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# Firm characteristics and country institutional development: Business relationships with foreign firms in transition economies

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**Firm Characteristics and Country Institutional  
Development: Business Relationships with Foreign  
Firms in Transition Economies**

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## **Firm Characteristics and Country Institutional Development: Business Relationships with Foreign Firms in Transition Economies**

### **ABSTRACT**

The composition of firms' foreign business networks has been attended to in recent research but has seldom been subjected to empirical study in transition economies. In this study, we test hypotheses related to the composition of firms' foreign business relationships. First, we suggest that firms' characteristics matter for building a network of ties the foreign agents. Then, we consider the moderating effect of the degree of institutional development of the home country to assess to extent to which firms' foreign business relationships in transition economies are affected by the institutional development. We conduct a set of logistic regressions and one OLS regression to investigate the composition of firms' business relationships using firm-level data from 24 transition economies. The results indicate that firm size and membership in trade associations are good predictors of foreign business relationships – specifically, relationships with foreign investors, customers, and suppliers - and also of the diversity of foreign relationships. The country's institutional development radically changes which firms' characteristics matter in forming business relationships.

**Keywords:** transition economies, foreign relationships, types of ties, institutional development

## INTRODUCTION

The firms' ability to establish business relationships is a major precondition for survival and expansion. Business relationships provide firms with access to various types of resources, information, market access, and innovation opportunities (Lipparini & Sobrero, 1994; (Jack & Anderson, 2002, Oviatt & McDougall, 1995). Business relationships are also instrumental in obtaining legitimacy, social status, reputation and social endorsement (Stuart et al., 1999; Human & Provan, 2000; Podolny, 2001). Firms establish different types of business relationships for different purposes (Hite & Hesterly, 2001), such as to access financial capital (i.e., relationships with financiers), to commercialize outputs (i.e., clients), or to access inputs (i.e., suppliers). A large body of research on networks, alliances, and entrepreneurship, has noted the benefits of these relationships (Birley, 1985; Stuart et al., 1999; Jack & Anderson, 2002) and suggested that firms' characteristics are important determinants of their networks (Fontes & Coombs, 1997) and how these networks evolve in response to resource needs (Hite & Hesterly, 2001). Research on transition economies has also noted that firms' ability to establish connections is a precondition for survival and prosperity (Roth & Kostova, 2001; Cernat & Vranceanu, 2002) in conditions of institutional upheaval.

In transition economies, foreign business relationships may be far more critical than in western countries because of the institutional voids that underlie ineffective and inefficient local institutions. In the face of institutional failure and overcome domestic insufficiencies, firms may replace formal with informal relationships (Roth & Kostova, 2001 ), or seek foreign relationships to overcome supply and/or demand insufficiencies. However, in transition economies the transaction costs are particularly high due to market uncertainties, legal and judiciary ineffectiveness, and political unrest. During the transition period, the local firms' ability to develop relationships to foreign agents (clients, financiers, suppliers, and partners) may be critical to access a variety of resources and markets that transcend the local political boundaries. That is, ties to foreign firms may be more

than an option for growth for firms in transition economies, they may be the solution for survival, hence warranting this and subsequent studies.

In transition economies, firms' characteristics may be the main drivers of business relationships, as they seem to be in western countries. That is, while firm characteristics may matter, as suggested, for example, by networks, strategic alliances and entrepreneurship researchers, these characteristics matter to a far larger extent in transition than in western countries (i.e., more institutionally developed countries). Moreover, in the context of transition economies, firms' characteristics are likely to be moderated by the degree of development of these countries' institutional environments (i.e., the countries advancement in the transition process) in determining the types of ties that local firms hold to foreign agents.

In this study, we examine transition countries' firms business relationships to foreign firms. We test hypotheses relating firms' characteristics to the likelihood they carry foreign business relationships. The link between firms' characteristics and their foreign ties has been implicitly advanced in extant research but has not been exposed to empirical testing. Partly, this may be because most recent research tends to take the point of view of the foreign multinational that is entering a transition country, rather than the point of view of the local firm. Specifically, we test empirically, on a sample of firms from 24 transition economies how the types of ties to foreign firms (i.e., composition of firms' business networks) vary for firms with diverse characteristics. We then examine the impact of the institutional development in the transition countries on the importance of firms' characteristics as antecedents of their networks of foreign relationships. That is, we study whether and how the degree of institutional development is likely to diminish the influence of firms' characteristics on the firms' ability to have ties to foreign firms. The two research questions are thus: *How do firms' characteristics in transition economies influence the likelihood of having business ties to foreign firms? How does the degree of development of the institutional environment influences the above relationship?* Our results provide strong evidence for

an important moderating effect of the institutional environment, thus supporting the need to study firms in transition economies.

The remaining of this study is structured in three main sections. The first section entails a brief literature review anchored in the traditional idea that firms' characteristics are primary antecedents of their business networks. Then we introduce the moderating effect of institutional development. The third section develops the empirical method and includes the description of the data, variables, statistical procedures, and results. We conclude with a thorough discussion of the results, implications, and avenues for future research.

#### FIRMS' CHARACTERISTICS AND BUSINESS NETWORKS

It is important at the outset to define that we refer to the composition of a firm's network refers as the types of business relationships of the firm, or the types of organizations that are included in the firms' business networks (Baum, Calabrese & Silverman, 2000; Gulati, Nohria & Zaheer, 2000). Specifically, we refer to the portfolio of members and the roles they play as: clients, suppliers, investors, and financiers. We restrict our analysis to ties to foreign firms, as recent research has examined how firms substitute formal by informal ties within the domestic setting (Roth & Kostova, 2001).

#### WHY DO BUSINESS RELATIONSHIPS MATTER?

Recent research on firms networks has noted that both the structure and composition of firms' networks of business relationships play a significant role in economic activity in general, and specifically for firms' survival, and success (e.g., Aldrich & Zimmer, 1986, Birley, 1985, Dubini & Aldrich, 1991, Hite & Hesterly, 2001, Human & Provan, 2000, Jack & Anderson, 2002, Jarillo, 1989, Larson, 1991). Business relationships facilitate the access to various types of resources (Lipparini & Sobrero, 1994), markets (Gulati, 1998, Hite & Hesterly, 2001), information (Dyer & Singh, 1998), detection of new opportunities (Birley, 1985), legitimacy (Human & Provan, 2000, Stuart, Hoang, & Hybels, 1999), innovation opportunities (Walker, Kogut, & Shan, 1997), and reputation and social

endorsement (Stuart, Hoang, & Hybels, 1999). These inter-firm business relationships improve the focal firms' ability to survive and succeed, permit firms to focus on their core competencies (Prahalad & Hamel, 1990), and minimize the constraints imposed by eventual resource limitations.

