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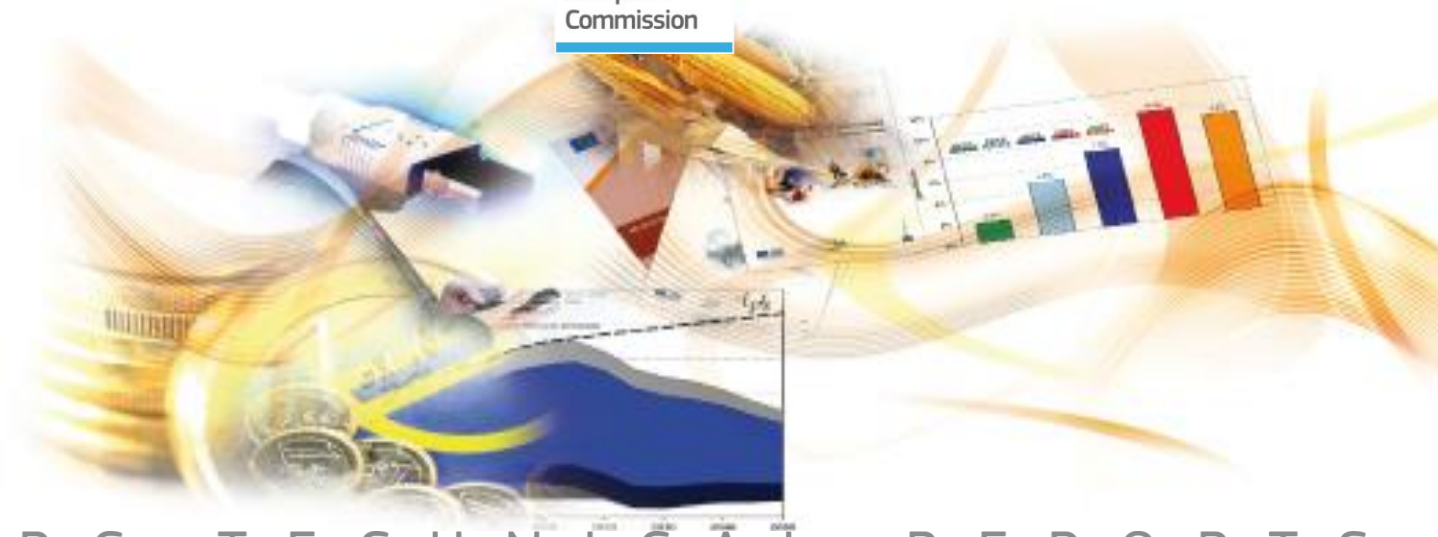

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How Foreignness can be both an Asset and a Liability for Firms

Jörg Zimmermann and Wolfgang Sofka

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Abstract

Many modern firms compete globally. However, research into whether foreignness is an asset or a liability in competition with domestic firms is inconclusive. We argue that foreign MNC subsidiaries are not per se advantaged or disadvantaged. We suggest that the distinction originates from the nature of the subsidiary's activity in the host country. We focus on two activities: knowledge search and knowledge deployment. We predict theoretically that domestic firms have advantages when they search for knowledge due to their embeddedness in the host country. However, this increased embeddedness reduces the degree of novelty of their knowledge pool. Foreign MNC subsidiaries therefore have advantages in knowledge deployment because they draw from a richer, international knowledge pool. However, these advantages accrue to both foreign and domestic MNCs. We test and support these predictions for a longitudinal dataset of 2900 firm observations in Spain. We develop recommendations for research and practice based on these findings.

Keywords: Liability of foreignness, foreignness as an asset, knowledge search, deployment

JEL codes: F23, A14, C23, L15

Introduction

The nature of competition between domestic firms and subsidiaries of Multinational Corporations (MNC) is a central issue for Strategy and International Business research (Alcacer & Chung, 2007; Spencer, 2008; Un, 2011). In an increasingly globalised environment, more management research and practice insights are required into how domestic firms can survive in competition with MNCs, as well as how MNCs can successfully compete in host countries. However, the central question of whether foreignness is an asset or a liability in host country competition remains unresolved (Zaheer, 1995; Nachum, 2003; Kronborg & Thomsen, 2009).

This question is relevant not just for businesses, but for policy makers too. Many national and regional governments have introduced policy measures for attracting foreign direct investment. The central rationale for directing government support at foreign firms is that MNCs will channel unique, foreign knowledge, procedures and capabilities to the host country and that these assets will eventually also become available to domestic firms. If these "spillovers" occur, domestic firms would be strengthened in their competitiveness.

However, empirical evidence for the presence of such spillovers from foreign subsidiaries to domestic firms has been mixed at best. Part of the explanation is that the advantages of knowledge spillovers from foreign MNC subsidiaries are often outweighed by the increased competition that MNCs bring to the host country (Meyer & Sinani, 2009). This competition can occur in the product market but also in factor markets where domestic firms may, for example, no longer be able to compete for top local talents if MNCs can offer higher salaries or better job prospects (De Backer & Sleuwaegen, 2003). An optimal host country policy mix would therefore aim at attracting foreign MNCs without reducing the competitiveness of local firms. The current study is designed to provide insights to this end.

We want to bring clarity to this discussion along two dimensions. Firstly, we argue that foreign MNC subsidiaries will not experience foreignness as an asset or liability per se. Instead, we theorize that the nature of the subsidiary's activity in the host country, i.e. whether it searches or deploys knowledge, determines whether it has advantages or disadvantages compared to host country rivals. Secondly, we argue that the latter reference group needs to be defined precisely. We theorize that certain advantages of foreign subsidiaries will emerge only in comparison with strictly domestic firms, but not with MNCs headquartered in the host country. We make these

predictions based on the theoretical mechanisms originating from embeddedness in the host country, which provide opportunities for host country firms in knowledge search activities but limit the degree of novelty when they deploy knowledge.

A stream of literature has dealt with the issue of whether foreignness is an advantage or disadvantage in a given host country. The traditional perspective has been that MNCs have advantages when they enter a host country compared to domestic firms. This line of reasoning is based on the premise that MNCs will draw from richer pools of resources that can be transferred to host country subsidiaries (Budd, Konings, & Slaughter, 2005; Kronborg & Thomsen, 2009). These resource transfers can be of different types, such as knowledge (Zhao, 2006) or financial resources for hiring host country talents (Grossman, 1984; De Backer & Sleuwaegen, 2003).

These findings strongly disagree with research identifying liabilities of foreignness (Zaheer, 1995). This line of research identifies foreignness as an additional cost factor for foreign subsidiaries compared with host country rivals. These liabilities have been identified as comparatively lower performance (Zaheer, 1995; Miller & Parkhe, 2002), more frequent lawsuits (Mezias, 2002b), and lower firm survival rates (Zaheer & Mosakowski, 1997). These liabilities of foreignness are largely explained by a lack of embeddedness in the host country, and hence reduced access to crucial but often tacit host country knowledge.

We build on this mechanism of embeddedness in the host country but argue that its effect depends upon the direction of knowledge flows between the MNC and the host country. We argue that the lack of embeddedness is a crucial source of liability of foreignness if MNCs search for knowledge in the host country. This builds on the argument that knowledge can rarely be fully separated from the person that carries the knowledge, i.e. the source, without significantly reducing the value of the knowledge (Agrawal, 2006). Domestic firms are more embedded in the host country environment because they have been shaped by that environment through continuous interaction over time. Hence, foreign MNC subsidiaries can be expected to be comparatively disadvantaged when they have to identify promising host country knowledge sources, such as leading clients or universities.

However, it would be myopic to assume that all foreign MNC subsidiaries are equally likely to search for knowledge. MNCs are uniquely positioned to transfer foreign knowledge to the host country based on intra-MNC norms and practices (Kogut & Zander, 1993). The primary activity of

the host country subsidiary is then to deploy this knowledge, for example by communicating or advertising it. In the case of knowledge deployment activities, the high degree of embeddedness of domestic firms disadvantages them because it homogenizes the knowledge pool of all domestic firms and reduces the degree of novelty among host country competitors. We therefore predict that foreign MNC subsidiaries will experience a relative advantage over domestic firms when deploying knowledge. More precisely, we argue that this advantage accrues to foreign MNC subsidiaries compared with strictly domestic firms but not compared with MNCs headquartered in the host country (we will refer to them as domestic MNCs), because they can draw on knowledge pools from abroad. Finally, we suggest that combining knowledge search and deployment in the host country favors domestic MNCs because they do not suffer from a lack of embeddedness when they search for knowledge, but nor are they constrained by the domestic knowledge pool when deploying knowledge.

