THE DETERMINANTS OF CROSS-BORDER CORPORATE STRATEGIC ALLIANCES: THE ROLE OF TRUST, CULTURAL DISTANCE, AND INSTITUTIONAL DISTANCE

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ABSTRACT

We examine the role of trust, cultural distance, and institutional distance on the propensity to form a cross-border strategic alliance. We find that a cross-border alliance is more likely to occur between firms from countries that have higher trust, and a shorter cultural distance. In contrast to what is implied by the literature, we do not find that institutional distance reduces the propensity to form an alliance. Additional tests show that a composite index of trust and cultural similarity mitigates the negative impact of spatial distance in forming a strategic alliance. These results are based on 16,196 strategic alliance spanning 1996 to 2004, 315 country-pairs, and 26 countries.

Key words: strategic alliance, cultural distance, institutional distance, trust, transaction cost

INTRODUCTION

Because of the increased need to understand foreign markets, in the last few decades, the number of cross-border strategic corporate alliances has surged. Li and Ferreira (2008) point out that an international strategic alliance is one of the most popular strategies to market entry because it is the easiest way to acquire knowledge of the host market. It speeds up the entry process and the benefits from the economies of scale.

Defined as a formal agreement between two or more business organizations to pursue a set of private and common interests (Ariño, 2002), a strategic alliance uses resources and governance structures from two or more organizations; and ex-ante both parties expect to benefit. Such alliances often include joint R&D agreement, licensing agreement, marketing agreement, and joint development or production. The benefits from strategic alliance can be of many types: for example, firms can gain access to new technologies, complementary skills, and/or labor, and improve productivity by “reducing inputs, enhancing outputs, or both” (Oum, Park, Kim, & Yu, 2004). Overall, these alliances provide opportunities that would be impossible to harness alone. Expectedly, research shows that the announcement of strategic alliances is associated with increases in abnormal stock return (Chan, Kensinger, Keown, & Martin, 1997).

But not all strategic alliances are successful. Research shows that a strategic alliance is more likely to be successful when the participants have higher trust, and come from similar cultures and share similar institutions. The common theme in these studies is that higher trust, similarity in culture and institutions,
reduce the transaction cost of the partnership. Our idea is motivated by this stream of literature. We conjecture that the propensity to form an alliance will also be affected by these factors. This is because managers will take into account the probability of its success before deciding whether to form an alliance. We test this idea in our study. Specifically we empirically examine the following questions: Is the propensity to form a strategic alliance greater when the host and the parent firm come from countries with higher trust, similar culture and similar institutions? We analyze these impacts jointly, thereby understanding the relative importance of these three factors.

To investigate our research questions, we construct 315 dyads of 26 countries. Except for three countries which we remove because of missing data, we use all the countries that are included in Knack and Keefer’s (1997) seminal study on the role of trust at the country-level on the GDP growth rate. We then manually collect the number of strategic alliances that occurred between firms of these country-pairs for the nine years (1996-2004) from the SDC platinum database. We merge this data-set with country level characteristics obtained from multiple sources. We construct three key measures: (i) the average trust, (ii) cultural distance (iii) institutional distance between these country-pairs. These measures are constructed in line with prior studies (Beugelsdijk1a, de Grootb, Lindersb, & Slangena, 2004, Flores & Aguilera, 2007, Kogut & Singh, 1988). We then use a multivariate analysis and investigate the association between the number of strategic alliances that occur between firms in a country-pair, and the three country-pair characteristics.

Our study is important for two reasons. First, because, although there are a number of studies that examine the impact of trust, and similarities in culture and institution on the success of a strategic alliance, to our knowledge, no study examines the impact of trust, cultural distance, and institutional distance on the propensity to form such an alliance. Therefore, our questions are in some ways a precursor to these already examined questions. Our primary motivation for this research is that the characteristics that are positively (negatively) associated with the success of strategic alliances should also be positively (negatively) associated with the incentive to form an alliance, because managers will take the probability of success before deciding to collaborate.

