Cheap talk: transaction costs, quality of institutions, and trade agreements

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Abstract

While there is evidence that politics matter for international cooperation, the impact on economic integration of the quality of institutions has been given short shrift in the previous literature. I argue that the quality of institutions—control of corruption and enforcement of the rule of law, in particular—raises the quantity and the quality of information available to potential member states during the bargain phase of a trade agreement. In turn, this inflow of information reduces the negotiation period of an agreement and in doing so, dampens the transaction costs associated with it. As a result, countries with good institutions are more likely to form trade agreements. Using original data on both the formation of trade agreements and the duration of negotiations, I quantitatively test this argument. The results strongly support the claim that the quality of institutions is a crucial driver in explaining the recent wave of regionalism.

Key Words: international cooperation; trade agreement; transaction costs; corruption; the rule of law.

Introduction

How do domestic institutions impact economic cooperation among countries? The previous literature has convincingly demonstrated that democratic regimes are more likely to engage in economic cooperation than autocratic regimes (Leeds, 1999; Mar-

tin, 2000; Mansfield, Milner and Rosendorff, 2002; Mansfield and Milner, 2010; McGillivray and Smith, 2008). The causal mechanism proposed by these studies boils down to electoral accountability. On the one hand, democratic leaders use international cooperation to signal to voters their willingness to implement welfare-enhancing policies in opposition to rent-seeking policies. In doing so, leaders increase the probability of remaining in office (Mansfield, Milner and Rosendorff, 2002; Mansfield and Pevehouse, 2008; Mansfield and Milner, 2010). On the other hand, democracies are able to establish credibility of commitments, which is necessary in international cooperation due to incomplete information about other countries' preferences. Indeed democratic leaders can be sanctioned and voted out of office if they renege on their promise to cooperate (Leeds, 1999; Martin, 2000; McGillivray and Smith, 2008).

In exploring the impact of domestic institutions on economic cooperation among countries, my contribution is two-fold. First, I show that the decision to cooperate with other countries depends crucially on the cost of reaching an agreement. In other words, while, with few important exceptions (Bearce, 2002; Simonelli, 2007), previous studies focus mainly on the enforcement phase of cooperation, I emphasize the role of the negotiation phase. Second, I take into account the quality of institutions in explaining why some countries cooperate more than others in the international economic system. By the quality of institutions, I mean the way in which the rules of the game work at the domestic level, or what Rodrik (2003: 32) defines as 'market-creating institutions'. Specifically, I focus on the control of corruption

and the enforcement of the rule of law. Although the number of democratic regimes and thus the use of proper constitutional devices to make politicians accountable to citizens have spread in many parts of the world, there is still a wide variation in the quality of institutions (Adserà, Boix and Payne, 2003: 445). In this paper I show that such a variation is responsible for explaining the formation of a large number of economic agreements in the past two decades.[2]

My argument is firmly grounded in the New Institutional Economics (NIE) literature. In a nutshell, I posit that high levels of control of corruption and enforcement of the rule of law increase the amount of information available among states. In turn, this large quality and quantity of information decreases the length of the negotiation of an agreement and in doing so, the transaction costs associated with it. As a result of this decline in bargaining costs, countries with a high quality of institutions are more likely to engage in economic cooperation. I test this argument, looking at the formation of preferential trade agreements (PTAs).[3] Specifically, my dataset covers all the trade agreements signed between 1990 and 2007 by 167 countries for which data are available. Moreover, I use an original measure of the length of negotiations of all the North–South trade agreements bargained between 1990 and 2007. This piece of information is a direct measure of the costs faced by countries that negotiate trade agreements. As such, it allows me to check the theoretical link between the magnitude of transaction costs and the probability of forming an agreement.

The results strongly support my hypotheses. Countries with a high quality of in-

stitutions form more agreements in a shorter period of time than countries with a low quality of institutions. Both high levels of control of corruption and the rule of law perform similarly. In addition, the quality of institutions matters even when controlling for the type of regime. In fact, the quality of institutions outperforms indicators capturing how democratic a country is. The results are robust to a large variety of checks and, importantly, are not hampered by selection bias.

The implications of these results are important. If the quality of institutions matter, previous studies have underestimated the advantage of having good institutions overemphasizing the presence of the sole (though relevant) electoral device. Mattli (1999) argues that economic integration arises because (usually big) companies demand large markets to achieve economy of scale in production.[4] I show that countries that have better institutions are more likely to create such large markets by forming trade agreements. For instance, companies placed in highly transparent countries have a comparative advantage in terms of market access over companies placed in poorly transparent countries. In sum, next to the well known effect on economic growth (Rodrik, 2003), my findings imply that the quality of institutions also has an indirect impact on economic competitiveness across countries.

This paper is structured as follows. The following section develops the theory upon which this study is built and derives four testable hypotheses. The third section describes the research design. The fourth section shows the empirical results of the econometric analysis. The fifth section controls for the robustness of the results.

Finally, some conclusions are drawn.

1 Theory and Hypotheses

From a legal point of view, a PTA, like every international agreement, is a lawfully binding contract between at least two countries. Cooperative agreements are formed by states via bargaining (Gilligan 2004; Fearon, 1994; 1998). In Fearon's words (1998: 270), 'problems of international cooperation typically involve first a bargaining problem (akin to various coordination games [...]).' Bargaining, as every coordination game, is mined by uncertainty and lack of information. As such, bargaining generates transaction costs. As Gilligan posits, unlike economics, these transactions do not involve the exchange of one good or service for another in international relations. Rather, such a transaction is 'a specific agreed-upon change in the policies in one country in exchange for specific changes in policies in another country' (Gilligan, 2011: 14). Previous studies emphasize the role of transaction costs in international cooperation (Yarbrough and Yarbrough, 1987; Keohane, 1989; Mattli 1999, Moravcsik, 1999). In particular, Keohane (1989: 166) argues that 'if transaction costs are extremely high it will not be feasible to build international institutions.'

The formation of a PTA is a complex procedure that requires member countries to change trade and trade-related policies. As such, a PTA negotiation is usually carried out over a considerable period of time. Thus, the transaction costs are non-

trivial. Figure 1 shows the duration of negotiations of all the North–South PTAs signed post-1990 by world region. The actual negotiation of these PTAs lasts on average not less than three years (with the exception of the EU Central Asia region). Negotiations are characterized by several rounds in which policymakers of both countries meet and discuss the provisions to include in the agreement. During these rounds, which mirror WTO rounds, negotiators seek a compromise between several trade and trade-related issues that characterize the last wave of PTAs.[5]

Figure 1 about here

If transaction costs are large, how can they be reduced? The NIE literature stresses the importance of good institutions in reducing transaction costs among individuals (Coase, 1960; North, 1990; 1993; Williamson, 1979). I extend the insights of the NIE literature to international cooperation among countries. Specifically, I advance the argument that countries with good institutions have access to more and better information than countries with bad institutions. In turn, this increase in the quality and quantity of information available to countries shortens the negotiation period. As the length of negotiations shrinks, transaction costs, which are an increasing function of the bargaining duration (Williamson, 1998), are reduced too. When PTAs are (or are perceived) as being relatively cheap to bargain due to their low transaction costs, countries are more likely to embark on negotiations in the first place and therefore to form PTAs.

