

Culture and the Cost of Contract Enforcement

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Abstract

What explains cross-country differences in the cost of contract enforcement? Previous findings suggest that fewer legal complexities support lower contract enforcement costs. In addition, recent work finds that individuals may rely on informal, cultural means to enforce agreements. Building from these two main bodies of work, this paper seeks to understand the variation of the costs of enforcing contracts by examining how informal cultural enforcement mechanisms may substitute or complement formal legal procedures ultimately shaping the costs of contract enforcement. Cultural measures of trust, individualism, individual responsibility and an overall culture index dominate legal formalism suggesting a substitution effect. These results suggest that variation in contract enforcement costs may be better explained from cross-country differences in culture than formal legal rules.

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1. Introduction

Without protection of property rights and enforcement of contracts, most agree that economic activity would remain at a subsistence level, as individuals have no incentive to be productive. Individuals would not produce beyond what could be immediately consumed for fear of expropriation. In this Hobbesian state of nature, life is ‘nasty, brutish, and short’. Contracting institutions, the ability to regulate and facilitate transactions between private parties, underpin economic exchange— moving out of the ‘Hobbesian Jungle’ to a more prosperous society.

As explicitly stated by North (1990), contract enforcement is an important predictor of economic growth. In addition, contracting institutions also internalize market failures, facilitate financial development, minimize corruption, and promote international trade (Coase 1960; Cheung 1983; Cooley et al. 2004; Yi and Tao 2009; Lerner and Schoar 2005; Jappelli et al. 2005; Doornik 2008; Bae and Goyal 2009; Cavalcanti 2010; Gennaioloi 2013; Anderson and Marcouiller 2002; Djankov et al. 2003; Djankov et al. 2006; Schwartz and Watson 2004; Dabla-Norris et al. 2008; Nunn 2007; Leeson 2008b). Therefore, lowering the costs of enforcing contracts supports higher economic growth and broader economic outcomes.¹

Given the importance of contracting institutions, it is natural to ask what determines the costliness of contract enforcement? Government court systems, at least in some form, exists across countries as a way to provide contracting institutions. Djankov et al. (2003) show there is tremendous variation in terms of the costs of using formal mechanisms to enforce contracts. In other words, even if government provides a way to enforce contracts not all governments are created equal. The authors find that more legal procedural complexity leads to higher costs of using government courts for contract enforcement (see also Djankov et al. 2008). Therefore, part of the variation in the costs of enforcement is the differences in formal legal procedures. In

¹ For the literature on incomplete contracts, see Grossman and Hart (1986); Hart and Moore (1999); Markusen (2001), Maskin and Tirole (1999), and Segal (1999).

addition, legal formalism is more prevalent in civil than in common law countries suggesting that legal transplantation may have produced inefficient formal legal procedures.

It is acknowledged that ‘other’ informal private institutions, such as reputational mechanisms, coexist that can also enforce contracts (Kaffine 2009; Benson 1989a,b; Greif 1993; Greif et al. 1994; McMillan and Woodruff 1999; Powell and Stringham 2009; Leeson 2007a,b,c,d,e, 2008a, 2009; Dixit 2004; Powell et al. 2008). Informal institutional mechanisms can take a variety of forms and are often difficult to disentangle. Recently, there has been an explosion of studies on the link between culture and a variety of development outcomes with the main conclusion as ‘culture matters.’ Both theoretical and empirical studies lend credence to the hypothesis that informal rules and culture shape economic outcomes such as underpinning democracy and property rights institutions (Knack and Keefer 1995, 1997; Barro and McCleary 2003; Stulz and Williamson 2003; Guiso et al. 2006; Licht et al. 2007; Pryor 2008; Tabellini 2008, 2010; Williamson and Kerekes 2011; Maseland 2013).

Building from these two main bodies of work, this paper seeks to understand the variation of the costs of enforcing contracts by examining how informal cultural enforcement mechanisms may exist that substitute or complement formal legal procedures that ultimately shape the formal costs of contract enforcement.² Specifically, if formal procedures are prohibitively costly individuals may have an incentive to rely more on informal mechanisms to enforce contracts. This supports the argument that informal rules may fill the void and substitute for formal mechanisms where governments do not or cannot adequately provide contracting institutions. However, the informal may complement the existing formal rules as fewer legal procedures may work as a result of informal rules that facilitate contract enforcement. The

² This paper focuses specifically on informal and formal institutional determinants of the cost of formal contract enforcement. Both culture and formal structures may enforce the contracts actually signed. However, I acknowledge that different contracts are likely to be signed under different institutional scenarios. Although this is an important and interesting question, it is not the goal of this paper.

existing formal rules may also be reflective of the informal mechanisms supporting a complements effect.³

Until recently, most papers empirically analyzing institutions and economic development did not distinguish between different types of institutions or enforcement mechanisms. Acemoglu and Johnson (2005) provide a first step towards ‘unbundling institutions’ by investigating government’s role in limiting government expropriation (property rights institutions) and private predation (contracting institutions). Essentially, they are running a horserace between property rights (rules constraining the state) versus contracting institutions (rules regulating private actions) – both of which are defined as being provided by government.⁴

Their results suggest an interesting conclusion. Contracting institutions impact stock market capitalization but have limited or no effect on key economic outcomes such as investment levels, financial development, and income levels. In contrast, property rights institutions are robustly related to all factors of economic development. Acemoglu and Johnson interpret this finding as suggesting that economies can function when faced with weak contracting institutions but not weak property rights as there are other recourses to secure private dealings but not to protect against government expropriation. Individuals can rely on other, non-governmental contracting mechanisms when the state is weak or chooses not to provide the necessary legal framework. In other words, private institutions exist that can substitute for costly government enforcement. This paper picks up where their conclusion leaves off to explicitly examine this potential effect.⁵

³ It is possible that both informal and formal institutions may be used in conjunction to enforce agreements; therefore, it is possible that they are both substitutes (one type may partially make up for the other if it is weak or absent) and complements (even in the most complete formal enforcement setting, culture can promote and aid cooperation). While this is an important possibility, it is beyond the scope of this paper. In addition, I explore the possibility of an interaction term and found no significant results.

⁴Acemoglu and Johnson (2005) considered using the terminology horizontal and vertical to describe property versus contracting institutions. The first emphasizes that contracting regulates transactions between ordinary citizens whereas property rights regulate relations between the state (elites) and citizens.

⁵Williamson (2000) argues that formal institutions are likely to be short-lived if they conflict with cultural norms, given the lengthy time period generally required for significant changes in the culture and norms of a society.

Following Acemoglu and Johnson's seminal article, Williamson and Kerekes (2011) explore the institutional mechanisms underlying property rights institutions. The empirical approach taken is separating constraints into formal political constraints and informal, cultural mechanisms that may provide property protection from government expropriation. The results show that culture trumps formal political constraints in determining property rights security. This result suggests that informal, cultural rules underpin protection from state predation and supports a substitution effect over a complementary argument. Mechanisms that provide contracting institutions are not explored.

The next logical step is to decipher what underpins contracting institutions—i.e. the cost of formal contract enforcement. I do so by examining the link between culture, formal procedural rules and the costs of contracting. I follow the same methodology from Acemoglu and Johnson (2005) and Williamson and Kerekes (2011) to analyze the underlying formal and informal institutional mechanisms that determine formal costs of contract enforcement.⁶

The empirical investigation relies on a variety of sources already established in the literature to develop a cost of contract enforcement index, a measure of formal legal procedural rules, and proxies for cultural mechanisms that may impact contracting costs. Both formal and informal institutions determine contracting cost. Therefore, as suggested by Djankov et al. (2003), the costs of contract enforcement can be viewed as a de facto, outcome variable. To measure formal legal procedures, I follow Djankov et al. (2003) and Acemoglu and Johnson (2005) and include legal formalism—the number of formal legal procedures necessary to resolve a simple case of collecting on an unpaid check. In order to include culture, I define and measure 'economic' cultural dimensions that may support contract enforcement. These include

⁶Williamson (2009) empirically analyzes the interaction between formal political constraints and informal institutions and finds that the existence of well-developed informal institutions is a strong determinant of economic development regardless of the strength of the formal rules.

generalized trust, individual responsibility, individualism and an economic culture index based on Tabellini (2010).⁷

The analysis seeks to understand the relationship between culture, legal formalism and contracting.⁸ I do so by controlling for measures of formal and informal institutions in regressions where the dependent variable is the contract enforcement index. The empirical results suggest that informal cultural values act as a substitute for formal rules thus providing a mechanism to lower the costs of contract enforcement. Trust, Tabellini's culture index and measures of individualism and individual responsibility are positively and robustly related to lower cost of contract enforcement. Once these measures of culture are included, legal formalism is not robustly related to contracting costs. I view this as suggesting that culture and formal government rules act more like substitutes than complements. This suggests that when government rules are prohibitively costly, individuals do have other recourses that can lower the cost of enforcement supporting Acemoglu and Johnson (2005). These results are robust to a variety of control variables, including English legal origin, and to different model specifications, including instrumental variable analysis. Overall, the results suggest that variation in contract enforcement costs may be better explained from cross-country differences in culture than formal legal rules.