The institutional failure and ineffectiveness in transition economies is likely to lead to a reconfigurations of business ties. According to Roth and Kostova (2001) firms, in these instances, substitute formal with informal relationships. However, the transaction costs involved in engaging in exchanges with firms in transition economies are substantial. Transaction costs increase due to, for example, market uncertainties, legal and judiciary ineffectiveness, and political unrest. Meyer (2001) recently noted that "institutions reduce transaction costs by reducing uncertainty and establishing a stable structure to facilitate interactions. However these rules are not in place during transition." The implementation of market, political, legal, financial and social reforms to support the transition from a communist state to a market-based economy has been a lengthy process in the majority of the former socialist countries. These countries were forced to transform substantial parts of their economic system, to advance in the privatization process and on the liberalization of the economy (Fogel & Zapalska, 2001; Cernat & Vranceanu, 2002). During the transition period, the local firms' ability to develop relationships to foreign agents (clients, financiers, suppliers, and partners) may be critical to access a variety of resources and markets that transcend the local political boundaries. That is, ties to foreign firms may be more than an option for growth for firms in transition economies, they may be the solution for survival.

#### **How does network composition vary across firms?**

Extant research has highlighted some firms' characteristics that determine firms' ability to form business relationships, and along which the composition of their business networks should vary. These are characteristics related to firms' size, age, reputation and legitimacy, and to organizational factors such as the extent of formalization, transparency and control mechanisms that firms have in place. In a parsimonious view we



may aggregate these factors in three main dimensions: social, scope and organizational, as described below. Firms' characteristics have a direct bearing on all the three factors simultaneously, and in our classification we seek only to illustrate the mechanisms through which firms' characteristics are important for building a network of business relationships. For instance, prior research has suggested that there are significant differences in terms of organizational structure, market focus, strategy, and resource endowments between small and large firms (Mintzberg, 1979). Small firms seem to be more dependent than large firms on the personal and cohesive social relationships of the entrepreneur or top management team (Low & MacMillan, 1988; Hite & Hesterly, 2001), such as their relationships with family members or friends, on which they rely to obtain resources, gain legitimacy (Lipparini & Sobrero, 1994; Human & Provan, 2000), and overcome the limitations of small size. Conversely, larger firms may seek business relationships for different strategic motives, such as innovation, market access, financial need, and so forth. Hence, firms' characteristics, such as size in this example, are likely to influence the composition of firms' business networks.

*Scope factors.* Scope factors relate to the activity of the firm. These factors may entail the size, age, volume of activity and even the industry of the firm. Scope factors determine the extent to which firms are able to establish business relationships, and their dependence on these relationships. For example, smaller firms have smaller scope, and a limited pool of managerial, financial, informational, and human resources (Stinchcombe, 1965; Beamish, 1999). Therefore, small firms may need to rely more on their business networks to overcome resource and informational constraints and improve their likelihood to survive and succeed (Birley, 1985, Jack & Anderson, 2002). Small firms' business networks expose these firms to information and resources not yet held, hence providing growth opportunities. Conversely, firms with a larger volume of activity require a more varied pool of business relationships to absorb their output (i.e., relationships with clients), to supply a more

diverse set of inputs (i.e., relationships with supplier), and even to face higher financial capital needs (i.e., relationships with financiers such as banks). Furthermore, the larger the scope, the more the firms are forced to search outside their traditional geographical boundaries and seek business relationships in foreign countries, or with foreign agents, to satisfy the input-output needs.

An alternative explanation for why small and large firms may have substantially different networks relies on their search capabilities. Small firms seem to rely more on cohesive and informal relationships because their search capabilities are limited to the neighboring landscape (Hite & Hesterly, 2001) and small firms are less likely than large firms to be aware of the full range of financing possibilities. This may signify that small firms lack the ability to search for, for example, financing opportunities outside their local (regional or national) area. Conversely, large firms possess more resources, broader search capabilities, and more knowledge on various mechanisms, namely on the procedures to obtain foreign financing.

Firm age has also been argued conceptually to influence the composition of their business network (e.g., Hite & Hesterly, 2001; Huang, Li & Ferreira, 2003). For example, older firms may have larger experience and resources to build their business relationships with various agents. Hence, size and age, possibly among other characteristics, influence firms' scope and their network of foreign business relationships.

*Organizational factors.* These are factors comprising the formalization of firms' internal structures, systems for control and reporting, and so forth. Organizational factors contribute to increase firms' transparency and reduce exchange uncertainty for partner that seek these firms. For example, smaller firms are generally less formalized and often the image and personal ties of the entrepreneur are confounded with the image and ties of the firm (Birley, 1985; Dubini & Aldrich, 1991). Conversely, larger firms are generally more formalized and do not depend on single individual decision makers. Larger firms are also more likely to have external control and monitoring mechanisms that reduce potential exchange uncertainties and

transaction hazards for partners by reducing managers' discretionary decision making (Huang, Li, & Ferreira, 2003).

The firms' size often brings added formalization. For example, large firms may need to seek financing in capital markets (i.e., go public), which bears significant monitoring by external agents, institutional investors, and financial regulation institutions (Aggarwal & Rivoli, 1991). Therefore, contrary to small firms, large firms are likely to have more formal exchange governance mechanisms (i.e., relationships governed by contracts) and to be perceived as having higher legitimacy and reputation and stable operations due to their increased transparency, which facilitates formal ties with other firms.

*Social factors.* Social factors include elements associated with the firms' legitimacy, reputation, social endorsement, status, etc. For example, smaller firms are more likely than larger firms to lack social resources. Small firms, and also new firms, frequently lack influence, endorsement, perception of quality, reliability, reputation and legitimacy (Boeker, 1989, Larson, 1992); as a result other firms may hesitate to have relationships with small firms (Stuart, Hoang & Hybels, 1999). For example, Singh et al. (1986) and Baum and Oliver (1991) noted that new firms are perceived as riskier and as having higher failure rates than established firms. Small firms will also find it difficult to attract financial capital from external sources due to the perceived risk ( Singh, House & Tucker, 1986; Baum & Oliver, 1991). Older firms possibly have developed a networks of business relationships that may serve as good referrals of its resource base, acquired legitimacy, and corporate strategy (Human & Provan, 2000) and highlight that they are trustworthy and capable. Firms lacking endorsement and legitimacy may seek reputation building affiliations such as membership in trade associations to enhance their reputation, legitimacy, endorsement, and extend their information channels. Furthermore, membership in trade associations also exposes the firm to foreign contacts (e.g., participation in trade fairs, and other events). In yet other instances, the selection of the location may serve to build legitimacy, as is the case when firms locate in

well identified locations of excellence, or in larger cities. Finally, firms with current or prior connections to the government may also benefit from higher perceived status. The support of the government reduces transactional uncertainties such as possibly happens for firms that are state-owned, but also for firms that were privatized.

In sum, all the above three factors of firms' characteristics - scope, organizational and social - contribute, in general, for the formation of business relationships, and also for the formation of different types of business relationships with foreign firms. Not only these factors determine whether the focal firm will seek foreign ties, but also the likelihood foreign firms will be willing to exchange with local firms. Hence, these three factors provide an aggregation of the motivations that drive both the local firm and the foreign firm to form a business relationship. In fact, because foreign firms will have an even higher difficulty in evaluating the focal firm's status, track record of performance, and trustworthiness than other domestic firms, it would seem reasonable that local firms' characteristics could serve as referrals in face of institutional insufficiencies. These characteristics decrease, for example, the uncertainty associated with the focal firm's management, legitimacy, reputation, trustworthiness, quality, meeting deadlines, and use of firms' funds.