The quality of institutions is a broad, multi-dimensional concept. I focus on two specific dimensions: the control of corruption and enforcement of the rule of law. **First**, how does the control of corruption reduce the period of negotiation of a PTA? Examples abound. A US chief economist involved in the Chile–US negotiations claims that reaching an agreement with Chile was relatively easy due to the transparency of Chilean institutions.[6] Similarly, a Chilean diplomat who also took part in the negotiations acknowledges that bargaining with the US was a particularly fast process compared to bargaining with other countries that negotiated PTAs with Chile. According to this high-ranking Chilean diplomat, the fast negotiation benefitted from the transparent bargaining strategy carried out by the US. In the words of this diplomat, Chilean negotiators could easily detect US preferences and goals from the first round of negotiations.[7]

The importance of transparent institutions during negotiations is familiar to practitioners. In commenting on the main lessons learned from the Chile–US PTA negotiation, Osvaldo Rosales, Director General for International Economic Relations, praises the role of institutions—a low level of corruption and an independent judicial system, in particular (2003: 6). In explaining the success of such negotiation Rosales (2003: 5) claims that 'macroeconomic stability is not sufficient, if they do not go with solid institutions that reinforce the stability of incentives and the transparency of public decisions.' To be sure, there were difficulties in negotiating this agreement. For instance, the 10^{th} round of negotiations in 2002 was particular controversial since Chile and the US bargained over products and market access for

a wide range of agricultural and industrial producers. However, in spite of these difficulties, the Chile–US agreement was achieved in three years, a time relatively short for such a deal. Indeed, the document itself consists of 989 pages of text organized in 21 chapters and numerous annexes.

Second, how does the enforcement of the rule of law impact upon the period of negotiation of a PTA? The rule of law increases the predictability of the actors involved in a PTA negotiation. In turn, high predictability reduces uncertainty, speeding up the negotiation process. Conversely, if the enforcement of law is lacking, the bargaining process is idiosyncratic, difficult, and long to conclude. Another example helps to clarify this causal chain.

In May 2006 Ecuador passed an oil bill that limited revenues of foreign oil companies and annulled an operating contract with Occidental Petroleum Corp. Neena Moorjani, a spokeswoman for the Office of the US Trade Representative, commented that 'the decision of Ecuador [...] appears to constitute a seizure of assets of a US company'.[8] As a consequence of Ecuador's oil bill, the US suspended negotiations with Ecuador. In justifying the decision of the US administration to cancel free-trade negotiations with Ecuador, Moorjani said that countries must 'obey the rule of law with respect to foreign investors' if they want to be a free-trade partner of the US.[9] The *de facto* nationalization of the US oil company does not come as a surprise in a country like Ecuador. Indeed, according to both the World Bank and ICRG indicators, in terms of enforcement of the rule of law, Ecuador scores substantively

lower than its neighbouring countries such as Colombia and Peru, which both signed a PTA with the US.

In sum, the theoretical framework that I developed suggests that institutional quality—control of corruption and enforcement of the rule of law, in particular—dampens transaction costs by increasing information among states. When the bargaining process is less costly and unstable for each state, the likelihood of forming a PTA increases. Note: my argument is dyadic, i.e. the quality of institutions of both countries needs to be high to trigger the causal mechanism that I suggest.

2 Hypotheses

With these insights, I will test the following two hypotheses related to the probability of signing a PTA:

HP1: A joint high level of control of corruption in dyads of countries is expected to increase the probability of forming a preferential trade agreement.

HP2: A joint high level of the rule of law in dyads of countries is expected to increase the probability of forming a preferential trade agreement.

Similarly, since my theory makes clear predictions on the impact of the rule of law

and the control of corruption on the duration of PTA negotiations, I will also test the following two hypotheses:

HP3: Ajoint high level of the control of corruption in dyads of countries is expected to shorten the negotiation process.

HP4: A joint high level of the rule of law between dyads of countries is expected to shorten the negotiation process.

Many other factors explain the formation of PTAs. For one, previous studies show that joint democracies are more likely to form PTAs, as mentioned in the Introduction. Since the quality of institutions and democratic regimes are correlated, it is crucial to show that the control of corruption and the rule of law increase the probability of forming a PTA and reduce the duration of its negotiation even controlling for the type of regime.

3 Research Design

For testing these hypotheses, I use the two models described in Equation 1.

$$h_{ij,t}(Formation) = h0_{ij,t} + exp(\beta_1 Quality\ Institutions_{ij,t-1} + \beta_2 X_{ij,t-1} + \epsilon_{ij,t}). \quad (1)$$

$$h_{ij,t}(Duration) = h0_{ij,t} + exp(\beta_1 Quality\ Institutions_{ij,t-1} + \beta_2 X_{ij,t-1} + \epsilon_{ij,t}), \quad (2)$$

where $h_{ij,t}(Formation)$ and $h_{ij,t}(Duration)$ are the hazard rates for two countries i and j at time t and $h0_{ij,t}$ is the baseline hazard. Quality of Institutions, which included both Control of Corruption and Rule of Law, is the main explanatory variable. Moreover, $X_{ij,t-1}$ is a vector of control variables, β_1 and β_2 are the coefficients, and $\epsilon_{ij,t}$ is the error term. Below I discuss the dependent variables, main explanatory variables, and control variables in detail.

3.1 Dependent Variable

I use two dependent variables. The first dependent variable measures the hazard rate of forming a PTA (to test HP1 and HP2). To arrive at that, for each dyad I coded whether it signed a trade agreement in a specific year. Specifically, PTA Formation equals 1 if two countries join the same PTA in given year t, 0 otherwise. This allows me to calculate the time in terms of years that a dyad goes without signing an agreement, that is, the hazard rate. In line with previous studies (Mansfield, Milner and Rosendorff, 2002; Mansfield and Pevehouse, 2008), I opted for the year of signature rather than the year of entry into force of an agreement. Moreover, I included both multilateral trade agreements, e.g. the EU, and bilateral trade agreements, e.g. the US–Chile agreement. I analyse only the first PTA. Hence, pairs of countries drop from the dataset after forming a trade bloc. Finally, since the

dependent variable assumes a value other than 0 only in the years in which the PTA is formed, the formation of a PTA is a typical rare event.

I have dedicated substantial effort to establishing an authoritative list of trade agreements signed between 1990 and 2007. Largely (but not solely) relying on three different databases, namely the list of regional trade agreements notified to the World Trade Organization (henceforth, WTO), the Tuck Trade Agreements Database, and the McGill Faculty of Law Preferential Trade Agreements Database, but excluding partial-scope agreements and agreements that envisage no preferential treatment, I find that 257 preferential trade agreements were signed and 2,102 dyads formed a preferential trade agreement between 1990 and 2007. As noted, I usually consider also second or third agreements signed by the same dyad. For instance, in the early 1990s all Central and Eastern European countries signed bilateral free trade agreements with the EU that were later converted into accession treaties. Both PTAs are captured by my operationalization of my first dependent variables.

The second dependent variable measures the duration (in years) of negotiations of all the North–South PTAs bargained after 1990 (to test HP3 and HP4). Collecting data on PTA negotiations is a tricky task. For some PTAs the formal beginning and formal end of negotiations are easily available, whereas for other PTAs this piece of information is difficult to obtain. For PTAs signed after 2000, whose negotiations are presumably the easiest to find, the percentage of missing data is around 40%. What is worse is that missing data are not random, but are concentrated among

poor, small countries (around 90%).[10]

To avoid dealing with non-random missing data, I focus only on North–South PTAs for which I was able to have complete data. Specifically, I explain negotiations of every bilateral agreement signed by Australia, the EU, EFTA, Japan, New Zealand, and the US with developing countries. Focussing on only North–South bilateral agreements has also another important advantage. These agreements are fairly similar one to another in terms of design and in terms of depth. For instance, they have a similar number of pages, similar issue-chapters, and similar provisions. Similarity in PTA design and scope is crucial here since it is likely to impact the length of negotiations. I end up with 84 negotiations and 70 agreements signed between 1990 and 2007.

3.2 Quality of Institutions

I measure Control of Corruption and Rule of Law using two different datasets. First, I use the indicators that come from the Worldwide Governance Indicators (WGI) created by Kaufmann, Kraay and Mastruzzi (2009) and available on the World Bank website.endnoteSee *www.worldbank.org/wbi/governance*. I use these data because they cover virtually every country in the world and are based on hundreds of specific and disaggregated individual variables measuring various dimensions of governance. Since their indicators are available from 1996 to 2008, the most recent data available has been used for the previous period. Since institutions are usually

slow time-varying covariates, this decision should not bias my results. The original variables range between -2.5 (low quality of institutions) and 2.5 (high quality of institutions). I recode them to lie between 0 and 5. My results are not sensitive to this recoding.