2. Culture: Substitute or Complement?

Contracting institutions monitor and enforce transactions between private parties. For example, a common transaction is between a creditor and a debtor. Either side of the transaction may want to renege on the original agreement or act opportunistic, and they may do so if failures exist regarding implementation and enforcement. Most assume that enforcement must come at the hands of government. As Hobbes states 'covenants without swords are mere words.' However,

⁷I recognize the possibility that different institutional relationships run in various directions. Thus, formal and informal rules often develop an interaction effect between one another. While I believe this effect may be important it is beyond the scope of this analysis.

⁸For a comprehensive analysis of the time series effects of changes in major institutions, see Sobel and Coyne (2010).

governments range in ability and willingness to provide the necessary legal framework to enforce contracts. In addition to government provided institutions, individuals may develop informal cultural arrangements that in effect substitute or complement the existing legal framework.

Cultural norms represent internalized constraints on individual behavior, suggesting that cultural norms may limit opportunistic behavior in private dealings leading to lower cost of enforcement (Williamson 2005; Stringham 2011). This idea is captured by Olson (2000) who argues that to obtain contract enforcement individuals need to “decide matters in accord with their beliefs about what is right—this is, in accord with their moral principles and the law—they have no reason to do anything else...Long experience suggests that these social arrangements can work at least tolerably well. This is an aspect of life where ethical principles and groups’ norms are decisive...” (Olson, p. 36). What Olson highlights is the possibility that informal norms and cultural values may lower the costs of enforcement. However, left unaddressed is how culture impacts contract enforcement through substituting or complementing government provided mechanisms.

Individuals can and do create alternative *ex ante* and *ex post* informal mechanisms instead of relying solely on government enforcement of contracts. Individuals vary in their method of enforcement. For example, parties involved may structure incentives for self-enforcement (Klein and Leffler 1981; Licht 2008) or rely on the discipline of repeat dealings or on trust (Landa 1994; Fukuyama 1996; Jackson 2011). Membership ‘requirements’ could also be used to restrict access to networks ranging from private clubs for merchants or traders, religious or ethnic groups, or familial communities (Landa 1981; Berstein 1992; Leeson 2007b). Others may develop more sophisticated methods such as private courts (Leeson 2009; Benson 1989b). Ellickson (1991), Posner (2002), and Ostrom (1990) illustrate how a system of elaborate norms encourages cooperation among group members.

Underlying the choice for contract enforcement mechanisms is determined by one’s perception of the costs and benefits from using legal courts versus relying on informal

arrangements ranging from simple to sophisticated methods. Therefore, it is natural to analyze the scope culture may play in acting as a substitute or as a complement for formal rules.

On one hand, culture may be able to minimize the adverse effects of bad legal rules as individuals substitute away from formal mechanisms. These arrangements can be self-enforcing as incentives can be structured so those involved are inclined to honor the contract. Williamson (2000) explains that private parties take steps to minimize opportunism because “even in states that make best efforts to provide protection for property rights and contract enforcement, the state’s access to information and the state’s protection and enforcement mechanisms are inherently limited” (p. 14). Consistent with this conjecture, Acemoglu and Johnson (2005) document that in the absence of effective enforcement from the state, individuals do have other private recourses. Effective economic governance includes various mechanisms such as credible commitments, reputation mechanisms, vertical integration, private protection of property rights, and profit motivated contract enforcement. Accordingly, cultural norms should dominate formal legal procedures in the analysis if this argument holds. Formally, the first hypothesis is as follows:

Hypothesis 1a: Culture substitutes for formal contracting rules.

Although culture may substitute for legal rules, when government provides lower cost alternatives culture may become less significant. This implies a substitution effect. For example, a culture conducive to contracting may formalize informal rules into legal procedures. Once the formal rules are credible, the informal mechanisms such as trust networks may be rendered less important. If this is the case, legal formalism should dominate culture suggesting a substitution or crowding out effect. Most studies to date assume this line of reasoning where either government provides the institutional framework necessary for contracting or any alternatives are too weak to properly substitute. Thus, the next hypothesis is as follows:

Hypothesis 1b: Formal contracting rules substitute for culture.

Culture and formal procedures impact contract enforcement. Their independent effects

might be weaker than the impact of having *both* appropriate formal and informal rules. For example, a culture rich in trust lowers contracting costs, but the combination of a trusting culture *and* a government that provides clear and fair contracting procedures could further reduce contracting costs. In addition, the existence of alternative institutional arrangements may induce a competitive element increasing the quality of government provided legal procedures. Lastly, the formal rules may reflect cultural values—e.g. higher trust societies may adopt fewer formal legal procedures. Therefore, the final hypothesis is as follows:

Hypothesis 2: Culture and formal rules act as complementary institutions.

Theoretically, the relationship between formal procedures and culture could reasonably be expected to go either way—they may be substitutes or complements. As discussed above, both culture and formal rules may independently affect contracting costs. Once both are included in the same regression, if either culture or legal formalism dominates the other, this suggests that the two are substitutes. However, if both remain significant, culture and formalism are complementing one another in determining the costs of contract enforcement.

3. Data

3.1 Contracting Institutions Index

To proxy for contracting institutions, I create an overall index from three different variables originating from Djankov et al. (2003) and the World Bank’s Doing Business project. This includes the number of procedures, number of days, and the cost to enforce a contract. Acemoglu and Johnson (2005) use similar variables when measuring contracting institutions and La Porta et al. (2008) refer to time to enforce contracts as an outcome from various institutional rules.⁹ Overall, these measures capture costs of enforcing contracts—an outcome of various institutional mechanisms including formal and informal rules and enforcement of those rules.

⁹Acemoglu and Johnson (2005) use an index of legal formalism, an index of procedural complexity, and the number of procedures necessary to resolve a court case to capture contracting institutions. They do not create an overall index.

The contracting institutions index is created by using principle component analysis to extract the common variation among the three World Bank variables designed to measure the enforceability of contracts. Number of procedures compiles the list of steps necessary to settle a commercial dispute such as steps to file a suit and steps to enforce a judgment. Time, measured in days, records how long it takes to enforce a contract. Cost, measured as a percentage of the claim, calculates court costs, enforcement costs, and average attorney fees. It does not include bribes. Differences in the effectiveness of courts across countries can result in significant differences in the costs of enforcing contracts. All three variables represent equilibrium outcomes from the functioning of the legal system and the presence of alternatives to the legal system to enforce contracts. Data is collected and averaged from 2004 to 2012. The index is rescaled between 0 and 1 with 1 representing greater contracting institutions.

In the empirical analysis, the contracting institutions index is the main dependent variable as the analysis seeks to explain what drives contract enforcement.

3.2 *Legal Formalism*

As indicated previously, quality of the legal system and government provision of enforcing contracts is widely argued as the most important way to enforce contracts. Therefore, this main variable of interest needs to capture formal institutional mechanisms that should lead to better contract enforcement. Legal formalism (Djankov et al. 2003; Acemoglu and Johnson 2005) measures the number of formal legal procedures necessary to resolve a simple case of collecting on an unpaid check. Previous work shows a convincing relationship with formalism and longer, less fair judicial procedures and more corruption. It can be thought of more generally as formalism regarding judicial procedures that ultimately determine the effectiveness of contract enforcement with more formalism resulting in less efficient contract enforcement. This measure is different from the World Bank's number of procedures to enforce a contract. Legal formalism represents the institutional constraints facing contract enforcement while the World Bank variable

measures the outcome from these constraints. This is an important distinction as the analysis ultimately wants to understand the importance of cultural institutional mechanisms and formal contracting institutional constraints.

