Eroding the Culture of Contracting: Aid, Not Trade?

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Abstract

We analyze how two well-known development policies—international trade and aid—affects the 'culture of contracting.' The culture of contracting refers to those cultural characteristics—trust, respect, level of self-determination, and level of obedience—which allow for the impersonal exchange necessary for growth and development. Theoretically, trade and aid may affect the culture of contracting for better or worse. We empirically analyze both possibilities and find that international trade generates, on net, positive effects while foreign aid generates negative effects on the culture of contracting. The more open a country is to trade and the less aid it receives, the more likely it is to possess a stronger culture of contracting.

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1. Introduction

Trade openness and aid are two well-known development policies intended to assist poor countries. Advocates of trade openness contend that if countries open their borders to trade they will be better off by increasing the extent of the market. Likewise, advocates of foreign aid argue that effective aid can assist poor countries in breaking the poverty trap. An existing literature explores the impact of both trade and aid on growth (see Hughes 2003 and Doucouliagos and Paldam 2008 for a review). Missing from this literature is an assessment of the effect of trade openness and aid on culture. This is an important consideration given that an emerging result in the development literature is that informal institutions underpin economic progress or stagnation (Guiso et al. 2006; Licht et al. 2007; Tabellini 2008a,b, 2010; C. Williamson and Mathers 2010).

As such, culture is one channel through which trade openness and 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 in general, and economic growth. To the extent that trade openness and aid positively affect the culture of contracting, it will contribute to sustained growth due to increases in the extent of the market. However, if trade openness or aid undermines the culture of contracting these policies could actually have the unintended consequence of undermining long-term growth.

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 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 concept of culture. However, by focusing on this one aspect we are able to gain analytical tractability to analyze cultural traits which are crucial to development.

Employing a measure of culture first identified by Tabellini (2008a,b, 2010) and later expanded on by C.Williamson and Kerekes (2010), we empirically analyze these alternatives by isolating the effect of trade openness and aid on the culture of contracting. In doing so, we attempt to explain how two important, well-known development policies may affect cultural traits that are central to development.

Our analysis contributes to two strands of literature, the first being the aforementioned literature analyzing the effect of trade and aid on growth (see Hughes 2003, Doucouliagos and Paldam 2008). We contribute to this literature by analyzing how trade and aid can affect the culture of contracting which underpins growth. Second, we contribute to the empirical literature exploring the connection between culture and economics outcomes (Guiso et al. 2006; Licht et al. 2007; Tabellini 2008a, b, 2010; C. Williamson and Mathers 2010). This literature is mainly focused on the link between culture and growth. In contrast, our focus is on how trade openness and aid influence the culture of contracting for better or worse.

Our main findings can be summarized as follows. We find that, on net, international trade has positive and beneficial effects on culture. Our results also suggest that foreign aid undermines cultural values that are crucial for economic development. Our results are robust to a variety of control variables, IV estimation, and alternative trade and culture measures.

We proceed as follows. The next section provides the theory of the culture of contracting and discusses the mechanisms through which trade and aid may affect this culture. Section 3 discusses the data used, while Section 4 presents the results of our empirical analysis. Section 5 provides a sensitivity analysis including a variety of robustness checks. Section 6 concludes with the implications of our analysis.

2. Theory

2.1 The Culture of Contracting

The idea that economic development requires increases in the extent of the market can be traced back to Adam 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 Tonnies (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 directly from Mousseau's work to describe the culture of contracting.

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; Keefer and Knack 2005, 2007).

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. Further, at the core of contracting is the process of bargaining and compromise which 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 (see 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 while 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 voluntary 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 (see Harper 2003).

2.2 Trade, 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 here. The question that interests us is whether two well-known development policies—trade openness and aid—positively or negatively affect the culture of contracting.

Theoretically, one can envision both a positive and negative feedback loop between trade, aid and the culture of contracting. In the case of a positive feedback loop, trade and/or 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 trade and 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, trade and/or 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 trade openness and aid could have both positive and negative effects under different scenarios.

Consider first a society's openness to trade. It should be noted that to the extent that people's values map to policies, trade openness requires some existing culture of contracting since international trade requires engaging in contracts with strangers. Theoretically, however, this initial openness may subsequently have a positive or negative feedback effect on the existing

culture of contracting. Typically, economists focus on allocative benefits of trade openness. However, trade can also have a dynamic effect through its effect on the exchange of alternative ideas and ways of doing business, as well as through the cultivation of relationships (see Storr 2008). The dynamic effect of trade can strengthen the existing culture of contracting.

However, it has also been argued that international trade openness can lead to the erosion of social networks and cohesion (Rodrik 1997; Chan 2007). From this standpoint trade disturbs the status quo, including existing norms of trust and cooperation by encouraging individualism and profit-seeking over social relations. A related argument emphasizes that openness to trade can have perverse effects on culture in terms of perceived loss of identity (Barber 1995; Huntington 1996). Under this scenario, individuals, or groups of individuals, view global integration as a threat to their core values and beliefs. The result is that indigenous individuals view global trade as reducing their ability to control their lives. This can lead to a backlash against global trade and integration, and in the limit, can result in violent conflict. In both instances subsequent entrepreneurial activity is threatened either because of a reduction in the informal institutions that allow for fluidity in economic interactions, in the case of eroded social cohesion, or in the loss of perceived control over one's life, in the case of lost identity.

Next consider the effect of foreign aid on the culture of contracting. 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 (see 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 new 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 (see 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 (see Svensson 2000 and 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.

Trade openness and 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.

3. Data

In order to create an index, which captures the culture of contracting, we build off of a culture variable first identified by Tabellini (2008a,b, 2010) and later expanded by Williamson and

Kerekes (2010). This variable, which is broken into four categories—trust, respect, individual self-determination, and obedience—captures the culture of contracting as discussed above. Data was collected from the World Values Surveys to quantify each of these four categories. These surveys capture individual beliefs and values reflecting local norms and customs, i.e., culture (The EVS Foundation and the WVS Association 2006). In order to maximize sample size, we average across all countries surveyed in any of the five waves (from 1981 to 2007) and aggregate the survey answers to create a culture index for each country.[1]

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.