To double-check the robustness of my findings I then use the variable Control of Corruption and Law and Order from the ICRG dataset. Control of corruption captures 'form of excessive patronage, nepotism, job reservations, "favor-for-favors", secret party funding, and suspiciously close ties between politics and business.' Law and Order is 'an assessment of the strength and impartiality of the legal system.' This data covers a lower number of countries (150) than Kaufmann's. However, their time span is from 1984 to 2009 and so they cover the entire period of investigation. These variables range between 0 (low quality of institutions) to 6 (high quality of institutions). Note: the correlation between Control of Corruption and Rule of Law is quite high, i.e. .85. Thus I estimate separately these variables to avoid the multicollinearity problem. Finally, to capture the joint-effect argument, I use the lower level of the quality of institutions in a dyad (Reuveny and Li, 2003).

3.3 Control Variables

Since other factors are likely to influence the chances of two countries' signing a PTA, I include a series of characteristics of the dyad under analysis and the context in which a dyad considers concluding an agreement. Doing so is vital to avoid

overestimating the effect of the main explanatory variables, as parallel policy choices may be a result of correlated unit-level factors or exogenous shocks that are common to various dyads. In line with previous studies in the field, I hence include several economic, geographical, and political control variables in my model to explain the formation of PTAs. Conversely, I include only a handful of these control variables to explain duration. Such a parsimonious approach is necessary due to the low number of observations. Most of these variables are lagged by one year to avoid endogeneity problems. Moreover, in the case of monadic variables, e.g. GDP and GDPpc, I use always the smaller of the two countries' values.

Concerning the variables capturing the economic condition in which the pair considers signing an agreement, I control for the amount of trade between the two countries, as an increase in trade may boost the probability of the two forming a preferential trade agreement (Trade). Large trade flows are likely to be accompanied with investments that are relation-specific, making traders dependent on access to each other's markets. They then may ask for a PTA to lock-in the existing situation and forestall protectionist trade policies by either side.[11] Trade may also matter as the positive welfare effects of a preferential trade agreement should be larger for countries with large trade flows already existing before conclusion of the agreement (Bhagwati, 1993). Furthermore, it can be hypothesized that signing an agreement between two economies of a relatively equal size should be easier than signing one between a large and a small economy. Among the reasons to expect such an effect is that a small country may fear becoming overly dependent on a large country and

that for a large country the economic benefits of an agreement with a small country are likely to be minor. The welfare gains from an agreement may also increase as the parties to an agreement become more similar in economic size (Baier and Bergstrand, 2004). The measure that I use for this variable is the absolute difference in GDP between the two countries (SIM).

I also include a measure of the size of the economy of the two countries to capture the idea that the larger the countries participating in a preferential trade agreement, the larger the economic gains. As Baier and Bergstrand (2004: 45) argue, a preferential agreement between two large economies increases the volume of trade in more varieties than one between two small economies. In addition, a more sizeable increase in trade among two large countries causes a larger net expansion of demand and hence a larger rise in real income. I capture this idea by including GDP (GDP). A further factor that potentially influences the likelihood of an agreement between a pair of countries is their level of development. The more developed are the two countries, the easier it is that they should find concluding an agreement. Two reasons support this expectation. First, a country with a highly developed economy is less dependent on tariff revenues. Second, a developed country is in a better position to compensate societal groups that face adjustment costs arising from trade liberalization (Ruggie, 1982). The variable that captures this argument is the GDP per capita (GDP Per Capita). The final economic variable that I include is economic growth, as a downturn in the business cycle in at least one of the two countries may increase the probability of a preferential trade agreement being formed (GDP

Growth).[12]

Two control variables capture domestic and international political conditions. At the international level, it is quite straightforward to assume that military allies should be more likely to sign an agreement than other pairs of countries (Alliance). At the domestic level, previous research has shown that democratic pairs of countries tend to sign more PTAs than non-democratic or mixed pairs (Mansfield, Milner and Rosendorff, 2002). I use the seven-point Freedom House scale of democracy to measure this variable (Freedom House, 2007). The advantage of the Freedom House index over others is that it covers all of the countries in my dataset and provides values for up to and including 2007.[13] I invert the values provided by Freedom House so that 1 is the value for a completely oppressive regime and 7 the value for a completely free regime (democracy). Note: the correlation between the Freedom House index and the WGI indicators is around .4, while the correlation between the Freedom House index and the IRGC indicators is around .3.

Moreover, I include three variables that capture the geographic position of the two countries. For one, neighbouring countries can be expected to have a higher probability of signing an agreement. Not only are there, on average, closer economic links between adjacent countries, but also the political links tend to be stronger. Following this reasoning, I expect countries that share a common border to be more likely to sign an agreement (Contiguity). In addition, since trade costs increase with distance, geographically proximate countries are more likely to form a preferential

trade agreement (Krugman, 1991; Baier and Bergstrand, 2004). I thus include the (natural logarithm) distance in kilometers between the two capitals of the pair of countries in my model (Distance). Finally, I control for whether at least one of the two countries is an island, as the specific geographical circumstances of such countries may influence their likelihood of signing an agreement (Island).

I also include four control variables to account for the position of the countries in, and the general state of, the international trading system. Since members of the WTO tend to have more similar trade policies than countries that do not form part of this international organization, dyads in which both countries are WTO members should be more likely to conclude an agreement (WTO). Furthermore, I consider the possibility that during WTO-sponsored multilateral trade negotiations countries' propensity to conclude preferential trade agreements increases (WTO Round). I also control for the argument that involvement in trade disputes may influence a pair's propensity to conclude a trade agreement. Having a trade dispute with the other side should decrease the likelihood of an agreement (Trade Dispute), while having a dispute with a third party should increase it (Mansfield and Reinhardt, 2003). This last variable is labeled Trade Dispute Third Party.

I also use three proxies to capture the cultural distance between the two countries, as culturally similar countries may find it easier to negotiate an international agreement. These proxies are common language, same religion, and common colonial heritage (Language, Religion, and Colony). Finally, I include a variable counting

the number of PTAs formed by each country in a dyad up to $t-1$. This variable captures the diffusion of PTAs, labelled Diffusion (Manger, 2005). Univariate summary statistics and data sources for all of these variables are available in Table 4.

Table 1 about here

3.4 Case Selection and Empirical Models

For the first dependent variable the unit of observation consists of indirect dyads by year of 167 countries that have available data on the WGI indicators and 135 countries that have available data on the ICRG indicators. For the WGI indicators the number of observations of each year is given by $\frac{167\times166}{2}$, which is 13,861. For the ICRG indicators the number of observations of each year is given by $\frac{135\times134}{2}$ which is 9,045. When I analyse the second dependent variable, the unit of observation is North–South bilateral agreements.[14] Since this is a cross-section analysis, I use the value reported in 1990 for time-varying covariates. In doing so, I should minimize the concern of endogeneity, i.e. negotiations might affect the quality of institutions. The analysis covers 18 years from 1990 to 2007. As Clarke has forcefully shown, including control variables to deal with such a major shift may increase rather than reduce the omitted variable bias (Clarke, 2005). I thus follow his recommendation of substituting research design for control variables by limiting the dataset to the post-Cold War period.

To estimate Model 1 and Model 2, I use a Cox Proportional Hazard Model. Event history models have three main advantages in such analyses. First, they incorporate the problem of left and right censoring that this project will have to take into account. Second, they allow a proper analysis of repeated spells, i.e. transition several times from one (or two, or three, etc.) and then back to zero again, using as an explanatory variable the number of previous transitions from zero to one (or two, or three, etc.) that dyads have experienced (Beck, 2008: 288). Third, they allow a more appropriate treatment of time-varying predictors in the models compared to the other regressions.