3.3 *Culture*

I narrow the concept of culture to those specific traits that may matter for contract enforcement. We can think of this subset of culture as those value, norms and traits that comprise ‘economic culture’ as defined by Porter (2000: 14): “the beliefs, attitudes, and values that bear on economic activities of individuals, organizations, and other institutions. This narrowing process enables a more in-depth analysis of the connection between culture and contracting (Patterson 2000).

To measure culture, I use four different cultural dimensions loosely under the umbrella of economic culture measured by multiple sources. Economic culture is defined and shown throughout the literature to be those values, norms and traits to be closely related to economic outcomes. The dimensions I focus on for contract enforcement are trust, individualism versus collectivism, individual versus government responsibility, and an aggregate culture index based on Tabellini (2010). I include several measures of culture that are loosely related, since a priori it is difficult to discern which cultural values will influence contracting costs. Including several different types of culture measures also provides robustness.

Two dimensions, generalized trust and Tabellini’s culture index, can be thought of as those values that are directly related to economic outcomes and can be cultivated, i.e. values that can be ‘invested’ in and increased through repeated interactions.¹⁰¹¹ Trust is perhaps the most

¹⁰Tabellini (2010) illustrates the importance of past political institutions and education rates in impacting culture. Specifically, a history of despotism can lead mistrust, limited morality and loss of self-control. He also argues that educational attainment could influence culture by encouraging general morality and providing a sense of control over one’s life.

¹¹ Trust can also be thought of as economic capital – as trust is something that can be developed and invested in. Even though trust is different from other deep-seeded values under the umbrella of culture, I do not believe this is problematic since the trust is essentially functioning as an informal institution, which is the main distinction I am attempting to capture.

direct connection to contracting as it reduces transactions and monitoring costs, leads more quickly to efficient outcomes, and enables further market exchange (Fukuyama 1996; La Porta et al. 1997; Woolcock 1998; Zak and Knack 2001; Dixit 2004; Francois and Zabojnik 2005; MacLeod 2007; Guiso et al. 2008; Berggren and Jordahl 2006; Berggren, Elinder, & Jordahl 2008; Beugelsdijk, de Groot and van Schaik 2004; Bjørnskov, C. 2007, 2010). Differing attitudes regarding generalized trust levels have economic consequences or benefits ranging from individual to international trade, lower corruption, higher rates of entrepreneurship, and higher levels of investment. As such, higher trust societies typically experience higher levels of economic development and growth.

This same logic may hold between trust and contracting institutions. One major cost when attempting to engage in exchange and negotiate the terms is the inability to write complete contracts. However, trust can serve as an informal intermediary when issues or breaches arise; thus, incentivizing individuals to engage in exchanges that otherwise would not take place. In general, higher trust individuals are less likely to engage in opportunistic behavior when dealing with one another.

The aggregate culture index is based on the methodology from Tabellini (2010). This variable is constructed by identifying four distinct categories of culture that should constrain behavior in a variety of ways. These four components are trust, respect, individual self-control, and obedience. These traits serve as rules governing interaction between individuals, including market production and entrepreneurship.

Respect captures differing mentalities regarding opportunistic behavior (Banfield 1958). Some societies condone engaging in highly opportunistic behavior outside the group or network, while other societies promote social interactions beyond groups or networks (Platteau 2000). Similar to trust, a generalized level of respect can further facilitate willingness to contract and ease of settling disputes if such a problem arises.

Individual self-control captures whether individuals reap the benefits or consequences of their actions. The more likely it is that economic success will be determined by one's own will, the more likely individuals will work harder, invest in the future, and engage in entrepreneurial activities. An extension of this argument is that individual choice depends on how much control you feel you have over your life. When individuals think that they have control over their life, they will be more likely to find ways that improve their economic welfare, including finding solutions to problems surrounding contract enforcement.

The last measure included is obedience—a trait argued to capture the degree to which cooperation is limited due to emphasis on hierarchical structures. This emphasis can inhibit risk taking and lead to uncertainty avoidance in transacting. For example, a more obedient culture may lead to larger ambiguities regarding dispute settlement thus increasing costs of contract enforcement. More obedience may also lead to less widespread cooperation across groups as individuals do only what they are told versus cooperating with one another in productive endeavors and to solve problems. This potentially leads to lower rates of contract enforcement. Obedience also relates to a cultural acceptance of an unequal power structure. Individuals within an obedient culture society may find it more difficult to enforce contracts due to the unequal power distribution among group members.

Data from all five waves of the World Values Surveys (1981-2008) is utilized to quantify each component. These surveys capture individual beliefs and values, reflecting local norms and customs. In order to correctly capture each component, one question from the survey is identified that is most closely correlated with each trait. For example, trust is measured by 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?” The trust index is quantified as the percentage of individuals answering yes.

Self-control 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.

For the Tabellini culture index, individual responses from each of the four questions are aggregated for each country. A comprehensive culture measure is achieved by first averaging the data across all five waves and then extracting the first principal components of all four traits. The index is normalized between zero and ten, with ten representing higher economic culture. A country with a higher score on the Tabellini culture index has stronger informal constraints regarding contract enforcement to countries with lower scores.

Two other cultural dimensions capture individuals versus collectivism. This distinction that reflects the importance of social ties in an individual’s fundamental understanding of the self (Gorodnichenko and Roland 2010). There are also several a priori reasons for thinking that individualism and collectivism may play an important role in shaping a country’s contracting costs. At the most general level, collectivist societies may tolerate a greater level of regulation as part of the larger set of social rules that constrain the individual and help to establish a given social order. Platteau (2000) argues that collectivism, with its stress on the importance of personal relationships and social identity, is fundamentally at odds with the efficient functioning of modern formal institutions, such as law and regulation, which requires the impersonal application of rules. As such, collectivist cultures may stifle economic development by discouraging innovation, entrepreneurship, and cooperation among other members of society. As a result,

individuals may not invest resources to invent ways to enforce contracts. Alternatively, individualistic cultures are more likely to engage in market production and exchange; therefore, those individuals will typically develop means of enforcing such transactions. Hofstede (2001) finds that individualism and collectivism to be the most important dimension of cultural variation in explaining cultural values, while Gorodnichenko and Roland (2011) and Davis (2012) present evidence that individualism is robustly related to economic development.

The first measure of individualism is also taken from World Values Survey and is constructed from responses to a question regarding the importance of individual versus government responsibility. Respondents are asked to indicate their position on a ten-point scale where ten corresponds to the position that “People should take more responsibility to provide for themselves” and one corresponds to the position that “The government should take more responsibility to ensure that everyone is provided for.” Responses are averaged across individuals and across each wave then aggregated at the country level to create a single measure of individualism. Similar measures of individualism have been used by DiTella, Dubra and MacCulloch (2007) and Davis (2012).

The second measure of individualism comes from Hofstede (1980, 2001) where a dimensional framework is constructed from surveys administered to various IBM employees across a number of countries. The surveys were conducted twice, in 1968 and 1972, and produced more than 116,000 responses. Individualism measures the degree to which individuals are integrated into groups. It assumes weak ties among group members and places responsibility for one’s life on the individual. Individualism is high in countries where individuals value person freedom and status. Following the logic, greater individualism should lead to great contracting institutions. This measure of individualism is shown to be the most robust when compared to other cultural dimensions (Gorodnichenko and Roland 2011).

Economic culture may perform important functions in securing and enforcing contracts. I specify four dimensions as potential mechanisms for contract enforcement including generalized

trust (trust), Tabellini's culture index (tab_culture); individual responsibility (indv_resp) and Hofstede's individualism (indv). Theoretically, culture may act as a substitute or a complement with respect to formal rules.

3.4 *Control Variables*

I also include a variety of other control variables identified in the literature as being potentially important for institutional development (for example, La Porta et al. 1999, 2004; Acemoglu et al. 2001, 2002; Glaesar et al 2004). This includes GDP Growth, log population, log GDP per capita, urban population, inflation, catholic (%), regulatory quality, gross capital formation, natural resources rents, trade, ethnic linguistic fractionalization, and educational attainment. As part of sensitivity analysis, additional controls are added sequentially as discussed below. Appendix 1 describes all the data including measurement and sources.

4. **Empirical Methodology and Results**

Theoretically, the relationship between formal court procedures and culture could reasonably be expected to go either way—they may be substitutes or complements. Once both are included in the same regression, if either culture or legal formalism dominates the other, this suggests that the two are substitutes. However, if both remain significant, culture and formalism are complementing one another in supporting contracting institutions.