[1] The time periods of the surveys are 1981-84, 1989-1993, 1994-1999, 1999-2004, and 2005-2007.

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 will affect the dependent variable. The index is normalized between zero and ten, with a higher score implying stronger informal norms that support economic growth 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.

For our main variables of interest, trade openness and aid, we rely on the current literature for the best measurement of each. 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). Foreign aid is measured as net development assistance and official aid received divided by GDP (PPP). This is also the most common measurement of foreign aid in the current literature. In addition to these two variables, we construct a supplementary variable, an aid to trade ratio, which is created by dividing net development assistance and official aid received by imports plus exports. Data for all three variables are collected from World Development Indicators 2010.

In addition to trade openness and foreign aid, we also control for other factors that could possibly influence a country's culture. We follow the existing development literature on

institutions in selecting our variables (for example, Levine and Renelt 1992; Dawson 1998; La Porta et al. 1999, 2004; Sachs 2001; Acemoglu et al. 2001, 2002; Jaggers and Marshall. 2000; Gwartney et al. 2004; Acemoglu and Johnson 2005; Tabellini 2010). In all regressions, we always include initial real GDP (PPP) per capita in 1981 (log form). Other explanatory variables include country size captured by population and area (log form), a dummy variable for English legal origin, latitude (distance from the equator) to control for geographic effects, educational attainment in 1960, religion measured as the percent of the population that is catholic, inequality as captured by the ethnolinguistic fractionalization index, macroeconomic stability measured by the inflation rate and government consumption, and the initial political and economic institutional environment. Appendix 1 provides a summary description of all data used in the analysis along with their sources.

4. Empirical Analysis

To investigate our central question, we implement OLS cross-sectional analysis (from 1981 to 2007) as our main model specification. We do so because of restricted data availability and limitations surrounding the culture variable. In order to maximize the number of observations, we need to average across all five waves of the WVS making panel analysis virtually impossible. We do not believe this to be of great concern as culture is slow to change and the data would not span across enough years to recognize significant changes over time (see O. Williamson 2000: 597).

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, trade openness, and the culture of contracting. This is a

first attempt to understanding how these variables may affect culture and caution the reader from drawing extreme casual conclusions from our results. However, as part of our sensitivity analysis, we do provide instrumental variable (IV) regression results in an attempt to overcome reverse causality and endogeneity issues. We believe these results, along with several other robustness checks, provide additional support to our main results. In addition to OLS, we also use robust regressions with iteratively reweighted least squares (RLS) to minimize possible effects from outliers.

Summary statistics for all of the variables used in the analysis are provided in Appendix 2. The number of observations, mean, standard deviation, and minimum and maximum values for each variable is reported. The dataset includes 45 countries covering the time period of 1981-2007 with income per capita ranging from $248 to $26,000. The culture index ranges from 0 to 8 with a mean of 3.37. Foreign aid averages 2 percent of GDP with a standard deviation of 3.89.[2] Trade averages 0.3 percent of GDP with a standard deviation of 0.37 percent and ranging from 0.08 percent (India) to 2 percent (Hong Kong). A correlation matrix is provided in Appendix 3.

4.1 Benchmark Results

As a benchmark, we first show the basic relationship between trade openness and aid with each of the four individual components of culture as well as the overall culture index. The regression is identified as:

$$C_i = \mu + \beta T_i + \alpha F_i + Z_i \grave{} \delta + \varepsilon_i$$

[2] The measurement is net foreign aid which is aid received net aid paid back; therefore, we can have a negative number.

where C equals each component (trust, control, respect, obedience) of culture or the overall index, T represents trade, F is foreign aid, and Z represents the control vector. For the benchmark regressions, we only control for initial income.

The benchmark OLS and robust RLS regressions are shown in Table 1.

[Insert Table 1 About Here]

In both the OLS and robust regressions, trade openness positively and significantly influences the level of trust and foreign aid has a negative and significant effect on trust.[3] This result is reversed for obedience where trade openness is negative and significant and aid is positive and significant. This implies that an increase in trade openness leads to higher generalized trust and lowers emphasis on obedience. Foreign aid decreases trust and promotes obedience. Based on the size of the coefficients, the trade openness effect appears much larger on both trust and obedience. For example, a one percent increase in trade openness leads to an 10 percentage point increase in trust and a one percent increase in aid lowers trust by 1.8 percentage points; however, a one standard deviation increase (0.37 percent) in trade leads to a 3.87 percentage point increase in the level of trust, while a one standard deviation increase in foreign aid (3.89 percent) lowers trust by 6.8 percentage points illustrating that the negative consequences from aid in our sample of countries is possibly much larger than the beneficial aspects from trading. In the OLS regressions, trade openness decreases the level of tolerance and respect while aid has a positive and significant effect. This result is not robust once we control for outliers in the RLS

[3] The individual components are based off of the survey aggregation process described above and are not rescaled to form a relative index. Trust, respect, and obedience are reported as percent of respondents and self-control is based on a scale from 1-10 and multiplied by ten.

regressions. In both the OLS and RLS regressions, neither aid nor trade significantly impacts 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 which is conducive to exchange as opposed to a measure of individual components of culture. Since we are mainly concerned with the impact of trade openness and aid on the culture of contracting, the aggregate index serves as the focus for the remaining empirical analysis. In both the OLS and RLS regressions, trade openness positively and significantly enhances a culture of contracting while foreign aid has a negative and significant impact. Based on the OLS results, a one percent increase in trade openness leads to approximately a 1.38 increases in the culture index (a difference between Bulgaria and Hong Kong) and a one standard deviation increase leads to a 0.51 increase in culture. This also implies that moving from the lowest trading country (India) to the highest trading country (Hong Kong) in our sample increases culture by 2.65. In contrast, moving from the lowest aid receiving country (South Korea) to the highest (Zimbabwe) significantly decreases culture by approximately 5.32, a substantial decrease considering culture's mean is 3.37. A standard deviation increase in aid lowers culture by 1.07, more than twice the effect from trade.