Among several history models, I choose the Cox Proportional Hazard model (1972) because of its elegance and computational feasibility. Since there are no *a priori* reasons to make any reasonable assumptions about the shape of the hazard in the case of the formation of PTAs, this latter feature of the Cox model is particularly welcome in this study.[15] Finally, due to panel heteroskedasticity or serial correlation, tests of statistical significance for the parameter estimates may be biased. In some recent research on the statistical analysis of time-series cross-section data with a binary dependent variable, Beck and Tucker (1996) and Beck, Katz and Tucker (1998) argue that one solution to this problem is to base significance tests on Huber standard errors, since they take account of any heteroskedasticity and the grouped nature (by dyad) of the data. Consequently, robust standard errors are used in all of the following analyses.

4 Empirical Findings

4.1 Formation of PTAs

I first report the results for the first dependent variable, i.e. the hazard rate of forming a PTA. The results shown in Table 2 strongly support the first and second hypotheses. Indeed, both the coefficients related to Control of Corruption and Rule of Law have negative signs, indicating that as dyads of countries jointly have a high quality of institutions, the probability of regional integration increases. Furthermore, both variables are statistically significant at the 99% level.

Table 2 about here

An effective way to show the impact of the main explanatory variables on the probability of forming a PTA is by using the survival curve. Such a curve shows for all the unit of observations the probability of surviving, i.e. not signing a PTA, across the 18 years under investigation. Since the quality of institutions affect positively the likelihood that pairs of countries form PTAs, i.e. the likelihood of 'dying', the survival curve should decrease when the levels of control of corruption and the rule of law are high, holding all the other control variables at their average value. Figure 2 and Figure 3 are in line with such an expectation. The graphs show that moving from the minimum to the maximum value of Control of Corruption and Rule of Law makes a pair of countries substantially more likely to conclude a PTA, i.e. dyad

survival rate drops from 1 to a minimum of 0.7.

Figure 2 about here

Figure 3 about here

The variable Democracy turns out to be not statistically significant in Model 1 and Model 2 and is statistically significant only at 90% level in Model 3. This is not surprising due to the aforementioned high correlation between the quality of institutions and type of regime. To check the severity of the multicollinearity problem, I run two models including the variable Democracy and excluding Control of Corruption and Rule of Law. Note: I use both Freedom House and Polity IV to capture the type of regime. As expected, Democracy is positive and statistically significant (Table 3) confirming that democratic regimes are more likely to cooperate than autocratic ones. However, Figure 4 shows that the effect of Democracy on the probability of forming a PTA is substantively lower than the effect of the quality of institutions. Indeed, when Democracy shift from the minimum to maximum value, the survival curve drops from 0.92 to 0.90 in the case of Freedom House and from 0.92 to 0.88 in the case of Polity IV. In sum, neglecting the quality of institutions in explaining PTAs causes a serious omitted variable problem. Indeed the explanatory power of Control of Corruption and Rule of Law outperform the explanatory power of other domestic institutions variables commonly included in models that predict the formation of PTAs.[16]

Furthermore, there is strong support for the argument that in predicting the formation of PTAs the quality of institutions captures a different mechanism compare to the one captured by the type of regime. To be sure, my argument is not that type of regime does not matter when controlling for the quality of institutions. The two variables might work jointly in explaining the formation of PTAs. My goal is to show in a convincing way that the quality of institutions is not another way to operationalize type of regime (a fair concern due to the high correlation of these variables). Moreover, to further investigate the multicollinearity problem I include both Control of corruption and Rule of Law at the same time on the right hand-side of the equation. Model 7 and Model 8 show that both covariates are still positive and statistically significant. Thus, although the correlation between these two variables is high, they seem to capture two different mechanisms that operate during a negotiation. Finally, regarding the other control variables, the sign of all the coefficients is in line with the other studies in the field adding plausibility to my findings.

Table 3 about here

Figure 4 about here

4.2 Duration of Negotiations

In the previous section I provided strong evidence in supporting the argument that the quality of institutions matter when it comes to predict the formation of PTAs. Quality of institutions might impact upon the formation of PTAs in several ways.

In presenting my theoretical framework I claimed that the main channel is the reduction of the negotiation period (and of the transaction costs associated with it). Is there any evidence that this is the case? Table 4 shows that Control of Corruption and Rule of Law (WGI indicators) increase the probability of signing a PTA among countries that negotiate it. Indeed, the coefficients of these variables are positive and statistically significant at the 90% level (Control of Corruption) and 95% level (Rule of Law). Conversely, the same effect does not hold for Control of Corruption and Rule of Law (ICRG indicators), i.e. these variables are not statistically significant. The results of the second set of variables are likely to be driven by the fact that I lose more than 20% of the observations. Since the number of observations is low, the model is sensitive to this substantial change of the sample.

Table 4 about here

Survival curves below (Figure 5) shows the impact of the two variables that are statistically significant on the length of negotiations. The impact of Control of Corruption and Rule of Law is not trivial. For instance, the graphs show that countries that have high level of the quality of institutions (WGI indicators) never negotiate for more than four years. Note that the survival curve of countries with low level of the quality of institutions scores more than 0.3 after 4 years. In sum, this analysis seems to confirm that good institutions matters in reducing the duration of a negotiation among countries and in turn, the transactions costs associated with extra years of bargain. Since countries anticipate these costs before entering into a negotiation, this finding helps to explain why Control of Corruption and Rule of

Law predicts the formation of PTAs.

Figure 5 about here

Table 5 below reports some further estimation on the impact of the type of regime on the length of negotiations. I re-estimate previous models using three different indicators of democracies, i.e. Polity IV, Freedom House, and Cheibub's dichotomous variable, a variable capturing executive constraints (data from Polity IV), and excluding the quality of institutions. Although the sign of the coefficient is always positive in the three estimations with only Democracy, it is never statistically significant. Interestingly, Executive Constraints have a positive coefficient, though it is not statistically significant. In sum, there is evidence that low level of corruption and high level of rule of have a larger impact on reducing the bargain period of a PTA than democratic regimes and veto players have. Put differently, it seems that it is not mainly the presence of elections or of checks and balances to help countries negotiating, but rather the presence of transparent institutions and an efficient enforcement of the law.

Table 5 about here

5 Robustness Check

I implement several further estimations to check the robustness of my findings. Regarding the formation of PTAs, since I included several time-varying covariates

into my models, there are concerns of non-proportionality and non-linearity. I tackle this issue by estimating the main models using accelerate time failure models, i.e. parametric models exponential, Weibull and Gompertz distribution. Moreover, I estimate the main models using splines for time-varying covariates (Keele, 2010). Note: since models with splines are computationally very intensive to run (Keele, 2010: 196), I include only three variables as also suggested by Achen (2005). Table 6 and Table 7 show results for the WGI indicators. All previous findings are confirmed. For the ICRG indicators results, which are also very similar to the ones reported above, are available upon request.

Table 6 about here

Table 7 about here

Regarding the duration of PTAs negotiation, the biggest concern is about selection bias. Indeed, there are strong theoretical reasons to believe that North countries decide to enter into negotiations with those South countries that have good institutions. If this is true, the coefficients presented above are biased. To tackle this issue, I use a duration model with selectivity (Boehmke, 2005; Boehmke, Morey and Shannon, 2006). The implementation of this model is straightforward. In the first stage, I endogenize the decision of North countries to enter into negotiations with a South country as a function of South country's the quality of institutions. Put simply, I predict the probability that a North country and a South country enter into a PTA negotiation using Control of Corruption and Rule of Law as main covariate. The estimated probability of selection is then used as a regressor in the second

stage for analysing the impact on the duration of a trade agreement of the quality of institutions. Such an approach, it allows for the conditioning of the estimated mean function in the second stage on the selection process of first stage.