The main empirical approach is cross-sectional OLS regression analysis with a variety of robustness checks including instrumental variable analysis, a semi-reduced form approach, and minimizing omitted variable bias.¹² I focus on cross-sectional analysis to maximize the number of

¹²While the focus of the paper is to hone in on the independent effect of culture, I recognize possible feedback mechanisms between culture and formal rules. I explored with the use of an interaction term but did not discover any significant or interesting findings. This could be due to the high multicollinearity between all three variables.

observations.¹³ Ideally, to more adequately address the central question, time series would be available across a large sample of countries to implement panel analysis; however, such data is limited or non-existent for legal formalism and Hofstede's individualism. This is a common issue when analyzing international institutional development data (see, for example, Djankov et al. 2003, 2008; La Porta et al. 2004, 2008).

Table 1 below presents the summary statistics for all data used in the empirical analysis. There are approximately 107 countries included in the analysis, although the sample size changes substantially depending on the specification. The countries included in the analysis range from all levels of development including Ethiopia and Burkina Faso (both averaging under \$800 GDP per capita) to United States and Norway. The average income is \$15,729 with a standard deviation of \$13,897.

[Insert Table 1]

The mean of the contracting index is 0.61 with a standard deviation of 0.28. The countries with the worst contract enforcement include Suriname, India, and Bangladesh. Italy is also in the bottom ten on the index. Largely driving this result is that it takes over 1,200 days to enforce a contract, more than double the sample average. Compare this with Singapore, the country receiving the highest score regarding contracting. It takes only 135 days and 21 procedures, on average, to enforce a contract in Singapore.

The mean of legal formalism is 3.53 with a standard deviation of 1.04. Hong Kong has the lowest legal formalism (0.73). Other countries with lower legal complexities include Belize, New Zealand and South Africa. Panama ranks the highest on legal formalism (5.84) as does Peru, Guatemala, and Bolivia.

Cultural values measured from WVS (trust, individual respect, and the Tabellini culture index) include the largest number of countries (as many as 92) compared to 78 for Hofstede's

¹³I also attempt to include culture measures from Schwartz (1994, 1999), but the number of observations is reduced to 45 countries. Therefore, I exclude these measures from the analysis.

individualism. The countries with the lowest level of trust include Trinidad and Tobago, Rwanda, and Brazil. Denmark, Sweden and Norway have the highest trust levels. In terms of individualism versus collectivism, United States and Australia rank highest whereas Guatemala and Ecuador score the lowest. Countries with the most individual responsibility include Austria and Sweden and those with the lowest are Macedonia and Tanzania. Countries with lower judicial formalism include Hong Kong, New Zealand, and South Africa and those countries with the highest are Guatemala, Bolivia and Panama.

4.1 *Univariate Results*

Before turning to the main model specifications, Table 2 below presents univariate regressions for each measure of culture, legal formalism and each component in the contracting index (time, procedures and cost) as well as the overall contracting index. Trust, Tabellini's index, and individualism are significantly related to all three individual contracting measures as well as the overall index. Individual responsibility is significant with all contracting measures except time. For example, trust reduces the number of days, procedures and cost to enforce a contract. An increase in the level of trust by one standard deviation (approximately 13 percentage points) decreases both the number of days and the cost to enforce a contract by approximately $\frac{1}{4}$ standard deviation. An increase of one standard deviation in the Tabellini culture index leads to an increase in the contracting index by approximately $\frac{1}{2}$ standard deviation.

[Insert Table 2 Here]

Both measures of individualism are also strongly related to measures of contract enforcement as they are significantly related to the overall contracting index, the cost to enforce a contract and the number of procedures. If individual responsibility increases by one standard deviation, the ease of enforcing contracts increases by approximately $\frac{1}{3}$ standard deviation.

Legal formalism is also (negatively) significantly related the contract enforcement indices. More legal procedural complexity increases the number of days and procedures to

enforce a contract. A decrease in legal formalism by one standard deviation increases the ease of contract enforcement by approximately $\frac{1}{4}$ standard deviation. It is not significantly related to cost of the claim.

Comparing across R-squareds, Tabellini culture index explains the largest variation in the contracting index at 0.21, Hofstede's individualism explains 0.19 and obedience captures 0.18 of the variation. Legal formalism explains less of the variation with R-squareds ranging from 0.000 to 0.08.

4.2 *Main Results*

Table 3 below presents the benchmark regressions where the contracting index is the dependent variable. Each measure of culture is included sequentially and log gdp per capita and legal formalism are controlled for in each regression specification.

All culture variables are significantly related to contract enforcement. The results in column (1) suggest that if trust increases by 20 percentage points, the contract enforcement index would increase by approximately 0.10 (1/10 of the size of the entire index). A one standard deviation increase in *tab_culture* increases the contract index by approximately the same amount, as suggested in column (2). Increasing the individual responsibility index by one-unit (almost one standard deviation) leads to about a $\frac{1}{4}$ standard deviation increase in the contracting index. The other measure of individualism, measured by Hofstede, reported in column (4), have approximately the same economic significance as *indv_resp*.—about $\frac{1}{4}$ standard deviation.

Legal formalism is negative but not significant in all four regressions. This lends support to the substitution effect outlined in Hypothesis 1A as all four measure of culture dominate legal formalism. Income per capita is positive and significant in three out of four regressions. On average, the specifications explain approximately 25 percent of the variation in costs of contract enforcement.

[Insert Tables 3 and 4]

Table 4 reports the main OLS regressions with control variables in addition to legal formalism. The analysis now includes a measure of religion, percentage of the population that is catholic, as religion homogeneity is shown to increase ease of self-governing abilities. Inflation is controlled as a proxy for macroeconomic stability. Trade (as a percent of GDP) is included as more economic exchange facilitates the need for contract enforceability. Size of country (log population) and urban population are also included. I drop log GDP per capita during these specifications as income is highly correlated with many of the additional explanatory variables of interest.¹⁴ Appendix 2 provides a pairwise correlation table.

Results in Table 4 are very similar to those presented in Table 3 above supporting Hypothesis 1A and suggesting the analysis is robust to the inclusion of a variety of controls. All culture variables are significantly related to contract enforcement with the expected sign. Legal formalism is not significantly related to cost of enforcement. The size of the coefficients is also similar as before. For example, as reported in column (2), moving from the lowest to highest ranking country scored by `tab_culture` (from Rwanda to Sweden) results in a 0.49 unit increase in contract enforcement—almost a change in half the size of the entire index. The 0.49 point difference represents the separation between Uganda and Luxembourg. This result suggests that as individuals become more trusting, respectful, individualistic, and less obedient, contract enforcement costs decrease. Both regressions (columns 3-4) illustrate the importance of individualism. As reported in column (3), moving from the lowest score to the highest country on `indv_resp` (a change from Macedonia to Austria) results in a 0.35 increase in the contracting index—approximately the difference between Puerto Rico and Great Britain.

Catholic, inflation, and population are insignificant in all specifications. Urban population is positive and significant in all four regressions. These results suggest that a 22 percentage point increase in urban population (one standard deviation) increases contract enforcement by approximately 0.10 units (about a 1/3 standard deviation). Trade is also

¹⁴ The results do not change significantly if log gdp per capita is included. Results available upon request.

significant in all specifications.¹⁵ Based on these specifications, a standard deviation increase in trade (about 60 percentage points) increases contract enforcement by about 0.06 units (1/5 standard deviation change). Combining these two results may suggest that as the size of the market expands contract enforcement is easier, or cheaper, due to repeated and continuous dealings. Approximately 36 percent of the variation is explained from these results.

To check for omitted variable bias, I rerun the specifications in Table 4 sequentially adding a variety of other controls in order to minimize endogeneity. This includes educational attainment, growth rate, regulatory quality, ethnic linguistic fractionalization (ELF), gross capital formation and natural resource rents.

As shown in Tables 5-6, the results are robust with similar findings between cultural measures and legal formalism—supporting the substitution argument presented in Hypothesis 1A. Trust is positive and significant in five of the six specifications. Trust loses significance once educational attainment is included. This is not surprising as both measures are highly correlated. Legal formalism is only significant in the last specification controlling for natural resource rents. Natural resources is also negative and significant as shown in column (6). This suggests that a standard deviation increase in rents decreases the contract index by approximately 1/3 standard deviation—a similar economic significance as legal formalism.