4.2 Main Results

Our main model specification builds off of the benchmark by expanding our control vector to include additional variables. We also introduce the aid to trade ratio variable to provide an alternative perspective capturing the relative effects from both aid and trade. The aid/trade ratio will be our main variable in the instrumental variable analysis, as it is virtually impossible to find

two valid instruments that satisfy the exclusion restrictions for both aid and trade. This is discussed in more detail below.

The main control vector includes initial income along with population and area (log form), a dummy variable for English legal origin, latitude, percent of the population that is catholic, the ethnolinguistic fractionalization (ELF) index, the inflation rate, and government consumption. To test against omitted variable bias, we also provide two additional regression specifications that control for educational attainment in 1960 or the initial political and economic institutional environment.[4]

Table 2 presents our main OLS results and the robust RLS regression results.

[Insert Table 2 About Here]

In all three regressions presented in columns (1) to (3), trade openness has a positive and significant effect on culture and foreign aid has a negative and significant effect. The only control variable with a (negative) significant effect is inequality, measured by the ELF index. Based on the average of the coefficients, a one standard deviation increase in trade leads to a 0.90 increase in culture (difference between Zambia and Brazil) and a standard deviation increase in aid leads to a decrease of 1.09. This implies that moving from the lowest to highest trading country would increase culture by approximately 5.05—the difference in culture between Ghana and Hong Kong. Also, the inclusion of the controls does not substantially increase the explanatory power of the model based on similar R-squareds between the benchmark and main results.

[4] 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 3.

In columns (4) through (7), we rerun our regressions replacing both the trade openness and aid variables with a relative measure of the two. The aid/trade ratio range is 0.0 to 0.92, indicating that, in absolute terms based on volume, countries in our sample trade more than the amount they receive in aid. However, in all 3 out of 4 regressions, the aid/trade ratio is negative and significant. This suggests that as the amount of aid increases relative to the amount of trading, a country's culture deteriorates. For example, a standard deviation increase in aid/trade leads to a 0.70 decrease in the culture index. Alternatively, an aid/trade ratio move from South Korea (lowest ratio) to Rwanda (highest ratio) decreases the culture index by approximately 3. This suggest that as countries become more dependent on foreign aid instead of relying on trading, an indirect consequence is a destruction of norms conducive to the culture of contracting necessary for economic growth and development.

Table 3 replicates Table 2 with our main robust reiterative least squares results.

[Insert Table 3 About Here]

In general, we find that the OLS results are not sensitive to outliers as the RLS results show the same basic pattern: trade openness positively enhances culture and aid has a negative effect on culture. One difference is that the coefficients for both trade openness and aid is much lower in regression (3) and trade openness loses its significance in this specification. Also, the coefficients for the aid/trade variable are lower in all most regressions and it loses significance in regression (5). In addition, more of the control variables are significant especially in regressions (3) and (7). One interesting result from column (7) is that initial democracy has a negative and significant effect on culture while initial economic freedom has a positive and significant effect.

The negative democracy effect could result because countries absent a culture of contracting experiment with democracy, whereas the positive effect from economic freedom may be capturing a general positive cultural effect from markets. While the differing effects from democracy and economic freedom are important to understand, an in-depth analysis is beyond the scope of the paper.

Overall, we view our benchmark and core analysis as providing evidence that trading with foreigners positively influences culture while receiving aid from foreigners has the opposite effect.[5] This lends support to the hypothesis that policies regarding trade openness and foreign aid may have unintended consequences on the culture of contracting.

5. Sensitivity Analysis

5.1 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 with an existing culture of contracting which supports economic exchange prefer to engage in international trading and do not find it necessary to receive large quantities of aid. It may be that our strong results above are due to the fact that countries with high culture scores choose trade openness instead of relying on foreign aid. In order to provide robustness to our main results, we use instrumental variable analysis. We cannot instrument for the regressions that use the standard trade openness and foreign aid measures, as it is virtually impossible to find two instruments that satisfy the exclusion restrictions for both aid and trade openness.[6] Instead, we instrument our aid/trade ratio variable

[5] 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 (VIF) scores fall within the tolerance range of 0-1.

[6] We experimented with a variety of variables that are often used as standard instruments for trade and foreign aid, but they failed to meet the exclusion restrictions.

with the standard aid instruments commonly found in the development literature (for example, see Burnside and Dollar 200; Djankov et al 2008). These instruments include population (log), infant mortality, arms imports (lagged), and dummy variables for strategic interests zones (Franc zone, Central America, and Egypt). The instruments appear to be valid as the F-statistic is 11.84 and the adjusted R-squared is 0.64. The first stage results are presented in Appendix 4.[7] We acknowledge that this robustness check is imperfect and does not necessarily imply that we are capturing the causal relationships between trade openness, aid, and the culture of contracting; however, we view it as lending support to the main hypothesis.

The IV regressions are presented in Table 4.

[Insert Table 4 About Here]

In all four regressions, aid/trade is negative and significant. A one standard deviation increase decreases the culture index by approximately 1.2 (based on the average of the coefficients). Inequality is negative and significant when included and initial economic freedom is positive and significant when included in the specification. These results support our findings above. Although these results add validity to the main findings, we are still cautious in making causal arguments as it is difficult to establish the exact mechanisms at play.