The second and perhaps the more important contribution to the strategic alliance literature is that we question the theoretical arguments and the empirical method used to examine the impact of institutional distance on strategic alliances. We conjecture that the idea that institutional distance adversely affects the success of the strategic alliances is questionable—it may not be appropriate to think of institutional distance the same as one views cultural distance. More importantly, the empirical evidence on this topic suffers from a peculiar problem. We do not know of any study that has raised this issue in the literature. Note that the idea that institutional distance negatively affects the success of a strategic alliance implicitly assumes the following: one, the firms from better institution countries will prefer firms from better institution countries; second, the firms from poor institution countries will prefer firms from poor institution countries. While the former appears plausible, the later appears implausible. It is not quite clear why poor institution countries would prefer to partner with another firm from poor institutions, and why an alliance between two poor institution countries is likely to be more successful that those between a poor institution and high quality institution. After all, poor institutions offer little protection should the relation not go according to plan, making the behavior of the partner less predictable.
We are aware that the prior literature suggests a negative association between the success of strategic alliances and institutional distance, but we believe that is because their sample is poorly constructed and has led to erroneous conclusions. In most of the studies examining this question, one of the partnering countries stays the same. For example, in Abdi and Aulakh (2012), Salomon and Wu (2012) and Flores and Aguilera (2007) all the firms in the sample are from the United States. This will lead to erroneous conclusion when investigating the impact of institutional distance.

In such a sample, what the authors consider as institutional distance may actually be capturing the institutional quality of the partner’s country. This is because, by construction, the sample will have a shorter intuitional distance for partners from countries with good institutions, and will have a longer institutional distance for partners from countries with poor institutions. For example, if the sample uses only the Fortune 500 firms from the US as in Flores and Aguilera (2007), the institutional distance between US-Bangladesh and US-India and US-Mexico will all be large; similarly, the institutional distance between US-Denmark, US-UK, US-Norway will all be short. Therefore, when the researchers find a negative association between institutional distance and the success of cross-border strategic alliance it might be capturing the negative association of the institutional qualities of the partnering firm’s country rather than the institutional distance between the two countries.

Not surprisingly, we find that the institutional distance is not associated with propensity to form an alliance. But when we restrict the sample to those country-pairs where one of the partners is the U.S, like in Abdi and Aulakh (2012), Salomon and Wu (2012) and Flores and Aguilera (2007), we do find that the higher institutional distance has a negative impact the propensity to form and alliance. This result strengthens our conjecture that the reason prior studies find a negative association between institutional distance and success of the strategic alliance is because of the research design that mistakenly captures the institutional quality rather than institutional distance.

The results of trust and cultural distance are in line with what prior literature suggests. We find a positive association between the levels of trust between two partners and the number of cross-border alliances between firms in the two countries. Holding other variables in our model constant, increases in the mutual trust from the 25th percentile to the 75th percentile increases the number of alliances between the country-pairs by about 20 percent. As expected, higher cultural distance between two countries reduces the possibility of cross-border alliances. Holding other variables in our model constant, an increase in the cultural distance from the 25th percentile to the 75th percentile decreases the number of alliances by about eight percent.

The rest of the paper proceeds as follows. In Section 2 we develop the hypotheses. In Section 3 we describe the empirical model. In Section 4 we describe the sample selection and the construction of the key research variables. In Section 5 we discuss the results and in Section 6, we conclude.

HYPOTHESIS DEVELOPMENT

Trust

Rousseau, Sitkin, Burt, and Camerer (1998) defines trust as a “psychological state comprising the intention to accept vulnerability based on the positive expectations of the intentions or behavior of
another”. As Luo (2002) points out, applying this definition to the level of cross-border alliances, means that trust will be exercised when a party relies on another party under uncertain conditions. The future of a strategic alliance is particularly uncertain. A higher level of trust can bestow alliances with a competitive advantage since it fosters information sharing, reduces transaction costs, facilitates investments in relationship assets (Katsikeas, Skarmeas, & Bello, 2008) and reduces the need for monitoring (Madhok, 1995). Trust also alters the “social properties” of the parties involved in the cross-border alliance. It helps cross-border alliances to overcome the challenges faced under uncertainty by building trust-based relationships, which in turn influence performance goals. High trust enhances the social network of alliances and impacts the overall organizational performance (Katsikeas, Skarmeas, & Bello, 2008). A much detailed exposition of the idea on how trust plays and important role in the success of strategic alliance is provided in Cullen, Johnson, and Sakano (2000) and Parkhe (1998).