Tab_culture is positive and significant in all six specifications with similar size coefficients as in Table 4. Column (12) illustrates a similar finding as column (6) where culture, legal formalism and natural resource rents are all significant. The adjusted R-squareds range from approximately 0.37 to 0.44

As shown in Table (6), individual responsibility is significant in all specifications. Hofstede's measure of individualism loses significance when education or regulatory quality is included. Legal formalism is insignificant in all twelve regressions.

¹⁵Ahlquist and Prakash (2010) show that foreign direct investment is important for contracting. Therefore, I reran the regressions replacing trade with foreign direct investment with similar findings. Results available upon request.

Educational attainment is positive and significant across all specifications. Economic growth is never significant. Regulatory quality is positive and significant in 3 of 4 regressions. This suggests that an increase in the quality of government can increase the ease of contract enforcement. I rerun this specification by replacing regulatory quality with democracy (as measured by Polity IV) and the results still hold. ELF is negative but never significant. Gross capital formation is positive and significant in the regressions controlling for both measures of individualism. Natural resource rents are negative and significant in all four regressions.

[Insert Tables 5 and 6]

4.3 *Correlation or Causation?*

Given the empirical setup, I recognize possible reverse causality concerns. I want to emphasize the difficulty in claiming causal mechanisms and focus on identifying possible underlying associations between different institutions and costs of contracting. This is a first attempt to understand how cultural values may affect contracting costs, and I caution the reader from drawing causal conclusions from the results. However, as part of the sensitivity analysis, instrumental variable (IV) regression results are included in an attempt to overcome reverse causality and endogeneity concerns. Although it may not completely overcome these biases, I believe the results provide an interesting perspective. This exercise, at a minimum, can possibly help in moving forward as I attempt to interpret the main findings.

The major challenge is to find appropriate instruments for culture. Fortunately, the development literature provides several valid instruments for cultural variables. This includes a geography variable (latitude), a language variable, and average variation in rainfall (Engerman and Sokoloff 1991; Diamond 1997; Easterly and Levine 2003; Licht et al. 2007; Williamson and Kerekes 2011; Hall and Jones 1999; Davis 2012). I use a combination of these three variables to instrument for the different measures of culture.

Latitude, measured as distance from the equator, is implemented to identify one potential channel through which culture affects institutions. Several papers argue that geography only exhibits an indirect effect on development by impacting the quality of current institutions. The argument is that certain factor endowments permit extreme inequalities and the dominance of a small group of elites. These differences in endowments have stunted institutional development (Easterly and Levine 2003 and Rodrik, Subramanian, and Trebbi 2004).

The second culture instrument is a language variable from Licht et al. (2007).¹⁶ The basic intuition is that language affects social inferences and value judgments transmitting cultural norms and values across generations. Kashima and Kashima (1998) present evidence that pronoun usage in language represents psychological differences between the speaker and the social context. Specifically, the use of 'I' or 'you' signals that the individual is the center of the context. On the contrary, a grammatical rule licensing pronoun drop suggests a reduction between the individual and the group. The pronoun drop dummy variable (1= grammatical rule for pronoun drop, 0 otherwise) constitutes a link between language and culture. Pronoun usage should be prevalent within societies emphasizing the individual over group solidarity. Pronoun drop will exist in cultures where collectivism as opposed to individualism is emphasized. This implies that the dummy for pronoun drop will have a negative relationship with culture measures. In order to expand the number of observations an updated version of the pronoun drop variable is utilized and provided by Abdurazokzoda and Davis (2013).

Lastly, 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. The log of the coefficient of variation of monthly precipitation is utilized as an instrument for culture (Davis 2012).¹⁷

¹⁶I also experimented with a variety of potential cultural instruments, such as religion, ethnic fractionalization, and settler mortality. However, religion and settler mortality are not strongly correlated with culture, and ethnic fractionalization does not satisfy exclusion restrictions.

¹⁷ I thank the author for providing me with this dataset.

I instrument all culture measures with both latitude and pronoun drop simultaneously; however, I replace latitude with variation in rainfall for individual responsibility as latitude is a weak instrument for this measure of culture. Both specifications are reported in the results presented below. Appendix 4 presents the first stage results suggesting that these instruments are indeed valid and appropriate to exclude.

[Insert Table 7]

Table 7 presents the benchmark IV regressions replicating Table 3. There is no major difference between the OLS and IV results. Trust, the culture index and individualism retains the expected signs and are significant. Individual responsibility is only significant in the second specification when instrumenting with rainfall variation instead of latitude. Legal formalism and culture retain their respective relationship where cultural measures dominate legal formalism. The size of the coefficient does increase on all variables. For example, the size of the coefficient for trust suggests that increasing trust by 20 percentage points increases contract enforcement by approximately one standard deviation.

[Insert Table 8 Here]

In Table 8 above, I replicate the main OLS regressions with controls instrumenting for culture. The results hold. All measures of culture are positive and significant. Formalism remains insignificant. Overall, after controlling for endogeneity and reverse causality, culture appears to act more like a substitute than complementing legal formal rules. The adjusted R-squareds range in size from 0.07 to 0.27.

[Insert Table 9 Here]

One potential issue is the possible feedback between culture and formal institutional measures of contracting. Ideally, valid instruments would exist for legal formalism as well as culture that satisfied the exclusion restrictions. Formal constraints and contract enforcement measures are most commonly instrumented with a dummy variable measuring legal origins (La Porta et al. 1997, 1998; Williamson and Kerekes 2011). Legal origin is shown to shape financial,

legal, and economic institutions and outcomes (Djankov et al. 2003; Spamann 2010). Different legal traditions, imposed during colonization, affect current legal systems. English legal origin is negatively and significantly correlated with formalism. Unfortunately, English legal origin is also correlated with several of the culture variables and some instruments for culture are correlated with formalism.

Instead of instrumenting for both culture and formalism, I directly control for English legal origin instead of legal formalism. Table 9 above reports these results. As shown, the results suggest that culture dominates legal origin. Culture significantly impacts contract enforcement. At a minimum, these results supports the findings that culture provides an important mechanism for explaining costs of contracting not previously considered.

5. Conclusion

The beginning of this paper posed the question, “What explains cross-country differences in the costs of contract enforcement?” After multiple model specifications including controlling for reverse causality, the empirical results show that culture significantly impacts the costs of formal contracting costs. The way in which culture matters is by acting as a substitute for formal rules providing a mechanism to lower the costs of contract enforcement.

Trust, an overall culture index and measures of individualism and individual responsibility are positively and robustly related to lower cost of contract enforcement while legal formalism is not robustly related to contracting costs. This suggests that culture and formal government rules act more like substitutes than complements. This finding supports previous work showing the importance of culture for economic outcomes as well as implicitly testing Acemoglu and Johnson’s (2005) claim that when individuals are faced with bad formal contracting rules private mechanisms exists as substitutes. This paper empirically finds evidence supporting such an argument. By including culture with legal formalism in the analysis, a richer explanation of cross-country contracting costs is provided.

In light of these results, as well as emerging literature on the importance of culture, the current trend toward formalization may overstate the importance of formal rules. In fact, these formal mechanisms may not be sufficient to achieve contract enforcement, due to potentially high costs that are often understated or completely ignored. These results have especially important implications for developing countries with highly predatory governments. The results highlight the need for more research on understanding the role of both informal and formal institutions in the development process. Specifically, the next step is to synthesize and explain how and why informal rules appear to be more important than formal, governmentally provided constraints for key institutions such as democracy, property rights and contract enforcement.

