The Tension of Information Sharing:
Effects on subsidiary embeddedness

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This paper proposes a conceptual model on the relationship between foreign subsidiary competition and embeddedness in peripheral areas. Strategic factors (such as strategic entry motives), under which this relationship holds, are explicitly identified. The study argues that *pressure to innovate* and *unintended private knowledge spillovers* compete in explaining the relationships between competition and embeddedness. Explorative statistical analysis and illustrative cases support the model and suggest three propositions to be tested on larger datasets. Contributions to business network theory, knowledge spillovers studies and to IB research are discussed and policy implications drawn.

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1.   Introduction

Are foreign competitors embedded in the host economy? To answer this question, this study proposes a conceptual model on the relationships between foreign subsidiary competition and embeddedness in the host economy explicitly identifying moderating strategic conditions. To this end, the focus is on strategic entry motivations in the host economy. In particular, competence-creating strategic entry motives are considered.

Mainstream IB research on network embeddedness in subsidiaries has regarded embeddedness mainly as an independent variable with e.g. market performance, knowledge creation and knowledge transfer as dependent variables (Andersson *et al.* 2001, Andersson *et al.* 2002, Holm *et al.* 2005). In these studies, embeddedness is considered as a long-term structural variable with implications on other more short-term oriented variables like performance (e.g. Forsgren *et al.* 2005), competence development and strategic role (Birkinshaw and Hood 2000, Andersson *et al.* 2001, Andersson *et al.* 2002) as well as on MNE's competitive advantage (Holm *et al.* 2005). Very little research so far has been made to investigate why subsidiaries differ in terms of their embeddedness. A notable exception is Andersson *et al.* (2005) who mention the possibility of a "reversed causality" focusing on the effects of management systems (i.e. headquarters' use of different control mechanisms) on subsidiary embeddedness.

Inspired by this study, the paper argues that the relationships between competition and embeddedness may be driven by two competing forces which can be summarized in the tension of information sharing (Asakawa 2001). In particular, in the Industrial Organization (IO) tradition competitive advantage is associated with competitive environments as they create *pressure to innovate* (Porter 1990). To gain and sustain competitive advantage, firms need to leverage critical distinctive resources that differentiated them from other competitors. Drawing on social capital theory (Coleman 1988, Burt 1992, Li 2001), IB scholars have recognized embeddedness as a key distinctive resources to multinational enterprises (MNEs) (e.g. Dyer and Singh 1998, Andersson *et al.* 2001, Andersson *et al.* 2001, 2002, 2007, Holm *et al.* 2005, Forsgren *et al.* 2005). In this perspective,

competition promotes subsidiaries embeddedness in host locations. An alternative competing force is suggested by a number of studies (Baum and Haveman 1997, Shaver and Flyer 2000, Chung 2001, Alcácer 2006, Sanna-Randaccio and Veugelers 2007) documenting that firms tend to avoid market competition to prevent risks of *unintended private knowledge spillovers*. Such risks are amplified when subsidiaries are embedded in social external networks and, in these cases, the relationships between competition and embeddedness fails to materialize. The conceptual model solves the tension related to information sharing by controlling for subsidiary strategic entry motives. Despite of competition, rival subsidiaries embed in the host economy when entering the market with a competence-creating scope. In this case, the expected payoffs of embeddedness exceed those of isolation to the extent that the relationship with domestic actors 1) is valuable in terms of knowledge as suggested by business network theory (e.g. Forsgren and Johanson 1992, Dyer and Singh 1998, Andersson *et al.* 2002, Holm *et al.* 2005) and 2) implies a low risk of knowledge spillovers as in trust-based theories (e.g. Coleman 1994, Uzzi 1997).

The model allows to endogenize embeddedness decisions with respect to knowledge spillovers and to account for related firm-specific considerations. A test is also conducted by means of an explorative statistical analysis further corroborated by illustrative corporate cases. In the final part of the paper, propositions on the relationship between competition and embeddedness and on the moderating influences of strategic entry motivation are proposed for further test on large scale datasets.

The geographical context of the study is a sub-national peripheral areas of an advanced country. Namely, the province of Catania (NUTS 3 level of Eurostat (2005) classification) in Sicily, which has been recognized as a peripheral (Objective 1) region of the Union (European Communities 1997). Non-traditional locations (such as emerging markets economies and peripheral areas of advanced countries) have been increasingly targeted by foreign investors (Keeble 1997, Monolopoulos 2006, Todt 2007, Yan *et al.* 2007, Parmar 2005) searching for opportunities and valuable resources to enhance their competitive advantage. Nonetheless, extant research on non-

traditional locations has mainly focused on emerging economies leaving largely unexplored peripheral areas, where resource scarcity and structural characteristics make more stringent the conditions under which foreign investors operates.

The study offers a theoretical contribution to business network theory by exploring the antecedents of embeddedness so far little investigated. A more general contribution to IB research concerns the focus on peripheral areas. Although FDI in non-traditional locations have been investigated, extant literature has mainly looked at emerging economies, while peripheral areas have been less studied.

2. Conceptual model

Departing from the recognition that subsidiary embeddedness is a source of competitive advantage (e.g. Andersson and Forsgren 1996, Andersson *et al.* 2001, 2002), our conceptual model focuses on competition as a potential antecedent of subsidiary embeddedness. In particular, the relationships between competition and embeddedness is analyzed with reference to two competing forces: *pressure to innovate* and *unintended private knowledge spillover*.

Pressure to innovate

Research drawing on the IO tradition (Barlett and Ghoshal 1986, Porter 1980, 1986, 1990) has emphasized the role of competitive environments arguing that the sustainability of rents depends on the relative influence of competitive forces faced by the firm (Henderson and Mitchel 1997). Competition creates pressure on firms to innovate (Porter 1990). To win the competitive race, and gain and maintain competitive advantage, rival firms require distinctive resources.

Drawing on sociology, IB and management scholars (Tsai and Ghoshal 1998, Dyer and Chu 2000, Andersson *et al.* 2001, Kostova and Kendall 2003, Hitt *et al.* 2002) recognize social capital as a key resource for action as it "is productive, making possible the achievement of certain ends that in its absence would not be possible" (Coleman 1988, 98). Within social capital theory, different definitions of social capital converge on the significance of relationships between and among actors

(Coleman 1988, Burt 1992, Lin 2001). Relations among corporate actors, for instance, can constitute social capital for them (Coleman 1998). Likewise, firms' informal linkages with dominant institutions in the environment confer resources and legitimacy (what has been recently labeled as institutional embeddedness) (Oliver 1997, Peng *et al.* 2005). Thus, social capital is about "resources embedded in a social structure which are accessed and/or mobilized in purposive action" (Lin 2001,12). Along these lines, the relational view of competitive advantage (Dyer and Singh 1998) has pointed out that network relationships are a source of competitive advantage, which, built through a path-dependent process, are difficult to imitate (Gulati 1998, Gulati *et al.* 2000) and provide unique access to new knowledge and learning opportunities.