Table 8 about here

Table 8 shows the results for the WGI indicators.[17] Both the coefficients of Control of Corruption and Rule of Law are positive and statistically significant at 99%. Thus controlling for a selection effect does not affect my results that if anything, are stronger. Note two other interesting results. First, South countries with high level of the quality of institutions are indeed more likely to enter into a negotiation with North countries (see selection columns). Second, ρ differs significantly from 0, implying the presence of selection bias.

6 Conclusion

In a oft-cited article published in the *Journal of Economic Growth* Rodrik, Subramanian, and Trebbi (2004: 135) stress that 'institutions rule... in economic development' and that 'the quality of institutions 'trumps' everything else', e.g. trade and geography. The importance of economic and geographical variables in the formation of PTAs does not lead to the same unequivocal conclusions. However, in this paper I do show that institutions do matter in regional integration. Indeed, the results support the argument that the quality of institutions plays an important role in regional integration. In particular, the control of corruption and the rule of

law decrease the period of PTA negotiation and increase the probability of forming a PTA. These findings have two important policy implications.

First, my results imply that there are substantial gains to be made from improving the quality of institutions. These gains are well established in terms of economic growth, as indeed (Rodrik, Subramanian and Trebbi, 2004) shows, but also relevant in relation to economic cooperation. If the demand arises for regional integration in order to reap benefits from economies of scale and to reduce transaction costs, as Mattli (1999) posits, governments that have high quality institutions are more likely to satisfy this demand and, in turn, improve their economic performance. Conversely, governments with low quality institutions are not able to capitalize on the opportunity that regional integration presents and, in turn, risk lagging even further behind in terms of economic growth. In sum, endogenous institution building is crucial for cooperation.

Second, something must be said about timing. This paper suggests that it is desirable for countries to undertake policy innovations that eventually result in an improvement of their institutions first, and then carry out a process of economic integration. Despite evidence that regional integration leads to policy convergence (Risse, Caporaso and Green, 2001), I argue that the formation of a PTA is easier, smoother, and less costly if some kind of convergence is reached before starting the bargaining process rather than after having joined a PTA. The classic example that fits into this pattern is the experience of the EU, which is constituted by fairly homo-

geneous high-quality-institution member countries. Conversely, the lack of similar institutional quality—between Singapore and Myammar, for instance—may explain the difficulties in the integration process experienced by the ASEAN Pact since its foundation in the 1960s.

To conclude, the quality of institutions might affect the formation of PTAs in another way that I did not explore in this paper. Specifically, lack of transparency can impact upon the monitoring and enforcement phase of a PTA. An example helps to clarify. The difficulties of reaching a trade agreement between the EU and the African, Caribbean, and Pacific (henceforth, ACP) countries were also related to safeguards for infant industries that ACP countries wanted to include in the treaty (Oxfam Press, 20 December 2007)[18] The EU was reluctant to include safeguards due to difficulties in monitoring ACP countries, the majority of which have rather opaque domestic systems. Put simply, due to this lack of transparency, the EU could not determine whether these safeguards would be used to defend infant industries in accordance with the rationale of their provision, or would constitute purely free-rider behavior. Taking into account these issues, future studies could explore the impact of the quality of institutions on the design of PTAs in general, and on their degree of flexibility in particular.

Notes

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[2]For another attempt to distinguish among democracies, see Rickard (2010).

[3]PTAs are international arrangements under which each member grants special market access to all the other members' products (Bhagwati and Panagariya, 1999). PTAs include free trade areas (e.g. the ASEAN Pact), common markets (e.g. NAFTA), customs unions (e.g. CARICOM), and economic monetary unions (e.g. the EU). I explain the formation of all these types of preferential instruments without distinction between bilateral and regional agreements.

[4]The economy of scale implies that an increase in production lowers the average cost of output per unit.

[5]These meetings occur also after the signature of the trade agreement. Therefore countries anticipate that problems which arise in the negotiation phase of a PTA will also materialize during its enforcement phase. I do not further expand this argument since this paper does not deal with the enforcement phase of an agreement and does not develop any predictions related to this phase.

[6]Interview carried out by the author on 18 June 2010.

[7]Interview carried out by the author on 7 July 2010.

[8]From BBC News (online edition) *http* : *//news.bbc.co.uk*/2/*hi*/*americas*/4988624.*stm* [consulted 15/06/2011].

[9]From BBC News (online edition) *http* : *//news.bbc.co.uk*/2/*hi*/*americas*/4988624.*stm* [consulted 15/06/2011].

[10]This non-randomness in missing values makes imputation problematic.

[11]This argument is derived from Yarbrough and Yarbrough 1992.

[12]For a similar reasoning see Mattli 1999.

[13]The results do not change when using other data sources, such as the Polity IV score.

[14]For the EU and EFTA I use the minimal value of each covariate among member countries. The results do not change when using the mean, the median, or the maximum value.

[15]I always report coefficients and not hazard ratios.

[16]I also perform cross-validation tests trials comparing the performance of a model including the quality of institutions variables while omitting Democracy with a model including Democracy while omitting the quality of institutions variable. Results favor Control of Corruption and Rule of Law over Democracy.

[17]For the ICRG indicators results are not statistically significant and are available upon request.

[18]The document is available at http://www.oxfam.org/en/node/251 [consulted on 13 July 2009].

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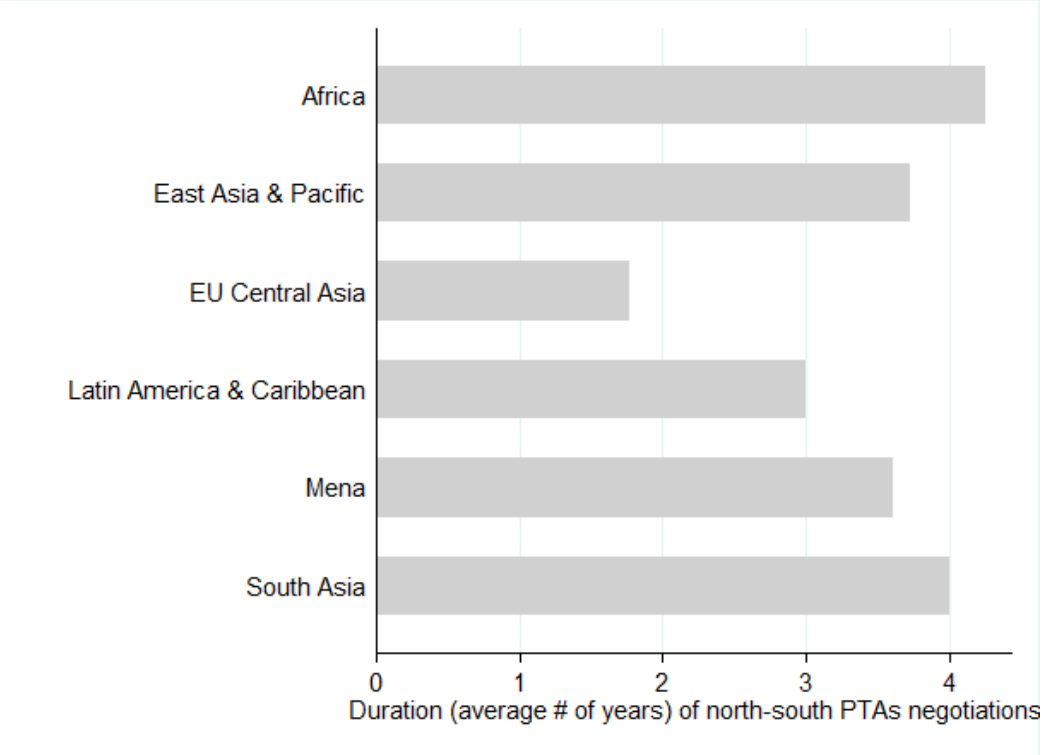

Figure 1: Duration (average number of years) of North–South PTAs negotiations by world's regions.

