Training for internationalization through domestic geographical dispersion: The case of emerging market business groups

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Abstract

Traditionally created to deal with the unfriendly domestic environment, business groups (BGs) are increasingly internationalizing. However, how BGs can reconcile their strictly domestic orientation with an international dimension still remains an open question. Drawing on arguments from organizational learning, we seek to solve this puzzle in relation to the internationalization of Indian BGs. In particular, we argue that in heterogeneous domestic emerging markets BG's geographical dispersion across sub-national states provides training for internationalization. To internationalize successfully, BGs need to develop the capability of managing geographically dispersed units in institutional heterogeneous contexts. Domestic geographical dispersion would indeed help the BG dealing with different regulations, customers and infrastructures. However, there is less scope for such training as BGs become more internationally experienced, and the benefits of domestic geographical dispersions are limited by the degree of urbanization of sub-national states. We test our argument on a sample of 693 Indian BGs over the period 2001-2010.

Keywords: Internationalization, domestic geographical dispersion, business groups, sub-national heterogeneity, emerging markets.

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INTRODUCTION

Firms in emerging markets (EMs) are often said to be lacking the global experience needed to sustain an internationalization effort (e.g., Luo and Tung, 2007). Nonetheless, more and more EM firms have been recently undertaking outward FDI (OFDI) as home contexts have made internationalization opportunities possible. Despite their domestic "raison d'être" and their little experience in managing internationally dispersed units, EM business groups (BGs) have also started internationalizing. BGs constitute a typical organizational form in EMs (Xu and Meyer, in press), traditionally developed to overcome the so-called institutional voids that typically characterize EM contexts (Khanna and Palepu, 2000). In particular, BGs fill the imperfections in the market mechanisms caused by the lack of appropriate market supporting institutions (Khanna and Palepu, 2000) by providing internal capital markets, reputation, government connections, intermediation functions, labor markets, credibility and the like to affiliate firms (Leff, 1978; Ghemawat and Khanna, 1998; Guillen, 1997).

Given this theoretical puzzle, we ask how BGs can reconcile their strictly domestic orientation with an international dimension. Elements borrowed from organizational learning theory help us solving this apparently counterintuitive phenomenon. Drawing on a call for more sub-national analyses in the IB field (Nachum, 2000) and the recent attention attached to the sub-national dimension in EMs (Tan and Meyer, 2011), we focus on the domestic geographical dispersion of BGs as a critical antecedent for successful internationalization. In line with organizational learning, we argue that the level of domestic geographic dispersion of the different BG units across institutionally heterogeneous sub-national units provides the

necessary training for internationalization. However, as BGs start gaining international experience, the relevance of domestic geographical dispersion for further internationalization declines. In addition, the types of sub-national contexts where BGs primarily disperse do play a role. BGs primarily dispersed in high urbanization sub-national units would focus on developing the necessary agility to go abroad. Instead, BGs primarily dispersed in low urbanization sub-national states would need to cope with the additional cost of dealing with resource- and institution- poor contexts.

We frame our analysis in the Indian context, where BGs are critical organizations of the domestic economy and great heterogeneity exists across sub-national states, especially in terms of institutional voids. The coexistence of different definitions of BGs (e.g., Fisman and Khanna, 2004) motivates our decision to empirically focus our study on a single country. BG affiliation in India is not a legal construct, but the Centre for Monitoring of the Indian Economy (CMIE) classification – based on the number of common shareholders, company announcements and shared interests – has been previously assessed and found reliable by (Khanna and Palepu, 2000).

Following a number of studies (Chang and Hong, 2002; Kumar, Gaur and Pattnaik, in press; Tan and Meyer, 2010), we focus on the group rather than affiliate, as behind the BG there is often a single family (especially in the Indian case). Anecdotal examples refer for instance more often to the Tata group rather than to the single Tata group affiliates. Moreover, BGs provide the reputation (like the case of Tata), strategy and shared resources that make OFDI possible.

The Indian context is emblematic in terms of market dimension and heterogeneity across sub-national states. Variation across Indian states is indeed enormous under many aspects. India is the third most heterogeneous country in the world in terms of languages spoken, which in 2012 amounted to 438 (The economist, 2012). Greater heterogeneity across Indian states

exists in terms of level of urbanization, which reflects disparities in the level of economic development and institutional quality. After a period of political instability during the 1970s, extensive market reforms and policy changes were implemented, especially since the early 1990s. As a result, in recent years India has experienced a dramatic opening of its industries to international competition (Fisman and Khanna, 2004) and an increasing internationalization of domestic firms.

The paper is organized as follows. First, we present our theoretical framework and hypotheses development. Then, we illustrate the chosen methodology in terms of data collection, appointed variables and applied econometric model. Finally, we present and discuss our empirical results, and draw theoretical and managerial implications of the study.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

EMs are characterized by institutional voids that relate to the inadequacy or absence of property rights protection, poorly equipped infrastructures, absence of specialized intermediaries and under-developed and volatile capital markets (Khanna and Palepu, 2000). Institutional voids clearly represent business constrains which EM organizations have learned to cope with. Traditionally, BGs are institutionally-induced structures originating as an optimal response to the presence of institutional voids (Bhaumik, Driffield and Pal, 2010). A BG is a resource sharing organizational structure (Chang and Hong, 2002), defined as a collection of independent firms in the private sector, often controlled by a family (Chang and Hong, 2002), connected via complex and stable mechanisms such as ownership and commercial ties, equity debt and affiliation between top managers (Carney *et al.*, 2011; Cuervo-Cazurra, 2006; Luo and Chang, 2005). Benefits of BG affiliation typically relate to capital sharing, skilled employees recruiting, financing, risk bearing capability (Fisman and Khanna, 2004). The existence of BGs is therefore strongly connected with the malfunctioning

or absence of domestic institutions. Hence, BGs have traditionally filled poor domestic institutional environments.

During the past decades, several EMs have been experiencing substantial institutional changes, especially in terms of liberalization and opening of the domestic economies to opportunities abroad (Cuervo-Cazurra & Dau, 2009). New possibilities for undertaking outward FDI have therefore emerged also for EM BGs. However, on the one hand BGs are often said to be slow in reaction and not inclined to internationalization, resisting institutional changes as reforms liberalize the context (Bhaumik, Driffield and Pal, 2010). On the other, some of these BGs are clearly able to internationalize (Peng, Wang and Jiang, 2008). However, consensus lacks on whether BGs internationalize more than other organizational forms (e.g. Chittoor *et al.*, 2009; Hundley and Jacobson, 1998).

