When in Rome, do as the Romans do: Dealing with corruption after entry

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Abstract
Research on corruption and FDI has extensively studied the influence of host country corruption, and the distance between home and host corruption (corruption distance) on entry decisions and entry modes, but overlooked how multinational enterprises organize after entry. To advance this research we investigate how corruption distance influences foreign subsidiary autonomy. Drawing on the institutional perspective, our theoretical framework proposes and our empirical analysis confirms that majority-owned foreign subsidiaries enjoy greater autonomy for high levels of corruption distance to gain local legitimacy and overcome the liability of foreignness. However, the ultimate influence of the external isomorphic pressure associated to corruption distance on subsidiary autonomy critically depends on the type of internal isomorphic pressure considered. The tension between internal and external isomorphism is stronger when the former relies on HQ-subsidiary socialization. Instead, the internal isomorphic pressure based on HQ-subsidiary dependence strengths the external isomorphic pressure associated to corruption distance.

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Abstract

Research on corruption and FDI has extensively studied the influence of host country corruption, and the distance between home and host corruption (*corruption distance*) on entry decisions and entry modes, but overlooked how multinational enterprises organize after entry. To advance this research we investigate how corruption distance influences foreign subsidiary autonomy. Drawing on the institutional perspective, our theoretical framework proposes and our empirical analysis confirms that majority-owned foreign subsidiaries enjoy greater autonomy for high levels of corruption distance to gain local legitimacy and overcome the liability of foreignness. However, the ultimate influence of the external isomorphic pressure associated to corruption distance on subsidiary autonomy critically depends on the type of internal isomorphic pressure considered. The tension between internal and external isomorphism is stronger when the former relies on HQ-subsidiary socialization. Instead, the internal isomorphic pressure based on HQ-subsidiary dependence strengths the external isomorphic pressure associated to corruption distance.

**Key words:** Subsidiary autonomy; Corruption distance; Socialization; Resource dependency; Institutional duality.
INTRODUCTION

A number of studies have looked at the association between host country corruption—the absence of public power for private gains—and foreign direct investments (FDI). These studies have mainly focused on the level of host corruption in relation to FDI inflows and debated on its impact on entry decisions (Mauro, 1995; Smarzynska & Wei, 2009; Wei, 2000a; Wei, 2000b). In this debate an increasingly pivot role is played by the distance between home and host levels of corruption (Habib & Zurawicki, 2002; Voyer & Beamish, 2004). Corruption distance can be seen as administrative distance creating institutional liability for foreign investors (Ghemawat, 2001) since corrupt practices are a component of local business and administrative customs (Habib & Zurawicki, 2002). More recently, a parallel literature on the impact of corruption distance on entry modes has developed (Davis, Desai, & Francis, 2000; Duanmu, 2011; Rodriguez, Uhlenbruck, & Eden, 2005; Smarzynska & Wei, 2009).

This research has extended widely our knowledge about the relationship between corruption and entry-related decisions. However, how multinational enterprises (MNEs) organize to respond to corruption after entry remains still largely unexplored. This comes as a surprise given that MNEs more often are induced to enter host countries in relation to their strategic relevance despite the host institutional framework as a result of the increasing competitive pressure. Recent studies have looked at after-entry strategic responses in relation to the general host institutional framework. In particular, Feinberg and Gupta (2009) focus on how a weak legal institutional framework of the host country relates to MNE’s operational integration after entry. Santangelo and Meyer (2011) look at strategy changes after entry in response to host institutional voids and uncertainty. In relation to corruption, work looking at MNE’s strategic choices after entry is very scant despite the relevant managerial and policy implications. Luo’s (2011) study analyzes the influence of host corruption levels on MNEs’ operational decisions after entry, such
as subunit’s investment commitment and export market orientation. Overall, “although it seems reasonable that firms would implement strategies to deal with corruption, this has not been easy to establish” (Rodriguez, Siegel, Hillman, & Eden, 2006: 736) and this area of research continues to be among the most elusive.

We contribute to address this research gap by looking at the influence of corruption distance on a specific MNE strategic organizational choice after entry that is the allocation of decision-making authority within the HQ-subsidiary relationship. Following the definition of institutional distance (Kostova, 1996; Salomon & Wu, 2012), we define corruption distance as the extent of similarity or difference between a host country and a home country in control of corruption. The level of decision-making authority held by a foreign subsidiary is a measure of its degree of autonomy within the HQ-subsidiary relationship and bears critical strategic implications for the whole MNE (for reviews, see Egelhoff, 1988; Paterson & Brock, 2002; Young & Tavares, 2004). The critical role of subsidiary autonomy to understand subsidiary contribution to MNE’s overall creation and ability to engage intra-MNE knowledge transfer has been documented (Ghoshal & Nohria, 1989; Gupta & Govindarajan, 1991; Gupta & Govindarajan, 2000; Noorderhaven & Harzing, 2009; Rabbiosi, 2011).

Drawing on extant research on corruption (Rodriguez, et al., 2005; Uhlenbruck, Rodriguez, Doh, & Eden, 2006) and institutional theory (Kostova & Zaheer, 1999), we posit that, at the subsidiary level, corruption distance creates an external pressure for isomorphism with the local environment, which the MNE would respond to by granting more autonomy to local subsidiaries in order to gain local legitimacy and overcome the liability of foreignness. However, organizations such as MNEs tend to be complex social systems and foreign subsidiaries confront institutional pressures also from within their MNEs (e.g., Bartlett & Ghoshal, 1989). For instance they need to conform to organization-based structures and practices which are formulated in the
MNE’s home context and elaborated within the MNE’s relational context (Kostova & Roth, 2002). Accordingly, we suggest that the MNE’s organizational response (e.g. decision about subsidiary autonomy) to external pressure (e.g. corruption distance) varies with the complexity of the internal pressure.