The empirical literature on the impact of trust on success of strategic alliance is consistent with the theory. Schumacher (2006) examines 67 small and medium German firms and find a positive association between the level of trust and the success of strategic alliance. Krishnan, Martin, and Noorderhaven (2006) examine the role of trust in 126 international alliances and find a positive association between trust and performance. Although Flores and Aguilera (2007) do not examine strategic alliances directly, they find that a US corporation is more likely to invest in countries with a higher level of trust. Sivadas and Dwyer (2000) investigates what affects the success of new products that are produced through a strategic alliance. They find that co-operative competency of which trust is an integral component is one of the key factors that drive the success of an alliance.

Since there is strong theoretical and empirical evidence that a higher level of trust can enhance the success of a strategic alliance, it is plausible to argue that managers will take this into account before getting into an alliance. Furthermore, any kind of collaboration is in essence an exchange of cash today for exchange of cash tomorrow and voluntary exchanges are more likely to occur when two parties trust each other more (Guiso, Sapienza, & Zingales, 2004). Therefore, firms are more likely to form an alliance if they trust each other more.

The level of trust varies across countries (Knack & Keefer, 1997, Zaheer & Zaheer, 2005). And we know from a growing stream of recent literature that the culture of where the firm is headquartered permeates the culture of the firm and affects its own culture (Grullon, Kanatas, & Weston, 2010, Hilary & Hui, 2009, Jha, 2012, McGuire, Omer, & Sharp, 2012). Therefore, firms in high trust countries are also likely to have a higher level of trust. In instances where corporations are both located in countries that have a higher level of trust, the mutual trust will be higher. Based on these studies, we make the following hypothesis.

**Hypothesis 1: Ceteris paribus, the number of cross border alliances is greater if countries have higher trust.**

**Cultural distance**

National culture is defined as “values, beliefs, norms, and behavioral patterns of a national group” (Leung, Bhagat, Buchan, Erez, & Gibson, 2005). Individuals living in the same country share similar
values and they tend to bring these values to their workplace. It has been proven that institutions in different countries behave dissimilarly and exhibit different organizational practices. Examples of such practices are management and decision-making styles, conflict resolution strategies, human-resource management practices (Slangen, 2006), and business activities such as capital structure and group performance (Leung, Bhagat, Buchan, Erez, & Gibson, 2005).

Over the last two decades, there has been a growing interest in understanding the role national culture plays on international business research. When the questions involve partnership between firms of different culture the variable of interest is often the cultural distance.

Defined as “the extent to which shared norms and values in one country differ from those in another” (Hofstede, 2001), a number of studies show that cultural distance between multinationals matters. For example, Slangen (2006) shows that cultural distance negatively affects the performance of the acquired firms if they are closely integrated. Chang, Kao, Kuo, and Chiu (2012) show that the problems with collaboration are more severe when a firm enters a culturally distant foreign market with poor governance. Barkema and Vermeulen (1997) examine a large longitudinal data and find that cultural distance adversely affects the performance of joint ventures.

The key argument in these studies examining the role of cultural distance is that entering a foreign country through an alliance has many benefits, but it also entails unique risks, such as problems of cooperation with partners from a different national culture. Differences in norms and values between two countries can create operational difficulties that might be very costly to overcome and these differences can hinder the agreement on reaching common goals and solving conflicts (Hennart & Zeng, 2002). It can also be difficult to understand partner’s different behavior and thinking, thus limiting the predictability of the partners’ behavior and adding uncertainty to the equation (Chang, Kao, Kuo, & Chiu, 2012). Furthermore, employees can sometimes be so strongly embedded in their own culture that cooperation between cross-border alliances seems like an impossible task (Slangen, 2006). Cultural distance can also increase management costs because knowledge barriers are created, obstructing the transfer of knowledge and core competencies (Chang, Kao, Kuo, & Chiu, 2012).

Based on the prior evidence on the impact of cultural distance on strategic alliances and the empirical evidence, our second hypothesis is the following:

**Hypothesis 2: Ceteris paribus, the number of cross border alliances is greater when cultural distance is shorter.**

**Institutional distance**

We define institutional distance as the difference in the legal and regulatory framework between the two countries. We acknowledge that there has not been a common consensus on what institutions mean. For example, Chao and Kumar (2010) describe them as “the formal and informal constraints that shape human interaction” and categorize them in regulative or legal aspects of institutions regard regulations that provide guidance to companies through legal sanctions; normative or social aspects of institutions are referred as the rule of thumb; and cognitive or cultural aspects involve symbols, cultural rules and
frameworks. In this study, we will focus on the regulatory dimension of the institutional context, since the cognitive aspect is covered by cultural distance.