A key skill to internationalize is the organizational ability to manage geographically dispersed resources (Bartlett and Ghoshal, 1989). The institutional "closeness" that has characterized many EMs in the past has produced a typical lack of global experience in many of their domestic organizations (Luo and Tung, 2007). However, some BGs have expanded in the domestic market across sub-national states. In EMs crossing sub-national domestic borders and operating domestically is likely to be riskier and more expensive than doing it abroad, because of the presence of institutional heterogeneity (Boisot and Meyer, 2008). Thus, from an organizational learning perspective (Fiol and Lyles, 1985) EM BGs that are more geographically dispersed over different domestic sub-national states will have the opportunity to learn operating over greatly diversified contexts. This domestic training would arguably prepare and sustain subsequent BGs' internationalization. In particular, domestic geographical dispersion across a large heterogeneous market like India (the same would hold for China and similar EMs) can equip BGs with the necessary organization agility required to manage globally dispersed activities. This learning mechanism can be illustrated also by the

concept of “exaptation”. That is, some capabilities, developed as adaptive responses to specific initial environmental conditions, can be suited for new purposes after the context changes (Marquis and Huang, 2010). In this case, the ability to manage geographically dispersed activities in a closed, and resource- and institution-poor domestic environment can support the purpose of internationalization once the institutional context opens up to international opportunities. The experience matured in the difficult domestic context can be re-adapted (or exapted) to different international contexts (not necessarily other EMs) and help BGs getting the critical organizational agility to internationalize. In other words, the organizational skill would be not a purely local one, even if it certainly grew in a local context. In this perspective, domestic geographical dispersion can be regarded as an intermediate globalization overcoming the dichotomous local-global distinction (Asmussen, 2009). Thus, organizations such as BGs can actually internationalize because of the domestic context. Drawing on an economic geography perspective, one could argue that, when BG units are geographically concentrated, the possibility of interactions inside the BG increases, in terms of information sharing, communication and socialization (Benito, Lunnan and Tomassen, 2011). On the other hand, coordination becomes difficult and complexity increases with greater geographical distance (Jakobsen and Onsager, 2003; Chakrabarti, Singh and Mahmood, 2007). However, the “easier to manage” conditions of domestic geographically concentrated BGs would not provide the source of learning that geographic dispersion over a difficult context would do. Managers of different BG units would not get the experience of running complex organizational structures in different contexts, and the BG itself would clearly belong to a specific sub-national state in the EM context and would run the risk to become over-embedded in that single domestic reality. Therefore, our hypothesis will be:

H1: Highly domestic geographically dispersed BGs will internationalize to a greater extent than low domestic geographically dispersed BGs.

More and more EM organizations are going global and gaining actual international experience with the opening of the domestic institutional context. In particular, over time BGs open up to internationalization opportunities and international experience will substitute for geographical dispersion. The ability of managing geographically dispersed units in the domestic contexts will become less relevant as BGs acquire internationalization experience. The organizational complexity to be managed in an international context would lead to improved internationalization abilities (Chakrabarti, Singh and Mahmood, 2007; Calori, Johnson and Sarnin, 1994).

H2: *The positive association between BG's domestic geographical dispersion and internationalization will be negatively moderated by the level of BG's international experience.*

Vast and heterogeneous EMs such as India and China are particularly characterized by extreme disparity between different sub-national states, in terms of resources, institutional quality and available business supports. In other words, institutional voids can be more or less severe in EMs, depending on the specific sub-national context. In particular, the quality of the sub-national institutional context relates to the level of urbanization of the context (Khanna, Palepu and Sinha, 2005). The most urbanized states typically have higher income levels, better infrastructures and more possibilities to exploit the benefits of the economic liberalization (Wu, 2008). In highly urbanized areas, there are in general more and better services for the firms (such as telecommunication, financing institutions, etc). Past studies suggest the existence of urban-specific advantages in the supplying of specialized business services to the firms (Baaij, van den Bosch and Volberda, 2004; Klier and Testa, 2002). Firms located in metropolitan areas can find infrastructures to travel and communicate,

skilled people and knowledge infrastructures (Baaij, van den Bosch and Volberda, 2004). In relation to India, (Khanna, Palepu and Sinha, 2005) document that the availability of venture capital, for instance, is limited to urban areas.

The level of urbanization is strongly connected to the level of economic development and quality of institutional framework (Hoff, 2003; Henderson, 2002; Fan *et al.*, 2009) . Rural areas are usually characterized by stagnation, delayed economic growth and poor institutional framework, whereas in urbanized areas the level of economic development and quality of institutional framework is greater (Norton, 2003). Institutions can have an important impact on the urban situation and have been clearly promoting urbanization in EMs (Henderson and Wang, 2007). Improved infrastructures and emigration rules for instance may enhance growth of urban population.

The differences between urban and non-urban areas are particularly substantial in EMs, as opposed to advanced economies (Henderson, 2002). For instance, China is divided between highly urbanized areas coexisting with much more rural ones, and some authors for this reason often talk about “two Chinas” (e.g. Abebe and Masur, 2008). Internal labor emigration to urbanized areas has consequently increased, since often policies favor urban areas over the rural ones and create dramatic disparity between the two (Henderson, 2002). Policies in EMs are now more and more focused on urbanization. By selecting primarily highly urbanized sub-national states, BG units bear the cost of managing their geographically dispersed network without any extra effort in sustaining their everyday business. Thus, BGs primarily dispersed in high urbanization states would be able to devote resources for internationalization. Instead, BGs primarily dispersed in low urbanized sub-national states would need to deal with resource- and institution-poor environments, in addition to the costs of coordinating their units across space. As a result, the costs associated with the geographical dispersion of business activities in low urbanization states would increase the

BG units' overall business costs compared to BGs primarily dispersed in high urbanized locations. Thus, we distinguish resources that enable internationalization from those that can sustain domestic growth but distract from internationalization (Tan and Meyer, 2010).

One could argue that extant studies have documented the BGs ability to operate in under-serviced sub-national states (Khanna and Palepu, 2000), because by definition BGs originate to cope with institutional voids. BGs will therefore be able to face the extra costs that being located in a low urbanized state can imply. However, in these states all BGS effort would be devoted to the domestic context and no free resources would probably be available to internationalize successfully. We argue therefore that there is a trade- off when allocating effort and resources between domestic *versus* international strategies for BGs primarily dispersed in low urbanization sub-national states. Thus, the relationship between BGs domestic geographical dispersion and extent of internationalization is contingent on the degree of urbanization of the sub-national states where BG units are primarily disperse. Thus, we claim

H3a: BGs primarily dispersed in highly urbanized sub-national states will internationalize to a greater extent.

H3b: For BGs primarily dispersed in highly urbanized sub-national states, the relevance of domestic geographical dispersion will decline as the BGs gain international experience.