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Appendix 1: Data Description and Sources

Variable	Description	Source
Time (days), log	Time is recorded in calendar days, counted from the moment the plaintiff decides to file the lawsuit in court until payment. This includes both the days when actions take place and the waiting periods between. Averaged 2004-2012.	Djankov et al. (2003); World Bank Doing Business Project
Cost (% of claim), log	Cost is recorded as a percentage of the claim, assumed to be equivalent to 200% of income per capita. No bribes are recorded. Three types of costs are recorded: court costs, enforcement costs and average attorney fees. Averaged 2004-2012.	Djankov et al. (2003); World Bank Doing Business Project
Procedures (number), log	A procedure is defined as any interaction, required by law or commonly used in practice, between the parties or between them and the judge or court officer. Other procedural steps, internal to the court or between the parties and their counsel, may be counted as well. Procedural steps include steps to file and serve the case, steps to assign the case to a judge, steps for trial and judgment and steps necessary to enforce the judgment. Averaged from 2004-2012.	Djankov et al. (2003); World Bank Doing Business Project
Contracting Index	First principal component of three contract enforcement variables: a measure of the number of procedures, number of days, and the cost to enforce a contract. Scaled between 0 and 10 with 10 being the highest.	Djankov et al. (2003); World Bank Doing Business Project
Tabellini Culture Index	The first principal component of three positive beliefs (control, respect, trust) and the negative belief (obedience). Scaled between 0-10 with 10 being the highest.	World Values Survey 1981-2007
Trust	Trust is measured as the percentage of respondents who answered that "Most people can be trusted."	World Values Survey 1981-2007
Respect	Respect is measured as the percentage of respondents that mentioned the quality "tolerance and respect for other people" as being important.	World Values Survey 1981-2007
Self-Control	Self-control is measured as the unconditional average response (multiplied by 10) 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).	World Values Survey 1981-2007
Obedience	Obedience is the percentage of respondents that mentioned obedience as being important.	World Values Survey 1981-2007
Individual responsibility	Calculated based on the average responses ranging from one to ten from the question: People should take more responsibility to provide for themselves (score 10) or The government should take more responsibility to ensure that everyone is provided for (score 1).	World Values Survey 1981-2007
Individualism	Measures the degree to which individuals are integrated into groups; individualism assumes weak ties among group members. Scaled between 0 and 10 with 10 representing strong individualism.	Hofstede (1980, 2001)
Controls		
Legal Formalism	Measures the number of formal legal procedures necessary to resolve a simple case of collecting on an unpaid check. Scaled between 1-7.	Djankov et al. 2003
GDP Growth	Growth of GDP per capita, PPP basis, constant 2000 international dollars; averaged for the years from 2004-2012.	World Development Indicators 2013.
Population	Log of population averaged from 2004-2012.	World Development Indicators 2013.
GDP per capita, log	Log of gross domestic product, per capita, PPP, international \$; averaged for the years from 1980-2012.	World Development Indicators 2013.

Urban Population	Percent of population living in an urban area; average for the years 2004-2012.	World Development Indicators 2013.
Inflation	Measured as the percentage change in the consumer price index. Average from 2004-2012.	World Development Indicators 2013.
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, Lopez-de-Silanes, Shleifer, and Vishny 1999
Regulatory Quality	Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Averaged from 2004-2012.	Kaufmann, Kraay, and Mastruzzi (2003); Worldwide Governance Indicators
Gross Capital Formation	Gross capital formation as a percentage of GDP. Consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Averaged from 2004-2012.	World Development Indicators 2013.
Natural Resources	Natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents. Measured as a percentage of GDP. Averaged from 2004-2012.	World Development Indicators 2013.
Trade	Trade is the sum of exports and imports of goods and services measured as a share of GDP. Averaged from 2004-2012.	World Development Indicators 2013.
Ethnic Linguistic Fractionalization	Measured by Ethnolinguistic Fractionalization which is the average value of five different indices of ethnolinguistic fractionalization. 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) percent of the population not speaking the official language; and (5) percent of the population not speaking the most widely used language.	La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1999.
Education	Average years of schooling of population over 25 years of age in 2000 or last year available (1990 for Estonia, Kazakhstan, Latvia, Lithuania and Vietnam, and 1980 for St. Vincent) from Barro and Lee database.	Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2003.
English Legal Origin	Dummy variable coded 0 or 1: 1 indicates that a country was colonized by Britain and English legal code was transferred.	La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1999.
Instruments		
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, Lopez-de-Silanes, Shleifer, and Vishny 1999.
Pronoun Drop	Dummy variable coded 0 or 1: 1 indicates grammatical rules allow pronoun drop.	Abdurazokzoda and Davis 2013.
Rainfall Variation (log)	The natural log of the coefficient of variation of monthly precipitation	Davis 2012.

Appendix 2: Pairwise Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1 contract_index	1.0																						
2 trust	0.3	1.0																					
3 tab_culture	0.5	0.9	1.0																				
4 indresp	0.3	0.5	0.5	1.0																			
5 indv	0.5	0.5	0.6	0.4	1.0																		
6 english	-0.1	0.0	-0.1	0.0	0.0	1.0																	
7 latitude	0.5	0.5	0.6	0.2	0.7	-0.3	1.0																
8 pronoun_drop	-0.3	-0.4	-0.5	-0.5	-0.6	-0.2	-0.4	1.0															
9 ln(covrain)	-0.5	-0.2	-0.4	-0.3	-0.3	0.2	-0.3	0.4	1.0														
10 catholic	0.0	-0.2	-0.1	0.3	0.0	-0.3	-0.1	0.1	-0.2	1.0													
11 formalism	-0.3	-0.2	-0.2	-0.2	-0.3	-0.6	-0.1	0.5	0.1	0.4	1.0												
12 education	0.6	0.5	0.7	0.4	0.6	-0.1	0.7	-0.5	-0.5	-0.1	-0.2	1.0											
13 growth	0.0	-0.1	-0.2	-0.4	-0.5	-0.1	-0.2	0.3	0.0	-0.2	0.2	-0.3	1.0										
14 gross_capital	0.1	0.2	0.1	-0.2	-0.2	-0.1	0.1	0.2	0.0	-0.3	0.1	-0.1	0.5	1.0									
15 inflation	-0.2	-0.2	-0.4	-0.3	-0.4	0.0	-0.3	0.1	0.2	-0.2	0.0	-0.4	0.4	0.2	1.0								
16 nat_resource	-0.3	0.0	-0.2	-0.2	-0.2	0.0	-0.2	0.1	0.4	-0.2	-0.1	-0.2	0.2	0.1	0.5	1.0							
17 trade	0.4	0.0	0.1	0.1	0.0	0.1	0.1	0.0	-0.3	0.0	-0.3	0.2	0.0	0.0	-0.2	-0.1	1.0						
18 urban	0.4	0.3	0.5	0.3	0.4	-0.3	0.4	-0.2	-0.1	0.2	0.0	0.6	-0.3	-0.2	-0.2	0.0	0.3	1.0					
19 elf	-0.3	-0.2	-0.4	0.0	-0.3	0.5	-0.6	0.0	0.3	-0.1	-0.1	-0.5	0.0	-0.1	0.2	0.0	-0.1	-0.5	1.0				
20 reg_quality	0.5	0.4	0.6	0.5	0.6	0.0	0.5	-0.4	-0.4	0.2	-0.3	0.7	-0.5	-0.2	-0.7	-0.5	0.4	0.5	-0.3	1.0			
21 ln(pop)	-0.1	0.1	-0.1	0.0	-0.1	0.1	-0.2	0.1	0.2	-0.1	0.0	-0.3	0.2	0.2	0.1	0.1	-0.4	-0.2	0.2	-0.3	1.0		
22 ln(gdppc)	0.3	0.3	0.5	0.4	0.6	0.0	0.5	-0.4	-0.3	0.1	-0.3	0.6	-0.4	-0.3	-0.3	-0.1	0.3	0.6	-0.4	0.6	-0.2	1.0	

Note: Bold coefficients represent significance at 5% level.