We test and support these hypotheses for a longitudinal dataset of more than 2900 firm observations in Spain. Our theoretical arguments and empirical findings allow much more nuanced predictions about whether firms will experience foreignness as an asset or a liability. We base these distinctions on the nature of the activity and the reference group in the host country. This means that our findings have immediate relevance for academic research and management practice.

From an academic perspective, the implications are twofold. Firstly, we establish that embeddedness is not per se an advantage for host country firms. The comparatively higher level of embeddedness restricts the uniqueness of their knowledge pool. Foreign MNC subsidiaries will not be negatively affected if they engage primarily in knowledge deployment. Hence, evaluating liability of foreignness while ignoring differences in activities generates confounding results. Secondly, foreign MNC subsidiaries will experience an advantage in knowledge deployment only in comparison with strictly domestic firms but not domestic MNCs. This implies that theoretical and empirical models ignoring the distinctions in comparison group suffer from biased findings.

From a managerial perspective, our findings indicate that both domestic firms and foreign MNCs can tailor their host country strategies. Domestic firms should be most concerned when foreign MNCs deploy knowledge in the host country. Foreign subsidiaries that engage primarily in knowledge search, though, are at a competitive disadvantage that domestic firms can exploit based on their higher degree of embeddedness. Foreign MNCs entering a host country should

consider the nature of competitors in the host country. They can expect superior performance in deploying knowledge if most host country competitors are strictly domestic, but not if most of the competitors are MNCs themselves.

The remainder of the article is structured as follows. The chapter following this introduction reviews relevant literature and derives theoretical predictions. The next chapter presents the empirical study followed by its results. In the final chapter we discuss these results, draw conclusions and identify directions for future research.

Theory

The comparison of local firms with the subsidiaries of foreign MNCs has been a cornerstone of Strategy and International Business research. However, existing literature is divided as to whether foreignness provides relative advantages for MNC subsidiaries (e.g. Brannen 2004, Kronborg and Thomson 2009) or disadvantages (e.g. Zaheer, 1995) compared with host country firms. We argue that MNC subsidiaries will not experience foreignness per se as an asset or a liability. Instead, we suggest that liabilities as well as assets of foreignness originate from the activity level. MNC subsidiaries are more likely to experience disadvantages in some activities and benefit from advantages in others. In this sense, the degree of liability (or asset) of foreignness can be predicted based on the nature of the activity. We focus on two primary subsidiary activities: the search for knowledge as well as the deployment of knowledge in the host country. This builds on a stream of research in International Business that conceptualizes an MNC´s ability to internalize knowledge flows between countries as its central characteristic (Kogut & Zander, 1993).

Our theoretical model rests on the basic assumption that pools of valuable knowledge are geographically confined. This would not be an issue if all knowledge could be codified and transferred via books, manuals and websites. However, major parts of knowledge are tacit in nature, acquired in practice over time and cannot be separated from the knowledge carrier, i.e. the knowledge source (Nonaka, 1994; Agrawal, 2006). It is therefore not necessarily the knowledge that is geographically confined but the skilled scientists and engineers that hold the knowledge who are unwilling to move (Almeida & Kogut, 1999). Empirical research has largely confirmed this and identified national borders as central boundaries for knowledge flows (Kogut, 1991; Audretsch & Feldman, 1996).

The knowledge pool in the host country is therefore distinct from that of other countries. We define the subsidiary activities along the direction of the knowledge flow from or towards the host country. We define knowledge search as all knowledge gathering activities of a foreign MNC subsidiary in the host country. This host country knowledge can be market-related, e.g. about customer or competitors, or technological in nature, e.g. from leading universities or suppliers (Schmidt & Sofka, 2009). We define knowledge deployment as all intentional knowledge flows towards the host country. This implies that the knowledge of an MNC subsidiary originates at least partly from sources outside of the host country and that the MNC takes active steps to communicate it in the host country, e.g. through advertising to host country customers. Our theoretical model for knowledge search and knowledge deployment is based on the direction of these knowledge flows, i.e. whether the knowledge sources are located in the host country or abroad. This allows us to derive theoretical predictions about whether foreign MNC subsidiaries will experience advantages or disadvantages when searching for or deploying knowledge compared with host country firms.

Our argumentation rests on the assumption that comprehensive knowledge transfers require interaction with the knowledge source, e.g. leading users, suppliers or scientists (Agrawal, 2006). Access to knowledge in a country can therefore be more accurately described as gaining access to knowledge sources. Markets for knowledge exchanges are largely underdeveloped or inefficient (Gans & Stern, 2010). Successful knowledge transfers are therefore much more specific and less anonymous exchanges between a knowledge source and a recipient. This process is facilitated by geographical proximity and social relationships. Accordingly a firm's embeddedness in its environment becomes critical for successful knowledge transfers.

We follow Polanyi (1957) and Granovetter (1985) in their conceptualisation of embeddedness. Economic transactions between two actors are embedded in a social and cultural context with partners' perspectives, interests, and resources mutually adapting over time. Social embeddedness lowers transaction costs by developing trust among co-localized firms (Maskell 2001). Embeddedness in business and social networks increases the capacity of firms to gather new knowledge (Andersson et al. 2001). The more deeply a firm is embedded in a social network with a customer or some other counterpart, the higher its likelihood of collecting new knowledge (Yli-Renko et al. 2001). The result of firms investing resources into increasing their embeddedness is social capital. Yli-Renko, Autio and Sapienza (2002) demonstrate that firms with an efficient and effective set of social relationships have superior access to information.

Relationships provide knowledge which goes well beyond what an organisation could possess in isolation. Knowledge can consequently be accessed earlier (as information that is provided early yields an advantage to the recipient) or lead to access to new knowledge sources via referrals (where the focal firm's interests are represented to third parties in a positive light).

Embeddedness, however, has a downside. Firms that rely on familiar relationships are likely to find themselves 'trapped in suboptimal, stable equilibria' (March 1991:71). While a match between internal knowledge stock and external market environment facilitates access to knowledge, it reduces the degree of novelty and uniqueness of a firm´s knowledge stock since partners that compete in the same environment are familiar with the same ideas, trends, etc. (Granovetter 1973). Thus, creating a well-tuned organisational architecture in order to successfully gather external knowledge (Barnett and Carroll 1995, Hannan and Freeman 1984) reduces the opportunities to access new expertise (Marsden 1983).

For the purpose of our paper, it is important to note that distinct country pools of knowledge exist. MNCs are especially well equipped to access and connect knowledge sources from distant geographical knowledge pools as well as to facilitate knowledge transfers between these knowledge pools (Berry, 2013). MNCs act as a social community with shared norms and understandings within the firm across different international subsidiaries (Kogut & Zander, 1993). Based on these characteristics an MNC can transfer even tacit knowledge across country boundaries. An MNC subsidiary is therefore operating in a dual context. It will strive to generate embeddedness in the host country by complying with its social norms as well as with the social norms within the MNC (Almeida & Phene, 2004). A strictly domestic firm does not face this trade-off. Then again, its knowledge access is also limited to its domestic pool of knowledge. We will return to this distinction in our hypotheses.

Social Embeddedness and Knowledge Search

A firm's search for external knowledge involves all efforts to access knowledge sources outside of the firm - e.g. universities, suppliers, customers - for technological novelties or emerging market needs (Laursen & Salter, 2006). It allows firms to generate novel combinations with their existing knowledge stock (Cassiman & Veugelers, 2006), or shorten the time it would take to develop the knowledge themselves (Fleming & Sorenson, 2004). However, there are limits to the benefits of external knowledge. Given limitations in a firm's information processing capacities,

the costs of screening knowledge can eventually outweigh its benefits (Koput, 1997). Consequently, firms have to manage their search for external knowledge wisely.