Figure 1 summarizes our conceptual model.

- FIGURE 1 ABOUT HERE –

METHODOLOGY

Data and Sample

We draw our dataset from three data sources. To identify Indian BGs we follow past studies in the strategy and international management fields (e.g., Chittoor et al., 2009; Elango &

Pattnaik, 2007; Gubbi et al., 2010) and rely on the *Prowess* database (2011 release) from the CMIE, which provides annual financial data for over 7,000 Indian firms. Due to erroneous – e.g. negative values of financial expenditures – and missing values the final number of observations over the period 2001-2010 is 5,824, which refers to 693 BGs. To identify Indian BGs' OFDI, we resort on the Zephyr database, from the Bureau van Dijk. Data concerning the level of urbanization of different India states are drawn instead from the Indian Census (2001, 2011), which provides for every state the percentage of population in urban areas (from a minimum of 9.8% to a maximum of 97%). Since data are available for the years 2001 and 2011 only, we have used interpolation to derive the values for the missing years.

Measures

The dependent variable, *BG internationalization*, captures the number of OFDI undertaken yearly by each BG from 2001 to 2010. OFDI include acquisitions, mergers and joint ventures, where the final stake acquired by Indian BG is greater than 10%. Thus, we exclude portfolio investments. We chose to focus on brownfield investments because greenfields are an uncommon type of investment by the Indian BGs (e.g. Bhaumik, Driffield and Pal, 2010) and exporting notably is a less complex mode of internationalization than FDI. The lack of recorded OFDI prior 2000 motivates our decision to collect data from 2001, like in (Kumar, Gaur and Pattnaik, in press). Despite the fact that our empirical sources reported no OFDI before 2000, certainly there have been some internationalization activities before that date. We however expect them to be very few, especially compared to the ones that we have in our sample.

To operationalize domestic geographical dispersion of Indian BGs, we rely on the postal index number (PIN) code[1] of the BG unit's headquarters in India. Specifically, we analyze domestic geographical dispersion at the state level, which in the Indian context bears great heterogeneity that needs to be managed. An alternative focus on metropolitan areas, for

example, would have not necessarily reflected abilities in dealing with different languages, rules, etc. We decided to focus on the HQ of the BG units, because the HQ location has usually symbolic, strategic and political relevance (Laamanen, Simula and Torstila, 2012).

Since our operationalization of corporate HQ locations is based on the year 2010, one might object that corporate HQ might be moved over time. However, the literature on relocation of HQ (e.g. Strauss-Kahn and Vives, 2009) acknowledges that HQ relocation is a rare phenomenon (Klier and Testa, 2002), even within the home country, especially when the company is large, diversified and old (Strauss-Kahn and Vives, 2009; Benito, Lunnan and Tomassen, 2011). International relocation is also unlikely with 5-6% of multinationals relocating their HQ to another country during their life (Strauss-Kahn and Vives, 2009; Voget, 2011). For instance, in the European Union (where the differences among member countries might be compared to the ones among Indian states) is rare, and in the United States, relocation within the same state is also the most common option (Baaij, van den Bosch and Volberda, 2004). This is because the relocation of the corporate HQ implies moving people and may be particularly expensive (Baaij, van den Bosch and Volberda, 2004).

The literature on HQ relocation mainly refers to advanced markets (Baaij, van den Bosch and Volberda, 2004; Strauss-Kahn and Vives, 2009). However, we have talked directly with an Indian IB researcher who confirmed that the practice of relocating corporate HQ is not common within India. Thus, we do not expect the corporate HQ in our sample to relocate substantially over time. Our measure of *domestic geographical dispersion* is the one year lag of an inverse Herfindahl index that for each Indian BG measures the dispersion across Indian states, defined as:

$$\frac{-\sum_{j=1}^{21}(U_{ij}^2)}{\sum_{i=1}^{693}U_i^2} \quad (1)$$

Where *U* is the number of units of BG *i* located in state *j* (with *i*=1, 2, …693 and *j*=1, 2, …21). Herfindahl Index measures have been applied similarly in previous research as a dispersion measure (e.g. in Khanna and Palepu, 2000; Carney *et al.*, 2011; Kumar, Gaur and Pattnaik, in press; Elango and Pattnaik, 2007).

The variable *international experience* measures the one year lag of the cumulative number of OFDI undertaken by the BG since the year 2000. To discriminate between BG primarily dispersed in high and low urbanized states we use the two binary variables *BGs mainly in HU* and *BGs mainly in LU*, respectively. In particular, the threshold to distinguish between high and low urbanized states is given by the median of the level of urbanization of the 21 Indian states considered.

As a result of the high level of economic development and better quality of the institutional framework in urbanized areas, we expect under-urbanized states to be under-represented in our sample. This is confirmed by the data: in 2000, the BG units localized in low urbanized states are 275, compared to 4,131 in high urbanized states. The figures are 240 and 5,039 respectively for the year 2010. Looking at the data distribution, the BG units in low urbanized areas tend to die out, and *vice versa* the new ones are established more and more in highly urbanized areas.

We control for a number of factors that could influence the Indian BGs' internationalization. First of all, we control for the *past BG internationalization*, operationalized as the one year lag of the dependent variable. This should protect our results from potential endogeneity problems. In line with the international process model (Johanson and Vahlne, 1977), we control for less complex internationalization modes which would enable BGs to acquire experiential learning of the international dimension. In particular, we include in the model the variable *export experience*, which measures the one year lag average level of exports of the BG. To account for the fact that the presence in several industries may overstretch managerial

resources and lead to suboptimal decisions (Kumar, Gaur and Pattnaik, in press), we also control for BG's *industrial diversification* as the one year lag of the Herfindahl index that captures the group-level dispersion on different industries (as in Kumar, Gaur and Pattnaik, in press). We control also for the BG's one year lag of *R&D investments, marketing investments* and *advertising investments* (Chang and Hong, 2002; Kumar, Gaur and Pattnaik, in press) because they capture resources that can explain internationalization, since they provide the investing organization with competitive advantages over the domestic rivals in the foreign environment (e.g., Dunning, 1992). In our model, we include then a *service industry dummy*, which takes value 1 if the BG is mainly active in service industries, 0 otherwise: Indian enterprises are indeed more often active and successful in services rather than manufacturing activities (Kochhar *et al.*, 2006). We then include the BG's *profitability,* which measures the one year lag of the profit before depreciation, interest, tax and amortization (PBDITA) divided by the BG's total income. More profitable BGs are indeed expected to be able to more easily undertake OFDI (e.g. Bhaumik, Driffield and Pal, 2010). Older and large firms may rely on greater resources. Thus, to account for age and size effect, we include the variables BG's *age*, which captures the number of years since the year of incorporation of the oldest BG unit (as in (Luo and Chang, 2005; Kumar, Gaur and Pattnaik, in press), and *size*, which is calculated as the one year lag of the total assets of the BG (as in Kumar, Gaur and Pattnaik, in press). We then account for the number of *BG units in Delhi*, since the location in the capital is common practice for many large BGs (Encarnation, 1989) and could imply political influences on the government (Khanna and Palepu, 2000) which may ease internationalization. Delhi is also the only area with urbanization level always above 90%.

