun our main results with 31 observations and find no significant relationship between aid and any of the four Hofstede culture variables. We also replace the dependent variable with a measure of individualism from WVSs and find no significant relationship between aid and individualism.

Collectively, we interpret these findings as suggesting that foreign aid does not undermine or support every dimension of culture; instead, it is more closely linked to notions of culture that are associated with economic activity such as exchange or contracting. This makes intuitive sense as these are the activities aid is supposed to help or facilitate.

## CONCLUSION

Our analysis implies that aid may have the unintended consequence of undermining some of the very values that are ultimately needed for growth and development. Our main finding — that aid is associated with a weaker culture of contracting — means that discussions of future aid needs to take this relationship into account. One current issue





where our finding is directly relevant is the recent effort to use monetary aid as a means of winning the “hearts and minds” of those in foreign countries [Multi-National Corps 2009]. The underlying idea is that monetary aid should be aimed at convincing others of the benefits of Western values and institutions. Our analysis implies that aid aimed at winning hearts and minds may come with significant long-run costs in the form of eroding the culture of contracting and, in the process, retarding long-term development.

## Acknowledgement

We thank the editor and an anonymous reviewer for comments and helpful suggestions.

## Notes

1. Our analysis is loosely related to the literature on how institutions determine a variety of economic outcomes (e.g., see de Soto 2000; Acemoglu et al. 2001; 2002; Landau 2003; Kerekes and Williamson 2008; Dutta and Roy 2011).
2. The time periods of the surveys are 1981–1984, 1989–1993, 1994–1999, 1999–2004, and 2005–2007.
3. We thank the author for providing us with this data set.
4. The five time periods are 1984 (average 1980–1984), 1989 (average 1985–1989), 1994 (average 1990–1994), 1999 (average 1995–1999), and 2007 (average 2000–2007), unless otherwise noted.
5. The measurement is net foreign aid, which is aid received, net aid paid back; therefore, we can have a negative number.
6. The individual components are based on the survey aggregation process described above and are not rescaled to form a relative index. Trust, respect, and obedience are reported as percentage of respondents and self-control is based on a scale from 1 to 10 and multiplied by ten.
7. The significance on the aid coefficient disappears once we include additional controls such as trade openness. These results are available upon request.
8. The Hausman test confirmed the superiority of a random effects model over fixed effects. The Hausman coefficients range from 5.34 to 6.88 and  $p$ -values range from 0.08 to 0.38, depending on the exact specification.
9. We do not include these controls in the main specification as it lowers the number of observations and they are significantly correlated with some of our main variables of interest. See Appendix C.
10. Our results are basically the same if we drop initial income or if we replace latitude with share of population living in the temperate zone as the geographic control measure. Also, our regressions do not appear to suffer from multicollinearity since the variance inflation factor scores fall within the tolerance range of 0–1.
11. Sargan-Hansen test for over-identifying restrictions is performed to confirm the validity of the instruments. This statistics is insignificant indicating that the instruments are uncorrelated with the error term and are correctly excluded.
12. See Knack and Keefer 1995; 1997; La Porta et al. 1997; Woolcock 1998; and Zak and Knack 2001 for the importance of trust for a variety of development outcomes.
13. Embeddedness/autonomy captures respect for tradition, social order, and obedience. Mastery/harmony captures the relationship between mankind and the natural and social world. Mastery refers to cultural emphasis on altering and changing the natural world as a means to improving an individual’s well-being. The last cultural dimension, hierarchy/egalitarianism, captures how societies generate group cooperation and productive activities. To measure each dimension, a survey with a series of questions related to the above distinct values was administered where respondents were asked to rate each of the value items as “a guiding principle in MY life.” Mean ratings of each of the items were computed to create country-level indices.

## References

- Acemoglu, Daron, and Simon Johnson. 2005. Unbundling Institutions. *Journal of Political Economy*, 113(5): 949–995.
- Acemoglu, Daron, Simon Johnson, and James Robinson. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review*, 91(5): 1369–1401.
- . 2002. Reversal of Fortunes: Geography and Institutions in the Making of the Modern World Income Distribution. *Quarterly Journal of Economics*, 117(4): 1231–1294.