Laursen et al. (2012) show that the effectiveness of a firm's knowledge search is positively moderated by the social capital of a geographical region. Knowledge flows are dyadic relationships (Lane and Lubatkin 1998): their effectiveness and efficiency depend not just on the recipient but also on the source's willingness and ability to share (Szulanski 1996, 2000; Dyer et al. 2001). The knowledge source must have an incentive to transfer the knowledge. Repeated interaction can generate trust between partners and increase these incentives.

This characterisation of relationships, networks, and social capital has much in common with the concept of embeddedness discussed by Polanyi (1957) and Granovetter (1985). These scholars argue that economic transactions between two actors are embedded in a social and cultural context with partners' perspectives, interests, and resources mutually adapting over time. Combining the notion of embeddedness in business and social networks with the concept of organisational learning and the related capacity to gather new knowledge leads to the conclusion that the latter capacity is dependent on firms' degree of embeddedness (Andersson et al. 2001); that is, the more deeply a firm is embedded in a social network with a customer or some other counterpart, the higher its likelihood of collecting new knowledge (Yli-Renko et al. 2001).

Foreign subsidiaries face a lack of embeddedness in host markets (Mitchell 1994). The main source of this disadvantage is the so-called liability of foreignness (Zaheer 1995). It results from a combination of social and cultural components that potentially limits success (Granovetter 1985, Zaheer and Mosakowski 1997, Nachum 2010). Simply because they are native, domestic firms have a great deal of congenital knowledge (Huber 1991) which makes it easy for them to adapt their business to local conditions and preferences (Mezias 2002b). These capabilities are deeply rooted in continuous practice, feedback, interaction, and shared experience. Foreign firms lack this form of embeddedness (Hannan 1998; Stinchcombe 1965). Schmidt and Sofka (2009) show, for example, that host country customers provide less valuable innovation impulses to foreign subsidiaries if domestic rivals are technologically leading. What is more, foreign subsidiaries are limited in their abilities to fully adapt to host country norms and requirements since they are simultaneously bound to comply with MNC-wide standards (Almeida & Phene, 2004).

In sum, embeddedness in the host country society increases the performance of a firm's search for external knowledge. Foreign MNCs are disproportionally disadvantaged when it comes to achieving host country embeddedness. The effectiveness of their search for external knowledge is consequently lower.

> *Hypothesis 1: Searching for external knowledge will have a greater effect on firm performance in domestic firms than foreign subsidiaries.*

Social Embeddedness and Knowledge Deployment

An implicit argument in the liability of foreignness literature is that domestic firms and their behavior are moulded by the host country environment. We argue that the superior efficiency and effectiveness with which domestic firms can access host country knowledge constrains the novelty of their knowledge stock. The forces that propel embeddedness within host country knowledge flows also homogenize the knowledge of the firms that are embedded in it. With an increasing focus on knowledge sources that are efficiently accessed, firms implicitly reduce their ability to access new knowledge, e.g. a firm restricts its knowledge to a limited set of knowledge providers. In such a setting, the firm reduces its ability to access expertise that is new to the firm and offers potential future growth opportunities (see e.g. Yli-Renko et al. 2001), with negative performance implications. As a consequence, the uniqueness of a firm's knowledge stock is reduced. Uniqueness leads to superior performance once the firm deploys its knowledge, e.g. by introducing products, brands or advertising campaigns. The firm can benefit from an at least temporary monopoly situation and harness the value of its knowledge as long as its rivals cannot imitate it quickly (Ceccagnoli, 2009). The more homogenized the knowledge stocks of firms in a market are, the quicker imitation will occur and the lower the performance effects of knowledge deployment will be.

More generally, constraints from existing embedded relationships have been defined as 'network inertia'. This network inertia is characterized by a limited ability to access new knowledge pools (Kim et al. 2006) or change existing networks (Ebers 1999, Gulati 1995, Levinthal and Fichman 1988). Levinthal and Fichman (1988) have argued that relationship specific assets between auditors and their clients develop over time, as they run their relationships effectively and learn from each other. This allows firms to effectively identify new developments and efficiently exploit them through their established network within the market environment in which they are competing. In the same vein, however, tie persistence increases with longer duration. Prior

alliances based on trust and relationship-specific routines increase the likelihood that firms will build alliances with the same partner in the future (Gulati 1995). In this way, embedded firms are more likely to apply procedures similar to those applied before, and rely on the same knowledge pools. Thus, the participants of these networks somehow restrict themselves to the expertise that is available within the established network.

Exploring the constraints of 'network inertia', by drawing on the structural inertia theory of organisational ecology (Hannan and Freeman 1984; Hannan, Polos and Carroll 3), the inertia is not a symptom of "bad management"; rather it is the natural result of creating a well-tuned organisational architecture that exploits strategic advantage and synergy (Barnett and Carroll 1995, Hannan and Freeman 1984). In this respect, network inertia can be regarded not as a symptom of poorly managed inter-organisational networks, but as a by-product of the previously successful management of networks that generate synergies for the participating organisations.

In comparison, subsidiaries of MNCs are not constrained by the host country knowledge environment. Their unique advantage is the ability to transfer knowledge across national boundaries through the intra-MNC network. MNCs generate a border-crossing social community with shared rules and understanding (Kogut & Zander, 1993). This allows an MNC to transfer knowledge that is developed in practice and more tacit in nature. Hence, the subsidiary of an MNC has the ability to combine host country knowledge with intra-MNC knowledge from headquarters and subsidiaries in other countries. These combinations have the potential to be unique in the host country market. Brannen (2004), for example, demonstrates that the reputation of the Walt Disney Company created an appeal for the local Japanese market as "Disneyland represents the best that America has to offer" (Toshiharu Akiba, Tokyo Disneyland spokesperson, quoted in Brannen 2004).

In sum, we theorize that the returns of any firm's knowledge deployment depend upon the uniqueness of the knowledge that is deployed. Domestic firms are comparatively more embedded and adapted to their host country environment. This limits the uniqueness of the knowledge that they can deploy. In contrast, MNCs are uniquely positioned to transfer foreign knowledge to the host country and combine it with local knowledge. As a consequence, the uniqueness of the resulting knowledge is relatively higher (compared with local firms) and the returns of deploying it are therefore also higher. We propose:

Hypothesis 2a: Deploying knowledge will have a lesser effect on firm performance in domestic firms than foreign subsidiaries

The argument for the knowledge deployment advantage of foreign MNC subsidiaries is based on their ability to access a knowledge pool that is not equally accessible from the host country. This ability, however, should be common to all internationalised firms. In this respect, host country rivals can be divided into two groups: Strictly domestic firms and domestic MNCs. Strictly domestic firms do not have subsidiaries outside of their home country, while domestic MNCs do. The distinction is important for specifying the theoretical mechanisms driving advantages and disadvantages of foreign MNC subsidiaries, since different reference groups allow different predictions.

Domestic firms´ advantages in knowledge search derive from their embeddedness in their home country. Hence, only foreign MNC subsidiaries suffer a lack of embeddedness. Domestic MNCs, though, do not suffer from disadvantages in the boundaries of the knowledge pool from which they can draw. They can access knowledge pools outside of their home country. This increases the uniqueness of their knowledge pool. Hence, when domestic MNCs deploy their knowledge they are not disadvantaged compared with foreign MNCs. However, they can be expected to have knowledge deployment advantages over strictly domestic firms. Theoretical predictions on advantages of foreign MNCs in knowledge deployment therefore require a precise distinction in reference groups. We hypothesise:

Hypothesis 2b: Deploying knowledge will have a lesser effect on firm performance in domestic firms – but not domestic MNCs - than foreign subsidiaries.

Social Embeddedness and Simultaneous Knowledge Search and Deployment Efforts

We build our theoretical argumentation around the distinct mechanisms of knowledge search and knowledge deployment which will favour domestic firms or foreign subsidiaries respectively. Obviously, firms have strong incentives to engage in knowledge search and deployment activities simultaneously. Search and deployment activities need to interact in such a way that the firm aligns its resource deployments with its market environment better than its rivals (Day 1994; Eisenhardt and Martin 2000).