Table 1: Descriptive statistics of the main variables. Sources: (1) World Trade Organization, the Tuck Trade Agreements Database, and the McGill Faculty of Law Preferential Trade Agreements Database; (2) World Bank: Quality of Institutions Dataset (Kaufman, Kraay and Mastruzzi, 2006); (3) ICRG dataset (2009); (4) IMF dataset (2005); (5) COW dataset; (6) Freedom House Dataset (2006); (7) WTO website; (8) Horn and Mavroidis dataset (2006); (9) CEPII dataset (2005); (10) Compiled by the author.

Variables	Mean	Std. Dev.	Min	Max	Source
PTA	.01	.10	0	1	(1)
Corruption (WGI)	1.93	.65	.37	5	(2)
Rule of Law (WGI)	1.90	.68	.13	4.62	(2)
Corruption (ICRG)	2.40	1.06	0	6	(3)
Rule of Law (ICRG)	3.11	1.28	0	6	(3)
Trade	8.87	1.33	0	13.68	(4)
GDPpc	2.04	4.27	0	72.77	(4)
GDP	1.82	1.29	.10	8.57	(4)
GDP Growth	.43	.6.50	-52.6	35.2	(4)
SIM	3.69	2.08	0	9.49	(4)
Alliance	.17	.38	0	1	(5)
Contiguity	.02	.14	0	1	(5)
Democracy	-4.91	-1.92	-1	-7	(6)
WTO	.54	.50	0	1	(7)
WTO Round	.66	.47	0	1	(7)
Trade Disp.	.005	.07	0	1	(8)
Trade Disp. (3^{rd} Party)	.30	.46	0	1	(8)
Distance	8.68	.78	2.44	9.89	(9)
Island	.13	.33	0	1	(9)
Colony	.16	.37	0	1	(9)
Language	.09	.29	0	1	(9)
Religion	.16	.37	0	1	(9)
Duration	3	2.18	1	9	(10)

Table 2: Formation of PTAs: Cox Model (errors clustered by dyads).

VARIABLES	(1) WGI	(2) WGI	(3) ICRG	(4) ICRG
Control of Corruption	0.28***		0.39***	
	(0.03)		(0.05)	
Rule of Law		0.40***		0.23***
		(0.05)		(0.03)
Type of Regime	0.00	0.01	0.03*	0.05***
	(0.01)	(0.01)	(0.02)	(0.02)
GDPpc	-0.05***	-0.05***	-0.04***	-0.04***
	(0.01)	(0.01)	(0.00)	(0.00)
GDP	0.18***	0.19***	0.20***	0.18***
	(0.02)	(0.02)	(0.02)	(0.02)
GDPGrowth	-0.01***	-0.01***	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
SIM	-0.03**	-0.03**	0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Trade	0.01	0.01	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Trade Dispute (3^{rd} Party)	-0.04	-0.05	-0.06	-0.02
	(0.06)	(0.06)	(0.06)	(0.06)
Island	-0.16**	-0.18***	-0.27***	-0.27***
	(0.07)	(0.07)	(0.08)	(0.08)
WTO	0.29***	0.29***	0.26***	0.32***
	(0.06)	(0.06)	(0.07)	(0.07)
Contiguity	-0.71***	-0.71***	-0.72***	-0.66***
	(0.09)	(0.09)	(0.10)	(0.10)
Trade Dispute	-2.21**	-2.22**	-2.52**	-2.51**
	(1.01)	(1.01)	(1.02)	(1.02)
MultiRound	1.16***	1.16***	1.00***	0.97***
	(0.11)	(0.11)	(0.14)	(0.14)
Distance	-0.99***	-0.99***	-0.93***	-0.91***
	(0.04)	(0.04)	(0.05)	(0.05)
Alliance	0.44***	0.42***	0.43***	0.45***
	(0.05)	(0.05)	(0.06)	(0.06)
Colony	0.13	0.15*	-0.14	-0.11
	(0.09)	(0.09)	(0.11)	(0.10)
Language	0.07	0.08	0.27***	0.27***
	(0.09)	(0.09)	(0.09)	(0.09)
Religion	0.07	0.07	0.07	0.06
	(0.05)	(0.05)	(0.05)	(0.05)
Diffusion	-0.02***	-0.02***	-0.02***	-0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Observations	242,059	242,059	158,504	158,492
No. of PTAs	2,102	2,102	1,522	1,522
No. of countries	167	167	136	136

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Formation of PTAs: Cox Model (errors clustered by dyads).

Covariate	(5) FH	(6) Polity	(7) WGI	(8) ICGR
Democracy	0.04***	0.04***		
	(0.01)	(0.01)		
Control of Corruption			0.21***	0.19***
			(0.06)	(0.03)
Rule of Law			0.25***	0.16***
			(0.06)	(0.03)
GDPpc	-0.02***	-0.02***	-0.06***	-0.05***
	(0.00)	(0.00)	(0.01)	(0.00)
GDP	0.19***	0.19***	0.18***	0.19***
	(0.02)	(0.02)	(0.02)	(0.02)
GDPGrowth	-0.01***	-0.01***	-0.01***	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
SIM	-0.02	-0.02*	-0.03**	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Trade	0.01	0.01	0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Trade Dispute (3^{rd} Party)	-0.06	-0.07	-0.05	-0.03
	(0.06)	(0.06)	(0.06)	(0.06)
Island	-0.18**	-0.22***	-0.17**	-0.25***
	(0.07)	(0.07)	(0.07)	(0.07)
WTO	0.36***	0.34***	0.28***	0.33***
	(0.06)	(0.06)	(0.06)	(0.06)
Contiguity	-0.76***	-0.76***	-0.70***	-0.66***
	(0.09)	(0.09)	(0.09)	(0.10)
Trade Dispute	-2.42**	-2.43**	-2.19**	-2.49**
	(1.01)	(1.01)	(1.01)	(1.02)
Multi Round	1.17***	1.17***	1.16***	1.04***
	(0.11)	(0.11)	(0.11)	(0.14)
Distance	-0.97***	-0.98***	-0.99***	-0.91***
	(0.05)	(0.05)	(0.04)	(0.05)
Alliance	0.43***	0.40***	0.43***	0.45***
	(0.05)	(0.05)	(0.05)	(0.06)
Colony	0.19*	0.19*	0.13	-0.13
	(0.10)	(0.10)	(0.09)	(0.10)
Language	0.05	0.07	0.08	0.30***
	(0.10)	(0.10)	(0.09)	(0.09)
Religion	0.05	0.04	0.07	0.09*
	(0.05)	(0.05)	(0.05)	(0.05)
Diffusion	-0.02***	-0.02***	-0.02***	-0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Observations	242,059	241,777	242,059	158,492
No. of PTAs	2,102	2,102	2,102	1,522
No. of countries	167	167	167	136

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Duration of Negotiation: Cox Model (errors clustered by dyads).

	(9)	(10)	(11)	(12)
Covariate	WGI	WGI	ICRG	ICRG
Control of Corruption	0.35*		-0.19	
	(0.19)		(0.16)	
Rule of Law		0.46**		0.02
		(0.23)		(0.13)
Democracy	0.01		0.01	0.01
	(0.02)		(0.02)	(0.02)
Distance	-0.53***	-0.62***	-0.67***	-0.59***
	(0.12)	(0.12)	(0.15)	(0.14)
GDPpc	-0.03	-0.03	0.09***	0.07**
	(0.04)	(0.03)	(0.03)	(0.03)
GDP	0.03	0.04	0.14	0.12
	(0.09)	(0.09)	(0.10)	(0.10)
Observations	84	87	69	69
No. of PTAs	70	70	57	57

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Duration of Negotiation: Cox Model (errors clustered by dyads).