Table 1 summarizes the descriptive statistics and correlations for all the variables included in the model. No variables exhibit distribution or correlation problems. The correlation between

international experience and *past BG internationalization* may potentially signal collinearity issues. To rule out collinearity, we run *ad hoc* tests as discussed in the result section.

- TABLE 1 ABOUT HERE -

Results

To handle the preponderance of zeros in our dependent variable distribution, we estimate a zero inflated negative binomial model. This type of model is a two steps Maximum Likelihood estimators that first estimates a logit regression to predict the membership of every observation to the "always zero" group; then, it estimates a truncated negative binomial model. As no zero inflated negative binomial model for panel data is available, we use a pooled cross section of all observations available in the period 2001-2010, controlling for year dummies. We also clusterize the regression on the BGs identification numbers and operationalize most of our independent and control variables in year *t*-1 to take into account BGs fixed effects and the time dimension, respectively.

To rule out potential collinearity problem, which the correlation between *past BG internationalization* and *international experience* may signal, we rely on the STATA 11 Coldiag2 routine and implement the regression collinearity diagnostic procedures proposed by (Belsley, Kuh and Welsch, 1980). The condition number of the matrix that we obtain based on our independent and control variables (i.e. 12.94) scores far below the threshold of 30 – that indicates multicollinearity problems (Belsley, Kuh and Welsch, 1980). Inspection of the single indexes reported by this Stata routine does not reveal two or more variables associated with 50 percent (or more) variance decomposition portions. Thus, we are confident on our results.

To test the improvement in model fit when adding *past BG internationalization*, we compare the zero inflated negative binomial models with and without this lagged dependent variable.

The tests indicate that adding the lagged dependent variable results in a statistically significant improvement in model, LR chi2(1) = 4.09 $p < 0.05$.

Table 2 reports the results of the zero inflated negative binomial model. Model 1 is the basic model that includes all independent and control variables. In model 2, we have then added the interaction between geographical dispersion and international experience. In Table 3, model 3 4 report the sample split between BGs with and without past internationalization; this is an alternative way to assess the interaction effect assessed by Model 2. The interpretation of interactions in non-linear models is indeed problematic, since the significance of the interaction term cannot be completely determined by the z-statistics in the regression output (Norton, Wang and Ai, 2004). For this reason we have performed a sample split and run the regression in Model 3 on those BGs that had some previous past OFDI experience (i.e. *international experience* bigger than 0) and then in Model 4 on those BGs that instead have not gained OFDI experience before the focal investment (i.e. *international experience* equal to 0). The sample split is an intuitive approach especially useful in this complex case, where the interaction terms have a problematic empirical distribution affected by zero inflation. In this way, our results are more informative than they would have been if we had reported the coefficients of Model 1 and 2 alone. In table 4 we report these estimations for the two sub-samples of BGs that are mainly dispersed in high (Models 5 and 6) and low urbanized states (Models 7 and 8).

The "inflate" section in Table 2, 3 and 4 specifies the equation that determines whether the observed count is likely to belong to the "always zero" group: we have included in this equation the variable *export experience*, since in line with the international process model (Johanson and Vahlne, 1977) it represents a less complex internationalization mode which could provide international experience useful for the subsequent OFDI. We have added also the *service industry dummy* variable, since Indian organizations that belong to the service

sector are usually more active in OFDI (Kochhar *et al.*, 2006). We have also added *BG units in Delhi*, since this could influence the capability of BGs to invest abroad – coherently with the rationale of our last two hypotheses – because it could imply political influences on the government (Khanna and Palepu, 2000). The variables in the inflation equation are in general negative and significant as expected, since they predict the probability of being an "always zero" observation.

- TABLE 2 AND TABLE 3 ABOUT HERE -

To check the actual existence of the "zero inflation" phenomenon and test whether the zero inflated negative binomial model would actually be preferable to a regular negative binomial model, we have performed the Vuong (1989) test. The test reports significant positive values (3.81 in Model 1; 3.80 Model 2; 1.58 in Model 3 and 2.19 in Model 4 (Table 2); 2.90 in Model 5; 2.93 in Model 6; 3.80 in Model 7; 3.79 in Model 8 (Table 3)), indicating that the zero inflated negative binomial model is preferable. Moreover, by running the count model diagnostic program "Countfit" in Stata 11, we have confirmed that among the possible count models that we could have chosen (i.e. poisson, negative binomial, zero inflated poisson and zero inflated negative binomial), the zero inflated negative binomial is indeed the one reporting the best fit performances. The marginal effects and incidence rate ratios calculated for Model 3 and 4 are reported in Appendix, Table A1. We report the marginal effects for the sub-samples' models, since for non-linear models including interactions they can give misleading information (Norton, Wang and Ai, 2004); we discuss further this point in the next paragraph.

The results of the zero inflated negative binomial models support all our hypotheses. In particular, in model 1 and 2 the variable *domestic geographical dispersion* shows a positive and significant coefficient ($p<0.05$ and $p<0.01$, respectively), indicating that the higher is the level of domestic geographical dispersion of the BG, the greater the extent of BG's

internationalization. H1 is therefore supported. In model 2, the interaction term between *domestic geographical dispersion* and *international experience* is negative and statistically significant ($p<0.05$). This indicates that the relationship between *domestic geographical dispersion* and the extent of internationalization is weakened when the BG gains international experience. We can see in Table 3 that this result is confirmed, since the relationship between the independent and dependent variable changes for the two sub-samples: it is not significant for BGs with international experience, whereas it is significant at the $p<0.01$ level for BGs without international experience. In the absence of an interaction we would have not had significantly different results. This indicates that international experience substitutes for domestic geographical dispersion as expected. H2 is therefore supported.