- Arriñada, Benito. 2010. Protestants and Catholics: Similar Work Ethic, Different Social Ethic. *The Economic Journal*, 120(547): 890–918.
- Baliamoune-Lutz, Mina, and George Mavrotas. 2009. Aid Effectiveness: Looking at the Aid–Social Capital–Growth Nexus. *Review of Development Economics*, 13(3): 510–525.
- Bénabou, Roland, and Jean Tirole. 2006. Belief in a Just World and Redistributive Politics. *The Quarterly Journal of Economics*, 121(2): 699–746.
- Berggren, N., and H. Jordahl. 2006. Free to Trust: Economic Freedom and Social Capital. *Kyklos*, 59(2): 141–169.
- Bisin, Alberto, and Thierry Verdier. 2001. The Economics of Cultural Transmission and the Dynamics of Preferences. *Journal of Economic Theory*, 97(2): 298–319.
- . 2011. The Economics of Cultural Transmission and Socialization, in *Handbook of Social Economics*, edited by Jess, Benhabib, Alberto, Bisin, and Matthew O., Jackson, Vol. 1 A, The Netherlands: North-Holland, 339–416.
- Burnside, Craig, and David Dollar. 2000. Aid, Policies, and Growth. *American Economic Review*, 90(4): 847–868.
- Collier, Paul. 2007. *The Bottom Billion*. New York: Oxford University Press.
- Davis, Lewis. 2012. Individualism and Economic Development: Evidence from Rainfall Data. Working paper.
- Dawson, J. W. 1998. Institutions, Investment, and Growth: New Cross-Country and Panel Data Evidence. *Economic Inquiry*, 36: 603–619.
- de Soto, Hernando. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Di Tella, Rafael, Sebastian Galiani, and Ernesto Schargrotsky. 2007. The Formation of Beliefs: Evidence from the Allocation of Land Titles to Squatters. *Quarterly Journal of Economics*, 122(1): 209–241.
- Djankov, Simeon, Oliver Hart, Caralee McLiesh, and Andrei Shleifer. 2008. Debt Enforcement around the World. *Journal of Political Economy*, 116(6): 1105–1149.
- Dollar, David, and Aart Kraay. 2003. Institutions, Trade, and Growth. *Journal of Monetary Economics*, 50(1): 133–162.
- . 2004. Trade, Growth, and Poverty. *Economic Journal*, 114(493): F22–F49.
- Doucouligios, Hristos, and Martin Paldam. 2008. Aid Effectiveness on Growth: A Meta Study. *European Journal of Political Economy*, 24(1): 1–24.
- Durkheim, Emile. 1893 [1933]. *The Division of Labour in Society*. Glencoe, IL: Free Press.
- Dutta, Nabamita, and Sanjukta Roy. 2011. Do Potential Skilled Emigrants Care About Political Stability at Home? *Review of Development Economics*, 15(3): 442–457.
- . 2013. The Changing Face of Culture: Gauging the Impact of a Free Media. *European Journal of Law and Economics*, 36(1): 95–115.
- Francois, Patrick, and Jan Zabojnik. 2005. Trust, Social Capital and Economic Development. *Journal of European Economic Association*, 3(1): 51–94.
- Frankel, Jeffrey A., and David Romer. 1999. Does Trade Cause Growth? *American Economic Review*, 89(3): 379–399.
- Fukuyama, Francis. 1996. *Trust: The Social Virtues and the Creation of Prosperity*. New York: Simon and Schuster.
- Gibson, Clark C., Krister Andersson, Ostrom Elinor, and Shivakumar Sujai. 2005. *The Samaritan's Dilemma: The Political Economy of Development Aid*. New York: Oxford University Press.
- Giuliano, Paola, and Antonio Spilimbergo. 2009. Growing up in a Recession: Beliefs and the Macroeconomy. NBER Working Paper 15321, National Bureau of Economic Research, Inc.
- Gorodnichenko, Yuriy, and Gerard Roland. 2010. Culture, Institutions and the Wealth of Nations. NBER Working Papers 16368, National Bureau of Economic Research, Inc.
- . 2011. Which Dimensions of Culture Matter for Long-Run Growth? *American Economic Review*, 101(3): 492–498.
- Grier, R. 1997. The Effect of Religion on Economic Development: A Cross-National Study of Sixty-Three Former Colonies. *Kyklos*, 50(1): 47–62.
- Gronдона, Mariano. 2000. A Cultural Typology of Economic Development. in *Culture Matters: How Values Shape Human Progress*, edited by L. Harrison and S.P. Huntington. New York: Basic Books, 40–55.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2006. Does Culture Affect Economic Outcomes? *Journal of Economic Perspectives*, 20(2): 23–48.
- Gwartney, James D., Joshua C. Hall, and Robert Lawson. 2010. Economic Freedom Dataset. in *Economic Freedom of the World: Annual Report*. Vancouver, BC: Fraser Institute.
- Harper, David A. 2003. *Foundations of Entrepreneurship and Economic Development*. New York: Routledge.
- Hofstede, Geert H. 1980. *Culture's Consequences: International Differences in Work-Related Values*. Thousand Oaks, CA: Sage.