5.2 Alternative Trade Measures

We replicate our main OLS regressions substituting the measure of trade openness with two alternative indices. The first is Sachs and Warner's (1995) trade openness measure (SW

[7] Sargan-Hansen test for over-identifying restrictions is performed to confirm the validity of the instruments. This statistic is insignificant indicating that the instruments are uncorrelated with the error term and are correctly excluded.

openness). A dummy variable for openness is based on five individual criteria for specific trade-related policies. This criterion includes tariff rates, non-tariff barriers, a black market exchange rate, a state monopoly on major exports, and a socialist economic system. A country is classified as closed if it displays at least one of the following characteristics: (1) Average tariff rates of 40% of more, (2) Nontariff barriers covering 40% or more of trade, (3) A black market exchange rate that is depreciated by 20% or more relative to the official exchange rate, (4) A state monopoly on major exports, (5) A socialist economic system. These five characteristics are included to cover various types of trade restrictions. A dummy variable equals to 1 classifies a country as open and 0 if closed. We use the average from 1950 to 1992 due to limited data availability.

The second measure is a constructed trade index based on the expected size of the trade sector. The constructed trade index is a subcomponent of Fraser Institute's Economic Freedom Index category freedom to trade with foreigners. In order to construct the index, regression analysis is performed to derive an expected size of the trade sector based on the population, geographic size, and location relative to the concentration of world GDP. The actual size of the trade sector is compared with the expected size for the country. The index assigns a higher score to countries with trade sectors that are higher than expected. Countries with relatively small trade sectors receive a lower score. The index is scaled between 0 and 10. We use the average from 1980 to 2007.

[Insert Table 5 About Here]

In seven out of the eight regressions, trade retains its significance. Using SW openness, trade is positive and significant in the first three regressions and aid remains negative but only significant in the first regression. Based on the averages of the coefficients, if a country moves from closed to open it would increase by 1.59 on the culture index. The regressions controlling for the constructed trade index shows that trade is positive and significant and aid is negative and significant in all four regressions. A one standard deviation increase in the constructed trade index increases culture, on average, by 0.68. Moving from the country (Rwanda) with the lowest constructed trade score to the highest (Hong Kong or Malaysia) increases the culture index by 2.79. The size of aid's impact on the culture of contracting remains relatively the same as before.[8]

5.3 Schwartz Culture Index

Our last robustness check replaces the previous measure of the culture of contracting with an alternative measure derived from Schwartz (1994, 1999) and most notably used in Licht et al. (2007) to demonstrate culture's effect on economic outcomes. Schwartz defines three main cultural dimensions. The first dimension is embeddedness/autonomy, designed to capture respect for tradition, social order, and obedience. Embeddedness places emphasis on the individual's place within a group and centers on maintaining the status quo and resists breaking group solidarity. Autonomy refers to the opposite of embeddedness where a culture places emphasis on individual uniqueness and encourages individuals to pursue their own ideas, directions, and plans. The second dimension captures the relationship between mankind and the natural and social world. This is called mastery/harmony where mastery refers to cultural emphasis on altering and changing the natural world as a means to improving an individual's

[8] These results are robust to RLS specification and, therefore, are not driven by outliers.

well being. Harmony emphasizes accepting the world as is instead of trying to change it. The last cultural dimension is hierarchy/egalitarianism and captures how societies generate group cooperation and productive activities. Hierarchy refers to a cultural acceptance of an unequal power structure whereas egalitarianism emphasizes social justice and equality among all group members.

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. Following the regression specification in Licht et al. (2007), we analyze trade and aid's effects on the indices capturing embeddedness, harmony, and hierarchy. We also use principle component analysis on these three indices to create an overall Schwartz index where an increase in the index represents an increase in culture associate with economic development.

The results are not reported but are summarized to save space.[9] We find similar results when we replace the WVS culture index with the Schwartz variables. Trade has a positive and significant effect on hierarchy and aid has a negative and significant impact (similar to the obedience result). Trade is negatively and significantly and aid is positively and significantly related to harmony. Neither aid nor trade significantly affects embeddedness. With the overall index, the same pattern emerges where trade has a positive and significant effect on culture and aid has a negative and significant effect.

6. Conclusion

[9] Results are available upon request.

To the extent that trade or aid helps or harms the culture of contracting, it implies that the benefits or costs of these policies may be greater than typically thought. Our finding that aid undermines the culture of contracting means that discussions of future aid needs to take this unintended cost into account. Likewise, our finding that trade openness encourage the culture of contracting implies that the benefits of trade openness may be greater than typically thought.

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 (see 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 have the unintended consequence of undermining some of the very values that are ultimately needed for growth and development.

References

Acemoglu, Daron and Simon Johnson. 2005. "Unbundling Institutions," *Journal of Political Economy*, 115: 949-995.

Acemoglu, Daron, Simon Johnson, and James Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91: 1369-1401.

_____. 2002. "Reversal of Fortunes: Geography and Institutions in the Making of the Modern World Income Distribution," *Quarterly Journal of Economics* 117: 1231-1294.

Barber, Benjamin. 1995. *Jihad vs. McWorld: How Globalism and Tribalism Are Reshaping the World.* New York: Crown Publishing Group.

Chan, Kenneth S. 2007. "Trade, Social Values, and the Generalized Trust,"*Southern Economic Journal* 73(3): 733-753.

Collier, Paul. 2007. *The Bottom Billion*. New York, NY: Oxford University Press.

Dollar, David and Kraay, Aart. 2003. "Institutions, trade, and growth," *Journal of Monetary Economics* 50(1): 133-162.

_____. 2004. "Trade, Growth, and Poverty," *Economic Journal* 114(493): F22-F49.

Doucouliagos, Hristos and Martin Paldam. 2008. "Aid effectiveness on growth: A meta study," *European Journal of Political Economy* 24: 1-24.

Durkheim, Emile. 1893 [1933]. *The Division of Labour in Society.* Glencoe, IL: Free Press.

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, Elinor Ostrom, and Sujai Shivakumar. 2005. *The Samaritan's Dilemma: The Political Economy of Development Aid.* New York: Oxford University Press.

Glaeser, Edward L., Rafael La Porta, Florencio Lopeez-De-Silanes, and Andrei Shleifer. 2004. "Do Institutions Cause Growth?" *Journal of Economic Growth* 9: 271-303.

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." published in *Economic Freedom of the World: 2010 Annual Report*, Fraser Institute.