This suggests that competition, by pressuring firms to access and mobilize resources to sustain their competitive advantage, positively impacts on firm's embeddedness in external network relationships. Accordingly, in the last decade studies of MNEs have recognized foreign subsidiaries as the source of new ideas and capabilities for the whole corporate network (Frost 2001) as a result of their embeddedness in different unique external local networks (Ghoshal and Barlett 1990, Ghoshal and Nohria 1997, McEvily and Zaheer 1999, Forsgren *et al.* 2000) of suppliers, customers, competitors, institutions, authorities and associations (Granovetter 1985, Håkansson and Snehota 1998, Rowley *et al.* 2000). Relational embeddedness enables foreign subsidiaries to link to local actors by strong ties, share common processes and values (Kate *et al.* 2000, Cohen and Prusal 2001) and makes them capable of exchanging smoothly information and learning (Mowery *et al.* 1996, Uzzi 1996).[i] In this perspective, competition positively affects subsidiary embeddedness as it pressures them to search for distinctive resources to innovate in order to win the competitive race.

Unintended private knowledge spillovers

Theoretical and empirical studies have shown that knowledge spillovers are critical in competitive relationships (Baum and Haveman 1997, Cantwell and Santangelo 2002, Sanna-Randaccio and Veugelers 2007, Alcácer 2006, Narula and Santangelo 2009) as they create risks of unintended private knowledge revelation to rivals. Knowledge spillovers are certainly more valuable

to direct competitors than to other firms (McCann and Mudambi 2005) since rivals own capabilities and technology (which other firms lack) to successfully exploit the private good aspect of knowledge (Cohen and Levinthal 1990). Due to their detrimental effects on firms' profits and R&D levels (Bernstein and Nadiri 1989, Steurs 1997), intra-industry knowledge spillovers are negatively perceived by firms (Grindley and Teece 1997) and enhanced by geographical proximity (Jaffe *et al.* 1993, Audretsch and Feldman 1996). As a result, studies of MNEs (Baum and Haveman 1997, Cantwell and Santangelo 2002, Sanna-Randaccio and Veugelers 2007, Alcácer 2006, Narula and Santangelo 2009) point out to a geographical separation of and limited information sharing among rival firms. To minimize the risks of imitation of their technology by competitors, multinationals may avoid to set up a subsidiary in a given country. Consistent with this argument, Kogut and Chang (1991) find that Japanese firms in the US operate in industries where they lag technologically behind the US counterparts. Similarly, technologically advanced MNEs often locate their foreign subsidiaries far away from host firms perceived as potential competitors (Shaver and Flyer 2000, Chung and Alcácer 2002, Alcácer and Chung 2007).

The relevant aspect of knowledge in our discussion is *private* knowledge which is complex, tacit and difficult to transfer (Nelson and Winter 1982) unless intentionally traded (von Hippel 1987). Unlike the private aspect, the *public good* aspect of knowledge is always codifiable in a way that enables easy transmission in the form of blueprints. With reference to the distinction between private and public knowledge, it has been argued that firms may positively perceive public knowledge revelation (d'Aspremont *et al*. 1998) in pure agglomerations characterized by atomistic competition (McCann and Mudambi 2005), where knowledge spillovers contribute to a virtuous cycle by strengthening the knowledge base of the location and firms (Jaffe *et al*. 1993). However, this positive perception of public knowledge spillovers is ruled out in situations of large firms' oligopolistic competition (McCann and Mudambi 2005) where the private aspect of knowledge is the dominant consideration. This scenario is likely to occur when multinational firms are involved since they traditionally operate in oligopolistic markets.

Private knowledge spillovers can be intentional (von Hippel 1987) or unintentional (Mudambi and Navarra 2004). In particular, spillovers to customers, suppliers and partners may be largely planned, but spillovers occurring through other channels (e.g. employees' mobility, reverse engineering and imitation by competitors) may be largely unintentional (Mudambi and Navarra 2004) and painful to firms' competitive advantage. Accordingly, unintended private knowledge revelation risks are amplified when subsidiaries are embedded in social external networks which enable transmission of tacit knowledge through trust-based relationships. In this perspective, competition has a negative impact on embeddedness and the relationships between competition and embeddedness may ultimately fail to materialized due to risks of unintended private knowledge spillovers.

Thus, risks of unintended private knowledge revelation to rivals may prevent firms from embedding in external network relationships. By contrast, non-rival firms have less to lose from such risks.

The moderating role of entry motives

The relationships between competition and embeddedness may nevertheless materialize despite of the documented role of unintended private knowledge spillovers in competitive relationships. In particular, competition may positively affect embeddedness when accounting for strategic moderating influences. IB research poses great emphasis on FDI motives (Dunning 1977) claiming greater heterogeneity in market entry scope within and between MNEs (Bartlett and Ghoshal, 1989, Jarillo and Martinez 1990, Birkinshaw 1997, Kuemmerle 1999, Pearce 1999, Birkinshaw and Hood 2000, Cantwell and Mudambi 2005, Nachum and Wymbs 2005).

These studies acknowledge that FDI are more and more selectively tapping knowledge in specific host markets where they aim at greater embeddedness with domestic actors to enhance their competitive advantage (Hedlund 1986, Bartlett and Ghoshal 1989, Almeida 1996, Frost 2001). Accordingly, strategic and non-strategic entry scopes (Kuemmerle 1999, Perace 1999, Birkinshaw 1994) are distinguished. Strategic entry scope is related to asset-seeking considerations and is about

the exploration of local knowledge and expertise complementary to the corporate network's competences (hereafter competence-creating scope). MNEs entering the host economy with this motivations are interested in the local supply-side (innovative and skilled-related) potential. Non-strategic entry scope is related to market- and efficiency-seeking considerations (hereafter non competence-creating scope). MNEs entering the host economy with this scope are interested in the local demand-side potential.

Market entry scope is likely to affect subsidiaries activities. Subsidiaries with a competence-creating entry scope are likelier to carry out activities more distant from the product market (e.g. R&D) and are, therefore, less vulnerable to direct competition.[ii] The activities carried out by subsidiaries with a non-competence creating entry scope are likelier to be closer to the product market and are, therefore, susceptible of greater competitive pressure (Alcácer 2006). In both differently motivated entries, the acquisition of a competence-creating mandate requires a gradual subsidiary-specific evolution where location, parent and subsidiary characteristics have been recognized to play an equal significant role (Cantwell and Mudambi 2005). Along these lines, Mudambi and Navarra (2004) contend that achieving a competence-creating status depends on the cost-benefit analysis of inward *versus* outward knowledge spillovers. Accordingly, competence-creating subsidiaries flourish when foreign investors gain more from inward knowledge spillovers associated to relationships with domestic actors than loose from outward knowledge spillovers associated to competition. Moreover, recent literature on subsidiary-level (Birkinshaw *et al.* 1998, Nobel and Birkinshaw 1998, Andersson and Forsgren 2000) has argued on the mutual reinforcing relationship and coevolution between greater subsidiary autonomy and greater embeddedness in external network relationships with domestic firms and institutions.