This interaction is bidirectional. Knowledge deployment activities of foreign subsidiaries can send signals to potential knowledge sources. The latter become more likely to provide access to their own knowledge if they can expect to benefit from valuable knowledge inflows in the future (Schmidt & Sofka, 2009). This reciprocity mechanism should make the knowledge search activities of foreign MNC subsidiaries more effective and efficient. The performance effect of knowledge deployment activities can be improved if they are tailored to host market conditions. This adaptation of deployment activities is based on knowledge obtained through search activities in the host country, such as the existence of influential customer groups with anticipatory demand (Kohli & Jaworski, 1990). We argue that domestic MNCs will be the biggest beneficiaries of combinations of knowledge search and deployment activities. They benefit from their embeddedness with host country knowledge sources in their search activities. Access to foreign knowledge through their foreign subsidiaries allows them to draw on a novel pool of knowledge. The resulting combinations of host country and foreign knowledge have an especially high potential for market success because they combine novelty with adaptation to host country needs. The reverse is true for foreign MNC subsidiaries. Hence, we predict:

> *Hypothesis 3: Searching and deploying knowledge simultaneously will have a greater effect on firm performance in domestic firms than foreign MNC subsidiaries*

Data and Method

Sample and Data

We empirically test the hypotheses using a broad sample of Spanish manufacturing firms derived from the *Encuesta Sobre Estrategias Empresariales* (Survey of Business Strategies database; ESEE). The data in the ESEE are probabilistic and stratified by industry, province, and firm size. The data can therefore be considered to allow generalisation. We chose this data set because it allows identifying and observing domestic and foreign-owned firms in the same environment. Prior research on knowledge adaptation also employs samples of manufacturing firms to empirically test the relationship between those market-adaptation activities and firm performance (see e.g., Matsuno and Mentzer 2000; Morgan et al. 1998). So, using a manufacturing sample in this paper makes the results more easily comparable with other work on this topic.

The panel data available from 1990 to 2003 are unbalanced, that is, not all firms are observed

for the entire period.[1] To ensure precise empirical measurement of the proposed relationships, certain observations had to be excluded. In particular, some of the variables of interest are not available for every firm and every year. For example, information as to firms' ownership structure was surveyed only for the years 1990, 1994, 1998, and 2002.[2] Thus, the sample is restricted to those firms that responded to the variables of interest for the years under study (2,937 firm observations firms: 519 majorly foreign owned[3] and 2172 majorly domestic-owned).

Hypotheses 2b and 3 predict relationships with domestic MNCs as comparison groups. We identify those domestic MNCs as Spanish firms that report foreign direct investments (FDI), and strictly domestic firms as those firms that report no FDI.[4] The variable on FDI of Spanish firms, however, is only available for the year 2002. In this respect, the sample is restricted to those companies that participated in the survey in the year 2002.[5]

Variables

Dependent Variable. Our hypotheses predict relationships with firm performance in the host country as the dependent variable. Direct profit measures would be preferable but are not available in the data. Besides, profit measures are difficult to apply within MNCs where internal pricing would make profits in a particular host country less meaningful and comparable to host country comparison groups. MNCs may, for example, shift profits to subsidiaries in host countries with more favourable tax burdens. In this case, differences in profits in a particular host country are reflections of accounting strategies but not necessarily firm performance.

We measure the dependent variable through sales revenue. It is defined as all sales revenues derived from firm operations in the Spanish market. To avoid issues originating from simultaneity and reduce potential common methods biases we use sales revenues from the subsequent year (t+1).

Empirical research confirms that unexpected shortcomings in sales revenue have a direct and immediate impact on decision-making within the firm and are therefore a good performance indicator (Ostheimer 1980; Tucci and Tucker 1995; Ang 2001; Krider et al. 2005). This is because

[1] Table A1 in the Appendix shows the evolution of the data for each year.
[2] An overview of the availability of the individual variables is provided in Table A2 in the Appendix.
[3] Majorly foreign-owned means more than 50% of firm shares are owned by foreigners.
[4] In all other empirical settings, we compare the foreign-owned firms with all domestic-owned firms.
[5] For consistency reasons, the estimations are also performed for 2002 only. The results are consistent. For further details see consistency checks in the Appendix.

unexpected shortages in sales often imply budget restrictions that may cause immediate cuts in firm spending (Tucci and Tucker 1995). We will demonstrate the stability of the empirical testing with regard to the hypotheses by applying two alternative measures for firm performance as consistency check estimations, i.e. sales growth and labour productivity.

Independent Variables. We measure knowledge search through external R&D expenditure (logarithmic form). The measure is very fitting since it covers whether a firm has invested in knowledge production outside of its firm boundaries, e.g. through contract research provided by local universities or suppliers, as well as the degree of these engagements. The measure is frequently used in the literature to identify firms' knowledge search efforts (e.g. Cassiman and Veugelers 2006). Such knowledge search activities could, for example, include co-locating with leading universities, joint research projects with suppliers, or product development in collaboration with advanced users. Knowledge deployment activities are measured as the firms' expenditures on promotional activities (logarithmic form), including expenses for publicity, advertisement, and public relations (Bonoma and Clark 1988, Foster and Gupta 1994, Morgan et al. 2002). Examples of such knowledge deployment include activities such as advertising, educating and training local wholesalers, retailers and clients about the advantages of what a firm has to offer. It can also include sending experts to technology advisory boards or standard setting committees.

Furthermore, we introduce a dummy variable to identify foreign firms. Zaheer and Mosakowski (1997) discuss a number of concepts to indicate whether a firm can be considered foreign: location of international headquarters, perception of the firm in a specific country, or share of foreign shareholders. We choose the latter concept. A firm is classified as foreign if more than 50% of its shares are held by foreigners in the year under review[6].

Control Variables. Factors other than the independent variables discussed above may affect firms´ performance. Firstly, we control for a firm´s own investment in knowledge production through its internal R&D investment, which is often also used as a measure for its absorptive capacity (Cohen & Levinthal, 1989).

Secondly, it is necessary to separate liabilities of foreignness from liabilities of newness (Zaheer & Mosakowski, 1997). The year of observation minus the year of the firm's incorporation

[6] In a second attempt, we also narrowed the foreign variable to only those firms that are either fully foreign or fully domestic owned thus excluding cross-border joint ventures (see results section).

indicates its tenure in the Spanish market. Similarly, we control for liabilities of "smallness" through size of the workforce measured as total labour costs.

Thirdly, market conditions both from competition and demand can influence the results. We include control variables capturing the frequency of changing products per year and relative market share in the main market, as well as the degree of product standardisation (high/low) and price changes of a firm´s products (change of the sales price of the company's products).

Fourthly, structural factors at the firm level can influence the results. We include dummy variables for whether the firm was part of an acquisition and whether it is diversified into multiple sectors. Firm management can also differ with regard to its autonomy in decision-making (Cantwell and Mudambi 2005).[7] Hence, we add a control variable for whether the owner is part of the management to control for firms' strategic independence. We further include the firms' share of R&D expenditures (share of R&D expenditure on sales revenue) in relation to the firms' share of promotional expenditure (share of promotional expenditure on sales revenue). Firms with a higher share of promotional expenditures compared to R&D expenditures indicate a stronger focus on the deployment of firm competence than firms that report a relative higher share of R&D expenditure compared to promotional expenditure. The latter points more towards a competence-creating mandate. In order to identify the geographical scope of firms' activities, we include the share of firm exports, the origin of the components of a firms' product (share of product components from European countries and other OECD countries), as well as firms´ efforts to assimilate imported technological expertise into the local market.

Finally, we control for remaining industry level effects. Industries differ in their international competitiveness. We therefore include the revealed comparative advantage of Spain in the focal firm's industry based on import/export statistics. We add industry dummy variables at the two-digit NACE code to account for remaining industry effects. We include year dummies to capture macroeconomic effects.