- . 2001. Culture's Consequences: Comparing Values, Behaviors, *Institutions, and Organizations Across Nations*, 2nd ed., Thousand Oaks, CA: Sage.
- Hughes, Helen. 2003. Trade or Aid: Which Benefits Developing Countries More? *Economic Papers*, 22(3): 1–19.
- Jagers, Keith, and Monty G. Marshall. 2000. Polity IV Project. Center for International Development and Conflict Management, University of Maryland.
- Kerekes, Carrie B., and Claudia R. Williamson. 2008. Unveiling de Soto's Mystery: Property Rights, Capital, and Development. *Journal of Institutional Economics*, 4(3): 299–325.
- Kevane, Michael, and Bruce Wydick. 2001. Social Norms and the Time Allocation of Women's Labor in Burkina Faso. *Review of Development Economics*, 5(1): 119–129.
- Knack, Stephen. 2001. Aid Dependence and the Quality of Governance: Cross-Country Empirical Tests. *Southern Economic Journal*, 68(2): 310–329.
- Knack, Stephen, and Philip Keefer. 1995. Institutions and Economic Performance: Cross Country Tests Using Alternative Institutional Measures. *Economics and Politics*, 7(3): 207–228.
- . 1997. Does Social Capital Have an Economic Payoff? *The Quarterly Journal of Economics*, 112(4): 1251–1288.
- . 2005. Social Capital, Social Norms, and the New Institutional Economics, in *Handbook of New Institutional Economics*, edited by C., Menard, and M.M., Shirley, The Netherlands: Springer, 701–725.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1997. Legal Determinants of External Finance. *Journal of Finance*, 52(July): 1131–1150.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Christian Pop-Eleches, and Andrei Shleifer. 2004. Judicial checks and balances. *Journal of Political Economy*, 112(2): 445–70.
- Landau, David. 2003. A Simple Theory of Economic Growth. *Economic Development and Cultural Change*, 52(1): 217–235.
- Levine, R., and D. Renelt. 1992. A Sensitivity Analysis of Cross-country Growth Regressions. *American Economic Review*, 82: 942–963.
- Licht, Amir N, Chanan Goldschmidt, and Shalom H. Schwartz. 2007. Culture Rules: The Foundations of the Rule of Law and Other Norms of Governance. *Journal of Comparative Economics*, 35(4): 659–688.
- Marshall, Monty G., Keith Jagers, and Ted Robert Gurr. 2011. *Polity IV Project: Dataset Users' Manual*. Center for Systemic Peace.
- Mathers, Rachel, and Claudia Williamson. 2011. Cultural Context: The Productivity of Capitalism. *Kyklos*, 64(2): 231–252.
- Mavrotas, George. 2009. Introduction: Development Aid — Theory, Policies, and Performance. *Review of Development Economics*, 13(3): 373–381.
- Mousseau, Michael. 2000. Market Prosperity, Democratic Consolidation, and Democratic Peace. *Journal of Conflict Resolution*, 44(4): 472–507.
- . 2003. Market Civilization and its Clash with Terror. *International Security*, 27(3): 5–29.
- . 2005. Comparing New Theory with Prior Beliefs: Market Civilization and the Democratic Peace. *Conflict Management and Peace Science*, 22(1): 63–77.
- Multi-National Corps. 2009. Money as a Weapon System. *MNC-CJ8 SOP*, 1–324.
- Platteau, Jean-Phillipe. 2000. *Institutions, Social Norms, and Economic Development*. Harwood: Academic Publishers and Routledge.
- Quinn, Dennis P., and A. Maria Toyoda. 2008. Does Capital Account Liberalization Lead to Economic Growth? *Review of Financial Studies*, 21(3): 1403–1449.
- Radelet, Steven. 2006. A Primer on Foreign Aid. Center for Global Development, Working Paper #92, Center for Global Development.
- Rodrik, Dani. 1997. *Has Globalization Gone Too Far?* Washington DC: Institute for International Economics.
- Rodrik, Dani, Arvind Subramanian, and Francesco Trebbi. 2004. Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development. *Journal of Economic Growth*, 9(3): 131–165.
- Sachs, Jeffrey. 2001. Tropical Underdevelopment. National Bureau of Economic Research Working Paper no. 8119, National Bureau of Economic Research, Inc.
- . 2005. *The End of Poverty*. New York: Penguin Books.
- Schwartz, Shalom H. 1994. Beyond Individualism/Collectivism: New Cultural Dimensions of Values, in *Individualism and Collectivism: Theory, Method, and Applications*, edited by Uichol, Kim, Harry C., Triandis, Cigdem, Kagitcibasi, Sang-Chin, Choi, and Gene, Yoon. Thousand Oaks, CA: SAGE Publications.
- . 1999. Cultural Value Differences: Some implications for Work. *Applied Psychology International Review*, 48(1): 23–47.
- Smith, Adam 1776[1976]. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Chicago: University of Chicago Press.