This reasoning suggests that rival competence-creating (*versus* non-competence-creating) motivated subsidiaries are more embedded in the host environment because they have less to loose and more to gain in terms of exploration of complementary knowledge (Mudambi and Navarra

2004). As a result, competence-creating (*versus* non competence-creating) motivated subsidiaries explore the knowledge base of a broad range of domestic actors.

Competition in peripheral areas

The setting of the model in a peripheral area suggests that oligopolistic competition is here limited to foreign-foreign rivalry.

In particular, domestic firms in peripheral areas are limited in size and capabilities, lack capital and have limited access to international capital markets. This bears a number of implications. Firstly, the limited capacity of the domestic actors makes the sourcing of valuable distinctive resources tougher in these locations than in richly endowed areas, since resources here are shallow and, as a result, exceptionally strategic for foreign investors. A second implication relates to the fact that in peripheral areas, domestic firms usually lack sufficient capabilities and technology to absorb foreign knowledge (Feinberg and Majumdar 2001, Meyer and Sinani 2009, Narula and Marin 2003). In these circumstances, foreign subsidiaries are more concerned with unintentional knowledge spillovers to foreign rivals than to domestic firms which can hardly take advantage of the potential developments. The literature on FDI spillovers to host economy has indeed strongly documented that foreign MNEs' knowledge spills over to domestic actors with sufficient absorptive capacity (Cantwell 1989, Kokko *et al* 1996, Aitken and Harrison 1995, Gőrg and Strobl 2001). Supporting evidence on this respect is consistent across developed (e.g. Girma 2005) and developing (e.g. Narula and Marin 2003) countries. Thirdly, the structural weaknesses of domestic actors prevent them from developing internationally and rule out the possibility that foreign MNEs can face domestic multinationals (either parent or subsidiaries) locally. Despite of empirical evidence showing that domestic parents outperform foreign subsidiaries (Castellani and Zanfei 2006), such scenario cannot apply to peripheral locations, where domestic firms are hardly in the position to develop corporate strategies that would enable them to compete in the long-term. By contrast, foreign investors show greater management capabilities and better performance as a result of their multinationality advantage (Buckley and Casson 1976, Dunning 1988, Castellani and Zanfei 2006).

Therefore, market competition can be limited to foreign-foreign rivalry in these non-traditional locations and foreign firms fear unintended private knowledge spillovers primarily to foreign competitors.

Hence, when embedding in domestic networks, foreign firms aim to maximize incoming spillovers from the host environment and to minimize out-coming spillovers of their private knowledge to foreign competitors. This implies that competition positively affects subsidiary embeddedness to the extent that subsidiary entry scope is competence-creating. Our conceptual model is summarized in Figure 1 where the relationship between competition and embeddedness may be driven by *pressure to innovate* stimulating firms to search for locally embedded distinctive resources to sustain corporate advantage and risks of *unintended private knowledge spillovers* to rivals when embedding locally. This tensions is solved in the model accounting for the moderating role of strategic entry motivations on knowledge spillover risks.

FIGURE 1 HERE

3. Data collection and measures

Data was collected on 20 foreign-owned subsidiaries located at 2005 in the Southern Italian province of Catania, which accounts for more than 80% of the total number of foreign-owned subsidiaries localized in the province. These firms operate in 5 broad sectors, which can be further classified as high-tech and non high-tech manufacturing and knowledge-intensive sectors according to the OECD classification of industries and services which explicitly focus on the level of technology. In particular, 5 firms (e.g. 25%) operate in high-tech manufacturing sectors, 2 (e.g. 10%) in non-high tech manufacturing sectors and 13 (e.g. 65%) in knowledge-intensive service sectors. The sample can be regarded as representative of the phenomenon of inward FDI in the entire region of Sicily, where a sharp increase in the presence of foreign investors operating in high-tech sectors (such as electronics and pharmaceuticals) has been recorded since the mid-1990s (Cominotti *et al.* 1999) with

the Catania province leading the trend. Over time Catania has become more attractive than Sicily as a whole, as illustrated in Table 1 by the entry growth rate of foreign investors.

TABLE 1 HERE

Data was collected by means of face-to-face interviews with managers of foreign-owned multinationals responsible or involved in the strategic management of the local subsidiary. Foreign subsidiaries were identified on the ground of the information provided by the Reprint database collecting data on FDI for Italy since 1985. Reprint database information was further updated and re-fined through newspaper and web search. Data collection was assisted by a local investment promotion agency, which initially contacted the foreign subsidiaries and sent them a personalized letter with the description of the project, the assurance regarding the confidentiality of collected data and a formal request for a face-to-face interview. Then, the introductory part of the questionnaires was sent by fax directly to each firm, asking to answer questions concerning the structural features of the firm. Interviews were conducted at the foreign subsidiary's site for between 90 and 120 minutes. In most cases interviews were supplemented by a visit of the site. A multiple investigator strategy was adopted in collecting data (Pettigrew 1990). Visits to accepting firms were made between November 2004 and March 2005 by the same two person team involving an experience researcher and an associate to the local investment promotion agency. Each individual in the team had a unique role (Eisenhardt and Bourgeois 1988) with the experienced researcher handling the structured questionnaire and coding the answers in a quantitative fashion, while the associate of the local investment promotion agency attended the interview asking clarifications, additional open questions and examples. The advantage of the use of multiple investigators lies in the complementary insights and different perspectives of the team members (Eisenhardt 1989). In this case, the idea was to combine the perspective of the academic and the practitioner. To ensure reliability and accuracy of data collection regular meetings were held between the team members after each interview. Follow-up phone interviews with firms' managers were also arranged to ask for clarifications and solve inconsistencies arisen when checking for inter-

researcher reliability. Team meeting were also carried out throughout to share thoughts and emergent ideas. As a result, the study was extended from the electronic to all foreign subsidiaries located in the area under analysis. Finally, participation of the investment promotion agency in the data collection allowed for data triangulation.

Since our data collection method can pose issues related to non-response bias, we compared the two subsets of respondents and non-respondents along the dimensions of sector and nationality of ownership (see Table A.1).

TABLE A1 HERE

No statistically significant differences where found between respondents and non-respondents when running a Fisher exact test of independence.