***Hypothesis 1.*** *Firms' characteristics (size, age, ownership status and membership in trade association) are positively associated to business relationships with foreign firms.*

The hypothesis above could be decomposed in a set of parallel hypotheses advancing a positive relationship between each of the firm's characteristics selected and the likelihood it will be able to develop a business tie to a foreign firm.

## **INSTITUTIONAL DEVELOPMENT**

In this section we add the second component of our model -- the degree of institutional development in the host country -- to understand how the degree of institutional development influences firms' ability to

establish business relationships beyond the direct effect of firms' characteristics. Institutional development is a good indicator of how far transition economies have evolved in their transition from a centrally-planned system towards a market-based system, and the hurdles already overcome (EBRD, 2000). The transformation towards a market-based economy is the most salient feature of transition economies (Meyer, 2001; Roland, 2001).

One manner to understand firms' business relationships in transition countries is to examine the effect of institutions in reducing transaction costs (Hoskisson et al., 2000; Meyer, 2001). According to North (1990), market efficiency is partly determined by the surrounding institutional environment and the extent to which it supports economic activity. Well developed institutions reduce search, negotiation and contracting costs, and the uncertainties involved in inter-firm exchanges and set a stable structure for supporting legal, regulatory and political infrastructures and agencies that protect firms (e.g., their proprietary assets, the enforceability of contracts) and facilitate exchanges (Meyer, 2001). However, there is little evidence that in spite of the different institutional environment, firms' business relationships are substantially different in transition economies from those expected to be found in more institutionally developed western countries. Notwithstanding, some scholars have provided interesting insights on how business networks may vary. For instance, Roth and Kostova (2001) found that firms tend to replace formal by informal ties when facing institutional voids, and Peng (2000) suggested that local business networks are particularly useful when formal institutions are weak. In none of these studies, however, have the authors focused on business networks with foreign firms.

Partnering with other organizations may be an effective way to minimize transaction costs, increase market power, promote learning, share risk (Larson, 1992; Gulati, Nohria, & Zaheer, 2000; Lu & Beamish, 2001), obtain endorsement (Stuart et al., 1999), or favor the access to an array of resources, as we discussed previously. In transition economies, specifically,

given the institutional upheaval (Khanna & Palepu, 1997; Roth & Kostova, 2001) it is particularly important to examine firms' business relationships because these relationships are likely to determine how these firms overcome an array of market imperfections, survive and prosper (Meyer, 2000). This is because inter-firms relationships may be an alternative to "absent" institutions, or to informal ties (Roth & Kostova, 2001). Furthermore, business relationships may be based on more than resource dependencies and be actually a strategy (Hite & Hesterly, 2001). As a strategy, some business relationships are proactively sought as a manner to, for example, guarantee a smooth ride through the transition period. If this is the case, not only we may expect to see firms with different characteristics engaging in dissimilar network arrangements, but we would also expect the business environment of the firm to favor some types of ties, rather than others. That is, the characteristics of the firms may be primary determinants of the composition of their networks but this examination needs to be placed in context. Transition economies highlight the context whereby the degree to which countries have evolved through the transition process may render some types of ties more likely than others. In sum, the institutional development of each country influences the types of ties established by local firms with foreign firms. As either firms or environments change, so should firms networks.

Foreign firms face potentially high transaction costs when engaging in exchanges with firms from transition countries. They lack information on local firms, they have to deal with evolving and often fuzzy regulations, with inefficient judicial systems and with under-legislated activities. Furthermore, foreign firms need to deal with corrupt officials and inefficient financial systems, weak protection of proprietary assets, and complex interventions in foreign activity in the host country (Meyer, 2001). The more institutionally developed the host country, the lower these transaction costs. The institutional development of these countries in transition is likely to affect the extent to which foreign firms need to rely on the local firms' characteristics as alternative indicators of lower transaction costs, reliability

and legitimacy. Underdeveloped institutional environments increase the costs of doing business, augment unfamiliarity, and increase informational demands. More developed institutional environments have models of organization of labor and ways of doing business that are more westernized. Hence, firms' characteristics may be themselves the references for potential foreign business agents in the face of institutionally underdeveloped environments.

**Hypothesis 2.** *The level of institutional development moderates the impact of firms' characteristics on the likelihood of having relationships with foreign firms, such that the less institutionally developed the country the more important are firms' characteristics.*

We advanced two main hypotheses on how the composition of firms' business network may vary as a direct influence of firms' characteristics, and with the moderating influence of the level of institutional development. We propose that institutional development reduces the importance of firms' characteristics for the formation of foreign ties because it reduces transactional costs. Then, the less institutionally developed the transition economy the more salient should be firms' characteristics. We test these two hypotheses in the following section. It is worth noting, at this stage, that this analysis departs substantially from prior research that tends to assume the point of view of the foreign firm that seeks to enter a foreign country. Here we look at the conditions that ease a local firm establish relations with foreign firms.

## METHODS

### Sample and Data Collection

The data used in this study was drawn from a survey conducted by the World Bank and the European Bank for Reconstruction and Development (EBRD) to over 4,000 firms in twenty six transition economies during 1999-2000. The survey and data are publicly available in the series Business Enterprise Environment Survey<sup>1</sup> (BEEPS survey). We excluded

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<sup>1</sup> Survey and dataset accessible at <http://econ.worldbank.org>.

surveys of firms with large missing data, of state-owned firms, and of non-profit organizations. We also excluded firms from Turkey and Rep. Serpska because we do not have comparable data concerning the institutional development in these two countries (countries not included in the EBRD's Transition Report 2000). Our final sample is composed of 3,087 firms from twenty four countries. The countries included are: Albania, Armenia, Azerbaijan, Belarus, Bosnia, Bulgaria, Croatia, Czech Republic\*, Estonia\*, Georgia, Hungary\*, Kazakhstan, Kyrgyzstan, Latvia\*, Lithuania\*, Macedonia, Moldova, Poland\*, Romania, Russia, Slovakia\*, Slovenia\*, Ukraine, and Uzbekistan (\* signals countries that joined the European Union in 2004).

### **Measures and Variables**

***Dependent variables.*** Foreign firms serve one of four roles: foreign firms may be investors/partners in the focal firm, may be clients, suppliers, or financiers (i.e., foreign banks). The distinction among the possible types of ties is warranted because different types may have different sensitivity to transaction costs and to the degree of development of the institutional framework in transition economies. Although firms also develop business relationships for other purposes, such as innovation and R&D purposes, these are less likely to matter in the short term for firms in transition economies, are not available in the dataset, and are not examined in this study. We coded six dependent variables to assess the ties to foreign firms.

*Foreign relationships* was coded as a dummy variable representing whether a firm has any business relationships with foreign firms. To distinguish the specific types of foreign relationships, we also coded four additional variables assessing whether the firm had any of the following four main types of foreign business ties:

*Foreign customers* was coded as a dummy variable representing whether a firm had a relationship with a foreign client. Firms in transition countries have significant benefits from interfaces with foreign customers for technological learning, to speed their internationalization, and to detect market opportunities in foreign countries. However, the development of



relationships with foreign clients is likely to be, at least partly, dependent on their perception of the focal firms' likelihood of survival, its credibility, and capacity to meet its obligations.