Based on Kostova and Roth’s (2002) definition of the MNE relational context between a parent and a subsidiary, we unpack the internal isomorphic pressure into two forces: the degree of socialization between HQ and subsidiary and the subsidiary’s control of critical resources. We expect the degree of socialization between the HQ and the focal subsidiary to negatively moderate the positive relationship between corruption distance and subsidiary autonomy. This is related to the fact that HQ-subsidiary socialization concerns trust and identity with norms and rules transferred by the parent, which favors value-sharing, and mimetic and normative conformity (Kostova & Roth, 2002; Kostova & Zaheer, 1999). Conversely, we posit that subsidiary’s control of critical resources positively moderates the (positive) relationship between corruption distance and subsidiary autonomy. Traditionally, the internal isomorphic pressure related to HQ-subsidiary dependence concerns subsidiaries hierarchical dependence on the support of their parents and relates to coercive conformity. However, subsidiaries have the opportunities to reverse the direction of this dependence through the control of critical resources (Bouquet & Birkinshaw, 2008; Pfeffer & Salancik, 1978).

We frame our analysis in relation to allocation of decision-making authority to majority-owned subsidiaries as the tension associated to institutional duality is arguably more compelling for these than for less involving ownership modes. In particular, we look at the autonomy of foreign subsidiaries of Italian MNEs, which provide an appropriate empirical focus because Italy is neither at the forefront of control of corruption nor at the bottom among countries, but roughly in the middle of world country ranking (Transparency International, 2012).
Our study contributes to two streams of research. We offer two contributions to the literature looking at the relationship between corruption and FDI. First, these studies have primarily focused on MNEs’ entry and entry-mode decisions (e.g., Habib & Zurawicki, 2002; Smarzynska & Wei, 2009; Uhlenbruck, et al., 2006), and never jointly consider corruption and MNE organizational structure after entry. Second, we complement this stream of research looking at the multifaceted nature of internal isomorphic pressure, which may weaken or strengthen the external isomorphic pressure associated to corruption distance. We also contribute to research on allocation of decision-making authority within the MNE. Studies in this tradition have primarily linked subsidiary autonomy to internal drivers (Cray, 1984; Egelhoff, 1984; Garnier, 1982a; Gates & Egelhoff, 1986; Hedlund, 1980; Taggart & Hood, 1999) and considered specific external drivers limitedly to knowledge sourcing opportunities (Ambos, Asakawa, & Ambos, 2011; Andersson & Forsgren, 1996).

THEORETICAL FRAMEWORK

We focus on public corruption and define it as the exercise of public power for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests (Kaufmann, Kraay, & Mastruzzi, 2010).

Institutional theory provides a theoretical explanation for MNE organizational responses to government actions (Westney, 1993). A major tenet of the institutional perspective is that organizations sharing the same environment will become "isomorphic" with each other (DiMaggio & Powel, 1983). Legitimacy motives drive organizational conformity to institutional pressures as the acceptance of the organization by its environment (i.e. organizational legitimacy) is vital for organizational survival and success (Hannan & Freeman, 1977; Meyer & Rowan, 1977).
However, MNEs consist of a network of subsidiaries located in different national institutional environments and, as a result, face unique institutional complexity as many elements of the institutional environment are country-specific (Rosenzweig & Singh, 1991). The achievement of organizational legitimacy for the MNE involves the establishment and maintenance of legitimacy for the MNE as a whole, as well as at the level of the MNE subunits operating in different countries (Kostova & Zaheer, 1999). The institutional duality the MNE as a whole faces is the source of the tension between local adaptation and global integration (Rosenzweig & Singh, 1991; Westney, 1993). MNEs need to adopt local practices in order to achieve legitimacy in all their institutional contexts, and, at the same time, need to utilize organizational practices on a worldwide basis in order to sustain their competitive advantage. We follow extant research and focus on the subsidiary level (Hillman & Wan, 2005; Kostova & Roth, 2002; Kostova & Zaheer, 1999). At this level the institutional duality concerns the institutional profile of the host country where the subsidiary is located, and the relational context within its MNE.

The host country institutional profile relates to a set of regulatory, cognitive and normative institutions (Scott, 1995). Foreign subsidiaries face disadvantages relative to their liability of foreignness the greater the institutional distance between home and host countries (Hymer, 1960; Zaheer, 1995). The adoption of a strategy of local isomorphism can limit the subsidiary’s exposure to this liability and eases the achievement of local legitimacy (Kostova & Zaheer, 1999). In particular, foreign subsidiaries seek to adopt strategies, structures and practices that conform to the local institutional environment (e.g., Dawar & Chattopadhay, 2002; Kostova, 1999). That is, “subsidiaries tend to take on the characteristics of other organizations in the local environment” (Rosenzweig & Singh, 1991, p. 345). The resulting endorsement and legitimization
of the subsidiary by the relevant local actors enables access to valuable resources (DiMaggio & Powel, 1983).

In addition to the local isomorphic pressure to achieve external legitimacy, within the MNE relational context subsidiaries confront with internal isomorphic pressures to achieve internal legitimacy (Westney, 1993). Subsidiaries need to adopt organization structures, policies and practices institutionalized within the MNE and formulated in the MNE’s home institutional context (Kostova & Roth, 2002). Thus, subsidiaries are influenced by the institutional environment of the home country, but such influence is indirect as is channeled and filtered through the parent organization. In this perspective, the relational context linking a foreign subsidiary to its parent is critical because it shapes how home country’s influences are interpreted and perceived by the foreign subsidiary, and ultimately subsidiary variation in the adoption of transferred practices. In particular, Kostova and Roth (2002) defines the HQ-subsidiary relational context in terms of trust, identify and dependence.

Trust concerns the belief that the parent acts honestly without taking excessive advantage and relates to the perceived reliability of the parent by the subsidiary. Identity is about the employees’ sense of belonging to an organization and their strong belief in and acceptance of the values and goals of the organization (Kagan, 1958; Kostova & Roth, 2002; O’Reilly & Chatman, 1986). Subsidiaries that trust and identify with the parent are likely to share the values and beliefs of the parent embodied in the practice that is being transferred, and to implement and internalize practices transferred from the parent (Kostova & Roth, 2002; Szulanski, 1996). As a result, in relational contexts characterized by trust and identity the internal isomorphic pressure subsidiaries confront with relies on mimetic and normative process. That is, subsidiaries adopt the patterns of successful organizations (i.e. the HQs) to minimize uncertainty and those patterns
considered appropriate within the HQ-subsidiary relational context (DiMaggio & Powel, 1983; Meyer & Rowan, 1977; Scott, 1987).