Econometric Model and Consistency Measures

Following the theoretical outline set out above, we estimate the impact of firms' knowledge search and deployment efforts on next year's sales revenues. The results of the Hausman test

[7] Owner-managers have a strong preference for control, which may entail an inefficient concentration of decision-making authority (Goffee and Scase 1985) that may cause a performance disadvantage compared to non-owner-managed firms (Barth et al. 2005; Lauterbach and Vaninsky 1999; Morck et al. 1998).

support the application of a fixed-effects model. In this respect, unobserved fixed-effects are taken into account. Hierarchical moderated linear regression analysis is used to test the hypotheses. In each step of the analysis, the next higher order of interaction is added. The applied empirical framework can explain (1) the different benefits of knowledge search activities for foreign and domestic firms, (2) differences between foreign and domestic firms' knowledge deployment, (3) the interactive effect of knowledge search and deployment for foreign and domestic firms, and (4) the relative differences between foreign and domestic firms´ knowledge deployment benefit based on domestic companies multinational activities.

Note that, following prior work on knowledge search activities (e.g. Yli-Renko et al. 2001, Cassiman and Veugelers 2006), we have to ensure that firms are involved in innovation activities and marketing. Otherwise, differences between foreign and domestic-owned companies could be driven by differences with respect to the likelihood of performing such activities instead of firms' efficiency in utilizing the benefit of those efforts. Thus, we excluded companies that reported no prior innovation or deployment efforts (e.g. Yli-Renko et al. 2001). This caveat should be kept in mind when interpreting the results.

We run additional consistency measures using sales growth and productivity as dependent variables. Due to data limitations, however, we measure productivity as firms´ next years' sales revenues divided by total costs from the previous year. Total costs include all firm expenditures for research activities, production, and distribution of the firm products in a particular year. It is not a measure of total factor productivity because we have no information on capital costs. Given the limitations of the data availability for productivity measures we treat the estimations as consistency checks while using sales revenues in the main models.

We conduct an additional consistency check estimation in which we reduce the sample to the year 2002. We have the most precise information on the firm's foreign investment activities in this particular year. All results are reported in the annex (Annex Table 3).

Descriptive Statistics

In this section, we provide a brief overview of the main characteristics of domestic and foreign firms active in the Spanish market. Further details can be found in Table 1.

Insert Table 1 about here

The descriptive statistics show differences between foreign and domestic firms' knowledge search and deployment spending. Foreign companies spend on average 1.73 million Euros on external R&D and 1.39 million Euros on promotional activities while domestic-owned companies invest on average 140,000 Euros in external R&D and 320,000 Euros in promotional activities. In line, foreign companies report significantly higher sales revenues (88 million Euros - current year) than their domestic counterparts (25 million Euros - current year). Put differently, foreign MNC subsidiaries invest on average 3.13% of their sales revenues in R&D and 2.38% in promotional efforts. Domestic-owned companies in comparison invest 1.41% of their sales revenues in R&D activities and 1.53% in promotion. This suggests that foreign-owned companies place greater emphasis on knowledge search and deployment than their domestic counterparts.

Furthermore, the statistics show that foreign firms' market tenure is on average higher than that of their domestic competitors. Similar findings (higher values for foreign MNC subsidiaries than domestic ones) show up for labour costs, internal R&D expenditures, the proportion of employees working in R&D, the likelihood of assimilating imported technologies or expertise, the likelihood of being part of a company group, the share of exports, as well as next years' sales revenues. On the contrary, domestic-owned firms show a higher number of product changes per year, a higher share of the main product on their overall revenues, a slightly higher increase of product prices, a higher likelihood of non-related diversification, and the owners of domestic firms are more likely to be part of the management.

Comparing multinational firms´ external R&D and promotion efforts in more detail, the descriptive results reveal that foreigners show only a slightly higher focus on external R&D efforts compared to deployment activities (32%, 68%) than their domestic-owned counterparts (28%, 72%).

Results

This section presents the results of the econometric analysis. Correlation statistics among the independent variables are shown in Table 2. Correlation values between internal R&D expenditures, exports and external R&D expenditures are modestly high. This is largely in line with the literature that has established strong relationships between the three variables

(Cassiman & Veugelers, 2006; Golovko & Valentini, 2011). We thus examine the variance inflation factors (VIF) to assess whether these correlations have the potential to influence the regression results. Chatterjee and Price (1991) and Hair et al. (1998) suggest that values above 10 indicate problematic values. We find no high values (above 10).

Insert Table 2 about here

Table 3 shows the results of the fixed effects regression analysis. The analysis proceeded as follows. First, the control variables and the main effects are introduced (Table 3, Model 1), followed by the two-way interactions to test hypotheses 1, 2a and 2b (Model 2-5), and then the three-way interaction for hypothesis 3 (Model 6). The estimations are performed using next year's sales revenues as the dependent variable. In addition, the table reports the results of the comparison between foreign-owned companies and those domestic-owned firms reporting foreign investments (Model 7).

Insert Table 3 about here

As to the variables of interest, foreign ownership indicates a negative relationship with next year's sales revenues (Model 1, Table 3). However, the main effect changes as interactions are added to the model in line with our hypotheses. The interaction of external R&D expenditures with foreignness shows a significant negative effect which lends support to Hypothesis 1 (Model 2). Focusing on knowledge deployment through promotion expenditure we find a significant positive interaction with foreignness (Model 3). This supports Hypothesis 2a. A similar effect is demonstrated for domestic MNCs (Model 4).This finding supports hypothesis 2b. Both domestic and foreign MNCs benefit from a knowledge deployment advantage compared with strictly domestic firms.

Focusing on the interaction of external R&D expenditures with promotional expenditures for foreign firms, the results show a significant negative impact (Model 6). This effect is consistent when restricting the sample to foreign-owned companies and those domestic-owned firms reporting foreign investments (Model 7). This supports hypothesis 3.

In sum, we find that foreign MNC subsidiaries experience liability of foreignness when they search for knowledge in the host country (Hypothesis 1). However, foreignness becomes an asset

when knowledge is deployed (Hypothesis 2a). This advantage exists only compared to strictly domestic firms but not compared with domestic MNCs (Hypothesis 2b). Finally, domestic MNCs experience advantages over foreign MNC subsidiaries when they perform knowledge search and deployment simultaneously.

We summarize findings for the control variables briefly, since they are not the main focus of this study. A significant negative effect is apparent for the share of labour costs on current sales revenues as well as the market share in the main market. The same is true for the relationship between firms marketing expenditure and their R&D expenses. Spending more on marketing than R&D decreases firms´ sales revenues in the coming year. However, efforts to export firms' goods as well as the revealed comparative advantage of the sector in which firms are competing increases future sales revenues.

Consistency and Sensitivity Checks

We perform a series of consistency check estimations in order to prove the validity of the empirical findings (see Annex, Table A3). First, we test the sensitivity of the estimation results for our definition of foreignness. Model 8 (see annex Table A3) reports the estimation results for only those firms that are either 100% foreign-owned or 100% domestically-owned. All significant findings of the main models remain stable. Secondly, we extract the information on the foreign direct investment of a firm from the survey of the year 2002. It is possible that the foreignness status of a firm observation has changed in the previous periods. Hence, we run a separate estimation for the year 2002 only (Model 9). The pattern of significant results remains unchanged. Finally, we test the effects on alternative measures for firm performance, i.e. our dependent variable. We re-estimate all models for sales growth and firm productivity (Model 10-11). The former is less prone to suffering from unobserved heterogeneity; the latter allows the assessment of performance incorporating inputs. Again, all results of these consistency checks confirm the findings for our main models.

Conclusions

We conduct this analysis to provide more clarity on the question of whether foreignness is an asset or a liability. To do so, we draw on the central mechanism of embeddedness which is inherent in most studies investigating liability of foreignness. We argue theoretically that the lack of embeddedness of foreign MNC subsidiaries compared with domestic rivals is not necessarily a

disadvantage. Instead, we argue that the nature of the subsidiary's activity in the host country, i.e. whether it searches or deploys knowledge, determines whether embeddedness is an asset or a liability for host country rivals.