We have then performed for both BGs primarily dispersed in high and low urbanized areas the same sample split described above, i.e. between those BGs that had some previous OFDI experience (i.e. *international experience* bigger than 0) and those that instead have not gained OFDI experience before the focal investment (i.e. *international experience* equal to 0). The variable *domestic geographical dispersion* is never significant for those BGs that had some previous OFDI experience, as expected. It is on the contrary significant for the other group. For BGs primarily dispersed in both low and high urbanized sub-national states, the relevance of domestic geographical dispersion declines as the BGs gain international experience; the effect is however much stronger for high urbanized states ($p<0.01$) compared to low urbanization states ($p<0.10$); this means that for BGs mainly dispersed in the latter areas it helps more to be domestically geographically dispersed than for BGs mainly dispersed in low urbanized states, as the benefits of *domestic geographical dispersions* are limited by the degree of urbanization of the states. H3a and H3b are therefore supported. As far as the controls are concerned, our results are consistent with findings of prior studies.

As a robustness check, we have re-run our estimations by using an Ordered Probit model, which fits models of ordinal dependent variable. The actual values taken on by the dependent variable are irrelevant, except that larger values are assumed to correspond to "higher" outcomes. It is therefore a way to estimate our results, alternative to count models. Also in this case we clusterize the regression on the BGs identification numbers, operationalize our independent and control variables as one year lag and add year dummies. The results are confirmed (Table 5). Also for this model we have compared the cases with and without *past BG internationalization*, and the outcome is confirmed, with LR chi2(1) = 14.88 ($p<0.01$). The results are confirmed also when we focus on the sub-samples of BGs primarily dispersed in high and low urbanized states, which confirms our last two hypotheses; the tables of this sample split are not reported due to lack of space but they are available from the authors.

As another robustness check, we have run the same zero inflated negative binomial model removing the BGs that are mainly active in industries controlled by the government (cf. Table 6). After 1991, industrial licensing in India was abolished in many industries so that now, according to the version of the Industries (Development and Regulation) Act (1951) revised in 2010, only five industries (i.e. distillation and brewing of alcoholic drinks, cigars and cigarettes made from tobacco and manufactured tobacco substitutes, electronic aerospace and defense equipments, industrial explosives, and hazardous chemicals) remain under compulsory license, because of safety and strategic reasons. The peculiar structure of these industries may indeed influence the rationale behind BG's OFDI (Source: dipp.gov.in/English/Archive/statannual/2009-10/chapter1.2.pdf). Also in this case we compare models with and without the lagged dependent variable, and the outcome is confirmed, with LR chi2(1) = 4.10 ($p<0.05$). The results are confirmed when we focus on the sub-samples of BGs primarily dispersed in high and low urbanized states as well. Again, the

tables of this sample split are not reported due to lack of space but they are available from the authors.

DISCUSSION AND CONCLUSIONS

We started our study in first place driven by the challenge of theoretically and empirically understanding how EM BGs, with little experience in managing internationally dispersed units, can be able to internationalize. We argued theoretically (and confirmed empirically) that a key dimension that can explain EM BGs' internationalization is the level of domestic geographic dispersion of the different BG units.

By analyzing the issue of institutional voids, and especially how they not only represent an obstacle, but also a potential good training for BGs' internationalization, we contribute to the institutional based view. Moreover, by studying a context that is unconventional and institutionally very dissimilar compared to advanced markets we underline the importance of including the home institutional environment as critical dimension to explain internationalization strategies (Peng, Wang and Jiang, 2008; Wan and Hoskisson, 2003).

At the same time, while the vast majority of past institutional literature treats home contexts as homogeneous environments, we acknowledge that, especially in the case of EMs, they clearly are not so. We assume therefore a sub-national perspective, which has been previously largely neglected (Nachum, 2000) and is particularly insightful in the case of big EMs.

We also contribute to organizational learning theory by arguing that a domestic opportunity for organizational learning (i.e. overcoming domestic institutional voids) can be applied to an international context.

Our arguments are coherent also with evolutionary process theory (Johanson and Vahlne, 2009), since we argue how the BG decision to implement a domestic "surrogate" of

internationalization, can help the BG itself in subsequent undertaking of OFDI. In this way we provide a theoretical framework that is general enough to be tested in different EM contexts, depending on the home country dimension and heterogeneity. India represents an optimal empirical context in this sense, due to the interesting diversity of its home context.

Among the limitations, we do not asses the performance effects of OFDI and we do not take into account the effect of industries' geographical composition. Moreover, there is certainly more than one way to measure the level of internationalization of an organization. We use a single indicator for internationalization. A composite index (Asmussen, 2009) might be recommended for future research.

Concerning the generalizability of our study, we are aware of the fact that since we decided to empirically focus our study on a single country, mainly because of the different definitions of BGs that exist across countries (e.g., Fisman and Khanna, 2004), this might represent a limitation. Future studies should take into consideration relevant theoretical and empirical differences that a different geographic origin of the BG might imply. Finally, it would be interesting to include in the analysis the directionality of BGs' OFDI.

Endnotes

1- The PIN code is a 6 digit code introduced in India in 1972 (cf. http://www.mapsofindia.com/chhattisgarh/pincode.html; http://www.mapguide.in/pincode/, consulted on March 30th 2012).

2- There are 25 states in India, but in some of them there are no BGs present in our sample that are located there (cf. Fisman & Khanna, 2004). Thus, we construct our variable considering the following Indian states: Delhi, Haryana, Punjab, Himachal Pradesh, Jammu & Kashmir, Chandigarh; Uttar Pradesh, Uttarakhand; Rajasthan, Gujarat, Daman and Diu, Dadra & Nagar Haveli; Goa, Maharashtra, Madhya Pradesh, Chattisgarh; Andhra Pradesh, Karnataka; Tamil Nadu, Kerala, Pondicherry, Lakshadweep; Orissa, West Bengal, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Andaman & Nicobar Islands; Bihar, Jharkhand.