Traditionally, dependence relates to the idea that the subsidiary relies on the support of the parent for providing major resources as a result of the hierarchical nature of the HQ-subsidiary relationship. In this case, organizational patterns are imposed by a powerful actor (i.e. the HQs) and conformity is coercive in nature (DiMaggio & Powel, 1983) as resource dependence is critical for organizational survival (Meyer & Zucker, 1988; Rosenzweig & Singh, 1991). As a result, resource dependence eases the implementation of transferred practices at the subunit, where managers, however, may not fully internalize the practice (Kostova & Roth, 2002). Indeed, subsidiary managers continuously seek opportunities to reverse the direction of dependence through the control of critical resources and eventually impose conformity to subsidiary’s organizational patterns to the parent (for a review see Bouquet & Birkinshaw, 2008). Power imbalances in the HQ-subsidiary relationship can modify the allocation of decision making authority within the HQ-subsidiary dyad (Bouquet & Birkinshaw, 2008).

The complexity of the HQ-subsidiary relational context exposes MNE’s subunits to different internal isomorphic pressures depending on the prevailing characteristics of this context (Kostova & Roth, 2002). Relational contexts characterized by trust and identity will exert an isomorphic pressure based on socialization. Instead, relational contexts characterized by power imbalances in HQ-subsidiary relations will exert an isomorphic pressures based on dependence. Depending on the characteristics of the HQ-subsidiary relational context, the legitimacy requirements of the host country institutional profile and MNE relational context may or may not conflict with each other. External isomorphic pressure gains great relevance in relation to corruption distance as different government corruption levels are greatly demanding in terms of local organizational legitimacy (Kostova & Zaheer, 1999), and are likely to influence after-entry
MNE’s strategies such as allocation of decision-making authority within the HQ-subsidiary dyad. However, the ultimate outcome of the external isomorphic pressure associated to corruption distance on subsidiary autonomy in relation to different types of internal isomorphic pressures is still unknown.

**CORRUPTION AND ALLOCATION OF DECISION-MAKING AUTHORITY: HYPOTHESES DEVELOPMENT**

**Corruption distance**

Since institutions and institutional frameworks (e.g., legal, political, and administrative systems; social norms) tend to be internationally immobile (Mudambi & Navarra, 2002), foreign subsidiaries must adapt their organization to the local institutions to take full advantage of the opportunities in the local context (Meyer, Mudambi, & Narula, 2011). However, corruption distance is likely to be associated to differences in business culture, norms and codes of conduct (Salomon & Wu, 2012). Thus, the greater the corruption distance, the less familiar to the foreign subsidiaries the host environment will be. A great corruption distance increases the liability of foreignness (Kostova & Zaheer, 1999), which manifests in additional coordination, transaction, legal and other costs (Salomon & Martin, 2008). To reduce these costs, firms can conform to local business practices and adopt isomorphic strategies (Miller & Eden, 2006; Salomon & Wu, 2012; Zaheer, 1995). Local conformity and legitimacy reduce the operational costs associated to an institutionally distant environment (Kostova & Roth, 2002). In particular, because the adherence or not to corrupted behaviors is partly cultural in nature (Treisman, 2000), specific knowledge and local embeddedness are likely to be needed in order to understand local norms and practices to ultimately conform to the local environment.
The complexity of the local environment in which the subsidiary is located increases the importance of local knowledge and, as a result, the subsidiary must be allowed greater influence in decision making (Nohria & Ghoshal, 1994). A decentralized decision system and the consequent delegation of decisions to the focal subsidiary enable greater alignment with local legitimacy requirements than centralization of decision-making authority does. Subsidiary autonomy favors the adoption of a strategy of local isomorphism that can limit the subsidiary’s exposure to the liability of foreignness and eases the achievement of local legitimacy (Kostova & Zaheer, 1999; Zaheer, 1995). More autonomous foreign subsidiaries can more easily seek to adopt strategies, structures and practices that conform to the local institutional environment (e.g., Dawar & Chattopadhay, 2002; Kostova, 1999). In particular, subsidiary autonomy favors local responsiveness (Bartlett & Ghoshal, 1989) and brings about a set of perceived potential benefits associated with the greater operative advantages that subsidiaries gain from being able to conform to the local expectations. Specifically, autonomous subsidiaries can establish more freely local relationships with local partners and institutions, and grasps tacit knowledge of the host country environment (Ambos, et al., 2011; Andersson & Forsgren, 1996), which ultimately eases local adaptation and recognition. The resulting endorsement and legitimization of the subsidiary by the relevant local actors enables access to valuable resources (DiMaggio & Powel, 1983). Instead, centralization of decision-making hampers local knowledge acquisition and limits legitimacy in the host country. Thus, we pose:

Hypothesis 1: The greater the corruption distance between the host and home country, the higher the foreign subsidiary autonomy.
The moderating effects of internal isomorphic pressures

Socialization

HQ-subsidiary relationships parallel principal agent relationships (Gupta & Govindarajan, 1991; Jensen & Meckling, 1976). To maintain and sustain a global competitive advantage, the HQs (the principal) needs to be able to benefit from a differentiated network of geographical dispersed and internally differentiated subsidiaries (the agent) (Bartlett & Ghoshal, 1989; Ghoshal & Bartlett, 1990; Gupta & Govindarajan, 1991). However, the local interests of each subsidiary may not always be aligned with those of the HQs and this possibility prevents the HQs to relinquish all decision-rights to the focal subsidiary.

A large literature has proposed that the creation of shared values is the solution to the problem of control (e.g., Nohria & Ghoshal, 1994). Internalization of these values by the actors in a social system guarantees the alignment of the principal and agent’s interests by building trust and identity between parties. Value-sharing ensures that organizational members trust one another based on the mutual expectation that they all work for collective goals, and self-interest will not be pursued by any organizational member (Tsai & Ghoshal, 1998). In addition, value-sharing among organizational members eases individuals’ identification with an organization and promotes actions of the organizational members congruent with organizational interests (Vora, Kostova, & Roth, 2007).