We argue that domestic firms benefit from their higher levels of embeddedness when they search for knowledge in the host country. However, the high level of embeddedness homogenizes the knowledge pool from which domestic firms can draw. MNCs, both domestic and foreign, are not constrained by the host country knowledge pool and therefore benefit from increased levels of novelty compared to strictly domestic firms when deploying the knowledge. Domestic MNCs have advantages when they combine knowledge search and knowledge deployment because they can benefit from higher levels of embeddedness in their search without suffering the negative consequences of constraints in the domestic knowledge pool in knowledge deployment.

We support these theoretical predictions empirically for a broad, longitudinal dataset of firms in Spain. This empirical opportunity allows us to eliminate several alternative explanations without limiting our empirical test to a single industry. Based on these findings we can derive several implications for academic research and management practice.

From an academic perspective, we relax the at least implicit assumption in many studies on liability of foreignness that domestic firms and MNC subsidiaries engage in the same activities. Our model is more flexible in the sense that we identify sources of assets or liabilities of foreignness at the activity level, i.e. whether firms search for or deploy knowledge. We demonstrate that the activity level allows differentiated theoretical predictions which cannot simply be extended to the firm or subsidiary level. In this sense, we show that foreign MNCs are not generally advantaged or disadvantaged when they operate in a host country.

Moreover, focusing on the activity level allows us to distinguish between different reference groups for assessing the effects of foreignness. This is an important addition to the literature since the degree of liability of foreignness is inherently a relative construct (Mezias, 2002a). We show that especially with regard to knowledge deployment activities, foreignness is an asset compared to strictly domestic firms but not necessarily compared with domestic MNCs. This distinction provides a pathway for more precise theorizing related to the advantages of being foreign as opposed to being international (Un, 2011). In sum, we would recommend that future studies comparing domestic and foreign firms incorporate the activity level for clarity in terms of

the source of advantage or disadvantage as well as in comparison to which group of host country firms.

Our findings have several implications for management practice. Both domestic and foreign firms can use our findings to optimise their strategies in the host country. Domestic firms should exploit their advantages in searching for knowledge in the host country. Their higher levels of embeddedness provide a competitive advantage for these activities. Foreign MNC subsidiaries, on the other hand, can expect to benefit especially from knowledge deployment. However, these advantages exist only if host country rivals are not MNCs themselves.

Finally, these findings also have consequences for targeted policymaking. There is a need to tailor policy instruments to particular types of companies and their activities in the host country.

Firstly, our findings indicate that domestic MNCs do not require government support in order to compete in their home markets because they combine local embeddedness with access to international knowledge pools. Secondly, strictly domestic firms benefit from support measures that leverage their embeddedness with local knowledge sources, e.g. universities or suppliers. These firms can be successful if they develop and strengthen their capacities for working together with external partners, e.g. in developing new products. Policymakers can support this process by providing incentives for strengthening professional and personal networks, e.g. through support for local conferences, personnel exchanges or even joint research projects. Thirdly, foreign MNC subsidiaries derive their strengths from deploying international knowledge, e.g. through new products. This is certainly advantageous for domestic customers as they have access to more advanced products and technologies. From an industrial policy perspective, it seems advisable to encourage broader knowledge flows between foreign and domestic firms. This can be in the form of encouraging co-location of foreign and domestic firms or through facilitating personnel mobility. Hence, and fourthly, the here applied foreign-domestic knowledge search and deployment framework can be a helpful tool for identifying the threats and assets of foreign investments for a specific host market environment.

In light of the targeted firm-specific policy recommendations highlighted above, we can further specify efforts to help improve public policy initiatives focusing on an international or supranational perspective. Depending on the expected outcome of public efforts to support local firms´ internationalisation efforts (deployment of superior capabilities or knowledge transfer

towards the home market), policymakers should consider firms' relative knowledge search and deployment abilities within a host location and the subsequent limitations. More precise policy instruments can help to strengthen, for example, firms' ability to access foreign knowledge pools. Moreover, policy initiatives that support an intensive cross-country knowledge/technology exchange (e.g. supra-national policy approaches between EU member states) should consider firms' relative advantages and disadvantages within a host market setting. Joint policy approaches between the participating countries allow, for example, more effective knowledge search efforts within host locations. Finally, policymakers should consider the assets originating from a fragmented European market. The need to adjust to new foreign market settings and the inherent ability to handle the lack of embeddeness within other European markets is a learning experience that firms can apply in other markets too. Thus, enabling European companies to expand their market activity across national boundaries not only contributes to the economic performance of European companies within this very European market, but also allows for learning experiences that European firms might use in order to compete globally.

Future Research

We demonstrate the implications of incorporating the activity level by focusing on knowledge search and deployment. This allows us to focus on knowledge as a major theme in MNC research (Kogut & Zander, 1993) and distinguish between the effects of embeddedness on different activities. However, the embeddedness mechanism and the knowledge aspect do not exhaust the potential realm of differences between domestic and foreign firms. We encourage studies that explore alternative differences in activities between domestic and foreign firms' activities focusing for example on the interdependency between foreign and local knowledge sourcing efforts on firms´ deployment success within a host market setting.

Our empirical setting is manufacturing firms in Spain. The longitudinal nature of the data in particular provides a unique opportunity to study our research question. Then again, Spain is an institutionally and economically developed member of the European Union. We encourage similar studies for other countries. This would provide the opportunity to incorporate the institutional dimension to our theoretical considerations on the effect of embeddedness and the success of knowledge sourcing efforts within host markets as well as firms´ degree of liability of foreignness.

Tables

TABLE 1—Descriptive Statistics

	All		Foreign		Domestic	
Variable	*Mean*	*S.D.*	*Mean*	*S.D.*	*Mean*	*S.D.*
Sales revenue in period t+1 (in Mio. Euro)	39.6	157	94.2	208	26.2	138
Sales revenue in period t (in Mio. Euro)	37.5	147	88.4	197	25	130
Foreign ownership	0.197	0.398	1	0	0	0
External R&D expenditure (in Mio. Euro)	0.452	5.812	1.73	12.9	0.14	1.02
Promotional expenditure (in Mio. Euro)	0.53	3.98	1.39	7.24	0.32	2.58
Multinational firm activity	0.63	0.48	1	0	0.53	0.5
Export value (in Mio Euro)	18.10	138.00	61.50	299.00	7.43	33.60
Relative marketshare	79.05	22.92	74.87	23.11	80.08	22.76
Revealed Comparative Advantage	114	44.264	116.58	45.58	113.37	43.92
Labor costs	9.54	26.9	21.6	44.1	6.58	19.6
Tenure	24.23	22.814	32.39	24.17	22.23	22.02
Internal R&D expenditure (in Mio. Euro)	0.6	4.03	1.1	3.81	0.48	4.07
Efforts for assimilating imported technology	0.259	0.438	0.42	0.49	0.22	0.41
No. of product changes per year	0.922	0.598	0.86	0.57	0.94	0.6
High product standardization (0/1)	0.633	0.482	0.63	0.48	0.63	0.48
Non-relative diversification	0.111	0.315	0.09	0.29	0.12	0.32
Owner part of management	0.214	0.411	0.03	0.17	0.26	0.44
Share of marketing expenditure divided by share of R&D expenditure	1.91	8.45	2.18	8.74	1.85	8.38
Change of product price	0.496	0.687	0.48	0.75	0.5	0.67
Acquisition	0.009	0.096	0.02	0.15	0.01	0.07
Percentage of imports from European countries	49.39	45.09	75.93	32.35	42.94	45.39
Percentage of imports from other OECD countries	8.39	20.63	14.53	24.72	6.9	19.22
Year 1994 dummy (yes/no)	0.136	0.343	0.2	0.4	0.12	0.33
Year 1998 dummy (yes/no)	0.11	0.313	0.2	0.4	0.09	0.28
Year 2002 dummy (yes/no)	0.121	0.327	0.18	0.38	0.11	0.31
	2704		532		2172	