Foreign suppliers. Foreign suppliers provide opportunity to overcome local inefficiencies in the markets for intermediate inputs. Procuring inputs in foreign countries also provides larger control over timings, quantities, and qualities, as well as a cost arbitrage advantage and increased competitiveness. Organizational factors, such as external monitoring mechanisms that reduce managers' discretionary decision making without significant control from external agents and institutions (Huang, Li, & Ferreira, 2003) decrease the perceived risk of doing business with transition firms, namely in what concerns payments to suppliers, meeting deadlines, and the use of firm's funds to fulfill responsibilities. Larger production scope increases the search for foreign suppliers and the membership in trade associations increases the focal firms' exposure to potential foreign suppliers. This variable was coded as a dummy variable with 1 indicating that the firm has at least one relationship to a foreign supplier.

Foreign investors/partners. Firms often seek foreign investors to overcome inefficiencies in the capital markets at home. Foreign investors are important to support firms' expansion, particularly when the personal acquaintances and the local financial institutions are unable to meet the capital needs (Meyer, 2000). For example, larger focal firms are generally better established in the market, accumulated experience and built a track record of successes, have higher internal formalization, and tend to adopt transparent internal decision-making that may attract foreign investors' interest. Similar to previous, this is a dummy variable.

Foreign financial firms. Foreign financial firms (banks) are important sources of financial capital to firms, and more so in less industrialized economies (Weller & Scher, 2001). Foreign banks are unlikely to finance the operations of small firms, except in limited, and specific, situations of a provable track record of, for example, innovative performance. Small firms are also less likely to need foreign financing. Growing firms are likely to

'calculatively' (Hite & Hesterly, 2001) establish ties to co-opt financial service firms, and alleviate financial resources dependence (Pfeffer, 1985; Rowley, Behrens & Krackhardt, 2000; Hite & Hesterly, 2001). Firms in transition countries seek foreign financiers to overcome structural and transactional market imperfections. Moreover, foreign financial firms are more likely to get involved with firms with higher scope, higher social status and developed internal organization. This is a dummy variable.

We also calculated the foreign diversity of the firms' business ties, assessing whether a local firm carried, simultaneously, multiple types of ties to foreign firms. This variable varies from 0 (no foreign relationship, no diversity) to 4 (diversified with all four types of foreign relationships).

***Independent and control variables.*** Although firms may be characterized along a rather extensive set of dimensions we restrict our examination to a few indicators that capture well the three factors previously mentioned: scope, social and organizational. Our selection was also restricted by data availability. We defined firms' characteristics along their size, age, membership in trade associations, and ownership status (private or privatized state-owned enterprises). *Firm size* is a categorical variable measured by the fixed assets<sup>2</sup> and ranges from 1 (fixed assets less than \$250,000) to 10 (fixed assets greater than \$500 million). *Firm age* was constructed as the difference between the firm's founding year and 2000. Age in our sample varies from 1 to 194. *Membership in trade associations* is a dummy variable capturing whether the firm is member of a trade association. Membership in trade associations may be indicative of an external focus. Finally, we coded the origin of the firm as a dummy variable (*Privatized firm*) which equals 1 if the firm resulted from the privatization of a previously state-owned firm, and 0 if the firm is private since inception. It is possible that private and privatized firms have different sets of capabilities, namely capabilities to search inside and outside the country for business contacts.

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<sup>2</sup> Similar results were observed when we utilized the volume of sales and the number of employees as alternative measurements of firm size.

To capture the extent of these countries *institutional development* we used a similar measure and procedure to Meyer's (2001) "institutional building". This variable is an unweighted average of ten dimensions evaluated by the EBRD: large scale privatization, small scale privatization, government restructuring, price liberalization, trade and foreign exchange system, competition policy, banking reform & interest rate liberalization, securities market & non-bank financial institutions, legal transition in commercial law, legal transition in financial regulations. The values indicate the cumulative progress in the movement from a centrally planned economy to a market economy in each dimension, rather than the rate of change in the course of the year. The higher the score the higher the transition towards a market-based system. Data for this variable was extracted from the EBRD's transition report 2000.

**Controls.** We included three control variables. We controlled for the firm's location as the *size of the city* where it is located. We classified the city as large if it has more than 250.000 people or if it is the country's capital. We control for *industry*<sup>3</sup> by including a dummy variable for manufacturing (1) or service (0) firms. We also included a country control as the *GDP* to control for wealth variations across nations. This data was collected from the World Competitive Index database.

## RESULTS

Tables 1 & 2 provide summary descriptive statistics and correlations of all variables. Although there are a number of significant correlations, none is high enough to raise concerns on multicollinearity (Hair, Anderson, Tatham, & Black, 1995). We also used the variance inflation factors (VIF) to test for multicollinearity. None of the VIF scores approached the commonly accepted threshold of 10 used to indicate potential multicollinearity hazards.

[ Insert Tables 1 & 2 about here ]

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<sup>3</sup> Although a disaggregation would be desirable this is not permitted given the data used.

The results of the regression models used to test the hypotheses are presented in Tables 3.1~3.6. The dependent variables capture whether the focal firms have a certain type of business relationship (client, supplier, investor, and financial support) with foreign companies. We conducted five sets of logistic regression tests for each of the following dependent variables: foreign relationship, foreign investor, foreign customer, foreign supplier, foreign financial stake. We also conduct one OLS regression with diversity of foreign ties (foreign diversity) as the dependent variable. These models allow us to examine the impact of the firms' characteristics on the probability of occurrence of a certain business relationship, as we hypothesized. With the significance level at 99%, our logistic regression models were significant as indicated by the models' Chi-square values.

[ Insert Tables 3.1 ~ 3.6 about here ]

Hypothesis 1 suggests that firms' characteristics affect the likelihood of having foreign relationships. We modeled the following firms' characteristics: size, age, membership in trade association, location and ownership form. Firm size was found to be significantly related to the formation of foreign relationships ( $\beta$ s are positive and statistically significant at  $p < .001$  in Model 2s, Tables 3.1 ~ 3.5). We conclude that larger firms are more likely to have foreign business relationships with foreign investors, customers, suppliers and financial capital providers. Larger firms also have a more diversified portfolio of foreign business relationships ( $\beta=0.187$ ,  $p < .001$ , in Table 3.6). The firms' membership in trade associations also heightens the likelihood of having all types of foreign relationships individually ( $\beta$ s are positive and statistically significant at  $p < .01$ , in Model 2s of Table 3.1 ~ 3.5) and a diversified pool of foreign relationships ( $\beta=0.301$ ,  $p < 0.001$ , in Table 3.6).

The firms' age only affects the likelihood of carrying relationships with foreign investors and foreign customers. The firms' age is negative associated with the likelihood of relationships to foreign investors ( $\beta=-0.011$ ,  $p < 0.05$ , in Model 2 of Table 3.2), but positively associated with the likelihood of relationships to foreign customers ( $\beta=0.10$ ,  $p < 0.01$ , in Model 2

of Table 3.4). Finally, whether a firm is private from inception or a privatized state-owned enterprise does not seem to affect substantially the likelihood of carrying foreign relationships, beyond ties to foreign investors (in Table 3.2).