Many different intermediate-level organizational mechanisms have been suggested to facilitate common norms and values, within the MNE (e.g., Bartlett & Ghoshal, 1989; Gupta & Govindarajan, 1991; Martinez & Jarillo, 1989). The most simple and effective of these intermediate-level mechanisms rely on direct communication and transfer of personnel within the organization (Edström & Galbraith, 1977; Galbraith, 1973). On the one hand, teamwork and personnel transfer make subsidiary’s norms and practices more observable to the parent
and evident the differences between ways of acting locally and globally. On the other, these intermediate-level mechanisms increase coordination, and stimulate interests’ convergence and norm sharing across the HQs and the focal subsidiary’s personnel (Gupta & Govindarajan, 2000; Tsai & Ghoshal, 1998). The extensive socialization associated with these coordination mechanisms eases trust-building and identification with the HQs by the focal subsidiary (Nohria & Ghoshal, 1994), that ultimately secure legitimacy within the HQ-subsidiary dyad (Bouquet & Birkinshaw, 2008).

However, subsidiaries confront with forces for establishing legitimacy both internally and externally (i.e., institutional duality). The internal and external legitimacy requirements may differ substantially and conflict with each other. We expect the requirements associated to a great corruption distance to conflict with internal socialization requirements. Since teamwork and personnel transfers between the HQ and a focal subsidiary would enforce value-sharing by easing trust and identity, the internal isomorphic pressure based on HQ-subsidiary socialization is likely to weaken the influence of corruption distance on subsidiary autonomy. Subsidiaries will perceive the organization structures, policies and practices transferred by the parent as efficient and, as a result, engage in internal mimetic and normative conformity (Kostova & Roth, 2002; Tsai & Ghoshal, 1998). Thus, the greater the degree of socialization between a parent and a focal subsidiary, the more the pressure for conformity with the host country institutional profile will be challenged by the internal consistency and unity of the HQ-subsidiary relational context. We expect this tension between the external isomorphic pressure associated to corruption distance and internal isomorphic pressure associated to HQ-subsidiary socialization to result in a reduction of the allocation of decision-making authority to the subsidiary. Thus, we pose:
**Hypothesis 2:** The greater the socialization (through teamwork and personnel transfer) between a subsidiary and its parent, the lower the (positive) relationship between corruption distance and subsidiary autonomy.

**Resources control**

The hierarchical nature of the HQ-subsidiary relationship requires the focal subsidiary to achieve legitimacy by the HQs for continuing access to organizational resources (Pfeffer & Salancik, 1978). The more dependent an organization (the subsidiary) is on a legitimating actor (the HQs), the more it will comply and be subject to coercive conformity (Meyer & Zucker, 1988; Rosenzweig & Singh, 1991). In particular, foreign subsidiaries will strive to secure corporate “ownership” advantage to compensate for the cost of operating in foreign markets. As a result, foreign subsidiaries implement HQs organizational structures, policies and practices, but are generally inclined to interpret a parent's mandate as coercive, even when it is not (Kostova & Roth, 2002; Westney, 1993).

In relation to subsidiary autonomy, Ghoshal and Nohria (1989) acknowledge that centralization of decision-making authority will be greater when subsidiary dependence on HQs is high. Subsidiary dependence on the support of the HQs limits subsidiary rights to pursue interests that may not necessarily be aligned to HQs interests. However, subsidiaries have sources of influence and power despite their hierarchical dependence (Bouquet & Birkinshaw, 2008). The conceptualization of the MNE as an inter-organizational network (Ghoshal & Bartlett, 1990) views the subordinate entities as differentiated in terms of both the complexity of their environments and levels of resources. In this perspective, subsidiaries will rely on their local environments to acquire resources that are unique and valuable (e.g., Birkinshaw, 1997; Rugman & Verbeke, 2001). These resources are critical to the extent that they are important or special to those from which power is being sought, and are scarce (Pfeffer & Salancik, 1978). Extant
literature has documented the quick obsolescence of market- or efficiency-related resources, and the long-term relevance of subsidiary world mandates as well as of strategic knowledge assets such as the supplying of specialized knowledge, technologies and competences that have strategic ramifications for the global firm as a whole (Birkinshaw, 2000; Birkinshaw, Hood, & Jonsson, 1998; Rugman & Verbeke, 2001).

Control of critical resources is an important source of subsidiary power and autonomy as it may reverse the direction of dependence (Andersson, Forsgren, & Holm, 2007). Birkinshaw and Morrison (1995) have found a strong link between the existence of a world mandate and high subsidiary autonomy. More generally, subsidiaries that have better access to critical resources traditionally possess greater power within the MNE (Andersson, et al., 2007; Bouquet & Birkinshaw, 2008; Mudambi & Navarra, 2004). For subsidiary controlling critical resources there is a "natural and relatively undiscriminating" resistance to the imposition of "externally mandated patterns" from the parent (Westney, 1993: 66). These subsidiaries will be able to come up with innovative practice that can be leveraged to the parent company and their parents more akin to relinquish decision rights to these subunits (Ghoshal & Nohria, 1989). Thus, subsidiaries controlling critical resources could more freely achieve external legitimacy in the host institutional environment by complying with the local legitimacy requirements because of power imbalances in disfavor of the HQs.

In particular, when the external isomorphic pressure is high such as in the case of high corruption distance, subsidiary’s control of critical resources will reverse the direction of dependence and the subsidiary will enjoy greater autonomy. That is, we expect the tension between the external isomorphic pressure associated to corruption distance and internal isomorphic pressure associated to dependence to result in an increase in the allocation of decision-making authority to the subsidiary, when the focal subsidiary controls critical resources.
Hypothesis 3: The (positive) relationship between corruption distance and subsidiary autonomy will be greater for subsidiaries controlling critical resources.

Figure 1 summarizes our conceptual framework.

- FIGURE 1 ABOUT HERE –

METHOD

Data

The measures used in this study are based on two data sources. First, the empirical sample consists of 299 HQ-foreign subsidiary dyads collected through a survey conducted in 2004 and 2005. As sample frame, we selected all 358 Italian MNEs with more than 50 employees operating in manufacturing industries from census data on the majority-owned foreign manufacturing and research based activities of Italian firms as of the beginning of 2004. 84 MNEs (response rate of approximately 24%) accepted to be studied through on-site face-to-face structured interviews with the parent companies’ top managers that lasted about 120-180 minutes each.¹ During the interviews, the respondents went through a pre-tested questionnaire, and data regarding the dyadic relationships of the parent company with each of its majority-owned foreign subsidiaries were collected. The sampled 299 foreign subsidiaries are located in 39 distinct host countries (see Appendix). The survey provides the information regarding subsidiary and HQ-subsidiary relations.