The information collected concerns market competition, entry scope, and local relationships.

Market competition*.* Market competition between foreign subsidiaries was measured in terms of both business and geography of activity as suggested by Chen (1996) who defines competitors as firms operating in the same industry and targeting similar customers. To this end, we focus on the subsidiary activity and its geographical market as reported in the interview. Accordingly, we classified two subsidiaries as rivals if they operate in the same line of business *and* in the same geographical market. Otherwise, subsidiaries were classified as non-rivals. To identify different lines of business, subsidiaries' activities were classified at the finest 4-digit classes' level. 12 out of the 20 sample subsidiaries were classified as market rivals (*R*) and 8 foreign subsidiaries as non-market rivals (*NR*).

Market entry scope. Different market entry scopes were identified by relying on the distinction between resource-based (Barney 1991) and transaction costs (Williamson 1975) considerations. In the resource-based view of the firm, firms pursue long-term successful performance by improving their competitive advantage through innovation. Based on market and efficiency considerations, the transaction costs perspective focuses on short-term profit maximization. Entry motives were operationalized in terms of strategic *versus* non-strategic objectives when entering the foreign

market. If the foreign investor's entered the host economy primarily to access assets, competencies and technological capabilities, achieve scale and scope economies in R&D, spreading R&D risk, access to technological resources, then its entry motives were classified as competence-creating (*CC*). If the foreign investor's entered the host economy primarily to increase market share, rationalize or entry into new businesses and geographic markets, access to cheap labor, its entry motives were classified as non competence-creating (*non-CC*). Table A.2 reports the full list of items referring to competence-creating and non competence-creating entry motives.

Table A.2 HERE

Overall 4 subsidiaries were classified as *CC* and 16 as non-*CC*. The classification of the sample of analysis along the dimensions of market competition and entry scope is summarized in Table 2.

TABLE 2 HERE

Embedded local relationships. The concept of embeddedness developed by Granovetter (1985) reflects the view that economic actions and outcomes are affected by social and cultural relationships (Grabher 1993). Local relationships have been recognized as a strategic resource for performance and competence development in multinational corporations to the extent that they ease the access to resources and capabilities which lie outside the firm and are embedded in a social structure (Lin 2001, Andersson *et al.* 2002). In this conceptualization of embeddedness, trust between business actors is a major aspect (Uzzi 1996) since it lowers costs of negotiation and conflict (Zaheer *et al.* 1998). Along these lines, business partners' relationships can be defined as trust–based to the extent that they concern reliability, fairness and goodwill (Dyer and Chun 2002), while, when self-interested and profit-seeking behavior prevails, the relationships are of an arm's-length type. Accordingly, trust is captured in terms of frequency of interactions and/or degree of mutual adaptation of resource activities (Lane and Lubatkin 1998). In this perspective, high embeddedness is the opposite of arm's length relationships since it underlies partners' trust (e.g. Håkanason and Shenota 1995, Uzzi 1997, Andersson *et al.* 2002, Forsgren *et al.* 2005). Departing from the recognition that "economic exchanges are embedded in social and cultural exchanges"

(Forsgren *et al.* 2005, 106), firms must have some kind of relationships to the extent that they identify their network in terms of business actors. Along these lines, we classified the relationships of foreign subsidiaries as trust-based (high embeddedness) or arm's length (low embeddedness) relationships. In particular, we focus on relational ties (RTs) with domestic institutions, domestic suppliers and customers, domestic sources of knowledge (e.g. university and public research centers), and recruitment relationships with domestic actors.

5.   Statistical analysis

Following Cassiman *et al.* (2005) methodology on an equally small sample, we carried out a two step statistical analysis. Firstly, we run a principal component analysis (PCA) to summarize the information on the various original questions related to trust-based relationships with domestic institutions, domestic suppliers and customers, domestic sources of knowledge (e.g. university and public research centers), and recruitment relationships with domestic actors. We relied on such information to build a series of (quantitative) synthetic indicators through a PCA of four independent groups of individual answers concerning each of the above-mentioned RTs.

PCA technique provides a more parsimonious description of the phenomena at hand, simultaneously mitigating for potential subjectivity problems through the diversity of questions. Our sample size may raise concerns on the suitability of PCA, although there is no universal agreement on the minimum level of the size. Research has challenged the general rules of thumb of the minimum sample size (MacCallum *et al.* 1999, Preacher and MacCallum 2002) arguing that the minimum level of the sample size is dependent on other aspects of design such as communalities and size of loading (MacCallum *et al.* 1999, Osborne and Costello 2004). To remove any concern, first we tested for sampling adequacy by running the KMO test for which we obtained values above 0.7 falling within the range of "good" values (Kaiser 1974, Hutcheson and Sofroniou 1999). To test that the factor model is appropriate, we also run the Barlett's test of sphericity and obtained statistically significant results at *p < 0.01*. Second, we ensured that the communalities of our variables were all

greater than 0.7 and their means above 0.8. As for loading size, loading was above 0.7 in all, but one case where it equaled 0.7, suggesting a high fitting of the sample-to-population pattern (Velice and Fava, 1998). No cross-loading of the variables was detected among the components. Finally, we follow Kaiser (1960) recommendation of eigenvalues over 1 when selecting components. We further validate this rule of thumb by means of the Cattell scree test plotting. These tests and checks make us confident on the reliability of PCA on our small sample.

PCA yielded six components whose details are reported in Table 3.

TABLE 3 HERE

Secondly, we related the six components to subsidiary market competition and entry scope to test for mean statistically significant differences. We tested for statistically significant differences between components distribution of rival (*R*) and non-rival (*NR*) categories, without distinguishing between different subsidiary entry scopes and, then, we made the same comparison within the *non-CC* category to control for the role of entry scope. Then, we tested for mean differences between *CC* and *non-CC* within the *R* group. All mean differences are investigated through a Mann-Withney test for which we reported exact significance. The results are reported in Table 4 and 5.

TABLE 4 HERE

In the first column, Table 4 lists the six different components capturing different relationships foreign investors established with domestic actors. In the subsequent columns, results for *R* and *NR* foreign investors are reported with and without subsidiary entry scope control (column four and three, respectively). Regardless of their scope, non-rival foreign subsidiaries related more with domestic actors being less anxious about knowledge spillovers to competitors. More specifically, non-rival subsidiaries established more RTs with domestic institutions, and domestic suppliers and customers. Means difference between rival and non-rival foreign subsidiaries was statistically significant at *p < 0.01* with the non-rival group scoring a higher mean value than the rival one. This confirms the greater embeddedness of non rival subsidiaries, most likely as a result of a

lesser strong competitive pressure. The results hold when controlling for heterogeneity in subsidiary entry scope.