TABLE 2 – Correlation Coefficients and Variance Inflation Factors

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Foreign ownership	1.00																						
2	External R&D expenditure	0.21	1.00																					
3	Promotional expenditure	0.26	0.40	1.00																				
4	Multinational company	0.36	0.34	0.48	1.00																			
5	Share of exports on current sales revenues	0.15	0.13	0.13	0.09	1.00																		
6	Relative marketshare	-0.08	-0.15	-0.23	-0.26	-0.05	1.00																	
7	Revealed comparative advantage	0.01	-0.03	0.01	-0.04	0.05	0.01	1.00																
8	Labor costs (Share on sales revenues)	0.13	0.15	0.06	0.23	0.06	-0.07	-0.11	1.00															
9	Tenure	0.21	0.24	0.33	0.31	0.07	-0.15	0.04	0.12	1.00														
10	Internal R&D expenditure	0.29	0.56	0.48	0.46	0.16	-0.25	-0.08	0.20	0.32	1.00													
11	Efforts for assimilating imported technology	0.19	0.23	0.17	0.18	0.12	-0.11	-0.04	0.04	0.16	0.28	1.00												
12	No. of product changes per year	0.04	0.07	0.07	0.09	0.05	-0.08	-0.05	0.06	0.02	0.12	0.08	1.00											
13	High product standardization (yes/no)	-0.01	0.02	0.17	0.08	0.03	-0.01	0.20	-0.17	0.11	0.03	-0.02	-0.09	1.00										
14	Non-relative diversification	-0.01	0.06	0.00	0.05	-0.01	-0.07	-0.12	0.04	0.05	0.07	0.03	0.06	-0.06	1.00									
15	Owner part of management	-0.23	-0.10	-0.11	-0.12	-0.06	0.05	0.01	-0.03	-0.10	-0.15	-0.12	-0.03	0.00	0.03	1.00								
16	Relation between firms marketing and R&D expenditure	0.08	0.18	0.19	0.16	0.00	-0.07	0.09	-0.02	0.22	0.29	0.07	0.02	0.18	-0.04	-0.05	1.00							
17	Change of product price	-0.02	0.00	0.11	-0.01	-0.01	0.02	0.00	-0.01	0.01	-0.01	0.01	0.01	0.07	-0.01	0.03	0.07	1.00						
18	Acquisition	0.07	0.01	0.05	0.05	0.00	-0.02	-0.03	-0.01	0.01	0.02	-0.01	0.03	0.02	0.02	-0.03	0.02	0.01	1.00					
19	Product components from European countries	0.31	0.33	0.46	0.54	0.09	-0.21	-0.02	0.12	0.30	0.46	0.21	0.05	0.05	0.04	-0.12	0.18	-0.01	0.00	1.00				
20	Product components from other OECD countries	0.24	0.24	0.27	0.30	0.06	-0.15	-0.13	0.14	0.19	0.35	0.18	0.07	0.05	0.08	-0.14	0.05	0.01	-0.01	0.25	1.00			
21	Year 1994 dummy (yes/no)	0.08	0.05	0.13	0.14	0.02	-0.06	-0.03	0.07	0.05	0.11	-0.02	0.02	0.05	0.02	0.12	0.00	0.00	0.05	0.11	0.08	1.00		
22	Year 1998 dummy (yes/no)	0.06	0.14	0.18	0.18	0.05	-0.09	-0.01	0.05	0.08	0.19	0.01	0.02	0.01	-0.01	0.02	0.04	-0.10	0.06	0.16	0.05	-0.17	1.00	
23	Year 2002 dummy (yes/no)	0.09	0.20	0.31	0.17	0.09	-0.03	0.05	0.06	0.06	0.17	0.03	0.01	-0.03	-0.04	0.01	0.04	0.25	-0.03	0.16	0.06	-0.17	-0.15	1.00
	VIF	1.29	1.55	1.85	1.82	1.06	1.12	1.10	1.14	1.25	2.08	1.15	1.04	1.17	1.04	1.13	1.18	1.17	1.02	1.66	1.25	1.26	1.26	1.43
	Mean VIF	1.3																						

TABLE 3 – Impact of Knowledge Search and Deployment: DV – Sales Revenues

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
Variable	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*
Foreign ownership	-0.053	[1.40]	-0.018	[0.41]	-0.102	[2.12]**	-0.065	[0.91]	-0.069	[1.35]	-0.111	[2.01]**	-0.126	[2.25]**
Promotional expenditure	0.054	[3.22]***	0.051	[3.02]***	0.044	[2.48]**	0.011	[0.42]	0.039	[2.20]**	0.036	[1.95]*	0.053	[2.28]**
External R&D expenditure	0.004	[0.39]	0.012	[1.19]	0.004	[0.44]	0.003	[0.33]	0.014	[1.33]	-0.003	[0.11]	0.006	[0.19]
Foreign*external R&D expenditure			-0.007	[1.82]*					-0.008	[2.02]**	0.013	[1.11]	0.02	[1.66]*
Foreign*promotional expenditure					0.053	[1.65]*	0.092	[2.40]**	0.059	[1.86]*	0.105	[2.65]***	0.109	[2.81]***
Domestic-multinational company							-0.052	[0.69]						
Domestic-multinational company * promotional expenditure							0.012	[1.78]*						
Promotional exp.*external R&D exp.											0.018	[0.61]	0.012	[0.38]
Foreign*Promotional exp.*external R&D exp.											-0.002	[1.87]*	-0.002	[2.19]**
Share of exports on current sales revenues	0.054	[2.95]***	0.053	[2.90]***	0.055	[3.00]***	0.039	[1.19]	0.054	[2.95]***	0.055	[2.98]***	0.082	[2.27]**
Relative marketshare	-0.028	[2.64]***	-0.028	[2.67]***	-0.028	[2.62]***	-0.028	[2.61]***	-0.028	[2.66]***	-0.028	[2.62]***	-0.018	[1.53]
Revealed comparative advantage	0.142	[2.28]**	0.144	[2.33]**	0.147	[2.36]**	0.142	[2.28]**	0.15	[2.42]**	0.151	[2.44]**	0.177	[2.78]***
Labor costs (Share on sales revenues)	-1.889	[7.02]***	-1.916	[7.12]***	-1.854	[6.88]***	-1.836	[6.78]***	-1.879	[6.98]***	-1.878	[6.99]***	-1.849	[6.82]***
Tenure	0.014	[1.00]	0.015	[1.02]	0.013	[0.87]	0.013	[0.87]	0.013	[0.88]	0.013	[0.91]	0.02	[1.28]
Internal R&D expenditure	0.01	[0.71]	0.011	[0.74]	0.009	[0.58]	0.01	[0.70]	0.009	[0.59]	0.008	[0.57]	0.008	[0.50]
Efforts for assimilating imported technology	0.009	[1.22]	0.009	[1.17]	0.01	[1.33]	0.01	[1.32]	0.01	[1.30]	0.009	[1.14]	0.003	[0.35]
No. of product changes per year	-0.005	[0.91]	-0.004	[0.81]	-0.005	[0.96]	-0.005	[0.92]	-0.004	[0.87]	-0.004	[0.84]	-0.005	[0.90]
High product standardization (yes/no)	-0.013	[1.39]	-0.014	[1.43]	-0.012	[1.32]	-0.013	[1.37]	-0.013	[1.36]	-0.012	[1.30]	-0.005	[0.42]
Non-relative diversification	0.003	[0.47]	0.003	[0.52]	0.003	[0.47]	0.002	[0.41]	0.003	[0.53]	0.003	[0.48]	0.01	[1.74]*
Owner part of management	0.002	[0.41]	0.002	[0.36]	0.002	[0.48]	0.003	[0.60]	0.002	[0.42]	0.002	[0.39]	-0.002	[0.26]
Relation between firms marketing and R&D expenditure	-0.031	[2.49]**	-0.032	[2.53]**	-0.029	[2.32]**	-0.029	[2.32]**	-0.03	[2.35]**	-0.031	[2.42]**	-0.038	[2.72]***
Change of product price	0.099	[1.48]	0.107	[1.59]	0.096	[1.43]	0.095	[1.42]	0.104	[1.55]	0.096	[1.43]	-0.006	[0.44]
Acquisition	0.012	[1.57]	0.011	[1.48]	0.013	[1.69]*	0.012	[1.65]	0.012	[1.62]	0.012	[1.58]	0.013	[1.70]*
Product components from European countries	-0.007	[0.68]	-0.006	[0.65]	-0.006	[0.63]	-0.007	[0.69]	-0.006	[0.59]	-0.007	[0.66]	-0.018	[1.45]
Product components from other OECD countries	-0.007	[0.97]	-0.008	[1.10]	-0.007	[0.98]	-0.008	[1.00]	-0.009	[1.12]	-0.009	[1.15]	-0.008	[0.94]
Year 1994 dummy (yes/no)	0.002	[0.48]	0.002	[0.51]	0.002	[0.51]	0.002	[0.43]	0.003	[0.55]	0.003	[0.57]	-0.001	[0.10]
Year 1998 dummy (yes/no)	0.041	[6.90]***	0.042	[7.05]***	0.041	[7.02]***	0.041	[6.83]***	0.043	[7.20]***	0.042	[7.10]***	0.031	[4.57]***
Year 2002 dummy (yes/no)	0.055	[6.81]***	0.057	[6.98]***	0.055	[6.85]***	0.053	[6.49]***	0.057	[7.05]***	0.056	[6.86]***	0.044	[4.64]***
Constant	0.777	[1.72]*	0.762	[1.69]*	0.737	[1.63]	0.718	[1.58]	0.715	[1.59]	0.741	[1.64]	1.253	[3.19]***
Observations	2696		2696		2696		2696		2696		2696		1823	
Number of groups	1984		1984		1984		1984		1984		1984		1225	
R-squared	0.34		0.35		0.35		0.35		0.35		0.36		0.33	