Harper, David A. 2003. *Foundations of Entrepreneurship and Economic Development.* New York: Routledge.

Hughes, Helen. 2003. "Trade or Aid: Which Benefits Developing Countries More?" *Economic Papers* 22(3): 1-19.

Huntington, Samuel. P. 1996. *The Clash of Civilizations and the Remaking of the World Order.* New York: Simon & Schuster.

Jaggers, Keith and Monty G. Marshall. 2000. "Polity IV Project" Center for International Development and Conflict Management, University of Maryland.

Knack, Stephen and Philip Keefer. 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: Menard, C. and Shirley, M.M. (Eds.). Handbook of New Institutional Economics, Springer: The Netherlands, 701-725.

Licht, Amir N. 2008. "Social Norms and Law: Why Peoples Obey the Law." *Review of Law and Economics* 4(3):715-750.

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* 35:659-688.

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: 63-77.

Multi-National Corps. 2009. "Money as a Weapon System," MNC-CJ8 SOP.

Platteau, Jean-Phillipe. 2000. *Institutions, Social Norms, and Economic Development,* Harwood: Academic Publishers & Routledge.

Quinn, Dennis P. 1997. "The correlates of change in international financial regulation,"

American Political Science Review 91(3): 531–551.

Quinn, Dennis P., and A. Maria Toyoda. 2007. "Ideology and Voter Preferences as Determinants of Financial Globalization," *American Journal of Political Science* 51:344-363.

_____. 2008. "Does Capital Account Liberalization Lead to Economic Growth?" *Review of Financial Studies* 21(3):1403-1449.

Rodrik, Dani. 1997. *Has Globalization Gone Too Far?* Washington, D.C.: 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: 131-165.

Sachs, Jeffrey. 2001. "Tropical Underdevelopment," National Bureau of Economic Research Working Paper No. 8119.

_____. 2005. *The End of Poverty.* New York, NY: Penguin Books.

Sachs, Jeffrey D. and Andrew Warner. 1995. "Economic Reform and the Process of Global Integration" *Brookings Papers on Economic Activity* 26(1995-1): 1-118.

Schneider, Friedrich and Alexander F. Wagner. 2001. "Institutions of Conflict Management and Economic Growth in the European Union," *Kyklos* 54: 509-532.

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 Ltd.

Schwartz, Shalom H. 1999. "Cultural value differences: Some implications for work." *Applied Psychology International Review* 48:23–47.

Smith, Adam. 1776. [1976]. *An Inquiry into the Nature and Causes of the Wealth of Nations.* Chicago: University of Chicago Press.

Storr, Virgil. 2008. "The Market as a Social Space," *The Review of Austrian Economics* 21(2/3): 135-150.

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.*

Tonnies, Ferdinand. 1887 [1957]. *Community and Society*. East Lansing, MI: Michigan State University Press.

Williamson, Claudia R. 2009. "Informal Institutions Rule: Institutional Arrangements and Economic Performance," *Public Choice*, 193(3): 371-387.

Williamson, Claudia R. and Rachel Mathers. 2010. "Economic Freedom, Culture, and Growth," *Public Choice*, forthcoming.

Williamson, Claudia R. and Carrie B. Kerekes. 2010. "Securing Private Property: Formal versus Informal Institutions," *Journal of Law and Economics,* forthcoming.

Williamson, Oliver. 2000. "The New Institutional Economics: Taking Stock and Looking Ahead," *Journal of Economic Literature* 38: 595-613.

Table 1: Sub-Components of Culture Index Culture and Trade Openness

Panel 1: OLS Regressions

	Dependent Variable:				
	Trust	**Respect**	**Self-control**	**Obedience**	**Culture Index**
Trade	10.462**	-18.377**	-2.144	-22.805***	1.380**
	(3.646)	(7.372)	(2.303)	(4.318)	(0.417)
Aid	-1.751**	1.492**	0.091	2.880***	-0.274**
	(0.621)	(0.676)	(0.333)	(0.744)	(0.087)
Initial Income	-4.266	4.747**	2.886*	2.868	-0.266
	(3.133)	(2.058)	(1.458)	(3.734)	(0.370)
Constant	56.027**	27.564	44.070***	24.322	5.639*
	(25.944)	(17.026)	(12.365)	(31.719)	(3.195)
Adj. R-Squared	0.211	0.297	0.143	0.346	0.361
Number of Obs.	46	46	45	46	45

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

Panel 2: Robust Regressions

	Dependent Variable:				
	Trust	**Respect**	**Self-control**	**Obedience**	**Culture Index**
Trade	12.207**	-7.177	-2.292	-23.029**	1.243**
	(4.379)	(7.273)	(3.471)	(7.789)	(0.573)
Aid	-2.005***	0.484	0.040	2.840**	-0.223**
	(0.527)	(0.634)	(0.418)	(0.937)	(0.069)
Initial Income	-6.084**	3.035	2.696*	2.884	-0.039
	(1.853)	(1.894)	(1.486)	(3.296)	(0.245)
Constant	70.105***	40.554**	46.071***	24.608	3.667*
	(15.479)	(15.565)	(12.412)	(27.536)	(2.049)
Adj. R-Squared	0.240	0.06	0.058	0.251	0.297
Number of Obs.	46	44	45	46	45