	(13)	(14)	(15)	(16)
Covariate	FH	Polity IV	Cheibub	
Democracy	0.01	0.07	0.16	
	(0.02)	(0.06)	(0.23)	
Executive Constr.				0.01
				(0.00)
Distance	-0.50***	-0.47***	-0.50***	-0.50***
	(0.12)	(0.12)	(0.12)	(0.12)
GDPpc	0.02	0.01	0.01	0.02
	(0.03)	(0.03)	(0.03)	(0.03)
GDP	0.06	0.06	0.08	0.05
	(0.09)	(0.08)	(0.08)	(0.09)
Observations	84	87	87	84
Observations	72	72	72	72

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Formation of PTAs: Cox Model (errors clustered by dyads).

	(17)	(18)	(19)	(20)
Covariate	Expon.	Weibull	Gompertz	Slines
Control of Corruption	0.49***	0.68***	0.56***	0.54***
	(0.06)	(0.06)	(0.06)	(0.04)
Democracy (FH)	0.05***	0.06***	0.06***	
	(0.02)	(0.02)	(0.02)	
GDPpc	-0.05***	-0.06***	-0.05***	
	(0.01)	(0.01)	(0.01)	
GDP	0.16***	0.19***	0.17***	0.14***
	(0.02)	(0.02)	(0.02)	(0.02)
GDPGrowth	-0.01***	-0.02***	-0.01***	
	(0.00)	(0.00)	(0.00)	
SIM	-0.07***	-0.08***	-0.07***	
	(0.01)	(0.02)	(0.02)	
Trade	0.05***	0.03***	0.05***	
	(0.01)	(0.01)	(0.01)	
Trade Dispute (3^{rd} Party)	0.05	0.14**	0.08	
	(0.06)	(0.06)	(0.06)	
Island	-0.24***	-0.36***	-0.28***	
	(0.08)	(0.08)	(0.08)	
WTO	0.21***	-0.01	0.10	
	(0.08)	(0.08)	(0.07)	
Contiguity	-0.75***	-0.69***	-0.73***	
	(0.15)	(0.17)	(0.16)	
Trade Dispute	-2.66***	-2.65***	-2.66***	
	(1.01)	(1.01)	(1.01)	
MultiRound	0.64***	0.76***	0.59***	
	(0.05)	(0.06)	(0.06)	
Distance	-1.10***	-1.14***	-1.11***	-1.72***
	(0.07)	(0.07)	(0.07)	(0.06)
Alliance	0.67***	0.66***	0.67***	
	(0.06)	(0.06)	(0.06)	
Colony	0.31**	0.27**	0.29**	
	(0.13)	(0.14)	(0.13)	
Language	0.03	-0.06	0.00	
	(0.14)	(0.14)	(0.14)	
Religion	0.15**	0.14**	0.14**	
	(0.06)	(0.07)	(0.06)	
Diffusion	0.00	-0.02***	-0.00**	
	(0.00)	(0.00)	(0.00)	
Constant	2.85***	1.71***	2.76***	
	(0.57)	(0.53)	(0.56)	
Observations	222,637	222,637	222,637	222,637
No. of PTAs	2,102	2,102	2,102	1,522
No. of countries	167	167	167	136

Robust standard errors in parentheses
*** p¡0.01, ** p¡0.05, * p¡0.1

Table 7: Formation of PTAs: Cox Model (errors clustered by dyads).

	(21)	(22)	(23)	(24)
Covariate	Expon.	Weibull	Gompertz	Slines
Rule of Law	0.51***	0.71***	0.59***	0.50***
	(0.07)	(0.07)	(0.07)	(0.04)
Democracy (FH)	0.04***	0.05***	0.05***	
	(0.02)	(0.02)	(0.02)	
GDPpc	-0.05***	-0.06***	-0.05***	
	(0.01)	(0.01)	(0.01)	
GDP	0.15***	0.17***	0.15***	0.13***
	(0.02)	(0.02)	(0.02)	(0.02)
GDPGrowth	-0.01**	-0.02***	-0.01***	
	(0.00)	(0.00)	(0.00)	
SIM	-0.08***	-0.08***	-0.08***	
	(0.02)	(0.02)	(0.02)	
Trade	0.05***	0.03***	0.05***	
	(0.01)	(0.01)	(0.01)	
Trade Dispute (3^{rd} Party)	0.07	0.16***	0.10*	
	(0.06)	(0.06)	(0.06)	
Island	-0.21**	-0.33***	-0.26***	
	(0.08)	(0.09)	(0.08)	
WTO	0.22***	-0.01	0.10	
	(0.07)	(0.07)	(0.07)	
Contiguity	-0.74***	-0.67***	-0.71***	
	(0.15)	(0.17)	(0.16)	
Trade Dispute	-2.63***	-2.62***	-2.64***	
	(1.01)	(1.01)	(1.01)	
MultiRound	0.66***	0.79***	0.60***	
	(0.05)	(0.06)	(0.05)	
Distance	-1.10***	-1.14***	-1.11***	-1.18***
	(0.06)	(0.07)	(0.07)	(0.06)
Alliance	0.68***	0.68***	0.69***	
	(0.06)	(0.06)	(0.06)	
Colony	0.27**	0.22*	0.25**	
	(0.12)	(0.13)	(0.13)	
Language	0.02	-0.07	-0.01	
	(0.13)	(0.14)	(0.13)	
Religion	0.15**	0.15**	0.15**	
	(0.06)	(0.07)	(0.06)	
Diffusion	0.00*	-0.02***	-0.00**	
	(0.00)	(0.00)	(0.00)	
Constant	2.78***	1.61***	2.68***	
	(0.58)	(0.56)	(0.58)	
Observations	222,637	222,637	222,637	222,637
No. of PTAs	2,102	2,102	2,102	1,522
No. of countries	167	167	167	136

Robust standard errors in parentheses

*** p¡0.01, ** p¡0.05, * p¡0.1

Table 8: Duration of Negotiation: Cox Model with sample selection (errors clustered by dyads).

Covariate	(25) Selection	(26) Outome	(27) Selection	(28) Outcome
Control of Corruption	0.35***	0.51**		
	(0.06)	(0.21)		
Rule of Law			0.35***	0.63***
			(0.06)	(0.26)
Democracy		0.03		0.02
		(0.02)		(0.02)
Distance		-0.50***		-0.61***
		(0.14)		(0.16)
GDPpc		-0.04		0.02
		(0.05)		(0.04)
GDP		0.02		0.01
		(0.10)		(0.10)
ρ	-0.09**		-0.11***	
	(0.04)		(0.04)	
Observations	1042		1042	
No. of Negotiations	84		84	
No. of PTAs	70		70	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

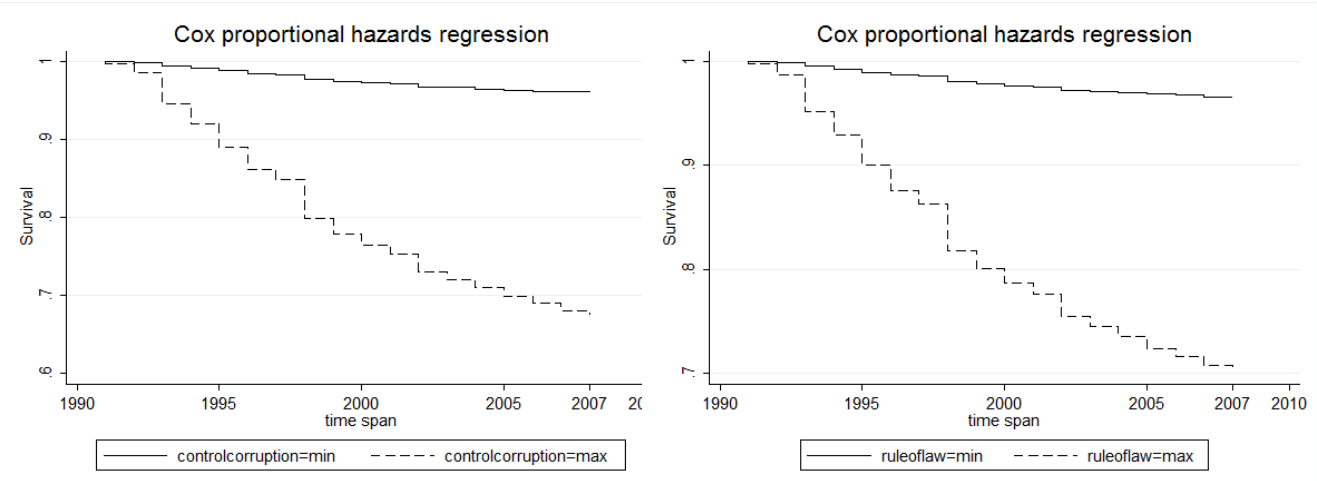

Figure 2: Survival estimates (formation): Control of Corruption and Rule of Law (WGI).