Absolute value of t statistics in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

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Annex

TABLE A1 – Evolution of the Data Set by Year

Year of observation	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Current Sample	2188	2188	2059	1977	1869	1876	1703	1716	1920	1776	1754	1870	1724	1708
Firms that respond		1888	1898	1768	1721	1693	1584	1596	1764	1631	1634	1693	1635	1380
Firms which disappear, do not collaborate, or are not accessible		300	161	209	148	183	119	120	155	145	120	177	89	328
Firms recovered					99								73	
Entries in the current year		171	79	101	56	9	132	324	12	123	236	31	0	0
Overall number of participating firms	3462													

TABLE A2 – Availability of the Individual Variables

Variable	*Years available*
Sales revenues	1990-2003
External R&D	1990, 1994, 1998, 2002
Expenses for publicity, advertisement and public relations	1990-2003
Foreign/Domestic shareholder	1990-2003
Tenure	1990-2003
Sector of activity	1990-2003
Internal R&D expenditure	1990-2003
Part of a company group	1990, 1994, 1998, 2002
Share of the major external shareholder	1990, 1994, 1998, 2002
Revealed comparative advantage	1990-2003
Acquisitions	1990-2003
Frequency for changing product	1990, 1994, 1998, 2002
Relative share in market 1	1990, 1994, 1998, 2002
Product standardization	1990, 1994, 1998, 2002
Diversification	1990, 1994, 1998, 2002
Evolution of the market	1990-2003
Share of the labor costs	1990-2003
Identity between ownership and control	1990, 1994, 1998, 2002
External ownership	1990, 1994, 1998, 2002
Foreign direct investments	2000-2003
Exports	1990-2003

TABLE A3 – Consistency Checks

	DV: Next years' sales revenues excl. 100% Foreign vs. 100% Domestic		DV: Sales growth		DV: Productivity		DV: Next years' sales revenues Only year 2002	
	Model 8		*Model 9*		*Model 10*		*Model 11*	
Variable	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*	*Coeff.*	*Std. Err.*
Foreign ownership	-0.234	[2.82]***	-0.903	[1.53]	-0.097	[2.10]**	-0.349	[1.37]
External R&D expenditure	0.006	[0.17]	-0.082	[0.26]	0.001	[0.05]	-0.206	[2.21]**
Promotional expenditure	0.042	[2.08]**	-0.027	[0.13]	-0.008	[0.49]	0.114	[1.80]*
Foreign*External R&D expenditure	0.021	[1.43]	0.162	[1.29]	0.015	[1.49]	0.063	[1.47]
Foreign*Promotional expenditure	0.143	[2.56]**	0.738	[1.75]*	0.058	[1.80]*	0.340	[2.34]**
Promotional exp.*External R&D exp.	0.008	[0.23]	0.260	[0.83]	0.008	[0.30]	0.197	[2.58]**
Foreign*Promotional exp.*External R&D exp.	-0.002	[1.75]*	-0.021	[1.97]**	-0.002	[2.15]**	-0.005	[1.72]*
Share of exports on current sales revenues	0.071	[3.41]***	0.290	[1.48]	-0.040	[2.45]**	-0.074	[1.26]
Relative marketshare	-0.017	[1.40]	-0.260	[2.32]**	-0.010	[1.10]	0.011	[0.42]
Revealed comparative advantage	0.120	[1.49]	1.238	[1.88]*	0.141	[2.60]***	0.076	[1.03]
Labor costs	-1.416	[5.01]***			-0.154	[3.99]***	0.792	[12.38]***
Sales revenues in current period			-5.705	[16.32]***				
Tenure	0.018	[0.99]	0.148	[0.97]	0.017	[1.33]	-0.069	[2.43]**
Internal R&D expenditure	-0.005	[0.31]	-0.054	[0.35]	-0.019	[1.45]	0.038	[0.86]
Efforts for assimilating imported technology	0.007	[0.78]	0.087	[1.05]	0.009	[1.35]	0.030	[1.48]
No. of product changes per year	0.001	[0.21]	-0.023	[0.44]	0.000	[0.07]	-0.014	[0.99]
High product standardization (yes/no)	-0.005	[0.45]	-0.077	[0.77]	-0.013	[1.56]	0.035	[1.72]*
Non-relative diversification	0.002	[0.37]	-0.033	[0.57]	-0.002	[0.46]	0.014	[1.01]
Owner part of management	0.006	[1.01]	0.039	[0.72]	0.006	[1.25]	-0.016	[0.91]
Relation between firms marketing and R&D expenditure	-0.020	[1.36]	-0.268	[1.99]**	-0.009	[0.85]	-0.140	[4.77]***
Change of product price	0.131	[1.78]*	2.131	[2.99]***	0.007	[0.57]	0.426	[1.29]
Acquisition	0.016	[1.75]*	0.120	[1.51]	0.016	[2.49]**		
Product components from European countries	-0.011	[1.00]	-0.062	[0.59]	0.017	[1.90]*	-0.071	[3.28]***
Product components from other OECD countries	-0.016	[1.85]*	-0.027	[0.34]	-0.002	[0.23]	-0.017	[0.93]
Year 1994 dummy (yes/no)	-0.002	[0.46]	-0.033	[0.66]	-0.012	[2.93]***		
Year 1998 dummy (yes/no)	0.038	[5.55]***	0.232	[3.65]***	-0.014	[2.64]***		
Year 2002 dummy (yes/no)	0.054	[5.83]***	0.263	[3.00]***	-0.019	[2.39]**		
Constant	0.222	[0.42]	-13.069	[3.21]***	-0.589	[2.33]**	-1.716	[1.32]
Observations	2398		2699		2850		235	
Number of groups	1814		1984		2091			
R-squared	0.36		0.32		0.18		0.83	

* significant at 10%; ** significant at 5%; *** significant at 1%

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Abstract
Many modern firms compete globally. However, research into whether foreignness is an asset or a liability in competition with domestic firms is inconclusive. We argue that foreign MNC subsidiaries are not per se advantaged or disadvantaged. We suggest that the distinction originates from the nature of the subsidiary's activity in the host country. We focus on two activities: knowledge search and knowledge deployment. We predict theoretically that domestic firms have advantages when they search for knowledge due to their embeddedness in the host country. However, this increased embeddedness reduces the degree of novelty of their knowledge pool. Foreign MNC subsidiaries therefore have advantages in knowledge deployment because they draw from a richer, international knowledge pool. However, these advantages accrue to both foreign and domestic MNCs. We test and support these predictions for a longitudinal dataset of 2900 firm observations in Spain. We develop recommendations for research and practice based on these findings.

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