Hypothesis 2 argues for a moderating effect of a country's institutional environment on the relations advanced in Hypothesis 1. Compared with the association between firm size and/or trade association membership and its foreign relationships, it seems that the causality between a firm age and/or privatization form and its foreign relationships is more sensitive across different institutional environments. This is evidenced by statistically significant coefficients of the interaction terms between firm age and its foreign relationships in Tables 3.1, 3.3, 3.4, and 3.6 and those between privatization form and the firm's foreign linkages in Tables 3.1~3.4 and 3.6.

## **DISCUSSION AND CONCLUSION**

This study contributes to the social network literature by investigating the composition of firms' business network regarding network members and types of ties but primarily to the international business literature by exploring firms' business relationships within country contexts. In this regard we present an interesting exploration of the firms' business networks in transition economies. We sought to understand which, and how, are the main determinants of business ties to foreign companies, and how the institutional environment may moderate the effects of these determinants in transition economies. We show that some firms characteristics are important predictors of their ability to establish foreign business relationships. We argued that ties to foreign agents are both an outcome of resource needs and of the ability to attract foreign agents. That is, firms' characteristics mitigate transaction uncertainties and serve as a referral to foreign agents. We also suggested that the more developed the local institutional environment, the less important should be firms' characteristics because more developed institutional environments reduce the transaction

costs involved in exchanging with firms in transition economies. Institutionally developed environments offer guarantees for dispute resolution and transparency that do not require relying on firms' characteristics.

Which firms' characteristics drive the ability to form foreign ties? Our results indicate that the size of the firm and its membership in salient trade associations are good predictors of the ability and/or willingness to have foreign business relationships – specifically, relationships with foreign companies as investors, customers, and suppliers. These same characteristics increase the ability to hold, simultaneously, ties to various types of foreign agents. Membership in trade associations may be an indicator of both internal and external orientation. The firms' age only seems a good predictor of the ability to capture foreign clients and investors. Finally, privatized firms, possibly in virtue of the privatization process, seem to have more foreign investors than private firms from inception, but do not attract more foreign clients, financiers, or suppliers.

When studying transition economies it is important to uncover how the institutional environment influences firms' strategies, structures and business ties. Table 4, above, summarizes the results of regressions 3.1 to 3.6. Our tests of the moderating effect of the state of development of the local institutional environment reveals a fundamental aspect: an almost absolute reversal of the firms' characteristics that matter for establishing foreign business relationships. The significant coefficients of firms' size and membership in trade associations (direct effects) are positive, but the coefficients of the interaction terms with institutional development lose significance. In turn, the interaction term raises the significance of age and ownership. That is, the more institutionally developed the country, the more important become firms' age and ownership status. Age is probably a good indicator of stability, visibility, reputation and legitimacy (social factor) but it may be also indicating that older firms have ties to the government. In this regard age and ownership may share some overlap. Ownership status is important as privatized firms may have developed a political capability of

engaging with the government officials and with agencies that, even if they are no longer under the direct management of the government, are likely to replicate their previous patterns of action and maintain favoring previously state-owned firms. For example, the banks, although some may have been privatized, are probably managed by the same individuals and still favor state-owned, and predictably, the privatized firms. However, more fundamentally, it seems that the more institutionally developed the country the easier it is for private firms to establish relationships to foreign firms. Perhaps the institutional effectiveness and efficiency are the determining factors because they ease the normal functioning of private firms. The more institutionally developed the country, the less likely the government will maintain a pervasive intervention in private economic activity.

Hence, as we predicted, our tests present evidence that the state of development of the local institutions significantly affects local firms' ability to establish foreign ties. Seemingly, it is not so much a question of reducing the influence of firms' characteristics, as indicators of legitimacy, and performance, but rather the complete alteration of which factors matter. It is also likely that foreign firms may be more willing to transact with firms in countries that are more institutionally developed because more developed environments reduce the transaction costs and the information requirements. Foreign firms may now rely on institutions that are "in place" to arbitrage and resolve potential conflicts and protect, for example, intellectual property.

We also assessed whether firms' characteristics could predict the diversity of ties. Our measure of diversity is a simple count of the types of foreign relationships that a firm may hold to different types of foreign agents (investors, suppliers, customers, and financiers). We found that size and membership in trade associations are the strongest predictors of more diversified foreign relationships. Firms and governments in transition economies may consider this finding when designing strategies and public policies. For firms we have clear evidence of the benefits of participation in trade associations, for public policy we show that governments ought to

promote the creation of these associations and collaborate in exposing local firms to foreign firms.

An interesting, even if not completely surprising, result of our empirical tests is the effect of the location on firms' establishment of foreign relationships. Given that access to economic agents is important in establishing business relationships, we included the size of the city in which the firm is located and noted that generally the larger the city the more likely the firm has relationships to a variety of foreign agents. As could be expected, larger cities are more likely to have more abundant and effective institutions, offer greater exposure to potential foreign contacts, and ease establishing connections to other agents. Institutions tend to evolve faster in larger, and more cosmopolitan urban spaces than in the more rural, and traditionally more conservative spaces. Hence, even within each country we observe different degrees of transition towards a market-based system.

It is worth mentioning the relatively low, but positive, correlation between age and size. This may reflect the profound transformation that is occurring in the transition economies as they move from a centrally-planned to a market-based model. Although firms' age varies to a maximum of 194 years, the mean age of the firms in our sample is about 9 years old; which under most conditions signifies relatively young firms. Firms at this age may still suffer from a liability of adolescence. Notwithstanding, the recent economic and political evolution -- with mass privatizations of former state-owned firms -- in transition countries may be causing this low correlation and be, in fact, a natural outcome when studying firms from transition economies.

Finally, although foreign firms seem to be increasingly investing in some transition countries, particularly in Hungary and the Czech Republic, foreign firms are still more important as clients and suppliers than as investors or financiers. This may be changing as a growing number of firms seek transition countries to relocate their more labor-intensive activities. Foreign investment, however, is likely to increase rather exponentially as foreign investors see conditions of stability and effective institutions. The



mere fact that some of these countries were expected to join the European Union (which some did in 2004) may account for some inter-country variations, and will predictably induce the formation of more ties to foreign agents.

The study of firms business relationships with foreign firms is important, among other issues, because these relationships may affect the national ability to reconstruct and innovate. For example, local firms that have business relationships predominantly to other national firms are likely to engage primarily in local search behaviors (March, 1991; Levinthal & March, 1993) which hinders the ability to introduce major modifications in the technological trajectories of the country (Kogut, 1991). Conversely, if local firms have business ties that span the national boundaries it is likely they may engage in a mix of exploitation and exploration of various technological trajectories (Kogut, 1991). It is true nevertheless that, at least to some extent, firms' characteristics will determine the degree to which they are able to engage in geographical boundary spanning searches. For example, small firms are likely to be constrained to local searches (Lipparini & Sobrero, 1994), because their ties tend to be also local and less diverse, as our results highlight. Conversely, large firms are more likely to have broader ties and be able to explore locally and beyond the local boundaries (both domestically and internationally). Large firms also larger resources to commit to those searches.