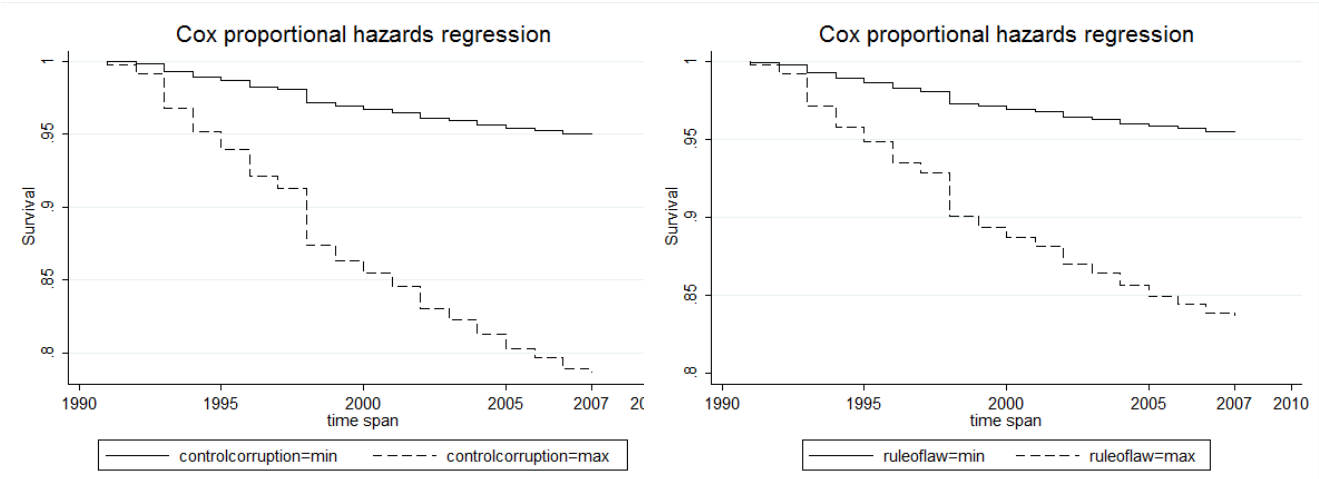

Figure 3: Survival estimates (formation): Control of Corruption and Rule of Law (ICRG).

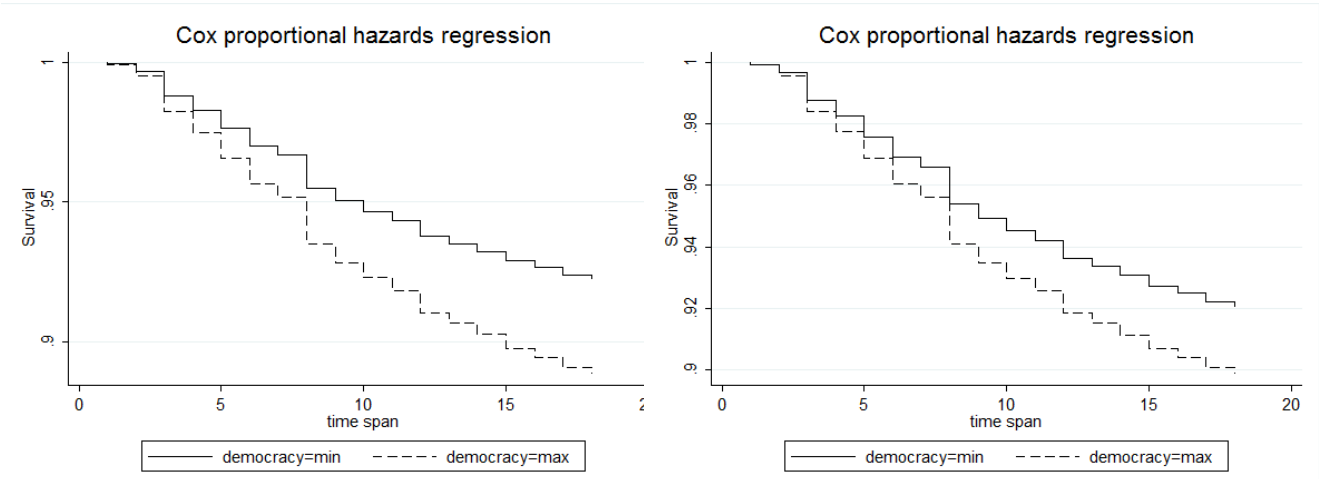

Figure 4: Survival estimates (formation): Democracy (Polity IV) and Democracy (FH).

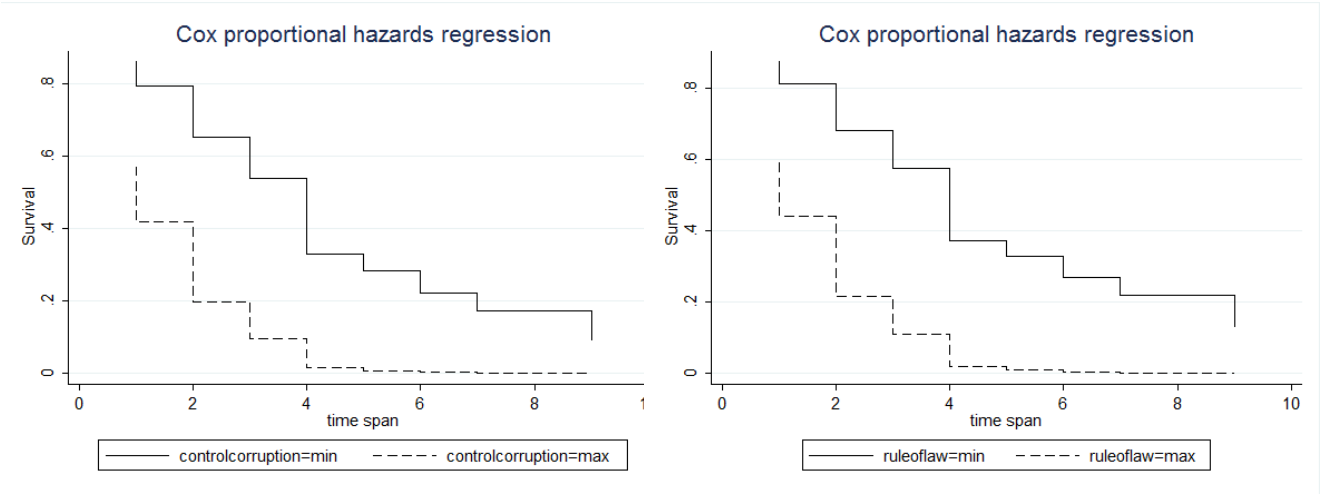

Figure 5: Survival estimates (duration): Control of Corruption and Rule of Law (WGI).