- Spolaore, Enrico, and Romain Wacziarg. 2009. The Diffusion of Development. *The Quarterly Journal of Economics*, 124(2): 469–529.
- Svensson, Jakob. 2000. Foreign Aid and Rent-Seeking. *Journal of International Economics*, 51(2): 437–461.
- Tabellini, Guido. 2008a. Presidential Address: Institutions and Culture. *Journal of the European Economic Association*, 6(2–3): 255–294.
- . 2008b. The Scope of Values: Cooperation and Incentives. *Quarterly Journal of Economics*, 123(3): 905–950.
- . 2010. Culture and Institutions: Economic Development in the Regions of Europe. *Journal of European Economic Association*, 8(4): 677–716.
- The European Values Study Foundation and World Values Survey Association (EVSF–WVSA) 2006. *European and World Values Surveys Four-Wave Integrated Data File, 1981–2004*, v.20060423. The European Values Study Foundation and World Values Survey Association (EVSF–WVSA), Tilburg, the Netherlands.
- Tonnies, Ferdinand 1887 [1957]. *Community and Society*. East Lansing, MI: Michigan State University Press.
- Williamson, Claudia R., and Rachel Mathers. 2011. Economic Freedom, Culture, and Growth. *Public Choice*, 148 (3–4): 313–335.
- Williamson, Claudia R., and Carrie B. Kerekes. 2011. Securing Private Property: Formal versus Informal Institutions. *Journal of Law and Economics*, 54(3): 537–572.
- Williamson, O.E. 2000. The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature*, 38(3): 595–613.
- Woolcock, M. 1998. Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework. *Theory and Society*, 27(2): 151–208.
- World Bank 2012. *World Development Indicators*. Washington, DC: World Bank.
- Zak, P.J., and S. Knack. 2001. Trust and Growth. *The Economic Journal*, 111(470): 295–321.

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## APPENDIX A

**Table A1** Data description and sources

<i>Variables</i>	<i>Data description</i>	<i>Sources</i>
Culture index	Culture index is constructed by using principal components analysis to extract the common variation among all four variables: trust, control, respect, and obedience. The index is normalized to range between 0 and 10. Trust is measured as the percentage of respondents who answered that “Most people can be trusted,” respect is measured as the percentage of respondents that mentioned the quality “tolerance and respect for other people” as being important, control is measured as the unconditional average response (multiplied by ten) to the question asking to indicate how much freedom of choice and control in your life you have over the way your life turns out (scaled from 1 to 10), obedience is the percentage of respondents that mentioned obedience as being important	European and WVSs, 1981–2007
Aid/GDP	Equals net official development assistance and official aid received divided by GDP (PPP)	WDI [2012]
GDP per capita (log)	GDP per capita, PPP, constant 2005 international dollar. Log form	WDI [2012]
Trade/GDP	Equals imports plus exports of goods and services divided by GDP (PPP)	WDI [2012]
Population (log)	Log of population. Average from 1981 to 2007	WDI 2012
English legal origin	Dummy variable representing English legal origin	La Porta et al. (1997)
Latitude	Measured as the absolute value of the latitude of the country, scaled to values between 0 and 1 (0 is the equator)	La Porta et al. [1997]
Percentage of catholic	Measured as the percentage of population in 1980 (or for 1990–1995 for countries formed more recently) that belonged to Roman Catholic religion	La Porta et al. 1997
Inflation	Measured as the percentage change in the consumer price index	WDI [2012]
Government consumption	Final government consumptions as a percentage of GDP	WDI [2012]
ELF	Measured by ELF that is the average value of five different indices of ELF. Its value ranges from 0 to 1. The five component indices are: (1) probability that two randomly selected people from a given country will not belong to the same ethnolinguistic group (2) probability of two randomly selected individuals speaking different languages; (3) probability of two randomly selected individuals do not speak the same language; (4) percentage of the population not speaking the official language; and (5) percentage of the population not speaking the most widely used language	La Porta et al. 1997
Education 1960	Total enrollment in primary and secondary school in 1960	WDI [2012]
Literacy	Literacy rate, percentage of the population age 15 and above who can, with understanding, read, and write a short, simple statement on their everyday life	WDI [2012]
Polity	The index is measured on a scale from –10 to 10 with 10 representing most democratic and –10 most autocratic. The variable is derived from subtracting the autocracy score from the democracy score	Polity IV, [Marshall, et al. 2011]
Infant mortality	The number of infants dying before reaching 1 year of age, per 1,000 live births in a given year	WDI [2012]
Arms imports	Arms imports (constant 1990 US\$ (in millions))	WDI [2012]
Manufacture	Manufacturing, value added (percentage of GDP)	WDI [2012]
Urban	Urban population (percentage of total)	World Development Indicators 2012.
Executive constraints	Measures institutionalized constraints on the chief executive. Scaled 1–7 with 7 representing strong constraints.	Polity IV, [Marshall et al. 2011]
Socialism	Dummy variable representing Socialist legal origin	La Porta et al. [1997]