<center>TABLE 5 HERE</center>

In Table 5, the first column lists the six components capturing the different relationships rival foreign investors established with domestic actors. Subsequent columns report differences between rival *non-CC* and *CC* subsidiaries. The Mann-Withney test detected statistical significance differences between *CC* and *non-CC* foreign subsidiaries when they were market rivals with the former establishing more RTs with domestic actors than the latter. In particular, rival *CC* (*versus non-CC*) subsidiaries established more trust-based relationships with domestic institutions, and domestic suppliers and customers ($p < 0.10$) as well as with domestic sources of knowledge ($p < 0.01$). In all these case, rival *CC* subsidiaries scored higher than *non-CC*.

6.   Illustrative cases

To corroborate the statistical analysis, we selected six illustrative cases[iii] for each of the three theoretical categories (Glaser and Strauss 1967) (i.e. *NR, R with a non-CC scope* and *R with a CC scope*). When selecting these cases we controlled for sectoral variation (Pettigrew 1990) by distinguishing high-tech (HT), non high-tech manufacturing (NHT) firms, and knowledge-intensive service (KIS) firms for each of the two dimensions under analysis (i.e. competition and entry scope). Then, we selected one subsidiary for each sector for the *NR* category (hereafter HT1, NHT1, KIS1, respectively), a knowledge-intensive service firm for the *R with a non-CC scope* category (hereafter KIS2), and a knowledge-intensive service subsidiary conducting R&D in biotechnology and a knowledge-intensive service subsidiary developing software and wireless equipment (hereafter KIS3 and KIS4, respectively) for the *R with* a *CC scope* category (see Table 6).

<center>TABLE 6 HERE</center>

Information collected through interviews was supplemented with data from web sources, newspapers and magazines. The main features of the six illustrative cases are reported in Table 7.

TABLE 7 HERE

Non-rival foreign subsidiaries

HT1 was a US subsidiary involved in production and R&D activity of pharmaceuticals (e.g. antibiotics and penicillin) and established in Catania in the mid-1950s. In terms of size, HT1 was a large firm, which entered into the market through an acquisition of a local competitor to enjoy technological synergies. Given its long-term presence in the host economy, the interviewed manager claimed the firm to be strongly embedded in the host environment, where it developed trust-based RTs with domestic suppliers, university, public research centers and local institutions (e.g. governative and local agencies, industrial institutions and unions). Network relationships with domestic firms mainly referred to subcontracting of intermediate products, components and production phases as well as visits, meetings and join training courses. The interviewed manager also revealed that the subsidiary externalized to local firms a series of activities ranging from R&D and logistic to distribution, stock management and maintenance. Similarly, the interviewed manager acknowledged strong RTs with the local university as far as join research projects, production and research consultancy were concerned. At the time the research was conducted, further developments of the R&D function were acknowledged to take place in the near future, thanks also to the relationships with the local University. The University together with domestic firms was also recognized by the foreign subsidiary as a major source of recruitment of top managers and white collar. Despite of the knowledge-intensive nature of the RTs established with the domestic actors, the manager reported no fear of risks of imitation or knowledge spillovers to the local environment.

NHT1 was a US subsidiary producing and commercializing crinkled paper. Established in the host market in the late 1950s through an acquisition, NHT1 was a medium-size firm. The early establishment of NHT1 allowed the foreign subsidiary to build up its network relationships with domestic actors. The interviewed manager declared that NHT1 had intense long-lasting relationships with domestic clients and suppliers, firms operating in the same sectors, the local University and local agencies. Network relationships with domestic firms mainly referred to the supply of

intermediate products and components as well as to the externalization of services such as distribution, building maintenance and equipment. These RTs confirm both the knowledge of the local competences by the foreign subsidiary which learned to trust local suppliers over time. The strong embeddedness of NHT1 in the host location was also reflected in the local recruitment strategy of the subsidiary. Specialized and qualified as well as common workers were recruited from domestic firms revealing a profound knowledge of the local contexts and human resources. Similarly, the interviewed manager acknowledged imitation of NHT1 production and commercialization activities by local firms. Despite of the knowledge spillovers traditionally associated to both local recruiting and imitation, the manager reported no fear of threats to the subsidiary competitive advantage being unable the domestic firms to effectively compete with the foreign company and lacking any foreign direct competitors in the host market.

KIS1 was a German company operating in business activities, locally carrying out design and implementation of industrial plants. Located in Catania in the late 1990s through a greenfield investment, KIS1 was a small-size firm. Although younger than the subsidiaries discussed above, KIS1 entertained strong network relationships with domestic suppliers, domestic firms operating in the same sectors and local institutions. During the interview, the manager of KIS1 declared that the subsidiary supplied intermediate products and components from domestic firms as well as sub-contracted production phases to them. These relationships revealed awareness and confidence in the competences of the domestic firms as also confirmed by the selling contracts KIS1 had signed with domestic companies. In addition to these networks relationships with domestic suppliers and customers, KIS1 related to the host environment by heavily relying on employees' recruitment from domestic firms. The interviewed manager declared that the top managers hired were formerly employed by domestic firms. This strategy clearly revealed a great knowledge of domestic firms' expertise, which the foreign subsidiary came to know through suppliers and customers' relationship over time. In such relationships, the foreign subsidiary learned to recognize the value of domestic counterparts and acquired them where possible. Valuable competences recognition was mutual as

stated by the interviewed manager who claimed that local firms imitated KIS1 production activities. Nonetheless, unintended knowledge spillovers in the host environment were perceived as harmless by the foreign subsidiary due to the lack of foreign competitors.

Rival foreign subsidiaries with a non-CC scope

KIS2 was a Japanese firm providing service and technical assistance of semiconductor equipments. Established in the local market in the mid-1990s through a greenfield investment, KIS2 was a small-size firm entering the market with a non-CC scope. Marketing and selling rationalization through partnerships with foreign clients and suppliers, access to a new geographical market as well as to specialized production capabilities were the primary entry motives indicated by KIS2 manager. More specifically, the interviewed manager clearly stated that the primary reason for the presence of the company in the host market was the establishment locally of a world's leader producer of semiconductors to whom the parent of KIS2 was interested in providing services and technical assistance. However, the opportunities raised in the local market by the presence of the semiconductor producer attracted at the same time other foreign investors competing with KIS2. Not surprisingly, in the host economy under analysis all market competitors with a non-CC scope were electronic companies locally supplying the semiconductors world's leader.

The tough competition faced by KIS2 strongly constrained its RTs in the host economy to the extent that the foreign subsidiary related to foreign competitors only by participating in join production teams, organizing and participating in conferences and workshops, visiting, meetings and join training courses. No relationships with domestic actors were reported by the interviewed managers, but the local University which was recognized to be merely a source of personnel recruitment. As stated during the interview, KIS2 strategically aimed to reduce risks of imitation and to control for competitive technologies. This yielded isolation from the domestic environment and a careful planning of any relationship with local foreign rivals in order to avoid potential knowledge spillovers.