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

Table 2: Main OLS Regressions

	Dependent Variable: Culture Index						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Trade	2.511***	1.848**	2.939**				
	(0.682)	(0.686)	(1.288)				
Aid	-0.252**	-0.217*	-0.360**				
	(0.121)	(0.108)	(0.169)				
Aid/Trade				-4.099**	-3.006**	-1.920	-4.315**
				(1.244)	(1.210)	(1.440)	(1.693)
Initial Income	-0.385	-0.469	-0.990	-0.016	0.133	0.181	-0.285
	(0.515)	(0.464)	(0.768)	(0.349)	(0.298)	(0.303)	(0.440)
Area (log)	0.410	0.338	0.393		-0.060	-0.027	0.075
	(0.249)	(0.271)	(0.331)		(0.190)	(0.187)	(0.265)
Pop (log)	-0.084	-0.101	-0.185		0.291	0.195	0.153
	(0.330)	(0.361)	(0.392)		(0.308)	(0.305)	(0.313)
English Legal Origin	0.205	-0.469	0.093		0.140	-0.399	0.460
	(0.513)	(0.571)	(0.893)		(0.589)	(0.630)	(0.948)
Geography	0.380	-1.016	1.320		-0.797	-1.533	0.433
	(2.050)	(2.355)	(2.731)		(2.063)	(2.622)	(2.509)
% Catholic	-0.007	-0.009	-0.001		-0.009	-0.011*	-0.009
	(0.005)	(0.005)	(0.009)		(0.006)	(0.006)	(0.008)
Inequality	-2.492**	-1.889*	-2.235*		-1.727	-1.379	-2.624*
	(0.988)	(0.992)	(1.229)		(1.045)	(0.983)	(1.344)
Inflation	-0.003	-0.004	0.000		-0.003	-0.003	0.001
	(0.003)	(0.003)	(0.005)		(0.003)	(0.003)	(0.005)
Gov. Consumption	-0.044	-0.024	-0.015		-0.051	-0.052	-0.070
	(0.077)	(0.084)	(0.124)		(0.080)	(0.089)	(0.100)
Education 1960		0.018				0.015	
		(0.013)				(0.015)	
Initial Democracy			-0.031				-0.073
			(0.068)				(0.067)
Initial Econ Freedom			0.508				0.791**
			(0.351)				(0.306)
Constant	3.843	5.522	7.173	3.941	0.189	0.648	0.217
	(6.417)	(6.825)	(8.318)	(3.083)	(5.367)	(5.546)	(5.369)
Adj. R-Squared	0.404	0.388	0.290	0.266	0.306	0.290	0.287
Number of Obs.	40	34	32	45	40	34	32

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

Table 3: Robust RLS Regressions

	Dependent Variable: Culture Index						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Trade	2.428**	2.219**	0.425				
	(0.853)	(0.745)	(0.584)				
Aid	-0.241*	-0.268**	-0.112*				
	(0.122)	(0.108)	(0.060)				
Aid/Trade				-2.736**	-2.375	-2.163	-1.359*
				(1.129)	(1.500)	(1.943)	(0.711)
Initial Income	-0.190	-0.309	0.014	0.365*	0.427	0.300	0.322*
	(0.498)	(0.476)	(0.265)	(0.215)	(0.351)	(0.375)	(0.155)
Area (log)	0.506*	0.577**	0.969***		-0.011	0.004	0.502***
	(0.264)	(0.219)	(0.125)		(0.210)	(0.211)	(0.119)
Pop (log)	-0.180	-0.312	-1.067***		0.078	0.148	-0.731***
	(0.365)	(0.315)	(0.171)		(0.325)	(0.363)	(0.145)
English Legal Origin	0.029	-0.494	-1.410***		-0.269	-0.278	-1.576***
	(0.569)	(0.562)	(0.307)		(0.605)	(0.745)	(0.324)
Geography	0.600	-0.273	-3.423**		-0.838	-0.671	-4.218***
	(1.958)	(1.928)	(1.038)		(2.009)	(2.461)	(1.009)
% Catholic	-0.010	-0.013**	-0.011**		-0.010	-0.013*	-0.017***
	(0.007)	(0.006)	(0.004)		(0.007)	(0.008)	(0.004)
Inequality	-2.477**	-2.516**	0.089		-0.902	-1.573	0.737
	(0.980)	(0.897)	(0.448)		(1.007)	(1.119)	(0.457)
Inflation	-0.004	-0.005	-0.003		-0.003	-0.003	0.003
	(0.004)	(0.003)	(0.002)		(0.004)	(0.004)	(0.002)
Gov. Consumption	-0.051	-0.026	-0.381***		-0.107	-0.065	-0.396***
	(0.076)	(0.068)	(0.039)		(0.079)	(0.087)	(0.037)
Education 1960		0.003				0.010	
		(0.011)				(0.017)	
Initial Democracy			-0.004				-0.108**
			(0.033)				(0.035)
Initial Econ Freedom			0.998***				1.216***
			(0.147)				(0.146)
Constant	2.987	5.802	10.655**	0.559	1.291	0.374	7.787**
	(7.400)	(6.560)	(3.642)	(1.845)	(6.543)	(6.984)	(2.686)
Adj. R-Squared	0.380	0.537	0.894	0.300	0.238	0.251	0.878
Number of Obs.	40	34	32	45	40	34	32

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

Table 4: Aid/Trade Ratio IV Regressions

	Dependent Variable: Culture Index			
	1	**2**	**3**	**4**
Aid/Trade	-7.273**	-4.738**	-4.179*	-6.532**
	(2.260)	(1.612)	(2.263)	(2.900)
Initial Income	-0.430	-0.247	-0.128	-0.574
	(0.408)	(0.436)	(0.482)	(0.625)
Area (log)		0.143	0.109	0.092
		(0.141)	(0.136)	(0.171)
English Legal Origin		0.181	-0.085	0.668
		(0.570)	(0.691)	(0.954)
Geography		-0.999	-0.932	0.882
		(2.078)	(2.647)	(2.547)
% Catholic		-0.007	-0.009	-0.008
		(0.006)	(0.006)	(0.009)
Inequality		-1.993*	-1.858*	-2.655*
		(1.025)	(1.034)	(1.408)
Inflation		-0.004	-0.003	0.001
		(0.003)	(0.003)	(0.005)
Gov. Consumption		-0.046	-0.037	-0.070
		(0.071)	(0.078)	(0.090)
Education 1960			0.008	
			(0.015)	
Initial Democracy				-0.101
				(0.067)
Initial Econ Freedom				0.812**
				(0.285)
Constant	7.619**	5.830	4.816	4.840
	(3.620)	(4.163)	(4.201)	(4.707)
Adj. R-Squared	0.140	0.296	0.240	0.268
Number of Obs.	44	39	33	32