Second, data on the control of corruption are obtained from the World Governance Indicators (WGI) database, which cover over 200 countries and territories. The WGI control of corruption composite index integrates several hundred variables obtained from 31 different data

¹ For most of the parent companies with more than 5 subsidiaries (20% of the sample), we were able to obtain longer interviews, sometimes based on two days meetings. It could be useful to note that 8.07 is the mean of the number of foreign subsidiaries for each parent company and 6.40 is the standard deviation.
sources, capturing governance perceptions as reported by survey respondents, nongovernmental organizations, commercial business information providers, and public sector organizations worldwide. These variables are first standardized and then combined together using an unobserved components model, which provides a natural framework for weighting the rescaled indicators by their relative precision in order to reduce the noise of single indicators (Kaufmann, et al., 2010). The final index measures control of corruption within an interval of –2.5 (low control of corruption) to 2.5 (high control of corruption). Following previous studies (e.g., Cuervo-Cazurra, 2006), to simplify the interpretation of the coefficients we rescaled the index by subtracting the original index from 2.5, such that a higher number indicates higher corruption and a lower number indicates lower corruption.

**Measures**

*Dependent variable*

Based on prior studies (Ghoshal, Korine, & Szulanski, 1994; Ghoshal & Nohria, 1989), we measure *subsidiary autonomy* on four items capturing at which MNE level each of the following strategic decisions are taken: (i) definition of R&D projects, planning, resources, etc.; (ii) introduction of new technologies; (iii) changes in products/services; and (iv) hiring and firing of the subsidiary workforce (Cronbach’s alpha = 0.77). Each strategic decision is measured on the following 1-5 point scale: (1) “the parent company decides alone”, (2) “the parent company decides but considers subsidiary inputs”, (3) “both the parent company and subsidiary have roughly equal influence on decisions”, (4) “the subsidiary decides, but considers parent company suggestions”, and (5) “the subsidiary decides alone”. We convert the decision scores (from the one to five scale) to z-scores by normalizing by decision to mean zero and standard deviation one. *Subsidiary autonomy* is calculated as the un-weighted average across all four z-scores.

*Independent variables*
We measure *corruption distance* as the squared difference in the rescaled control corruption index values for each home-host country pair (e.g., Siegel, Licht, & Schwartz, 2008). The quadratic form of this measure assumes an increasing marginal effect of an additional unit of corruption distance. That is, the higher the corruption distance between home and host, the greater the marginal difficulties associate to an additional unit of distance.

*Moderators*

Mechanisms such as the participation of employees from the HQ and foreign subsidiaries in international teamwork, joint committees and meetings and the transfer of personnel within the MNE usually involve socialization forms (Ambos & Schlegelmilch, 2007; Gupta & Govindarajan, 1991; Nobel & Birkinshaw, 1998; Rabbiosi, 2011). Thus, to test H2, socialization through teamwork and personnel transfer is captured by a variable that measures how frequently (i) teamwork, and temporary (short-term) transfers of (ii) managers, and (iii) scientific and technical staff (researchers, engineers, etc.) were used within the HQ-subsidiary dyad. Respondents were asked to assess the intensity of the use of these three communication and coordination mechanisms on a seven-point Likert scale ranging from “used rarely” to “used very often”. The variable *socialization* is the average of responses to the three items (Cronbach’s alpha = 0.71).

To test H3, we identify subsidiaries controlling critical resources based on the qualitative interview responses. We created the dummy variable *subsidiary’s resource control* on the basis of specific phrases drawn from the interview transcripts. Specifically, we classified the variable *subsidiary’s resource control* equal to 1 whenever interview respondents described their units as subsidiary with research and development (R&D) world mandates or controlling critical resources as specialized knowledge, technologies and competencies that have strategic implication for the MNE as a whole (Birkinshaw, 2000; Birkinshaw, et al., 1998; Birkinshaw &
Morrison, 1995; Rugman & Verbeke, 2001). Some examples of the quotes that we associated with subsidiaries controlling critical resources are: (1) “the subsidiary undertakes R&D for the global market”; (2) “the subsidiary is responsible for the development, production and marketing of pivots for the global market. The technology of pivot continues to be concentrated only in this subsidiary”; (3) “the subsidiary is a center of excellence for this specific product, they do both the R&D and the manufacturing”; (4) “they design and develop the ‘snowtech’ technology for the entire group”; (5) “the subsidiary is specialized in a variety of 2D and 3D systems for laser cutting and welding applications. In the group it is also recognized as the premier provider of precision laser processing systems for producing the components used in land and aero turbine engines”. Quotes of the questionnaire were coded independently by two researchers who independently also rated the 299 subsidiaries. There was agreement on 292 out of 299 evaluations. To resolve the disagreements (2.4%), the two researchers jointly went through the interview transcripts and other available documents. In sum the variable subsidiary’s resource control is a binary variable controlling for whether the focal subsidiary carries out i) research and/or development for the global market, ii) research and/or development of specific product, or possesses iii) specific technologies or competencies.

Controls

We control for a number of variables that may influence subsidiary autonomy and be correlated with our main explanatory variables. A first set of controls concerns subsidiary-specific characteristics. Research has documented that subsidiary age affect HQ-subsidiary relationships (Rabbiosi & Santangelo, 2013). Thus, the variable subsidiary age is the difference between 2005 (the year when the interviews were conducted) and the year when the subsidiary became a part of the Italian MNE. We also control for size and industry context effects. To this end, we include in our model relative size, measured as the difference between the natural logarithm of the number
of employees in the subsidiary and the natural logarithm of the number of employees in the parent company in 2004, and a dummy variable \((\text{high-tech industries})\) that equals one if the subsidiary operates in either “science-based” or “specialized suppliers” sectors, with the benchmark being subsidiaries operating in low tech industries (e.g., “scale-intensive” industries) (Pavitt, 1984). Finally, we also account for the effects of the entry mode (Slangen & Hennart, 2008) adding to the model the dummy variable \textit{greenfield}.