Recent studies show that the transaction cost associated with partnership can be higher when dealing with an unfamiliar regulatory environment. Salomon and Wu (2012) note that “liability of foreignness” is severe when in cases of alliance between partners that has greater institutional distance. Flores and Aguilera (2007) argue that companies prefer to hold alliances with partners located in countries that are more ‘proximate/similar’ to their home countries. They argue that it is likely that companies will try to minimize uncertainty in cross-border alliances by venturing in countries that have at least one familiar dimension of the institutional environment. They examine the FDI investment of the top one hundred MNC and find that these companies are more likely to invest in countries that have similar institutions. The argument made in these studies and that is reiterated in many other studies is that cross-border alliances are at higher risk of being exposed to opportunistic behaviors from partners. The cost of these opportunistic behaviors is more severe in alliances where partners have dissimilar regulative institutions (Abdi & Aulakh, 2012, Chao & Kumar, 2010).

But it is not intuitively clear whether the cost of opportunistic behavior of the partner is more severe when the institutional distance is large, as these studies point out, or whether the institutional quality in the partnering country is poor. For example, the idea that institutional distance reduces the chance of successful relations implicitly assumes that firms from countries with poor institutions will find it easier to enforce contracts in countries with poor institution. This may not be the case—a firm from a country with poor institution might actually find it easier to enforce a contract in a country that has better institution. For this reason, we make two hypotheses with regard to institutional distance.

Hypothesis 3a: Ceteris paribus, the number of cross border alliances is greater if institutional distance is lower.

Hypothesis 3b: Ceteris paribus, the number of cross border alliances is unaffected by the institutional distance.

**METHOD**

**Empirical Model**

The empirical model we use to examine the propensity to form an alliance is summarized in the following equation.

**Equation 1:**

\[
\text{LN (# of ALLIANCES}_{ij} = \beta_0 + \beta_1 \text{AVERAGE TRUST}_{ij} + \beta_2 \text{CULTRUAL DIST}_{ij} + \beta_3 \text{INSTITUTIONAL DIST}_{ij} + \beta_4 \text{LN(SPATIAL DIST}_{ij} ) + \beta_5 (\text{GDP}_i \times \text{GDP}_j) + \beta_6 (\text{GDPPC}_i \times \text{GDPPC}_j) + \beta_7 \text{COMLANG} + \beta_8 \text{COLONY} + \beta_9 \text{LN(# FIRMS}_{ij}) + \text{Year Indicators} + \epsilon \]

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The dependent variable, \( \text{LN} \) # of ALLIANCES\(_{ij} \), is the natural logarithm of the number of alliances between firms of the two countries in a country-pair. For each country-pair, we manually obtain the number of strategic alliances that occur between the firms from the two countries.\(^i\) We obtain this data from the SDC database of Thomson Financial which records all publicly announced alliances worldwide. SDC draws information from the Securities and Exchange Commission filings, newswires, press, trade magazines, professional journals, and the like. SDC provides information on contract type (i.e., licensing agreement, marketing agreement, joint venture, joint development or production, etc.), description of the deal, the date of the agreement, identities of the participant firms (primary SIC code, name, nation, parent companies, etc.), and the SIC code of the alliance. We include all types of strategic alliances—technology licensing, joint venture, joint marketing, manufacturing, R&D, OEM, technology transfer, and supply agreements.\(^ii\)

Our key research variables are: AVERAGE TRUST\(_{ij}\) that measures the average level of trust between country pairs; CULTRUAL DIST\(_{ij}\) that measures the cultural distance between country pairs; and INSTITUTIONAL DIST\(_{ij}\) that measures the institutional distance between country pairs.

To measure AVERAGE TRUST\(_{ij}\), we follow the approach of Knack and Keefer’s study (1997) and Flores & Aguilera’s (2007) study. We obtain the measure of trust from the World Value Survey, a database that carries out representative national surveys from 97 countries containing almost 90 percent of the world’s population. The following question was used by the World Value Survey to assess the level of trust in a society: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” Two possible answers are given: “most people can be trusted”, or “can’t be too careful””. As a proxy to measure trust in each country, we use the percentage of people in each country that answered: “most people can be trusted”. The AVERAGE TRUST is the average of trust in country \( i \) and country \( j \).