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Figure 1. Conceptual model

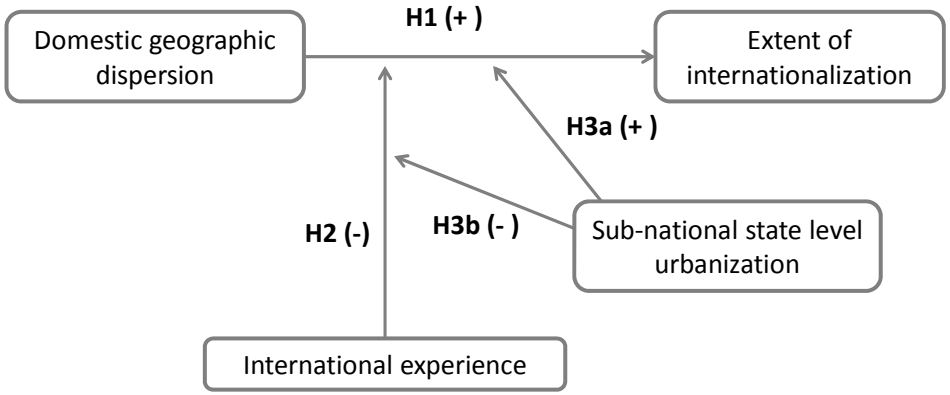

Table 1. Descriptive statistics and correlation matrix (5,824 observations)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1)BG internationalization																
2)domestic geo dispersion$_{t-1}$	0.103															
3)international experience$_{t-1}$	0.356	0.123														
4)past BG internationalization$_{t-1}$	0.308	0.093	0.623													
5)BG units in HU$_{t-1}$	.0001	-0.193	-0.007	-0.003												
6)BG units in LU$_{t-1}$	-0.031	0.019	-0.040	-0.030	-0.358											
7) service industry dummy$_{t-1}$	0.064	-0.051	0.043	0.044	-0.011	-0.100										
8)export experience$_{t-1}$	0.043	-0.071	0.093	0.049	0.007	0.014	-0.070									
9)industrial diversification$_{t-1}$	0.074	0.276	0.089	0.071	-0.022	-0.046	-0.073	-0.131								
10)R&D investments$_{t-1}$	0.004	-0.006	0.007	0.001	0.005	-0.005	-0.016	0.016	-0.005							
11)marketing investments$_{t-1}$	-0.005	-0.002	-0.003	-0.002	0.020	-0.008	0.052	-0.022	-0.014	0.006						
12)advertising investments$_{t-1}$	0.022	0.008	0.018	0.018	0.011	-0.011	0.089	-0.020	-0.045	0.002	0.111					
13)profitability$_{t-1}$	0.003	-0.020	0.004	0.003	-0.008	0.004	0.012	0.013	0.002	0.001	.0003	0.001				
14)age$_{t-1}$	0.077	0.202	0.095	0.076	0.080	-0.051	0.018	-0.150	0.294	-0.022	0.007	-0.014	0.007			
15)size$_{t-1}$	0.128	0.127	0.235	0.139	0.039	-0.021	0.104	-0.021	-0.056	-0.003	0.017	0.032	0.002	0.122		
16)BG units in Delhi$_{t-1}$	0.136	0.258	0.189	0.133	-0.502	-0.046	0.156	-0.052	0.142	-0.016	0.019	0.020	0.005	0.129	0.062	
Mean	0.052	-0.714	0.206	0.048	0.786	0.034	0.384	0.137	-0.540	0.003	0.148	0.016	-319.269	46.272	4331	1.337
S. deviation	0.311	0.268	0.962	0.304	0.410	0.180	0.486	0.196	0.267	0.037	2.964	0.164	15444	28.549	34361	3.327
Minimum values	0	-1	0	0	0	0	0	0	-1	0	0	0	-1164189	2	0.14	0
Maximum values	8	-0.111	23	8	1	1	1	1	-0.123	1.652	150.889	9.721	40124	185	128511	39

*Year dummies removed due to lack of space.

Table 2. BG domestic geographic dispersion and the extent of BG internationalization.

	Model 1			Model 2		
	Coeff.	s.e. †		Coeff.	s.e. †	
domestic geo dispersion $_{t-1}$	0.931	(0.389)	**	1.164	(0.420)	***
international experience $_{t-1}$	0.313	(0.079)	***	0.428	(0.079)	***
domestic geo dispersion x international experience $_{t-1}$				-0.511	(0.218)	**
past BG internationalization $_{t-1}$	0.331	(0.155)	**	0.322	(0.155)	**
BG mainly in HU $_{t-1}$	0.232	(0.256)		0.273	(0.262)	
BG mainly in LU $_{t-1}$	-14.050	(0.361)	***	-17.365	(0.366)	***
service industry dummy $_{t-1}$	0.391	(0.203)	*	0.369	(0.197)	*
export experience $_{t-1}$	0.405	(0.468)		0.291	(0.467)	
industrial diversification $_{t-1}$	1.267	(0.424)	***	1.214	(0.420)	***
R&D investments $_{t-1}$	0.723	(0.644)		0.736	(0.642)	
marketing investments $_{t-1}$	-0.921	(0.515)	*	-0.743	(0.367)	**
advertising investments $_{t-1}$	1.010	(1.053)		1.031	(1.081)	
profitability $_{t-1}$	0.000	(0.000)	*	0.000	(0.000)	*
age $_{t-1}$	-0.001	(0.003)		-0.001	(0.003)	
size $_{t-1}$	0.000	(0.000)	**	0.000	(0.000)	**
BG units in Delhi $_{t-1}$	0.041	(0.020)	**	0.042	(0.020)	**
dummy year 2002	0.291	(0.494)		0.286	(0.498)	
dummy year 2003	1.216	(0.507)	**	1.208	(0.512)	**
dummy year 2004	1.050	(0.483)	**	1.034	(0.489)	**
dummy year 2005	1.438	(0.504)	***	1.438	(0.508)	***
dummy year 2006	1.526	(0.518)	***	1.516	(0.521)	***
dummy year 2007	1.652	(0.492)	***	1.642	(0.491)	***
dummy year 2008	1.444	(0.493)	***	1.404	(0.491)	***
dummy year 2009	-0.385	(0.613)		-0.469	(0.595)	
dummy year 2010	0.831	(0.488)	*	0.796	(0.480)	*
constant	-3.320	(0.570)	***	-3.184	(0.576)	***
inflate						
export experience $_{t-1}$	-57.140	(30.757)	*	-54.573	(30.293)	*
service industry dummy $_{t-1}$	-1.369	(.804)	*	-1.352	(.792)	*
BG units in Delhi $_{t-1}$	-.311	(.208)		-.291	(.196)	
constant	2.335	(.683)	***	2.322	(.664)	***
Observations	5,824			5,824		
Wald chi2	3266.55		***	4619.32		***
Lnalpha	1.020	(.232)	***	.969	(.270)	***

*** p<0.01, ** p<0.05, * p<0.1. † Robust standard errors based on observations clustered on the BG identity.

Table 3. BG domestic geographic dispersion and the extent of BG internationalization – sample split