**Table A1** *continued*

<i>Variables</i>	<i>Data description</i>	<i>Sources</i>
Rainfall variation (log)	The natural log of the coefficient of variation of monthly precipitation	Davis 2012
Genetic distance from the United Kingdom	Measure of genetic dissimilarity of a country's dominant ethnic group from that of the United Kingdom, based on non-active gene variants	Spolaore and Wacziarg [2009]
Franz zone	Dummy equal to 1 if a country belongs to Franc zone	World Bank
Central America	Dummy equal to 1 if a country belongs to Central America	World Bank
Egypt	Dummy equal to 1 for Egypt	World Bank

## APPENDIX B

**Table B1** Country and year of WVS

<i>Countries</i>	<i>WVS wave</i>	<i>Countries</i>	<i>WVS wave</i>
Albania	1994, 1999	Kyrgyz Republic	1999
Algeria	1999	Latvia	1994, 1999
Argentina	1984, 1989, 1994, 1999, 2007	Lithuania	1994, 1999
Armenia	1994	Macedonia, FYR	1994, 1999
Azerbaijan	1994	Malaysia	2007
Bangladesh	1994, 1999	Mali	2007
Belarus	1994, 1999	Malta	1984, 1989, 1999
Bosnia and Herzegovina	1994, 1999	Mexico	1989, 1994, 1999, 2007
Brazil	1989, 1994, 2007	Moldova	1994, 1999, 2007
Bulgaria	1994, 1999	Morocco	1999, 2007
Bulgaria	2007	Nigeria	1989, 1994, 1999
Burkina Faso	2007	Pakistan	1994, 1999
Chile	1989, 1994, 1999, 2007	Peru	1994, 1999, 2007
China	1989, 1994, 1999, 2007	Philippines	1994, 1999
Colombia	1994, 2007	Poland	1994, 1999, 2007
Croatia	1999	Romania	1994, 1999, 2007
Cyprus	2007	Russian Federation	1994, 1999, 2007
Czech Republic	1994, 1999	Rwanda	2007
Dominican Republic	1994	Saudi Arabia	1999
Egypt, Arab Republic	1999, 2007	Serbia	1994, 1999, 2007
El Salvador	1994	Singapore	1999
Estonia	1999	Slovak Republic	1994, 1999
Ethiopia	2007	Slovenia	1994, 1999, 2007
Georgia	1994	South Africa	1994, 1999, 2007
Ghana	2007	Thailand	2007
Hong Kong	2007	Trinidad and Tobago	2007
Hungary	1994, 1999	Turkey	1989, 1994, 1999, 2007
India	1989, 1994, 1999, 2007	Uganda	1999
Indonesia	1999, 2007	Ukraine	1994, 1999, 2007
Iran, Islamic Republic	1999, 2007	Uruguay	1994
Iraq	1999, 2007	Venezuela, RB	1994, 1999
Jordan	1999, 2007	Vietnam	1999, 2007
Korea, Republic	1984, 1989, 1994, 1999, 2007	Zambia	2007
		Zimbabwe	1999