While we noted that our results have some implications for public policy in terms of promotion of trade and industry associations, we may also conclude that governments really ought to commit efforts in advancing as fast as possible through the transition period. In particular, in developing the institutions that make markets more transparent and effective. For example, these may be the capital markets, the agencies for regulation of competition, the legal and judiciary system, and so forth. For firms, our results illustrate that firms characteristics matter probably because these characteristics reduce cognitive uncertainties that foreign agents may have. Firms may decrease those uncertainties in multiple ways such as joining

other firms in associations, collaborating with higher status firms, and more generally by increasing the transparency of their internal (e.g., organization, decision-making processes) and external processes (e.g., reporting systems, accessing funds in the capital market).

**Limitations and additional research avenues.** This study is based on a cross-sectional analysis and the data available permits us only to characterize the situation in a single point in time. Future research can set a longitudinal test of how the firms' business networks evolve. Moreover, the data restricts our examination to only a few firms' characteristics, while a larger set of dimensions would be desirable. Scholars have questioned the reliance on executives' recall of previous company issues. For instance, Golden (1992) suggested that retrospective reports of organizational phenomena may be inaccurate. Miller, Cardinal and Glick (1997) responded to Golden's critique by showing that retrospective reporting is a viable research methodology if the measures used are adequately reliable and valid. Retrospective reports have been commonly used in strategic management and organization theory research. Nevertheless, further research could substantially advance our understanding by using primary data specifically dedicated to support this line of research rather than publicly available data with its inherent limitations. Finally, it is also worth noting that we only examine direct ties and the types of foreign partners. Further insights might be obtained by examining the specific functional composition of the network - such as ties for R&D, specific supply components, distribution channels, and so forth. Our data does not support these analyses. An immediate research question may be, for example, how do the business networks influence R&D, innovation outcomes, specialization and business scope?

Additional research may assess whether the formation of business relationships is cumulative. Firms gradually build up their image as successful, reliable, and legitimate, which enhance their attractiveness as partners for client, supplier and/or investor business relationships. Therefore, it may be that prior affiliations provide endorsement and

increase the likelihood that the firm will be able to develop business relationships with other organizations in the future. For example, business relationships with prestigious foreign firms are likely to signal quality, managerial ability, stability, ability to fulfill deadlines, honor payments and agreements. Therefore, future research may advance our understanding on the extent to which the firms' current network of business relationships is a determinant of their future network composition. We were able to assess whether prior ties to the government (which is the case of privatized firms) facilitate foreign ties, and found that this is not substantially the case.

### CONCLUSION

The study of the composition of firms' business network with foreign firms contributes to our understanding of the idiosyncrasies of firms' interactions in transition economies. The extent to which firms in different countries seek collaborative and stable ties contributes to their innovative capabilities, to survive and prosper in unstable environments, and to expand beyond the boundaries of both the current pool of business relationships and of national political borders. Business networks are important both in centrally planned and market-based economies because they facilitate inter-firm exchanges (Mattson, 1999; Meyer, 2000). Firms in all types of economic systems procure inputs and place outputs through business ties to other firms, with whom they engage in more or less stable patterns of dyadic or networked interaction.

In transition economies firms' business network with foreign agents is important to conceptualize how firms overcome uncertainties and limitations imposed by environmental changes and severe institutional and economic transformations. In the former centrally planned economies business ties served to connect firms to different government-controlled institutions, but the government pervasiveness in economic activity is gradually decreasing as more firms and services are privatized. Business networks serve in both types of economic systems to obtain better deals and to overcome both structural and transactional market insufficiencies, possibly beyond the

exclusive effect of institutional development. Therefore, a main question may not be whether institutions matter, but rather how firms in transition economies seek to overcome institutional insufficiencies through ties to foreign firms, and whether and how the transition from a central plan to a market-based economy endeavors substantial changes in the firms' business network.

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**Table 1.** Means and standard deviations

| <b>Variable</b>                           | <b>N</b> | <b>Mean</b> | <b>Std.<br/>Dev.</b> | <b>Min</b> | <b>Max</b> |
|---|----------|-------------|----------------------|------------|------------|
| Foreign relationship<br>(FRELATIONS)      | 2978     | 0.44        | 0.50                 | 0          | 1          |
| Foreign investor<br>(FINVESTOR)           | 3082     | 0.14        | 0.35                 | 0          | 1          |
| Foreign supplier<br>(FSUPPLIER)           | 3082     | 0.33        | 0.47                 | 0          | 1          |
| Foreign customer<br>(FCLIENT)             | 3079     | 0.22        | 0.41                 | 0          | 1          |
| Foreign financial<br>(FFINANCE)           | 2945     | 0.03        | 0.17                 | 0          | 1          |
| Foreign diversity<br>(DIVERSITY)          | 2928     | 0.73        | 0.99                 | 0          | 4          |
| Firm size (SIZE)                          | 2772     | 2.11        | 1.90                 | 1          | 10         |
| Firm age (AGE)                            | 3038     | 9.41        | 14.31                | 1          | 194        |
| Privatized firm<br>(PRIVATIZED)           | 3087     | 0.30        | 0.46                 | 0          | 1          |
| Member of trade<br>association (MTA)      | 3087     | 0.23        | 0.42                 | 0          | 1          |
| Institutional<br>development (INSDEV)     | 3087     | 3.21        | 0.51                 | 1.93       | 4.10       |
| City size (CITY)                          | 3087     | 3.29        | 1.76                 | 1          | 6          |
| Industry                                  | 3059     | 0.50        | 0.50                 | 0          | 1          |
| GDP (constant 1995<br>US\$, in trillions) | 3087     | 0.08        | 0.1                  | 0.002      | 0.33       |

**Table 2.** Correlations matrix

| Variable                       | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11     | 12      | 13      | 14    |
|--------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|-------|
| 1 Foreign relationship         | 1.000   |         |         |         |         |         |         |         |         |         |        |         |         |       |
| 2 Foreign investor             | 0.469*  | 1.000   |         |         |         |         |         |         |         |         |        |         |         |       |
| 3 Foreign supplier             | 0.822*  | 0.293*  | 1.000   |         |         |         |         |         |         |         |        |         |         |       |
| 4 Foreign customer             | 0.620*  | 0.202*  | 0.519*  | 1.000   |         |         |         |         |         |         |        |         |         |       |
| 5 Foreign financial            | 0.205*  | 0.197*  | 0.139*  | 0.139*  | 1.000   |         |         |         |         |         |        |         |         |       |
| 6 Foreign diversity            | 0.861*  | 0.614*  | 0.826*  | 0.765*  | 0.369*  | 1.000   |         |         |         |         |        |         |         |       |
| 7 Firm size                    | 0.352*  | 0.228*  | 0.342*  | 0.365*  | 0.211*  | 0.436*  | 1.000   |         |         |         |        |         |         |       |
| 8 Firm age                     | 0.131*  | 0.024   | 0.135*  | 0.199*  | 0.087*  | 0.178*  | 0.324*  | 1.000   |         |         |        |         |         |       |
| 9 Privatized firm              | 0.017   | -0.064* | 0.039*  | 0.113*  | 0.014   | 0.057*  | 0.252*  | 0.228*  | 1.000   |         |        |         |         |       |
| 10 Member of trade association | 0.225*  | 0.122*  | 0.218*  | 0.205*  | 0.071*  | 0.251*  | 0.301*  | 0.151*  | 0.062*  | 1.000   |        |         |         |       |
| 11 Institutional development   | 0.131*  | 0.075*  | 0.113*  | 0.163*  | 0.065*  | 0.157*  | 0.195*  | 0.091*  | -0.095* | 0.188*  | 1.000  |         |         |       |
| 12 City size                   | -0.227* | -0.213* | -0.191* | -0.057* | -0.060* | -0.203* | -0.048* | 0.039*  | 0.191*  | -0.054* | 0.031  | 1.000   |         |       |
| 13 Industry                    | -0.050* | 0.023   | -0.061* | -0.200* | 0.005   | -0.099* | -0.164* | -0.150* | -0.280* | -0.020  | 0.126* | -0.188* | 1.000   |       |
| 14 GDP                         | -0.160* | -0.071* | -0.162* | -0.132* | -0.038* | -0.157* | -0.069* | -0.051* | 0.069*  | -0.055* | -0.017 | -0.035  | -0.061* | 1.000 |