	BGs with international experience			***BGs without international experience***		
	Model 3			Model 4		
	Coeff.	s.e. †		Coeff.	s.e. †	
domestic geo dispersion $_{t-1}$	0.331	(0.581)		1.081	(0.403)	***
past BG internationalization $_{t-1}$	0.195	(0.130)				
BG mainly in HU $_{t-1}$	0.011	(0.440)		0.478	(0.317)	
BG mainly in LU $_{t-1}$				-13.173	(0.397)	***
service industry dummy $_{t-1}$	0.205	(0.457)		-0.255	(0.380)	
export experience $_{t-1}$	-0.422	(0.701)		-1.224	(0.868)	
industrial diversification $_{t-1}$	2.318	(0.854)	***	1.385	(0.486)	***
R&D investments $_{t-1}$	0.123	(3.510)		15.299	(5.757)	***
marketing investments $_{t-1}$	-0.287	(0.219)		-0.652	(0.372)	*
advertising investments $_{t-1}$	0.255	(0.273)		1.648	(0.416)	***
profitability $_{t-1}$	0.000	(0.000)		0.001	(0.000)	***
age $_{t-1}$	0.001	(0.006)		-0.001	(0.004)	
size $_{t-1}$	0.000	(0.000)	*	0.000	(0.000)	
BG units in Delhi $_{t-1}$	0.010	(0.031)		-0.020	(0.035)	
dummy year 2002	0.166	(1.632)		0.346	(0.729)	
dummy year 2003	0.820	(1.375)		1.316	(0.688)	*
dummy year 2004	0.679	(1.512)		0.793	(0.620)	
dummy year 2005	1.111	(1.532)		1.273	(0.667)	*
dummy year 2006	1.100	(1.428)		1.267	(0.622)	**
dummy year 2007	0.909	(1.457)		1.741	(0.623)	***
dummy year 2008	0.650	(1.462)		1.660	(0.648)	**
dummy year 2009	-0.505	(1.530)		-0.725	(0.884)	
dummy year 2010	0.316	(1.419)		0.641	(0.655)	
constant	-0.673	(1.651)		-1.325	(0.884)	
inflate						
export experience $_{t-1}$	-14.591	(12.817)		-4.326	(1.076)	***
service industry dummy $_{t-1}$	-1.159	(.999)		-1.018	(.467)	**
BG units in Delhi $_{t-1}$	-.179	(.109)		-.189	(.065)	***
constant	1.912	(.732)	***	2.453	(.667)	***
Observations	527			5,297		
Wald chi2	176.74		***	2286.07		***
lnalpha	-.987	(.310)	***	-.498	(1.824)	

*** p<0.01, ** p<0.05, * p<0.1.

Table 4. BG domestic geographic dispersion and the extent of BG internationalization – sample split

	BGs with international experience						*BGs without international experience*					
	BG mainly in LU			***BG mainly in HU***			***BG mainly in LU***			***BG mainly in HU***		
	Model 5			Model 6			Model 7			Model 8		
	Coeff.	s.e.		Coeff.	s.e. †		Coeff.	s.e. †		Coeff.	s.e. †	
domestic geo dispersion $_{t-1}$	-0.656	(0.857)		0.332	(0.583)		1.405	(0.757)	*	1.080	(0.399)	***
past BG internationalization $_{t-1}$	-1.294	(0.478)	***	0.195	(0.131)							
service industry dummy $_{t-1}$	-0.269	(0.580)		0.208	(0.467)		0.185	(0.880)		-0.279	(0.377)	
export experience $_{t-1}$	1.698	(2.364)		-0.419	(0.722)		-3.542	(2.871)		-1.272	(0.896)	
industrial diversification $_{t-1}$	3.533	(1.753)	**	2.318	(0.857)	***	-3.429	(1.073)	***	1.437	(0.490)	***
R&D investments $_{t-1}$	-12.454	(8.454)		0.089	(3.141)		34.740	(33.171)		16.400	(6.382)	**
marketing investments $_{t-1}$	20.516	(7.708)	***	-0.288	(0.217)		-1.741	(4.541)		-0.646	(0.399)	
advertising investments $_{t-1}$	-38.767	(24.434)		0.253	(0.276)		-8.634	(14.438)		1.740	(0.395)	***
profitability $_{t-1}$	0.002	(0.001)		0.000	(0.000)		0.001	(0.000)		0.001	(0.000)	***
age $_{t-1}$	0.019	(0.018)		0.001	(0.005)		-0.017	(0.010)	*	0.000	(0.004)	
size $_{t-1}$	-0.000	(0.000)		0.000	(0.000)	*	0.000	(0.000)	***	0.000	(0.000)	
BG units in Delhi $_{t-1}$	-0.058	(0.040)		0.010	(0.026)		-0.067	(0.096)		-0.040	(0.034)	
dummy year 2002				0.165	(1.643)		-33.003	(23.051)		0.370	(0.737)	
dummy year 2003	73.828	(49.680)		0.820	(1.375)		0.462	(0.897)		1.322	(0.691)	*
dummy year 2004	-2.526	(1.162)	**	0.678	(1.513)		0.712	(0.865)		0.777	(0.621)	
dummy year 2005	-4.178	(1.336)	***	1.109	(1.525)		-2.045	(1.771)		1.310	(0.687)	*
dummy year 2006	-3.921	(1.397)	***	1.098	(1.429)		0.125	(1.123)		1.287	(0.625)	**
dummy year 2007	-3.821	(1.287)	***	0.908	(1.454)		0.670	(0.860)		1.743	(0.627)	***
dummy year 2008	-4.217	(1.305)	***	0.648	(1.460)		-0.661	(1.409)		1.707	(0.664)	**
dummy year 2009	-6.556	(1.728)	***	-0.506	(1.528)		-1.084	(1.400)		-0.734	(0.882)	
dummy year 2010	-6.576	(1.645)	***	0.315	(1.417)		-1.366	(1.569)		0.641	(0.657)	
constant	5.278	(2.033)	***	-0.666	(1.631)		-1.887	(1.616)		-0.881	(0.886)	
inflate												
export experience $_{t-1}$	-6.866	(4.416)		-14.616	(12.963)		-9.641	(5.171)	*	-4.270	(1.127)	***
service industry dummy $_{t-1}$	-1.687	(1.823)		-1.157	(1.013)		-.433	(2.087)		-1.020	(1.127)	**
BG units in Delhi $_{t-1}$	-.253	(.127)	**	-.178	(.105)	*	-.730	(.385)	*	-.165	(.054)	***
constant	3.351	(1.522)	**	1.911	(.740)	**	5.214	(1.131)	***	3.209	(.788)	***
observations[§]	116[§]			527			1,131			5,101		
Wald chi2	34.70		**	175.46		***	332.54		***	69.11		***
Lnalpha	-18.694	(944.038)		-.984	(.952)		-28.274	(.338)	***	-.534	(2.252)	

*** p<0.01, ** p<0.05, * p<0.1. † Robust standard errors based on observations clustered on the BG identity. [§] The total number of observations in this table does not add up to 5,824, because the regressions do not include those BGs that are *equally* dispersed in high and low urbanized states.

Table 5. Robustness check: Ordered Probit model.