Rivals foreign subsidiaries with a CC scope

KIS3 was a Swiss chemical company with a strong focus on biotechnology. Established in 2001 through a greenfield investment, KIS3 carried out locally R&D activity into viral vectors and virosome-based vaccines as well as genetic engineering.

When entering the local market, the company was primarily motivated by the opportunities to access the local scientific knowledge in chemistry. The interviewed manager clearly stated that scope economies in R&D, R&D restructuring and diversification were the main entry goals. Coherently with its competence-creating entry motivations, KIS3 developed strong linkages mainly with the local University and research centers. The interviewed manager declared that the core of the relationship with public research centers concerned partnering in research activity as well as cooperation in degree programs activities. The R&D activity of the foreign subsidiary took place at the local University hospital departments, where the subsidiary's laboratories were accommodated. Similarly, KIS3 was greatly involved in PhD and master's programs activities as well as in the follow-up of graduate students to the extent that the University was recognized to be a major source of recruitment. Despite of the great embeddedness of the foreign subsidiary with the local University, the relationships of KIS3 with other local actors (such as financial institutions, government agencies and service providers) were by far more limited. Despite of the declared intention of controlling for competitive technologies, KIS3 strongly related to domestic knowledge sources judging the expected payoff of embeddedness greater than those of isolation from the host environment.

KIS4 was a US greenfield investment established in 2001. The small-size subsidiary developed locally software and wireless equipment and conducted R&D in the field. The subsidiary motivations to enter the market were mainly innovation-driven aiming KIS4 to achieve R&D economies of scale and scope, R&D rationalization as well as to speed up technology transfer from research to production. Similarly, the interviewed manager reported that, when entering the market, the firm was interested in sourcing assets, competences and technological capabilities through linkages with local firms and partnerships with the local University and public research centres. In line with these entry goals, KIS4 established partnerships with the local University and public research centres to run join research

projects as well as for production and research consultancy. KIS4 used also the local University for employees' recruitment. Relationships with the domestic environment also involved industrial institutions and domestic firms, although to a lesser extent. Network relationships with domestic firms primarily concerned collaboration in research projects and partnerships in research teams as well as supplying and sub-contracting activities. Despite of local market competition from other foreign investors, KIS4 built up selected network relationships with domestic actors acknowledging no fear of knowledge spillovers to foreign rivals.

7. Propositions, implications and future research

Building on extant research (Andersson *et al.* 2005), this study investigates the antecedents of subsidiary embeddedness by proposing a conceptual model of the relationship between market competition and subsidiary embeddedness explicitly accounting for moderating influences of strategic market entry motives. The model is set in a peripheral area of an advanced economy, where the shallow endowment of the host market makes embedded relationships especially strategic, and competition limited to foreign-foreign rivalry. By means of an exploratory analysis further corroborated by illustrative cases, the empirical evidence confirms that competition discouraged foreign corporate units from establishing RTs with domestic actors due to unintended private knowledge spillovers to rivals. However, competing foreign units related to domestic actors to source distinctive valuable resources when entering the market with a competence-creating (as opposite to non competence-creating) scope, as a result of the pressure to innovate associate to competition. On these grounds, a number of propositions to be tested on large scale datasets are proposed.

In tune with the *unintended private knowledge spillovers* argument foreign subsidiaries try to avoid unintentional private knowledge spillovers to foreign rivals by limiting their RTs with domestic actors. In this respect, the most emblematic case is KIS2 which, being interested in establishing special relationships with its world´s leader foreign client, completely isolated from the

domestic environment fearing unintentional knowledge spillovers to foreign rivals. Due to the detrimental effect of unintentional knowledge spillovers on competitive advantage, foreign subsidiaries are more embedded when they have less to lose regardless of their entry motives. Accordingly, non-rival foreign investors related to a broader range of domestic actors than rivals subsidiaries do. This reasoning leads to the formulation of

Proposition 1: Regardless of their entry scope, non-rival foreign subsidiaries establish more relational ties with domestic actors than rival foreign subsidiaries do.

However, differences are remarkable when looking at the RTs established with domestic actors by rival foreign investors once controlling for entry scope. The isolation of KIS2 from the domestic environment may be attributed to its non-CC entry scope (i.e. KIS2 manager clearly acknowledged the non innovation-related scope of the firm as well as the competitive pressure from other foreign investors interested in establishing exclusive supplying relationships with the world's leader semiconductor producer). This yielded a strategy of isolation from the domestic environment and a careful planning of the relationships with other foreign rivals to avoid risks of knowledge spillovers. Thus, being absent the *pressure to innovate*, concerns of *unintended private knowledge spillovers* prevail and competition negatively affected embeddedness with domestic actors. By contrast, in tune with the *pressure to innovate* argument, rival *CC* subsidiaries are strongly committed to source new complementary knowledge locally to enhance corporate competitive advantage. In this case, strategic entry motivations moderate concerns of *unintended private knowledge spillovers* and the *pressure to innovate* force prevails since there is a good cost-benefit analysis of knowledge inward *versus* outward (Mudambi and Navarra 2004). There are several possible explanations for the good cost-benefit analysis in the later case. Following business network theory (e.g. Dyer and Singh 1998, Andersson *et al.* 2002, Holm *et al.* 2005), rival CC subsidiaries value embedded relationships in terms of knowledge and distinctive resources that enhance corporate competitive advantage. Accordingly, the illustrative cases clearly show that the involvement of KIS3 and KIS4 in domestic network relationships suggests that they valued the gains of knowledge

spillovers from domestic relationships more than the risks of knowledge spillovers to corporate competitors. Another explanation relates to trust-based theories (e.g. Coleman 1994, Uzzi 1997). Embedded relationships are trust-based by construct. Thus, rival CC may related more with domestic actors because they believe that these relationships imply a low risk of knowledge spillovers. This aspect has not emerged from the analysis, but it may be implicit to it and worth to be further investigated. In any case, this discussion leads to

Proposition 2: Rival subsidiaries establish more relational ties with domestic actors when they have a CC rather than non-CC scope.

Furthermore, rival *CC* subsidiaries widened the exploration of the host environment to a broader range of realms where potential novelty creation may be gathered (Cantwell and Mudambi 2005). Indeed, by targeting valuable knowledge sources, KIS3 and KIS4 established RTs with local public research institutes and, to a lesser extent with, domestic suppliers. Affiliates considered "centers of excellence" (or aiming at playing this role) within the global network tend to be more integrated with domestic actors (Holm and Pedersen 2000) for the sake of novelty creation primarily through relationships with local institutions producing knowledge. During the interview the manager of KIS3 and KIS4 documented strong RTs with the local University and public research centers in human resource recruitment, research activity and in third level education and training. Thus,

Proposition 2a: Rival foreign subsidiaries establish more relational ties with domestic actors producing knowledge when they have a CC rather than non-CC scope.