Appendix 3: List of Countries

Albania	Cyprus	Iran	Mexico	Singapore
Algeria	Czech Republic	Iraq	Moldova	Slovakia
Argentina	Denmark	Ireland	Morocco	Slovenia
Armenia	Domin. Republic	Israel	Namibia	South Africa
Australia	Ecuador	Italy	Nepal	Spain
Austria	Egypt	Jamaica	Netherlands	Suriname
Azerbaijan	El Salvador	Japan	New Zealand	Sweden
Bangladesh	Estonia	Jordan	Nigeria	Switzerland
Belarus	Ethiopia	Kenya	Norway	Taiwan
Belgium	Finland	Korea	Pakistan	Tanzania
Bolivia	France	Kuwait	Panama	Thailand
Bosnia & Herz.	Georgia	Kyrgyzstan	Peru	Trin. & Tobago
Brazil	Germany	Latvia	Philippines	Turkey
Bulgaria	Ghana	Lebanon	Poland	Uganda
Burkina Faso	Greece	Libya	Portugal	Ukraine
Canada	Guatemala	Lithuania	Puerto Rico	United Kingdom
Chile	Hong Kong	Luxembourg	Romania	United States
China	Hungary	Macedonia	Russia	Uruguay
Colombia	Iceland	Malaysia	Rwanda	Venezuela
Costa Rica	India	Mali	Saudi Arabia	Vietnam
Croatia	Indonesia	Malta	Serbia	Zambia
			Sierra Leone	Zimbabwe

Appendix 4: First Stage Results

Panel A: First stage results for Table 7:

	trust	tab_culture	indv_resp	indv_resp	indv
	(1)	(2)	(3)	(4)	(5)
latitude	36.081*** (10.300)	5.020*** (1.361)	0.279 (0.604)		65.432*** (10.174)
pronoun_drop	-6.138 (4.712)	-0.649 (0.609)	-0.744** (0.318)	-0.640* (0.320)	-10.764* (5.682)
ln(covrain)				-0.709** (0.308)	
formalism	-3.661* (1.860)	-0.385 (0.232)	-0.006 (0.131)	0.010 (0.117)	-2.900* (1.653)
ln(gdppc)	-2.161 (2.257)	0.188 (0.296)	0.152 (0.156)	0.056 (0.154)	4.147 (2.757)
Constant	50.292** (23.881)	2.754 (3.090)	4.208** (1.481)	4.895** (1.440)	-0.966 (26.160)
Observations	66	65	65	65	66
Adj. R-squared	0.338	0.406	0.205	0.276	0.665
F-stat	10.65	13.4	5.04	9.06	
Hansen-J	0.146	0.006	3.10	1.42	0.51
p-value	0.70	0.94	0.08	0.23	0.47

Panel B: First stage results for Table 9:

	trust	tab_culture	indv_resp	indv_resp	indv
	(1)	(2)	(3)	(4)	(5)
latitude	30.847** (9.013)	4.041*** (1.112)	-0.197 (0.546)		71.221*** (10.697)
pronoun_drop	-7.952* (4.314)	-1.222** (0.507)	-0.953*** (0.250)	-0.759** (0.269)	-11.986** (5.161)
ln(covrain)				-0.504* (0.287)	
english	2.683 (3.856)	-0.073 (0.423)	-0.165 (0.240)	0.005 (0.220)	7.290* (3.986)
ln(gdppc)	-0.724 (1.448)	0.310 (0.187)	0.106 (0.137)	0.023 (0.137)	2.958 (2.515)
Constant	27.135* (15.081)	0.977 (1.823)	4.943*** (1.272)	5.345*** (1.284)	-3.365 (24.087)
Observations	77	76	75	75	73
Adj. R-squared	0.268	0.409	0.210	0.249	0.653
F-stat	8.99	13.19	5.05	8.53	47.66
Hansen-J	0.07	0.06	2.6	2.2	0.34
p-value	0.79	0.80	0.11	0.14	0.56

Note: Robust standard errors are in parentheses. Significance level:
 *** at 1%, ** at 5%, * at 10%. Includes a constant term.

Table 1: Summary Statistics

Variable	Abbreviation	Observations	Mean	Std. Deviation	Min	Max
Time (days), log	ln(time)	107	6.26	0.46	4.91	7.45
Cost (% of claim), log	ln(cost)	107	3.26	0.52	2.10	5.01
Procedures (number), log	ln(proc)	107	3.57	0.17	3.04	3.93
Contracting Index	contract_index	107	0.61	0.28	0.01	1.00
Trust	trust	92	26.03	13.67	3.80	63.77
Tabellini Culture Index	tab_culture	91	4.32	1.99	0.00	10.00
Individual responsibility	indv_resp	88	5.09	0.96	3.36	7.27
Individualism	indv	78	41.83	22.98	6.00	91.00
Legal Formalism	formalism	83	3.53	1.04	0.73	5.84
Common Law	english	104	0.28	0.45	0.00	1.00
Latitude	latitude	104	0.35	0.20	0.01	0.72
Pronoun drop	pronoun_drop	93	0.69	0.46	0.00	1.00
Rain variation, log	ln(covrain)	104	-0.20	0.45	-0.76	0.95
Catholic (%)	catholic	104	34.84	38.24	0.00	97.30
Education	education	80	7.34	2.60	1.20	12.25
Growth rate	growth	106	3.04	2.36	-1.63	12.56
Gross capital formation	gross_capital	104	23.33	5.38	10.26	45.20
Inflation	inflation	106	6.67	5.37	-1.26	27.68
Natural resources (% gdp)	nat_resource	106	9.05	15.63	0.00	86.88
Trade (% gdp)	trade	105	92.93	60.73	25.53	404.27
Urban population	urban	106	63.49	21.97	12.92	100.00
Ethnic linguistic fractionalization	elf	105	0.23	0.28	0.00	0.89
Regulatory quality	reg_quality	107	0.34	0.93	-2.04	1.92
Population, log	ln(pop)	106	16.47	1.60	12.65	20.99
GDP per capita, log	ln(gdppc)	105	9.12	0.95	6.40	11.14
GDP per capita	gdppc	104	15,729	13,897	777	69,181

Table 2: OLS Univariate Regressions with Individual Components

	Independent Variables:				
	trust	tab_culture	indv_resp	indv	formalism
Dep. Variables:					
ln(time)	-0.009*** (0.003)	-0.066*** (0.019)	-0.023 (0.039)	-0.005** (0.002)	0.125*** (0.043)
Obsv.	92	91	88	78	100
Adj. R ²	0.071	0.077	0.003	0.055	0.082
ln(proc)	-0.002* (0.001)	-0.030*** (0.009)	-0.076*** (0.015)	-0.003*** (0.001)	0.035** (0.017)
Obsv.	92	91	88	78	100
Adj. R ²	0.022	0.105	0.173	0.125	0.043
ln(cost)	-0.010** (0.004)	-0.107*** (0.027)	-0.121** (0.047)	-0.006** (0.002)	0.002 (0.035)
Obsv.	92	91	88	78	100
Adj. R ²	0.057	0.165	0.043	0.064	0.000
Contract Index	0.006*** (0.002)	0.065*** (0.011)	0.095*** (0.022)	0.006*** (0.001)	-0.067*** (0.025)
Obsv.	92	91	88	78	100
Adj. R ²	0.095	0.216	0.101	0.194	0.057

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%. Each represents a separate regression including a constant term.

Table 3: Benchmark OLS Regressions

	Dep. Variable: contract_index			
	(1)	(2)	(3)	(4)
trust	0.005** (0.002)			
tab_culture		0.051*** (0.014)		
indv_resp			0.073** (0.028)	
indv				0.003* (0.002)
formalism	-0.039 (0.031)	-0.043 (0.029)	-0.034 (0.032)	-0.048 (0.030)
ln(gdppc)	0.107** (0.040)	0.080* (0.041)	0.097** (0.039)	0.066 (0.049)
Constant	-0.348 (0.399)	-0.175 (0.389)	-0.502 (0.375)	0.056 (0.432)
Observations	70	69	69	69
Adj. R ²	0.244	0.295	0.204	0.242

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

Table 4: Main OLS Regressions with Control

	Dep. Variable: contract_index			
	(1)	(2)	(3)	(4)
trust	0.006** (0.002)			
tab_culture		0.049** (0.015)		
indv_resp			0.089** (0.034)	
indv				0.004** (0.002)
formalism	-0.038 (0.029)	-0.036 (0.029)	-0.027 (0.031)	-0.033 (0.033)
catholic	0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)
inflation	0.003 (0.005)	0.006 (0.005)	0.002 (0.005)	-0.001 (0.008)
trade	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
urban	0.005** (0.002)	0.004** (0.002)	0.005** (0.002)	0.004** (0.002)
ln(pop)	-0.014 (0.020)	-0.009 (0.019)	-0.007 (0.022)	0.013 (0.025)
Constant	0.417 (0.407)	0.280 (0.415)	-0.009 (0.548)	0.005 (0.522)
Observations	71	70	70	69
Adj. R ²	0.352	0.395	0.342	0.361