	BGs with international experience			***BGs without international experience***		
	Coeff.	Model 9 s.e. †		Coeff.	Model 10 s.e. †	
domestic geo dispersion $_{t-1}$	0.566	(0.347)		0.517	(0.175)	***
past BG internationalization $_{t-1}$	0.261	(0.066)	***			
BG mainly in HU	0.091	(0.246)		0.189	(0.128)	
BG mainly in LU				-3.441	(0.141)	***
service industry dummy $_{t-1}$	0.408	(0.178)	**	0.241	(0.086)	***
export experience $_{t-1}$	0.702	(0.377)	*	0.902	(0.193)	***
industrial diversification $_{t-1}$	1.339	(0.489)	***	0.589	(0.185)	***
R&D investments $_{t-1}$	1.439	(2.190)		0.351	(0.304)	
marketing investments $_{t-1}$	-0.161	(0.127)		-0.260	(0.255)	
advertising investments $_{t-1}$	0.066	(0.233)		0.320	(0.180)	*
profitability $_{t-1}$	0.000	(0.000)		0.000	(0.000)	*
age $_{t-1}$	0.001	(0.003)		-0.001	(0.002)	
size $_{t-1}$	0.000	(0.000)		0.000	(0.000)	***
BG units in Delhi $_{t-1}$	0.028	(0.016)	*	0.039	(0.015)	***
dummy year 2002	-0.174	(0.860)		0.081	(0.235)	
dummy year 2003	0.614	(0.743)		0.411	(0.206)	**
dummy year 2004	0.228	(0.786)		0.457	(0.201)	**
dummy year 2005	0.652	(0.767)		0.466	(0.208)	**
dummy year 2006	0.542	(0.728)		0.530	(0.204)	***
dummy year 2007	0.541	(0.734)		0.672	(0.197)	***
dummy year 2008	0.313	(0.743)		0.621	(0.204)	***
dummy year 2009	-0.368	(0.766)		-0.231	(0.305)	
dummy year 2010	0.295	(0.731)		0.334	(0.222)	
cut1	0.949	(0.857)		2.181	(0.251)	***
cut2	1.785	(0.853)	**	2.793	(0.257)	***
cut3	2.379	(0.865)	***	3.233	(0.276)	***
cut4	2.919	(0.879)	***	3.875	(0.393)	***
cut5	3.192	(0.930)	***			
cut6	3.470	(0.832)	***			
observations	527			5,297		
Wald chi2	109.29		***	1602.80		***

*** p<0.01, ** p<0.05, * p<0.1

Table 6. Robustness check: zero inflated negative binomial model, without strategically controlled industries.

	BGs with international experience			*BGs without international experience*		
	Model 9			Model 10		
	Coeff.	s.e. †		Coeff.	s.e. †	
domestic geo dispersion $_{t-1}$	0.357	(0.595)		1.029	(0.429)	**
past BG internationalization $_{t-1}$	0.203	(0.165)				
BG mainly in HU	-0.022	(0.433)		0.447	(0.326)	
BG mainly in LU				-14.559	(0.408)	***
service industry dummy $_{t-1}$	0.247	(0.634)		-0.223	(0.388)	
export experience $_{t-1}$	-0.347	(1.013)		-1.174	(0.889)	
industrial diversification $_{t-1}$	2.278	(0.873)	***	1.433	(0.486)	***
R&D investments $_{t-1}$	0.176	(4.514)		15.427	(5.623)	***
marketing investments $_{t-1}$	-0.312	(0.258)		-0.652	(0.368)	*
advertising investments $_{t-1}$	0.233	(0.275)		1.584	(0.454)	***
profitability $_{t-1}$	0.000	(0.000)		0.001	(0.000)	***
age $_{t-1}$	0.001	(0.006)		-0.001	(0.004)	
size $_{t-1}$	0.000	(0.000)	**	0.000	(0.000)	
BG units in Delhi $_{t-1}$	0.010	(0.037)		-0.025	(0.034)	
dummy year 2002	0.155	(1.627)		0.325	(0.721)	
dummy year 2003	0.830	(1.384)		1.214	(0.673)	*
dummy year 2004	0.736	(1.512)		0.774	(0.616)	
dummy year 2005	1.073	(1.536)		1.242	(0.658)	*
dummy year 2006	1.094	(1.429)		1.184	(0.621)	*
dummy year 2007	0.911	(1.464)		1.697	(0.619)	***
dummy year 2008	0.642	(1.465)		1.606	(0.638)	**
dummy year 2009	-0.512	(1.533)		-0.767	(0.882)	
dummy year 2010	0.266	(1.433)		0.595	(0.647)	
constant	-0.723	(1.806)		-1.313	(0.987)	
inflate						
export experience $_{t-1}$	-50.391	(28.804)	*	-48.339	(28.541)	*
service industry dummy $_{t-1}$	-1.164	(.825)		-1.150	(.815)	
BG units in Delhi $_{t-1}$	-.328	(.185)	*	-.309	(.180)	*
constant	2.230	(.650)	***	2.222	(.630)	***
observations	521			5,075		
Wald chi2	3269.07		***	3396.47		***
Lnalpha	1.015	(.232)	***	.964	(.261)	***

*** p<0.01, ** p<0.05, * p<0.1 † Robust standard errors based on observations clustered on the BG identity.

Appendix

Table A1. Zero inflated negative binomial: marginal effects and incidence-rate ratios (IRR)

	Model 2		Model 4	
	Marginal effects [a]	IRR	Marginal effects [a]	IRR
domestic geo dispersion $_{t-1}$	0.056	1.392	0.003	2.949
past BG internationalization $_{t-1}$	0.033	1.215		
BG mainly in HU	0.002	1.011	0.001	1.613
BG mainly in LU			-0.039	1.90E-05
service industry dummy $_{t-1}$	0.051	1.228	0.002	0.775
export experience $_{t-1}$	0.130	0.656	0.008	0.294
industrial diversification $_{t-1}$	0.393	10.153	0.004	3.995
R&D investments $_{t-1}$	0.021	1.130	0.046	4409462
marketing investments $_{t-1}$	-0.049	0.750	-0.002	0.521
advertising investments $_{t-1}$	0.043	1.290	0.005	5.199
profitability $_{t-1}$	2.56E-05	1.000	3.22E-06	1.001
age $_{t-1}$	1.85E-04	1.001	1.56E-06	0.999
size $_{t-1}$	7.70E-07	1.000	1.83E-08	1.000
BG units in Delhi $_{t-1}$	0.004	1.010	4.36E-04	0.980

[a] All continuous variables at mean values and “year” is at the benchmark value (i.e. 2001).