Knowledge flows from subsidiary to the HQ may influence intra-firm bargaining power and ultimately subsidiary autonomy (Mudambi & Navarra, 2004). Empirical evidence also shows correlation between subsidiary autonomy, socialization mechanisms and HQ-subsidiaries knowledge flows (Noorderhaven & Harzing, 2009; Rabbiosi, 2011). Thus, we control for the degree of reverse-knowledge transfer (RKT), which is the transfer of knowledge to parent companies from their overseas subsidiaries. \textit{Reverse knowledge transfer} is measured as the respondent’s perception of the extent (“null” = 0; “low” = 1; “medium” = 2; “high” = 3) to which the parent company had used subsidiary knowledge pertaining to technology, know-how, skills and capabilities.

We control for the “parent experience in dealing with legitimacy issues and expertise in scanning different institutional environments, identifying important legitimating actors, making sense of their legitimacy requirements, and negotiating with them” (Kostova & Zaheer, 1999: 71). To this end, we include in the model \textit{multinational experience}, which is a count of the number of FDIs the MNE had made (e.g., Delios & Beamish, 1999).

A further set of controls relates to the host country. In particular, we account for the effect of knowledge sourcing opportunities in the host on subsidiary autonomy (Ambos, et al., 2011; Andersson & Forsgren, 1996) by considering the distance between home and host in terms of knowledge intensity. To this end, based on the World Development Indicators, first we calculated
the knowledge intensity of home and host country ($K_{IT}$ and $K_{IJ}$, respectively) on the basis of a principal component factor analysis of two indicators: (i) R&D expenditures as percentage of GDP and (ii) number of scientific and engineering articles published per 1,000 inhabitants (Cronbach’s alpha = 0.92). Then, as for corruption distance we calculate the squared difference in the knowledge intensity values for each home-host country pair. Finally, in order to capture knowledge sourcing opportunities in the host relatively to the home country we measured knowledge sourcing opportunities as $(K_{IT} – K_{IJ})^2$ if $K_{IJ} \geq K_{IT}$ and equal to zero if $K_{IJ} < K_{IT}$.

We also control for cultural and geographical distance between home and host countries. Cultural distance is measured using Kogut and Singh's (1988) cultural distance index. Geographical distance is measured by kilometers (thousand of) between Rome – capital city of Italy – and the capital city of the foreign subsidiary’s country.

Results

Table 1 shows the summary of the descriptive statistics and correlations for all variables considered in the econometric exercise.

– INSERT TABLE 1 ABOUT HERE –

Table 2 reports the results of ordinary least squares (OLS) estimations on the degree of allocation of decision making authority within the HQ-subsidiary dyad. As we observe more than one subsidiary in each MNE, an issue of possible non-independence among the observations (i.e., parent company-subsidiary dyads) may arise (Greene, 2000). We use the Stata’s cluster option to rule out this potential problem and obtain a robust variance estimate that adjusts for within-cluster correlation.

The results of the OLS regressions support all the hypothesized relationships. More in detail, in Models 1 the variable corruption distance shows a positive and significant coefficient ($p<0.05$), indicating that the higher is the level of corruption distance, the higher is the level of
decision-making authority allocated to the foreign subsidiary. This gives support to hypothesis 1.

We note that the coefficient of the variable socialization is negative and significant at p<0.10 suggesting that socialization mechanisms could be perceived as monitoring tools (Edström & Galbraith, 1977). Studies on subsidiary autonomy have regarded HQ-subsidiary socialization as a tool for subtle control and documented a negative direct effect on delegation of decision making to the subsidiary (Ambos & Reitsperger, 2004; Ambos & Schlegelmilch, 2007; Asakawa, 1996; 2001). The level of subsidiary’s internal integration within the MNE (i.e. internal embeddedness) is generally associated with less subsidiary autonomy (Ambos, et al., 2011; Ambos & Reitsperger, 2004). Our estimates substantiate this result. Also the positive and significant (p<0.01) coefficient of the variable subsidiary’s resource control confirms previous work that suggests different degrees of subsidiary autonomy for different types of subsidiary roles and, in particular, a greater degree of autonomy for those subsidiaries dedicated to knowledge creation and development (Ambos & Schlegelmilch, 2007; Ghoshal & Nohria, 1989; Gupta & Govindarajan, 1991; Nobel & Birkinshaw, 1998; Nohria & Ghoshal, 1994).

We find support for hypothesis 2. In Model 2, we add to the model the interaction term corruption distance \times socialization which coefficient is positively and significantly (p<0.05) related to subsidiary autonomy. In other words, we find indication that the organizational response to external pressures (i.e. high level of corruption distance) resulting in higher levels of subsidiary autonomy is counterbalanced by internal forces driven by socialization processes which ultimately reduce subsidiary autonomy. Conversely, as shown in Model 3, if the subsidiary controls critical resources the increase in subsidiary autonomy in response to external pressures is enhanced. The coefficient of the interaction term corruption distance \times subsidiary’s resource control is indeed positive and significant (p<0.05). Thus, hypothesis 3 is confirmed. In Model 4,
we add to the model both the first and the second interaction terms and verify the stability of the
moderation results.

– INSERT TABLE 2 ABOUT HERE –

As we have normalized around their mean the variables before creating the interaction
terms (with the exception of the dummy variable *subsidiary’s resource control*), the main effects
in Models 2-4 can be interpreted as the effect of a variable at the average observed score of the
other variable (Finney, Mitchell, Cronkite, & Moos, 1984). Therefore, when the level of
socialization between HQ and subsidiary is set to its sample mean the correlation between
corruption distance and subsidiary autonomy is significant and positive (in Model 2 see the
coefficient of *corruption distance*). Ceteris paribus, if the subsidiary does not control any relevant
resources (*subsidiary’s resource control* is set to zero) subsidiary autonomy appears to be
unrelated to corruption distance (in Model 3 see the coefficient of *corruption distance*). However,
partially this latter result could be driven by the higher correlation between main variables and
interaction term in Model 3 than in Model 2.²

**DISCUSSION AND CONCLUSION**

Various scholars have contributed to the understanding of location choice and entry mode in
relation to corruption distance (Mauro, 1995; Smarzynska & Wei, 2009; Wei, 2000a; Wei,
2000b). Nonetheless, the question of how to deal with corruption distance does not end with the
decision to entry (and how) a foreign country. With MNEs investing in majority-owned
subsidiaries in institutionally distant countries there is an increasing need for the understanding of

² The correlation of the interaction term *corruption distance × subsidiary’s resource control* with the variables *corruption distance* and *subsidiary’s resource control* is 0.49 and 0.45, respectively. The correlation of the interaction term *corruption distance × socialization* with the variables *corruption distance* and *socialization* is 0.2 and 0.01, respectively.
how institutional distance impacts a range of strategic choices after entry (Feinberg & Gupta, 2009; Salomon & Wu, 2012).