Note: \* $p < 0.05$

**Table 3.1.** Logistic regression models: Foreign relationships

| DV: Foreign relationship           | Model 1       | Model 2       | Model 3       | Model 4       | Model 5       | Model 6       |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>CONTROL VARIABLES</b>           |               |               |               |               |               |               |
| City size                          | -0.307***     | -0.292***     | -0.302***     | -0.290***     | -0.288***     | -0.302***     |
| Industry                           | -0.465***     | -0.276***     | -0.319**      | -0.317**      | -0.312**      | -0.319**      |
| GDP                                | -0.003***     | -0.003***     | -0.004***     | -0.004***     | -0.003***     | -0.004***     |
| <b>INDEPENDENT VARIABLES</b>       |               |               |               |               |               |               |
| Firm size                          |               | 0.391***      | 0.466*        | 0.364***      | 0.366***      | 0.375***      |
| Firm age                           |               | 0.004         | 0.003         | -0.078**      | 0.003         | 0.003         |
| Privatized firm                    |               | -0.166        | -0.121        | -0.111        | -3.057***     | -0.117        |
| Member of trade association        |               | 0.747***      | 0.704***      | 0.688***      | 0.691***      | 1.024         |
| Institutional development          |               |               | 0.336*        | 0.042         | 0.055         | 0.310**       |
| <b>INTERACTIONS</b>                |               |               |               |               |               |               |
| Firm size*Inst'l development       |               |               | -0.027        |               |               |               |
| Firm age*Inst'l development        |               |               |               | 0.025**       |               |               |
| Privatized firm*Inst'l development |               |               |               |               | 0.932***      |               |
| Member of TA*Inst'l development    |               |               |               |               |               | -0.098        |
| INTERCEPT                          | 1.219***      | 0.073         | -0.915*       | 0.015         | -0.036        | -0.827*       |
| N                                  | 2952          | 2620          | 2620          | 2620          | 2620          | 2620          |
| Chi-square                         | 281.42**<br>* | 612.35**<br>* | 622.51**<br>* | 633.70**<br>* | 642.53**<br>* | 622.53**<br>* |

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.2.** Logistic regression models: Foreign investor

| DV: foreign investor               | Model 1       | Model 2       | Model 3       | Model 4       | Model 5       | Model 6       |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>CONTROL VARIABLES</b>           |               |               |               |               |               |               |
| City size                          | -0.367***     | -0.357***     | -0.362***     | -0.361***     | -0.356***     | -0.361***     |
| Industry                           | -0.115        | -0.007        | -0.027        | -0.027        | -0.029        | -0.028        |
| GDP                                | -0.002***     | -0.002**      | -0.002**      | -0.002**      | -0.002**      | -0.002**      |
| <b>INDEPENDENT VARIABLES</b>       |               |               |               |               |               |               |
| Firm size                          |               | 0.298***      | 0.278         | 0.292***      | 0.288***      | 0.292***      |
| Firm age                           |               | -0.011*       | -0.011*       | -0.035        | -0.013**      | -0.011*       |
| Privatized firm                    |               | -0.473**      | -0.456**      | -0.453**      | -2.754**      | -0.457**      |
| Member of trade association        |               | 0.389**       | 0.361**       | 0.363**       | 0.362**       | -0.035        |
| Institutional development          |               |               | 0.136         | 0.095         | 0.015         | 0.106         |
| <b>INTERACTIONS</b>                |               |               |               |               |               |               |
| Firm size*Inst'l development       |               |               | 0.004         |               |               |               |
| Firm age*Inst'l development        |               |               |               | 0.007         |               |               |
| Privatized firm*Inst'l development |               |               |               |               | 0.702*        |               |
| Member of TA*Inst'l development    |               |               |               |               |               | 0.119         |
| INTERCEPT                          | -0.567***     | -1.362***     | -1.749**      | -1.609**      | -1.356**      | -1.657**      |
| N                                  | 3054          | 2708          | 2708          | 2708          | 2708          | 2708          |
| Chi-square                         | 158.01**<br>* | 278.52**<br>* | 279.87**<br>* | 280.14**<br>* | 285.13**<br>* | 280.08**<br>* |

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.3.** Logistic regression models: Foreign suppliers

| DV: foreign supplier               | Model 1   | Model 2   | Model 3   | Model 4   | Model 5   | Model 6   |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>CONTROL VARIABLES</b>           |           |           |           |           |           |           |
| City size                          | -0.270*** | -0.249*** | -0.255*** | -0.244*** | -0.240*** | -0.257*** |
| Industry                           | -0.510*** | -0.304**  | -0.340*** | -0.339*** | -0.332**  | -0.338**  |
| GDP                                | -0.004*** | -0.004*** | -0.004*** | -0.004*** | -0.004*** | -0.004*** |
| <b>INDEPENDENT VARIABLES</b>       |           |           |           |           |           |           |
| Firm size                          |           | 0.324***  | 0.193     | 0.303***  | 0.303***  | 0.311***  |
| Firm age                           |           | 0.004     | 0.003     | -0.081**  | 0.002     | 0.003     |
| Privatized firm                    |           | -0.080    | -0.038    | -0.034    | -3.648*** | -0.036    |
| Member of trade association        |           | 0.715***  | 0.674***  | 0.663***  | 0.665***  | 1.311*    |
| Institutional development          |           |           | 0.170     | -0.002    | -0.046    | 0.299**   |
| <b>INTERACTIONS</b>                |           |           |           |           |           |           |
| Firm size*Inst'l development       |           |           | 0.036     |           |           |           |
| Firm age*Inst'l development        |           |           |           | 0.025**   |           |           |
| Privatized firm*Inst'l development |           |           |           |           | 1.133***  |           |
| Member of TA*Inst'l development    |           |           |           |           |           | -0.193    |
| INTERCEPT                          | 0.675***  | -0.419**  | -0.883    | -0.338    | -0.218    | -1.296*** |
| <b>N</b>                           | 3054      | 2708      | 2708      | 2708      | 2708      | 2708      |
| <b>Chi-square</b>                  | 248.18**  | 524.02**  | 531.57**  | 542.61**  | 561.24**  | 532.07**  |
|                                    | *         | *         | *         | *         | *         | *         |