Implications

The study mainly contributes to business network theory, which has so far focused on the effects of subsidiaries embeddedness on corporate performance leaving aside the issue of the antecedents of embeddedness. The notable exception of Andersson *et al*. (2005) addresses this issue by focusing on strategic management variables as antecedents of embeddedness. We advance this stream of research by focusing on a long-term structural variable (i.e. competitive conditions) as

antecedent of embeddedness, whose understanding is crucial to design appropriate managerial strategies and effective economic policies.

A further implication concerns the general IB literature. In particular, FDI in non-traditional areas have been mainly investigated with respect to emerging economies (e.g. Meyer 2004, Todt 2007, Yan *et al.* 2007, Parmar 2005), while MNEs' activities in peripheral areas have been little studied (notable exceptions are e.g. Manolopoulos 2006, Todt 2007, Narula and Benito 2006), probably as a result of the scale of the phenomenon. The contribution of the study is in the direction of expanding our understanding of the dynamics in these locations.

A major policy implications for the design of FDI-attraction and FDI-assisted development policies also derives from the analysis. Prior research has acknowledged the need to disentangle quantity from quality FDI. This study goes further by drawing attention also to the competitive relationships between foreign investors, which in specific non-traditional locations may affect their embeddedness. The inability of domestic actors to benefit from these RTs calls for proactive industrial policies aiming to enhance their capabilities and related absorptive capacity as well as to provide the financial resources necessary to a medium-/long-term development.

Limitations and future research

The study suffers from a number of limitations as far as the empirical analysis is concerned. First of all, the sample size limits the empirical support to the conceptual model proposed allowing for a mere exploratory statistical analysis. Further econometric analysis on large sample datasets is clearly need. Secondly, the study adopts a dichotomous (high *versus* low embeddedness) rather than a continuous measure of embeddedness (Dacin *et al.* 1999).

Thirdly, being the study inspired by a theory-development approach, further research is necessary. In particular, other variables may have moderating influences on one or both of the two competing forces driving the relationship between competition and embeddedness, e.g. time and entry mode. Account of these variables will complicate the conceptual model, but it may help to further qualify the relationship under analysis.

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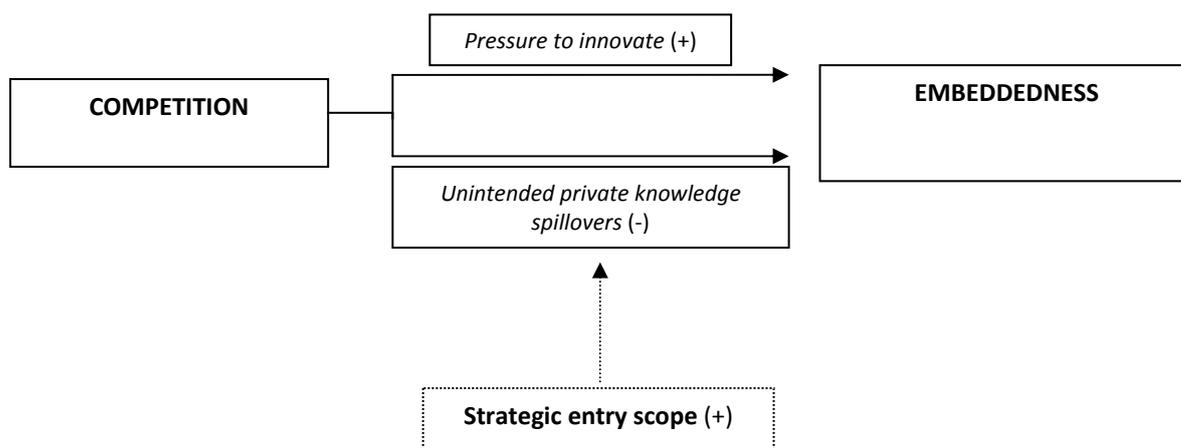
Figure 1 – Conceptual model

Table 1 - Italian inward-FDI, average entry rate per year (number of foreign plants), by sub-national area of destination

	1986-1997	*1998-2004*
North-West	118.33	531.33
North-East	54.42	106
Center	31.92	92.33
South and Islands	26.92	7.33
Sicily	2.75	2.33
Catania	0.92	1.5
Total	***231.58***	***737***

Source: Author's calculations on database Reprint, Politecnico di Milano - ICE.

Table 2 - Classification of foreign subsidiaries

		Market Competition		Total Sample
		R	*NR*	
Market entry scope	CC	4	0	**4**
	non-CC	8	8	**16**
Total Sample		**12**	**8**	**20**

Table 3 - Principal components extracted, individual questions and load factors

Principal Component[a]	Questions	Load factor
RTs with domestic institutions		
Relationships with domestic institutions	Relationships with the local University	0.881
	Relationships with the local industrial/union institutions	0.852
	Relationships with the local public research institutions	0.754
	Relationships with local agencies	0.681
RTs with domestic suppliers and customers		
Relationships with domestic suppliers	Relationships with domestic (non multinational) firms	0.950
	Supplying of intermediate products and components by domestic (non multinational) firms	0.931
	Supplying contracts with domestic (non multinational) firms	0.782
Relationships with domestic suppliers and customers	Relationships with domestic (non multinational) firms operating in the same sector	0.956
	Relationships with domestic (non multinational) customers	0.934
	Relationships with domestic (non multinational) suppliers	0.730
Relationships with specialized suppliers	Specific supplying from domestic spin-offs	0.773
	Relationships with domestic services suppliers	0.687
RTs with domestic knowledge sources		
Relationships with domestic sources of knowledge	Relationships with local public research institutes	0.935
	Relationships with the local University in research consulting	0.910
	Relationships with the local University in join research project	0.881
	Relationships with local public research centers in join research project	0.829
	Relationships with local public research centers in research consulting	0.808
RTs with domestic recruitment sources		
Recruitment relationships with domestic actors	Recruitment of top managers from the local University	0.854
	Recruitment of top managers from domestic firms	0.854
	Recruitment of white collars from Italian MNES	0.822

[a]Rotation Method: Varimax with Kaiser Normalization.