To measure CULTURAL DIST\(_{ij}\), we follow Kogut and Singh (1988) and define cultural distance based on Hofstede’s cultural dimensions. Hofstede obtained his original data from IBM employees working in 40 different countries; eventually his study was expanded to more than a hundred countries. He categorizes culture into four dimensions, namely power distance, individualism/collectivism, masculinity/femininity, and uncertainty avoidance.

The following formula was used:

\[
\text{CULTURAL DIST}_{ij} = \frac{\sum_{u=1}^{4} \left( I_{ui} - I_{uj} \right)^2}{4V_u};
\]

Where CULTURAL DIST represents cultural distance between the country dyads, where \( I_{ui} \) is country \( i \)'s score on the \( u \)th cultural dimension, \( I_{uj} \) is country \( j \)'s score on the \( u \)th cultural dimension, and \( V_u \) is the variance of the index of the \( u \)th dimension.

To measure INSTITUTIONAL DIST\(_{ij}\) we follow Beugelsdijk1a, de Grootb, Lindersb, and Slangena (2004) and use the same mathematical procedure to determine cultural distance, but this time using
Kaufmann Worldwide Governance Indicators (Kaufmann, Kraay, & Mastruzzi, 2009). These indicators report on six dimensions: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. The indicators are based on 30 individual data sources produced by survey institutes, think tanks, NGOs, international organizations and private sector firms. These dimensions provide a good measure on how the institutional quality of a country differs among countries.

As in Beugelsdijk1a, de Grootb, Lindersb, and Slangena (2004) we use Kogut and Sigh (1998) method, this time with Kaufmann six dimensions:

Formula 2:

\[
INSTITUTIONAL DIST_{ij} = \frac{\sum_{u=1}^{6} \left\{ \frac{(I_{ui} - I_{uj})^2}{V_u} \right\}}{6},
\]

Where INSTITUTIONAL DIST represents institutional distance between the country dyad, \(I_{ui}\) is country \(i\)’s score on the \(u\)th governance dimension, \(I_{uj}\) is country \(j\)’s score on the \(u\)th governance dimension, and \(V_u\) is the variance of the index of the \(u\)th dimension.

We use the following control variables: LN (SPATIAL DIST\(_{ij}\)) which is the natural logarithm of the spatial distance between country pairs; LN((GDP\(_i\) * GDP\(_j\))) which is the natural logarithm of product of GDP of the two countries; LN(GDPPC\(_i\) * GDPPC\(_j\)) which is the natural logarithm of the GDP per capita of the two countries; COMLANG which is a dummy variable that is equal to 1 if the countries share a common language, and zero otherwise; COLONY which is a dummy variable that is equal to 1 if one of the countries was ever the colony of another since 1945; and, LN(# FIRMS\(_{ij}\)) which is the natural logarithm of the average of the total numbers of firms for countries \(i\) and \(j\) that are listed in the COMPUSTAT. All the control variables except LN(# FIRMS\(_{ij}\)) are obtained from (Rose & Spiegel, 2009). We also include dummy variables for each year and cluster the standard errors at country-pair level. This adjusts for correlated standard errors between country-pairs over time. We expect greater spatial distance between two countries to increase the transaction cost of forming collaboration, and therefore expect a negative coefficient. For the rest of the control variables, we expect the coefficient to be positive.

Sample

Our sample consists of unbalanced panel data of 2,491 dyad-year. Each dyad is a unique country-pair. This dataset comes from 26 countries, 315 country-pairs that spans from 1996 to 2004. The countries covered in the study are presented in Table 1. The sample selection is as follows. We start by constructing dyads of 29 countries that are used in the Knack and Keefer (1997) study to construct a panel in which the unit of observation is the unique country \(i\)-country \(j\) pair, or dyad. For each year, the dyad data is constructed as follows: \(c1\sim c2, c1\sim c3, ..., c1\sim cn; c2\sim c3, c2\sim c4, ..., c2\sim cn; ... ; cn-1\sim cn\), where \(c1\)=country \(1\), ..., \(cn\)=country \(n\). There are \((n \times n-1)/2\) dyads in each year. Given our \(n=29\) nations, this gives us 406 dyads in each year 3654 year-dyads across the whole time period of 1996-2004. From these we remove
189 dyad-years because they are not available in Rose and Spiegel (2009)’s database. We remove 458 dyad-years because AVERAGE TRUST is not available, 516 dyad-years because CULTURAL DIST. Our final sample therefore consists of 2,491 dyad-year and 26 countries. The three countries that get removed are Iceland, South Korea and South Africa.