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.4.** Logistic regression models: Foreign customers

| DV: foreign customer               | Model 1   | Model 2   | Model 3   | Model 4   | Model 5   | Model 6   |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>CONTROL VARIABLES</b>           |           |           |           |           |           |           |
| City size                          | -0.148*** | -0.124*** | -0.135*** | -0.127*** | -0.126*** | -0.135*** |
| Industry                           | -1.172*** | -1.018*** | -1.131*** | -1.124*** | -1.124*** | -1.131*** |
| GDP                                | -0.004*** | -0.004*** | -0.004*** | -0.004*** | -0.004*** | -0.004*** |
| <b>INDEPENDENT VARIABLES</b>       |           |           |           |           |           |           |
| Firm size                          |           | 0.310***  | 0.269     | 0.275***  | 0.276***  | 0.280***  |
| Firm age                           |           | 0.010**   | 0.009*    | -0.040    | 0.008*    | 0.009*    |
| Privatized firm                    |           | -0.015    | 0.087     | 0.089     | -1.655*   | 0.088     |
| Member of trade association        |           | 0.700***  | 0.583***  | 0.577***  | 0.578***  | 0.661     |
| Institutional development          |           |           | 0.670***  | 0.511***  | 0.506***  | 0.686***  |
| <b>INTERACTIONS</b>                |           |           |           |           |           |           |
| Firm size*Inst'l development       |           |           | 0.003     |           |           |           |
| Firm age*Inst'l development        |           |           |           | 0.015*    |           |           |
| Privatized firm*Inst'l development |           |           |           |           | 0.536*    |           |
| Member of TA*Inst'l development    |           |           |           |           |           | -0.023    |
| INTERCEPT                          | -0.024    | -1.230*** | -3.219    | -2.711*** | -2.698*** | -3.271*** |
| <b>N</b>                           | 3051      | 2705      | 2705      | 2705      | 2705      | 2705      |
| <b>Chi-square</b>                  | 230.38*** | 505.47*** | 546.67*** | 550.85*** | 552.40*** | 546.68*** |

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.5. Logistic regression models: Foreign finance**

| DV: foreign financial              | Model 1   | Model 2   | Model 3  | Model 4   | Model 5  | Model 6   |
|------------------------------------|-----------|-----------|----------|-----------|----------|-----------|
| <b>CONTROL VARIABLES</b>           |           |           |          |           |          |           |
| City size                          | -0.198**  | -0.157*   | -0.172*  | -0.167*   | -0.171*  | -0.170*   |
| Industry                           | -0.087    | 0.428     | 0.377    | 0.384     | 0.382    | 0.382     |
| GDP                                | -0.002*   | -0.002    | -0.002   | -0.002    | -0.002   | -0.002    |
| <b>INDEPENDENT VARIABLES</b>       |           |           |          |           |          |           |
| Firm size                          |           | 0.383***  | 0.153*** | 0.372***  | 0.373*** | 0.373***  |
| Firm age                           |           | 0.008     | 0.007    | -0.008    | 0.007    | 0.007     |
| Privatized firm                    |           | -0.418    | -0.396   | -0.384    | -0.089   | -0.391    |
| Member of trade association        |           | -0.063    | -0.140   | -0.127    | -0.131   | 0.035     |
| Institutional development          |           |           | 0.109    | 0.292     | 0.357    | 0.350     |
| <b>INTERACTIONS</b>                |           |           |          |           |          |           |
| Firm size*Inst'l development       |           |           | 0.065    |           |          |           |
| Firm age*Inst'l development        |           |           |          | 0.004     |          |           |
| Privatized firm*Inst'l development |           |           |          |           | -0.090   |           |
| Member of TA*Inst'l development    |           |           |          |           |          | -0.048    |
| INTERCEPT                          | -2.683*** | -4.189*** | -4.417** | -5.029*** | 5.243*** | -5.219*** |
| <b>N</b>                           | 2920      | 2566      | 2596     | 2596      | 2596     | 2596      |
| <b>Chi-square</b>                  | 15.07**   | 93.68***  | 95.93*** | 95.48***  | 95.44*** | 95.42***  |

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ **Table 3.6. OLS regression models: Foreign diversity**

| DV: foreign diversity              | Model 1   | Model 2   | Model 3   | Model 4   | Model 5  | Model 6   |
|------------------------------------|-----------|-----------|-----------|-----------|----------|-----------|
| <b>CONTROL VARIABLES</b>           |           |           |           |           |          |           |
| City size                          | -0.134*** | -0.108*** | -0.111*** | -0.109*** | 0.106*** | -0.111*** |
| Industry                           | -0.301*** | -0.177*** | -0.201*** | -0.199**  | 0.197*** | -0.200*** |
| GDP                                | -0.001*** | -0.001*** | -0.001*** | -0.001*** | 0.001*** | -0.001*** |
| <b>INDEPENDENT VARIABLES</b>       |           |           |           |           |          |           |
| Firm size                          |           | 0.187***  | 0.063     | 0.177***  | 0.174*** | 0.179***  |
| Firm age                           |           | 0.002     | 0.001     | -0.012    | 0.002    | 0.002     |
| Privatized firm                    |           | -0.067    | -0.043    | -0.040    | 1.028*** | -0.045    |
| Member of trade association        |           | 0.301***  | 0.273***  | 0.274***  | 0.272*** | 0.070     |
| Institutional development          |           |           | 0.078     | 0.100*    | 0.594    | 0.139**   |
| <b>INTERACTIONS</b>                |           |           |           |           |          |           |
| Firm size*Inst'l development       |           |           | 0.035     |           |          |           |
| Firm age*Inst'l development        |           |           |           | 0.004*    |          |           |
| Privatized firm*Inst'l development |           |           |           |           | 0.312*** |           |
| Member of TA*Inst'l development    |           |           |           |           |          | 0.062     |
| INTERCEPT                          | 1.439***  | 0.794***  | 0.594***  | 0.518***  | 0.693*** | 0.414**   |
| <b>N</b>                           | 2903      | 2579      | 2579      | 2579      | 2579     | 2579      |
| <b>R-square</b>                    | 9.26      | 26.69     | 27.30     | 27.34     | 27.72    | 27.23     |

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 4.** Summary of results

|                        | FR | FC | FS | FI | FF | FD |
|------------------------|----|----|----|----|----|----|
| <b>Characteristics</b> |    |    |    |    |    |    |
| Firms' size            | +  | +  | +  | +  | +  | +  |
| Firms' age             | ns | +  | ns | -  | ns | ns |
| Membership in TA       | +  | +  | +  | +  | ns | +  |
| Ownership status       | ns | ns | ns | +  | ns | ns |
| <b>Moderation</b>      |    |    |    |    |    |    |
| Firms' size            | ns | ns | ns | ns | ns | ns |
| Firms' age             | +  | +  | +  | ns | ns | +  |
| Membership in TA       | +  | ns | ns | ns | ns | ns |
| Ownership status       | ns | +  | +  | +  | ns | +  |

Notes: FR - foreign relationship, FC - foreign clients, FS - foreign suppliers, FI - foreign investors, FF - foreign financiers, FD - foreign diversity, ns - not significant.