We contributed to address this research gap by examining the influence of corruption distance on how MNE choices about organizational structure. Specifically, we focused on a specific strategic organizational decision within the HQ-subsidiary relationship that is the allocation of decision-making authority. Drawing on institutional theory, we theoretically speculate and empirically show that corruption distance exerts a pressure for local conformity on foreign subsidiaries which results in greater subsidiary autonomy. External legitimacy eases indeed access to local valuable resources that are vital to survival and profitability, and more autonomous subsidiaries can better respond to local isomorphic requirements.

A second contribution we offer to the literature on corruption and FDI concerns the unpacking of the internal isomorphic pressure that characterizes complex organizations such as MNEs. We provide conceptual arguments and supporting empirical evidence on the relevance of the heterogeneity of internal isomorphic pressure to identify under which conditions the tension between internal and external isomorphic pressures materialize and ultimately influence strategic organizational choices. In particular, we suggest that a tension between external and internal isomorphism at the subsidiary level will materialize in HQ-subsidiary relational contexts characterized by trust and identity where the internal isomorphic pressure will be associated to socialization between HQ and the focal subsidiary. In this scenario, internal legitimacy will favors internal coherent policies and common strategies, but rises the costs associated to the liability of foreignness. Instead, in relational contexts characterized by dependence of the parent on the focal subsidiary’s resources, the tension will fail to materialize as subsidiary controlling critical resources will have the power to derogate to mandated patterns. Rather in these scenarios the internal and external pressure will reinforce one another.
The study also contributes to the body of literature on subsidiary autonomy. Research on subsidiary autonomy aimed at the understanding of the effects of the external environment is still scarce. Earlier studies have explained subsidiary autonomy by subsidiary and MNE characteristics (e.g. Cray, 1984; Egelhoff, 1984; Garnier, 1982a; Gates & Egelhoff, 1986; Taggart & Hood, 1999). In relation to the role played by the external environment, pioneering work basically focused on an overall evaluation of the complexity of the local context. Subsidiaries located in environments with relatively low complexity seem to require low degrees of autonomy compared to those subsidiaries facing more complex and changeable environments (e.g., Garnier, 1982b; Gates & Egelhoff, 1986; Ghoshal & Nohria, 1989). However, the multifaceted nature of the external environment in which the subsidiary is located calls for disentangling how different forces of the external environment can be associated to the allocation of decision making authority within the HQ-subsidiary relationship. In this context, more recent work provides theoretical and empirical evidence of a positive relationship between subsidiary’s external embeddedness and degree of autonomy (Ambos, et al., 2011; Andersson & Forsgren, 1996). External embeddedness is seen as the subsidiary’s access to and collaboration with the local business network (e.g., competitors, suppliers, customers) and institutional actors (e.g., universities, private research institutions). The underlying idea is that subsidiaries need a certain degree of decision-making autonomy to be able to tap into the local knowledge. Our study advances this stream of research showing that aspects other than the availability of and access to local knowledge can explain the allocation of decision-making authority to the foreign subsidiary. In particular, institutional aspects such as corruption distance are critical in explaining subsidiary autonomy too.

As with all research, this study has limitations. In relation to the choice of control in corruption as our measure of the phenomenon, we highlight the following points. First, since
public corruption has various dimensions, using the level of perceive corruption in the country we might have a partial view of the relationship between corruption distance and subsidiary autonomy (Cuervo-Cazurra, 2006; Rodriguez, et al., 2005). Second, we look at public corruption, but it would be interesting to test whether our story holds when considering also private corruption (Rodriguez, et al., 2006). Future research should be devoted to extend our framework to alternative corruption measures and dimensions.

MNEs are very complex organization. We focus on MNE organizational responses related to parent-subsidiary dyad and overlook other possible parallel organization responses involving e.g. a re-organization of the MNE intra-network relationships and/or adoption of specific practices as modus operandi (Zhao, 2006). To this end, a more demanding data collection would be required to effectively take into account the multiplicity of intra-firm relationships and institutional environments.
References


FIGURES AND TABLES

Figure 1 – Conceptual framework
<table>
<thead>
<tr>
<th>Table 1 – Descriptive statistics</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<td></td>
<td></td>
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<tr>
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<td>0.20</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4 Subsidiary's resource control</td>
<td>0.20</td>
<td>0.40</td>
<td>0.39</td>
<td>0.24</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5 Knowledge sourcing opportunities</td>
<td>0.72</td>
<td>0.99</td>
<td>0.05</td>
<td>0.38</td>
<td>-0.10</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6 Geographical distance</td>
<td>3.24</td>
<td>3.21</td>
<td>0.02</td>
<td>-0.02</td>
<td>0.04</td>
<td>-0.08</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7 Cultural distance</td>
<td>1.18</td>
<td>0.95</td>
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<td>-0.26</td>
<td>0.12</td>
<td>-0.08</td>
<td>0.09</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>8.72</td>
<td>-0.15</td>
<td>0.05</td>
<td>0.20</td>
<td>-0.08</td>
<td>-0.07</td>
<td>-0.11</td>
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<td>9 Reverse knowledge transfer</td>
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<td>1.01</td>
<td>0.03</td>
<td>0.10</td>
<td>0.29</td>
<td>0.17</td>
<td>0.05</td>
<td>-0.03</td>
<td>-0.06</td>
<td>-0.01</td>
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<tr>
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<td>0.09</td>
<td>-0.09</td>
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<td>0.05</td>
<td>0.15</td>
<td>-0.21</td>
<td>0.11</td>
<td>0.02</td>
<td></td>
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<td>11 Relative size</td>
<td>-1.72</td>
<td>1.20</td>
<td>-0.07</td>
<td>0.04</td>
<td>0.11</td>
<td>0.12</td>
<td>0.03</td>
<td>-0.03</td>
<td>-0.08</td>
<td>-0.02</td>
<td>0.15</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.07</td>
<td>0.05</td>
<td>-0.15</td>
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<td>0.12</td>
<td>0.15</td>
<td>-0.01</td>
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<td>0.07</td>
<td>-0.22</td>
<td></td>
</tr>
<tr>
<td>13 Greenfield</td>
<td>0.30</td>
<td>0.46</td>
<td>0.04</td>
<td>0.03</td>
<td>0.01</td>
<td>-0.19</td>
<td>-0.04</td>
<td>0.15</td>
<td>0.05</td>
<td>-0.03</td>
<td>0.04</td>
<td>0.25</td>
<td>-0.16</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Correlations greater than 0.09 are significant at p<0.1. N. of observations = 299.
Table 2 – Regression analysis of the allocation of decision making: The role of distance in control of corruption