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

Table 5: Alternative Trade Measures OLS Regressions

	Dependent Variable: Culture Index							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW Openness	1.258**	1.943**	2.170**	0.990				
	(0.555)	(0.743)	(0.786)	(0.937)				
Constructed Trade Index					0.191**	0.366**	0.266**	0.353**
					(0.084)	(0.101)	(0.110)	(0.159)
Aid	-0.229**	-0.065	-0.066	-0.216	-0.199**	-0.202*	-0.166*	-0.297**
	(0.093)	(0.118)	(0.099)	(0.133)	(0.079)	(0.104)	(0.086)	(0.128)
Initial Income	-0.316	0.095	-0.177	-0.662	-0.057	-0.519	-0.470	-1.171
	(0.381)	(0.537)	(0.526)	(0.626)	(0.338)	(0.546)	(0.473)	(0.704)
Area (log)		0.131	0.146	0.241		0.088	0.057	0.269
		(0.192)	(0.186)	(0.177)		(0.154)	(0.163)	(0.163)
Pop (log)		0.345	0.188	0.031		-0.142	-0.053	-0.332
		(0.336)	(0.335)	(0.295)		(0.299)	(0.304)	(0.305)
English Legal Origin		-0.163	-0.812	0.004		-0.030	-0.491	0.033
		(0.716)	(0.636)	(0.979)		(0.482)	(0.537)	(0.745)
Geography		0.561	-0.340	1.352		1.239	-0.097	2.377
		(2.175)	(2.554)	(2.856)		(2.094)	(2.497)	(2.761)
% Catholic		-0.004	-0.006	-0.003		-0.005	-0.008	-0.002
		(0.010)	(0.009)	(0.008)		(0.005)	(0.006)	(0.008)
Inequality		-1.945	-1.239	-2.230		-2.950**	-2.200**	-3.191**
		(1.224)	(1.037)	(1.319)		(1.018)	(1.026)	(1.257)
Inflation		-0.005	-0.005*	-0.001		0.001	-0.001	0.003
		(0.003)	(0.002)	(0.005)		(0.004)	(0.003)	(0.004)
Gov. Consumption		-0.065	-0.053	-0.015		-0.055	-0.031	-0.029
		(0.105)	(0.107)	(0.119)		(0.065)	(0.074)	(0.101)
Education 1960			0.023**				0.018	
			(0.011)				(0.012)	
Initial Democracy				-0.022				0.045
				(0.065)				(0.070)
Initial Econ Freedom				0.610*				0.507
				(0.305)				(0.307)
Constant	5.978*	-3.840	0.030	2.635	3.171	8.563	6.960	11.342
	(3.321)	(6.593)	(7.484)	(5.809)	(2.865)	(7.285)	(6.873)	(8.227)
Adj. R-Squared	0.323	0.503	0.647	0.521	0.353	0.571	0.598	0.610
Number of Obs.	39	37	32	33	45	41	35	33

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

Appendix 1: Data Description and Sources

Variable	Data Description	Source
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 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), obedience is the percentage of respondents that mentioned obedience as being important. Measured as the average across all five surveys from 1981 to 2007.	European and World Values Surveys, 1981-2007
Trade/GDP	Equals imports plus exports of goods and services divided by GDP (PPP). Average from 1981 to 2007.	World Development Indicators 2010
Aid/GDP	Equals net official development assistance and official aid received divided by GDP (PPP). Average from 1981 to 2007.	World Development Indicators 2010
Initial Income	GDP per capita, PPP, constant 2005 international $ in 1981.	World Development Indicators 2010
Area (log)	Logarithm of total land area (sq. km). Average from 1981 to 2007.	World Development Indicators 2010
Pop (log)	Log of population. Average from 1981 to 2007.	World Development Indicators 2010
English Legal Origin	Dummy variable representing English legal origin.	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
Geography	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)
% 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)
Inflation	Measured as the percentage change in the consumer price index. Average from 1981 to 2007.	World Development Indicators 2010
Gov. Consumption	Final government consumptions as a percent of GDP. Average 1981 to 2007.	World Development Indicators 2010
Inequality	Measured by Ethnolinguistic Fractionalization which is the average value of five different indices of ethonolinguistic 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	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)

Variable	Data Description	Source
	speaking the most widely used language.	
Education 1960	Measured as the number of years of schooling of the total population over age 25 by 1960.	Glaeser et al. (2004)
Initial Econ Freedom	Measures the level of economic freedom on a scale from zero to ten, with ten representing a greater degree of freedom. The index utilizes 21 components grouped in seven broad categories: size of government, economic structure and use of markets, monetary policy and price stability, freedom to use alternative currencies, legal structure and security of security of private ownership, freedom to trade with foreigners, and freedom of exchange in capital markets. Measured in 1980.	Fraser Institute, *Economic Freedom on the World*
Initial Democracy	The index is measured on a scale from 0 to 10 with 10 representing most democratic. The variable is derived from a combination of quantifying the competitiveness of the political process, the openness and competiveness of executive recruitment, and constraints on the chief executive. Measured as the average from 1980 to 1984.	Polity IV
Aid/Trade	Equals aid divided by imports plus exports. Average from 1981 to 2007.	World Development Indicators 2010
Infant Mortality	The number of infants dying before reaching one year of age, per 1,000 live births in a given year. Average from 1981 to 2007.	World Development Indicators 2010
Arms Imports	Arms imports (constant 1990 US$). Average from 1981 to 2007.	World Development Indicators 2010
SW Openness	A dummy variable equal to 1 classifies a country as open and 0 if closed based on tariff rates, non-tariff barriers, a black market exchange rate, a state monopoly on major exports, and a socialist economic system. Average from 1950 to 1992.	Sachs and Warner (1995)
Constructed Trade Index	Regression analysis was used to derive an expected size of the trade sector based on the population and geographic size of the country and its location relative to the concentration of world GDP. The actual size of the trade sector was then compared with the expected size for the country. This procedure allocates higher ratings to countries with large trade sectors compared to what would be expected, given their population, geographic size, and location. On the other hand, countries with small trade sectors relative to the expected size receive lower ratings. The index is scaled between 0 and 10. Average from 1980 to 2007.	Fraser Institute, *Economic Freedom on the World*