Table 4 - Subsidiary embeddedness and market competition

	Market Rivals	Non-CC + CC				Non-CC			
		Mean Rank	Mann-Whitney U	Z	Exact Sig.[§]	Mean Rank	Mann-Whitney U	Z	Exact Sig.[§]
RTs with domestic institutions									
Relationships with domestic institutions	NR	14.06	19.50	-2.28	**	11.69	6.5	-2.88	***
	R	8.13				5.31			
RTs with domestic suppliers and customers									
Relationships with domestic suppliers	NR	11.94	36.50	-0.91		10.38	17.00	-1.62	
	R	9.54				6.63			
Relationships with domestic suppliers and customers	NR	14.69	14.50	-2.64	***	11.50	8.00	-2.59	***
	R	7.71				5.50			
Relationships with specialized suppliers	NR	11.94	36.50	-0.91		8.63	31.00	-0.11	
	R	9.54				8.38			
RTs with domestic knowledge sources									
Relationships with domestic sources of knowledge	NR	10.94	44.50	-0.32		9.69	22.50	-1.31	
	R	10.21				7.31			
RTs with domestic recruitment sources									
Recruitment relationships with domestic actors	NR	12.38	33.00	-1.66		10	20.00	-1.85	
	R	9.25				7			

[§][2*(1-tailed Sig.)].

*** significant at $p < 0.01$.

** significant at $p < 0.05$.

Table 5 - Subsidiary embeddedness and entry scope under market competition

			Rivals		
	Entry scope	Mean Rank	Mann-Whitney U	Z	Exact Sig.§
RTs with domestic institutions					
Relationships with domestic institutions	Non- CC	4.75	2.00	-2.66	**
	CC	7.00			
RTs with domestic suppliers and customers					
Relationships with domestic suppliers	Non- CC	5.13	5.00	-2.08	*
	CC	9.25			
Relationships with domestic suppliers and customers	Non- CC	6.88	13.00	-0.57	
	CC	5.75			
Relationships with specialized suppliers	Non- CC	7.75	6.00	-1.89	
	CC	4.00			
RTs with domestic knowledge sources					
Relationships with domestic sources of knowledge	Non- CC	5.06	4.50	-2.32	**
	CC	9.38			
RTs with domestic recruitment sources					
Recruitment relationships with domestic actors	Non- CC	6.00	12.00	-1.41	
	CC	7.50			

§[2*(1-tailed Sig.)].

** significant at *p < 0.05.*

* significant at *p < 0.10.*

Table 6 - Selection of illustrative cases

	Market Competition					Total
	R		NR			
OECD sector	KIS		KIS	HT	NHT	
Market entry scope	*CC*	*non-CC*				
No. foreign subsidiaries	4	8	1	5	2	**20**
No. selected cases	2	1	1	1	1	**6**
Case label	KIS3 - KIS4	KIS2	KIS1	HT1	NHT1	

Legend: KIS: Knowledge intensive service; HT: High-tech manufacturing; NHT: Non high-tech manufacturing.

Table 7 - Main features of the illustrative cases

			NR			
Case label	*Activity*	*Nationality of ownership*	*Size*	*Entry mode*	*Entry time*	*RTs with domestic actors*
HT1	production and R&D activity in pharmaceuticals	US	large	acquisition	mid-1950s	Domestic suppliers, local University, public research centers and local institutions.
NHT1	production and commercialization of crinkled paper	US	medium	acquisition	late 1950s	Domestic clients and suppliers, local University, institutions
KIS1	design and implementation of industrial plants	Germany	small	greenfield	late 1990s	Domestic suppliers, domestic firms operating in the same sectors and local institutions
			R with non-CC scope			
Case label	*Activity*	*Nationality of ownership*	*Size*	*Entry mode*	*Entry time*	*RTs with domestic actors*
KIS2	service and technical assistance of semiconductors equipment	Japan	small	greenfield	mid-1990s	Domestic Institutions (i.e. local University)
			R with CC scope			
Case label	*Activity*	*Nationality of ownership*	*Size*	*Entry mode*	*Entry time*	*RTs with domestic actors*
KIS3	R&D activity in biotechnology	Switzerland	small	greenfield	2001	Local University, public research centers, domestic suppliers
KIS4	development of software and wireless equipment, and R&D activity	US	small	greenfield	2001	Local University, public research centers, domestic suppliers

Table A.1 - Representativeness of the sample of analysis

Sectors	Total foreign subsidiaries in the population	Respondent	Non-Respondent	Fisher exact test (p-value)
Manufacture of pulp, paper and paper products (NHT)	1	1	0	1.000
Manufacture of chemicals and chemical products (HT)	3	3	1	0.544
Manufacture of machinery and equipment n.e.c. (NHT)	1	1	0	1.000
Manufacture of electrical and optical equipment (HT)	2	2	0	1.000
Real estate, renting and business activities (KIS)	16	13	3	1.000
Total	**23**	**20**	**4**	
Nationality of ownership	Total foreign subsidiaries in the population	Respondent	Non-Respondent	Fisher exact test (p-value)
European	6	6	0	0.539
Japanese	3	2	1	0.437
US	15	12	3	1.000
Total	**24**	**20**	**4**	

Legend: HT: high-tech; NHT: non high-tech; KIS: knowledge-intensive services.

Table A.2 – Definition of market entry scopes

Competence-creating	Non Competence-creating
- Scale economies in R&D	- Scale economies in production
- Scope economies in R&D	- Broadening the product mix
- R&D Restructuring /rationalization	- Entering a new business
- Acceleration of firm's technological transfer from research centers to production	- Rationalization of production
- R&D risk spreading	- Rationalization of marketing and sales
- Setting common standards	- Accessing specialized production capabilities
- Reduction of imitation risks	- Increasing market share,
- Control of competitive technologies	- Entering a new geographical market
- Access to assets, competencies and technological capabilities	- Accessing cheap labor force
- Accessing tacit knowledge and other technical/technological capabilities embedded in the local environment	- Establishing links with local Italian/foreign clients
- Establishing links with universities, public and private research centers	- Establishing links with local Italian/foreign suppliers
- Establishing links with firms, domestic or foreign multinationals belonging to local technological clusters operating in the same or in related sectors	- Presence of infrastructures (motorways, airports, plants for energy production, etc.) to serve target markets
	- Availability of (transportation, financial, retailing, software, etc.) services to foreign-owned firms' activity
	- Financial and fiscal incentives

[i] This study focuses on relational embeddedness being concerned with individual relationships rather than position in a system of relationships as when analysing structural embeddedness.

[ii] It is worth acknowledging that subsidiary activities can be more fine-grained classified. Pearce and Papanastassiou (1999), for instance, propose a classification of subsidiary labs whose activities can be more or less distant from the product market depending on whether the focus is on R or D. Such a detailed classification is beyond the scope of this paper.

[iii] This number falls within the range indicated by Eisenhardt (1989) for a meaningful analysis yielding a satisfactory degree of theoretical complexity without running in the difficulty of coping with a large volume of data.