## APPENDIX C

Table C1 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
(1) Culture index	1.00																		
(2) Aid/GDP	<b>-0.53</b>	1.00																	
(3) Log GDP pc 1980	<b>0.31</b>	<b>-0.63</b>	1.00																
(4) Trade/GDP	<b>0.21</b>	0.08	<b>0.25</b>	1.00															
(5) Urban	<b>0.40</b>	<b>-0.47</b>	<b>0.78</b>	<b>0.38</b>	1.00														
(6) Manufacture	<b>0.42</b>	<b>-0.28</b>	0.10	-0.05	<b>0.26</b>	1.00													
(7) ELF	<b>-0.39</b>	<b>0.34</b>	<b>-0.45</b>	-0.07	<b>-0.44</b>	-0.26	1.00												
(8) Literacy 1960	<b>0.36</b>	<b>-0.41</b>	<b>0.65</b>	0.21	<b>0.49</b>	<b>0.45</b>	<b>-0.42</b>	1.00											
(9) Socialism	<b>0.43</b>	-0.19	0.11	-0.05	0.04	<b>0.33</b>	<b>-0.35</b>	<b>0.49</b>	1.00										
(10) Executive constraints	0.20	-0.18	0.14	<b>0.30</b>	0.13	0.25	-0.29	<b>0.41</b>	<b>0.32</b>	1.00									
(11) Polity	0.16	-0.19	0.12	0.24	0.18	0.26	0.29	<b>0.39</b>	<b>0.26</b>	<b>0.94</b>	1.00								
(12) Genetic distance from the United Kingdom	<b>-0.42</b>	<b>0.61</b>	<b>-0.45</b>	0.06	<b>-0.47</b>	-0.20	<b>0.57</b>	<b>-0.35</b>	<b>-0.36</b>	-0.17	-0.18	1.00							
(13) Rain variation	-0.05	0.01	-0.22	-0.09	<b>-0.24</b>	0.19	0.16	0.03	-0.09	0.06	0.23	<b>0.39</b>	1.00						
(14) English	-0.01	-0.08	-0.05	-0.05	0.03	0.18	0.17	0.04	0.06	0.01	0.06	0.08	0.10	1.00					
(15) Latitude	<b>0.44</b>	<b>-0.28</b>	<b>0.31</b>	0.08	<b>0.33</b>	<b>0.30</b>	<b>-0.45</b>	<b>0.46</b>	<b>0.76</b>	<b>0.36</b>	0.26	<b>-0.58</b>	<b>-0.45</b>	-0.04	1.00				
(16) Percentage of catholic	-0.10	-0.14	0.24	0.00	<b>0.27</b>	0.24	<b>-0.29</b>	<b>0.37</b>	-0.11	-0.01	0.10	-0.02	<b>0.27</b>	0.18	-0.14	1.00			
(17) Inflation	0.09	-0.12	0.18	-0.19	0.17	0.18	-0.17	0.28	<b>0.43</b>	0.11	0.18	<b>-0.29</b>	-0.03	-0.03	<b>0.31</b>	-0.04	1.00		
(18) Government consumptions	0.06	0.06	0.26	0.15	0.22	0.09	-0.02	0.15	<b>0.33</b>	<b>0.31</b>	0.20	<b>-0.34</b>	<b>-0.56</b>	-0.01	<b>0.49</b>	-0.10	0.06	1.00	

Note: Correlations significant at 5 percent are in bold.



## APPENDIX D

**Table D1** First-stage results

	<i>Dependent variance: Aid</i>	
	<i>Cross-sectional</i>	<i>Panel estimation</i>
Log population	2.214 (3.711)	2.739 (6.068)
Log population <sup>2</sup>	-0.085 (0.110)	-0.129 (0.179)
Infant mortality	0.047 (0.013)	0.108 (0.024)
Franc zone	1.780 (2.513)	10.385 (4.357)
Central America	-2.512 (3.121)	-2.700 (5.618)
Egypt	-1.755 (3.230)	-0.694 (5.162)
Arms imports (lagged)	-0.001 (0.001)	0.001 (0.001)
Constant	-13.621 (31.164)	-8.727 (51.170)
Number of observations	59	104
<i>F</i> -statistics	3.81	—
Adjusted <i>R</i> <sup>2</sup>	0.25	—
Hansen <i>J</i> -statistic	4.26	4.27
$\chi^2$ <i>P</i> -value	0.64	0.64

*Note:* Robust standard errors are in parentheses. Clustered by country for panel estimation. Significance level:  
 \* at 10 percent \*\* at 5 percent, \*\*\* at 1 percent.