Appendix 2: Summary Statistics

Variable	Obs.	Mean	Std. Dev	Min	Max
Culture Index	45	3.37	1.57	0.00	8.04
Aid/GDP	45	2.04	3.89	-0.003	19.31
Trade/GDP	45	0.34	0.37	0.08	2.14
Initial Income (log)	45	8.20	1.12	5.59	10.44
Aid/Trade	45	0.11	0.21	0.00	0.92
Population (log)	45	16.80	1.69	12.84	20.89
Area (log)	45	12.53	2.18	5.77	16.05
English Legal Origin	45	0.33	0.48	0.00	1.00
Geography	45	0.34	0.14	0.14	0.59
Percent Catholics	45	30.30	38.68	0.00	97.30
Inequality	41	0.32	0.29	0.00	0.86
Inflation	45	35.41	62.54	3.09	282.32
Gov. Consumption	44	13.20	4.07	5.84	26.03
Education 1960	35	47.35	26.07	2.60	92.90
Initial Democracy	40	2.48	3.30	0.00	10.00
Initial Economic Freedom	37	5.15	1.04	3.22	8.64
Infant Mortality	44	42.72	31.60	6.47	122.79
Arms Imports (millions)	44	322.16	449.58	2.08	2,094.33
SW Openness	38	0.24	0.33	0.00	1.00
Constructed Trade Values	44	5.42	2.34	0.38	10.00
Control	45	67.17	7.69	46.80	81.35
Trust	45	21.02	11.66	3.80	53.43
Obedience	45	46.40	18.85	2.24	81.74
Respect	45	62.76	11.87	14.23	82.12
Initial Income	45	5,944.06	5,907.72	267.90	34,115.94
GDP Per Capita (1981-2007)	45	6,901.49	5,883.62	247.47	26083.39

Appendix 3: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Culture	1.00																			
(2) Trade/GDP	0.21	1.00																		
(3) Aid/GDP	**-0.52**	0.11	1.00																	
(4) Initial Income	**0.31**	0.23	**-0.63**	1.00																
(5) Area (log)	0.19	**-0.44**	-0.18	**-0.41**	1.00															
(6) Pop (log)	0.03	**-0.63**	-0.03	-0.27	**0.78**	1.00														
(7) English Legal Origin	-0.03	-0.04	-0.01	-0.07	0.10	0.10	1.00													
(8) Geography	-0.17	0.10	0.18	0.09	-0.13	-0.07	**-0.47**	1.00												
(9) % Catholic	-0.12	-0.06	-0.15	**0.29**	-0.15	-0.08	0.12	0.04	1.00											
(10) Inflation	-0.05	-0.19	-0.13	0.20	0.13	**0.32**	-0.02	-0.02	**0.41**	1.00										
(11) Gov. Consumption	-0.08	0.13	0.20	0.22	**-0.39**	-0.05	-0.03	0.00	-0.27	-0.12	1.00									
(12) Inequality	**-0.34**	-0.06	**0.30**	**-0.48**	0.27	**0.33**	0.22	0.00	**-0.35**	-0.12	0.03	1.00								
(13) Education 1960	0.32	0.25	**-0.40**	**0.67**	**-0.37**	-0.28	-0.07	0.07	**0.43**	0.24	-0.07	**-0.39**	1.00							
(14) Initial Econ Freedom	0.29	**0.63**	-0.04	**0.34**	**-0.35**	**-0.41**	0.02	0.08	0.02	-0.28	-0.01	-0.01	0.24	1.00						
(15) Initial Democracy	-0.08	0.17	-0.20	0.25	-0.13	-0.18	-0.06	0.19	0.30	0.08	-0.15	0.06	0.25	0.24	1.00					
(16) Aid/Trade	**-0.55**	-0.21	**0.70**	**-0.59**	-0.10	-0.03	0.07	-0.04	-0.13	-0.16	0.01	0.26	**-0.54**	-0.05	**-0.32**	1.00				
(17) Infant Mortality	**-0.58**	**-0.38**	**0.56**	**-0.73**	0.29	0.27	0.02	0.12	-0.27	-0.15	-0.13	**0.62**	**-0.72**	-0.27	-0.17	**0.73**	1.00			
(18) Arms Imports	0.16	-0.22	-0.27	0.07	**0.49**	**0.41**	-0.09	-0.06	**-0.34**	-0.02	0.13	0.04	-0.26	-0.17	-0.01	-0.24	0.03	1.00		
(19) SW Openness	**0.33**	**0.55**	-0.22	**0.34**	-0.28	**-0.39**	0.11	-0.10	-0.15	-0.05	0.04	-0.11	0.14	**0.53**	0.24	**-0.30**	**-0.51**	-0.12	1.00	
(20) Constructed Trade Index	**0.38**	**0.39**	-0.14	-0.01	**0.31**	0.18	0.16	-0.16	-0.28	-0.21	0.06	**0.37**	0.01	0.32	-0.05	**-0.37**	-0.11	0.11	0.41	1.00

Note: Correlations significant at 5% are in bold.

Appendix 4: First-stage Results

	Dependent Variable: Aid to Trade
Pop (log)	-0.044***
	(0.016)
Infant mortality	0.004***
	(0.001)
Franc Zone	0
	(0.112)
Central America	-0.051
	(0.132)
Egypt	0.022
	(0.139)
Arms Imports (lagged)	-0.0002
	(0.00006)
Initial Income	-0.049
	(0.029)
Constant	1.083**
	(0.436)
F-Stat	11.84
Hansen J Statistic	5.253
Chi-sq P-value	0.386
Adj. R-Squared	0.64
Number of Obs.	44

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