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corruption distance</td>
<td>0.10 (0.05)**</td>
<td>0.13 (0.05)***</td>
<td>0.03 (0.04)</td>
<td>0.07 (0.04)</td>
</tr>
<tr>
<td>Socialization</td>
<td>-0.08 (0.04)*</td>
<td>-0.08 (0.04)*</td>
<td>-0.08 (0.04)*</td>
<td>-0.08 (0.04)*</td>
</tr>
<tr>
<td>Subsidiary’s resource control</td>
<td>0.74 (0.19)***</td>
<td>0.72 (0.18)***</td>
<td>0.64 (0.18)***</td>
<td>0.63 (0.18)***</td>
</tr>
<tr>
<td>Corruption distance × Socialization&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-0.05 (0.02)**</td>
<td>-0.04 (0.02)*</td>
<td>-0.30 (0.13)**</td>
<td>0.26 (0.13)**</td>
</tr>
<tr>
<td>Knowledge sourcing opportunities</td>
<td>-0.06 (0.05)</td>
<td>-0.08 (0.05)</td>
<td>-0.05 (0.04)</td>
<td>-0.06 (0.04)</td>
</tr>
<tr>
<td>Geographical distance</td>
<td>0.01 (0.01)</td>
<td>0.00 (0.01)</td>
<td>0.01 (0.01)</td>
<td>0.00 (0.01)</td>
</tr>
<tr>
<td>Cultural distance</td>
<td>-0.04 (0.04)</td>
<td>-0.02 (0.04)</td>
<td>-0.06 (0.04)</td>
<td>-0.05 (0.04)</td>
</tr>
<tr>
<td>Multinational experience</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.01)</td>
</tr>
<tr>
<td>Reverse knowledge transfer</td>
<td>0.01 (0.06)</td>
<td>0.02 (0.06)</td>
<td>0.01 (0.06)</td>
<td>0.02 (0.06)</td>
</tr>
<tr>
<td>Subsidiary age</td>
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<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td>Relative size</td>
<td>-0.07 (0.06)</td>
<td>-0.07 (0.06)</td>
<td>-0.07 (0.06)</td>
<td>-0.07 (0.06)</td>
</tr>
<tr>
<td>High-tech industries</td>
<td>-0.10 (0.17)</td>
<td>-0.08 (0.17)</td>
<td>-0.12 (0.17)</td>
<td>-0.11 (0.17)</td>
</tr>
<tr>
<td>Greenfield</td>
<td>0.12 (0.12)</td>
<td>0.11 (0.12)</td>
<td>0.15 (0.12)</td>
<td>0.14 (0.12)</td>
</tr>
<tr>
<td>Constant</td>
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<td>-0.12 (0.22)</td>
<td>0.02 (0.22)</td>
<td>0.03 (0.22)</td>
</tr>
<tr>
<td>F-Test</td>
<td>3.28***</td>
<td>3.56***</td>
<td>3.21***</td>
<td>3.50***</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.25</td>
<td>0.26</td>
<td>0.26</td>
<td>0.27</td>
</tr>
</tbody>
</table>

In brackets, robust standard errors corrected for heteroscedasticity and cluster-correlated data. N. of observations = 299.

<sup>a</sup> The interacting variables have been normalized around their mean value before being interacted.

* p<.10; ** p<.05; *** p<.01 (two-tailed tests applied).
Appendix

Table A1. Host countries list

<table>
<thead>
<tr>
<th>FDI host country</th>
<th>N. of subsidiary (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>7 (2.34)</td>
</tr>
<tr>
<td>Austria</td>
<td>6 (2.01)</td>
</tr>
<tr>
<td>Belgium</td>
<td>8 (2.68)</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>2 (0.67)</td>
</tr>
<tr>
<td>Brazil</td>
<td>11 (3.68)</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Canada</td>
<td>11 (3.68)</td>
</tr>
<tr>
<td>China</td>
<td>12 (4.01)</td>
</tr>
<tr>
<td>Croatia</td>
<td>3 (1.00)</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Denmark</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Egypt, Arab Rep.</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Estonia</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Finland</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>France</td>
<td>65 (21.74)</td>
</tr>
<tr>
<td>Germany</td>
<td>33 (11.04)</td>
</tr>
<tr>
<td>Greece</td>
<td>5 (1.67)</td>
</tr>
<tr>
<td>Hungary</td>
<td>2 (0.67)</td>
</tr>
<tr>
<td>India</td>
<td>4 (1.34)</td>
</tr>
<tr>
<td>Japan</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Macedonia, FYR</td>
<td>2 (0.67)</td>
</tr>
<tr>
<td>Mexico</td>
<td>2 (0.67)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>6 (2.01)</td>
</tr>
<tr>
<td>Norway</td>
<td>2 (0.67)</td>
</tr>
<tr>
<td>Poland</td>
<td>5 (1.67)</td>
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<tr>
<td>Portugal</td>
<td>2 (0.67)</td>
</tr>
<tr>
<td>Romania</td>
<td>4 (1.34)</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>4 (1.34)</td>
</tr>
<tr>
<td>Singapore</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>4 (1.34)</td>
</tr>
<tr>
<td>Slovenia</td>
<td>5 (1.67)</td>
</tr>
<tr>
<td>Spain</td>
<td>22 (7.36)</td>
</tr>
<tr>
<td>Sweden</td>
<td>5 (1.67)</td>
</tr>
<tr>
<td>Thailand</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Tunisia</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>Turkey</td>
<td>1 (0.33)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>15 (5.02)</td>
</tr>
<tr>
<td>United States</td>
<td>38 (12.71)</td>
</tr>
<tr>
<td>Total</td>
<td>299 (100)</td>
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