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

Table 5: Main OLS Regressions with Additional Controls

	Dep. Variable: contract_index											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
trust	0.004 (0.002)	0.006** (0.002)	0.004* (0.002)	0.005** (0.002)	0.005** (0.002)	0.006** (0.002)						
tab_culture							0.031* (0.018)	0.049** (0.016)	0.039** (0.016)	0.048** (0.017)	0.044** (0.017)	0.049** (0.015)
formalism	-0.030 (0.030)	-0.037 (0.033)	-0.018 (0.031)	-0.044 (0.032)	-0.049 (0.030)	-0.052* (0.028)	-0.030 (0.029)	-0.032 (0.032)	-0.018 (0.030)	-0.038 (0.031)	-0.043 (0.030)	-0.050* (0.027)
catholic	0.001 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)
inflation	0.008 (0.005)	0.004 (0.006)	0.015* (0.008)	0.004 (0.005)	0.003 (0.005)	0.009* (0.005)	0.008 (0.005)	0.007 (0.006)	0.015* (0.008)	0.006 (0.005)	0.006 (0.005)	0.012** (0.005)
trade	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001* (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
urban	0.003 (0.002)	0.005** (0.002)	0.004* (0.002)	0.005** (0.002)	0.005** (0.002)	0.005** (0.002)	0.003 (0.002)	0.004** (0.002)	0.003* (0.002)	0.004** (0.002)	0.005** (0.002)	0.004** (0.002)
ln(pop)	0.004 (0.020)	-0.013 (0.022)	0.002 (0.021)	-0.009 (0.020)	-0.015 (0.021)	-0.013 (0.019)	0.005 (0.020)	-0.006 (0.022)	0.003 (0.021)	-0.008 (0.019)	-0.009 (0.020)	-0.009 (0.018)
education	0.045** (0.016)						0.040** (0.016)					
growth		-0.002 (0.017)						-0.005 (0.017)				
reg_quality			0.123* (0.065)						0.107 (0.064)			
elf				-0.109 (0.154)						-0.030 (0.155)		
gross_capital					0.006 (0.005)						0.003 (0.005)	
nat_resource						-0.006** (0.003)						-0.007** (0.003)
Constant	-0.107 (0.436)	0.400 (0.455)	0.102 (0.464)	0.424 (0.419)	0.368 (0.407)	0.510 (0.366)	-0.123 (0.447)	0.238 (0.469)	0.035 (0.472)	0.287 (0.428)	0.260 (0.417)	0.375 (0.364)
Observations	69	71	71	71	70	71	68	70	70	70	69	70
Adj. R ²	0.423	0.342	0.380	0.349	0.344	0.371	0.441	0.386	0.414	0.385	0.377	0.416

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

Table 6: Main OLS Regressions with Additional Controls

	Dep. Variable: contract_index											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
indv_resp	0.071** (0.035)	0.090** (0.034)	0.067* (0.035)	0.086** (0.034)	0.083** (0.032)	0.088** (0.033)						
indv							0.002 (0.002)	0.004** (0.002)	0.002 (0.002)	0.004** (0.002)	0.004** (0.002)	0.003* (0.002)
formalism	-0.019 (0.032)	-0.030 (0.035)	-0.013 (0.032)	-0.033 (0.033)	-0.045 (0.030)	-0.044 (0.029)	-0.032 (0.035)	-0.039 (0.037)	-0.016 (0.034)	-0.035 (0.034)	-0.052 (0.032)	-0.045 (0.031)
catholic	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)
inflation	0.007 (0.005)	0.001 (0.006)	0.012 (0.007)	0.003 (0.005)	0.002 (0.005)	0.009* (0.005)	0.003 (0.007)	-0.002 (0.009)	0.010 (0.008)	-0.000 (0.008)	-0.001 (0.007)	0.005 (0.007)
trade	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
urban	0.003 (0.002)	0.005** (0.002)	0.004* (0.002)	0.005** (0.002)	0.006** (0.002)	0.005** (0.002)	0.002 (0.002)	0.004* (0.002)	0.003 (0.002)	0.003* (0.002)	0.004** (0.002)	0.004** (0.002)
ln(pop)	0.006 (0.022)	-0.009 (0.024)	0.004 (0.023)	-0.004 (0.022)	-0.014 (0.022)	-0.007 (0.021)	0.022 (0.025)	0.007 (0.026)	0.027 (0.025)	0.016 (0.026)	0.002 (0.024)	0.007 (0.024)
education	0.040** (0.016)						0.047** (0.017)					
growth		0.004 (0.018)						0.012 (0.019)				
reg_quality			0.106* (0.061)						0.146** (0.062)			
elf				-0.105 (0.151)						-0.071 (0.148)		
gross_capital					0.010* (0.005)						0.013** (0.006)	
nat_resource						-0.007** (0.003)						-0.005* (0.003)
Constant	-0.389 (0.567)	0.017 (0.582)	-0.163 (0.567)	0.018 (0.558)	-0.039 (0.524)	0.096 (0.478)	-0.288 (0.582)	0.105 (0.578)	-0.268 (0.539)	-0.001 (0.531)	-0.036 (0.529)	0.189 (0.489)
Observations	68	70	70	70	69	70	68	69	69	69	68	69
Adj. R ²	0.402	0.332	0.360	0.338	0.350	0.368	0.419	0.355	0.391	0.353	0.386	0.382

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

Table 7: Benchmark IV Regressions

	Dep. Variable: contract_index				
	(1)	(2)	(3)	(4)	(5)
trust	0.013** (0.005)				
tab_culture		0.095** (0.034)			
indv_resp			0.198 (0.140)	0.252** (0.109)	
indv					0.006** (0.003)
formalism	-0.021 (0.036)	-0.034 (0.031)	-0.024 (0.041)	-0.015 (0.039)	-0.044 (0.031)
ln(gdppc)	0.076 (0.049)	0.037 (0.054)	0.049 (0.076)	0.030 (0.066)	0.018 (0.063)
Constant	-0.316 (0.482)	-0.001 (0.456)	-0.744 (0.454)	-0.876** (0.445)	0.366 (0.519)
Observations	66	65	65	65	66
Adj. R ²	0.111	0.235	0.045	0.00	0.198

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

Table 8: IV Regressions with Controls

	Dep. Variable: contract_index				
	(1)	(2)	(3)	(4)	(5)
trust	0.017*** (0.005)				
tab_culture		0.136*** (0.035)			
indv_resp			0.197** (0.079)	0.197** (0.077)	
indv					0.008*** (0.002)
formalism	-0.009 (0.034)	-0.001 (0.034)	0.004 (0.043)	0.004 (0.042)	0.001 (0.031)
catholic	0.001 (0.001)	0.001 (0.001)	-0.002* (0.001)	-0.002* (0.001)	-0.000 (0.001)
inflation	0.014** (0.006)	0.020** (0.008)	0.008 (0.008)	0.008 (0.007)	0.009 (0.008)
trade	0.001** (0.000)	0.002*** (0.000)	0.001** (0.000)	0.001** (0.000)	0.002*** (0.000)
urban	0.003* (0.002)	0.001 (0.002)	0.005** (0.002)	0.005** (0.002)	0.002 (0.002)
ln(pop)	-0.031 (0.021)	-0.007 (0.019)	-0.015 (0.023)	-0.015 (0.023)	0.011 (0.026)
Constant	0.300 (0.359)	-0.204 (0.438)	-0.549 (0.692)	-0.550 (0.670)	-0.233 (0.502)
Observations	67	66	66	66	66
Adj. R ²	0.071	0.160	0.245	0.245	0.271

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%. Regressions 1, 2, 3, and 5 are instrumented with latitude and pronoun drop. Regression 4 is instrumented with ln(covrain) and pronoun drop.

Table 9: Semi Reduced Form IV Regressions

	Dep. Variable: contract_index				
	(1)	(2)	(3)	(4)	(5)
trust	0.015** (0.005)				
tab_culture		0.110*** (0.030)			
indv_resp			0.206** (0.101)	0.277** (0.094)	
indv					0.008** (0.003)
english	-0.035 (0.082)	0.024 (0.071)	-0.063 (0.074)	-0.069 (0.082)	-0.018 (0.074)
ln(gdppc)	0.056 (0.038)	0.014 (0.042)	0.057 (0.049)	0.035 (0.050)	0.000 (0.059)
Constant	-0.282 (0.296)	0.016 (0.302)	-0.921** (0.302)	-1.085** (0.339)	0.279 (0.445)
Observations	77	76	75	75	73
Adj. R ²	0.00	0.197	0.081	0.00	0.113

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%. Regressions 1, 2, 3, and 5 are instrumented with latitude and pronoun drop. Regression 4 is instrumented with ln(covrain) and pronoun drop.