The summary statistics of the sample is presented in Table 2. For about fifty percent of the country-pair there was not a single strategic alliance. The highest number of strategic alliance is 121 and the average number of alliance is 2.3. Table 3 reports the correlation of the main variables used in the study. The correlations are consistent with the hypotheses: the correlation of LN (# ALLIANCES) with AVERAGE TRUST is positive, the correlation with CULTURAL DISTANCE is consistent with Hypothesis 2, and the correlation of INSTITUTIONAL DISTANCE is negative, consistent with hypothesis 3a.

RESULTS

Regression Analysis (OLS)

The results of the OLS regression are presented in Table 4. These results show that LN (# ALLIANCES) is positively associated with AVERAGE TRUST and negatively associated with CULTURAL DISTANCE, consistent with Hypothesis 1 and 2 respectively. But we do find INSTITUTIONAL DISTANCE has a significant impact, which is inconsistent with Hypothesis 3a, but consistent with hypothesis 3b.

Column 1 reports the coefficient of the model summarized in equation 1. Note that the coefficient of AVERAGE TRUST is positive and significant at one percent, and the coefficient of CULTURAL DISTANCE is negative and significant at one percent. These results support Hypothesis 1 and Hypothesis 2. The coefficient of INSTITUTIONAL DISTANCE is positive, contrasted to what we expected, but it is not significant. In Column 2, 3 and 4, we report the results of OLS regression, when only one of our key research variables is used. We find results consistent with the main model. We still do not find that INSTITUTIONAL DISTANCE has a significant negative impact.

The coefficients of the control variables have the expected sign, except for COLONY. As expected we find that when the average GDP, GDP per capita, and the number of firms in these countries are higher, the number of alliances are also high. We also find that common language is positively associated with forming alliances. However, we do not find that a colonial legacy has a positive impact— it appears to have a negative relation.

CONCLUDING REMARK

We conduct a comprehensive analysis of how trust, cultural distance, and institutional distance impact the propensity to collaborate using a country-pair and year level data. We find that the greater level of trust and shorter cultural distance increases the propensity to form a strategic alliance. These results are consistent with the suggestion made in the literature.
However, inconsistent with what a number of studies suggest, we do not find that institutional distance reduces the propensity to form an alliance. Our research raises a question on the idea that institutional distance will deter strategic alliance. We provide theoretical reasoning and empirical evidence that the distance between institutions cannot be thought of the same way one thinks about the distance between cultures. We argue that prior empirical research might be erroneously capturing institutional quality rather than the institutional distance when modeling the impact of institutional distance on strategic alliances. In short, we raise concern regarding the idea that institutional distance will adversely impact the success of a strategic alliance.

While our study is quite comprehensive and suited for the questions we address, there are some limitations. One of the limitations is that the propensity to form an alliance could be related to firm-level characteristics such as industry and size, which we do not control for because our study is country-pair level analysis. We acknowledge that this is a limitation of our study, but note that the trust, cultural, and institutional measures are all country-level so the natural unit of our analysis is at the country–pair level. Regardless, it will be useful to investigate our question with a firm level data. Our second limitation is that while we focus on the propensity to collaborate, we do not focus on the probability of success. We expect the success of the alliance to be in line with our finding of propensity to collaborate, because the manager takes into consideration the probability of a successful relation before deciding to partner. Third, as with most cross country studies, one could question the generalizability of our result to other countries. We believe our sample is quite representative in that it includes developed countries and developing countries, and therefore country-pairs where both the countries belong to a developing country, unlike many prior studies where often one of the countries in the partnership remains constant.

Note:
All tables, results, and references available upon request from Anand Jha, ajha@tamiu.edu. These were omitted due to page limitation.

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i This was highly labor intensive work, where we had to manually count the number of alliance that occurred between firms of two countries.

ii This study ignores licensing deals among individual investors, non-profit organizations, governments and universities.

iii Note that we lose these observations because of missing data to calculate the AVERAGE TRUST and CULTURAL DISTANCE.