Emerging versus advanced country MNEs investing in Europe: A typology of subsidiary global–local connections

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This paper empirically investigates how subsidiaries of multinationals from both emerging (EMNEs) and advanced (AMNEs) economies investing in Europe learn from the local context and contribute to it as much as they benefit from it. To explore this we classify the behavior of MNE subsidiaries into different typologies on the basis of how knowledge is transferred within the multinational and on the nature of the local innovative connections. The empirical analysis relies on an entirely new, subsidiary-level dataset in the industrial machinery sector in Italy and Germany. Results show that EMNEs and AMNEs undertake different strategies for tapping into local knowledge and for transferring it within the company. We identify a new typology of EMNE subsidiary that contributes through its significant local innovative efforts to development processes in the host country. This result suggests possible win-win situations from which novel policy implications may be drawn.

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1. Introduction

As European countries face one of the worst economic crises in recent history, emerging economies are demonstrating their dynamism, showing significant resilience to the current global downturn. We are witnessing an unprecedented international expansion of emerging economy firms into multinational enterprises (MNEs). According to UNCTAD (2011), outflows of foreign direct investment (OFDI) from developing and transition economies reached the record level of $388 billion in 2010, corresponding to 29% of global outflows, up from 16% in 2007 before the financial crisis. Furthermore in 2011 among the top ten Fortune Global 500 companies, there were three Chinese firms, Sinopec, China National Petroleum, and State Grid along with other leading emerging economy MNEs (EMNEs) including Petrobras from Brazil, Tata Motors from India, Pemex from Mexico and Petronas from Malaysia.

EMNEs are attracting a great deal of interest from international business (IB) scholars, who are focusing mainly on how they have come into prominence and how they differ from advanced country MNEs (AMNEs), in a bid to understand whether EMNEs’ behavior is consistent with mainstream IB theories (Ramamurti & Singh, 2009). In this burgeoning literature stresses that one of the chief motivations for this growth of EMNEs is the appropriation of strategic assets (Dunning, 1993). While EMNEs’ strengths rely mainly on their specific home country advantages (e.g. low factor costs, state support), they generally have few accumulated firm-specific advantages, and their expansion abroad, especially to advanced countries, is driven crucially by the search for technology, management, and strategic skills, brands, and commercial knowledge, which are all largely lacking in their home countries (Rugman, 2009, chap. 3). Thus, internationalization is a strategy aimed at strengthening firms based on the accumulation of previously unavailable resources. The study of developing country MNEs is not novel per se. Third world MNEs were being investigated in the late 1970s and the 1980s (Lall, 1983; Wells, 1983). However, the recent wave of EMNE expansion has resulted in renewed attention and is giving rise to a new strand in the IB literature (Wells, 2009, chap. 2).

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The keenness of EMNEs to acquire high-value strategic assets in advanced economies has generated considerable interest, concern, and controversy worldwide. The rapid expansion of EMNEs is viewed with a mix of hope and fear: on the one hand, inputs of fresh capital are welcomed by host countries, especially in these times of low growth; on the other hand, there are reservations, especially in the case of Chinese investments, that foreign investments are an expression of the investing country’s or state’s interest in gaining control over advanced economy strategic assets and infrastructures, which is also causing concern related to loss of dominance in key technological capabilities. These mixed sentiments are often based on scanty information and individual interpretations and we argue that there is an urgent need for more empirical research to provide a better understanding of this phenomenon. Questions are being asked about how strategic assets are being acquired, and whether EMNEs are displaying a predatory ‘take-and-leave’ behavior or are contributing to the development trajectories of advanced host economies.

There is a rapidly growing literature on EMNEs’ strategies and motivations for investing in advanced economies, which is based mainly on firm case studies (see among others Liu & Li, 2002; Zhang & Filippov, 2009), on descriptive investigations of specific host countries (e.g. on Germany, Schüller-Zhou & Schüler, 2009; on Italy, Pirotbelli, Rabellotti, & Sanfilippo, 2011; on the UK, Cross & Voss, 2008; Liu & Tian, 2008), and on particular industries (e.g. on India’s pharmaceutical sector, Athreye & Godley, 2009, and steel industry, Kumar & Chadha, 2009). There are also some econometric studies, many of which are based on aggregate Chinese FDI data, that explore the importance of different motivations, including the search for strategic assets (Amighini, Rabellotti, & Sanfilippo, 2011; Buckley et al., 2007; Kolstad & Wiig, 2012; Pradhan, 2009).

However, little attention has so far been paid to understanding the impact of EMNEs on the local contexts of advanced country host economies, and there is little existing micro-level empirical research on this topic. This paper addresses this gap in the literature by exploring empirically, using both quantitative and qualitative evidence, the following research questions: How do EMNE subsidiaries investing in Europe learn from the local context, and do they contribute to it as much as they benefit from it? How does their behavior differ from that of AMNEs?

To investigate these questions we develop a novel conceptual framework (Section 2), to classify the behavior of MNE subsidiaries into different typologies on the basis of how knowledge is transferred within the MNE and on the level of local innovative connections, which is in line with earlier research in this field (Lorenzen & Mudambi, 2010; Marin & Giuliani, 2011; Mudambi & Swift, 2012). The empirical analysis relies on an entirely new subsidiary-level dataset, which includes EMNEs and AMNEs operating in the industrial machinery sectors in Italy and Germany (see Section 3 for the methodology). Our results show that EMNEs and AMNEs adopt different strategies for tapping into local knowledge and diffusing it within the company (Section 4). Besides, beyond confirming the existence of predatory attitudes among EMNEs, we highlight a different typology of EMNE subsidiaries that contributes to the host country’s development processes through its significant local innovative efforts. This suggests a new view of EMNEs in advanced countries and the possibility of an interesting win-win situation, which has some important implications for policy (Section 5).

2. Conceptual framework: a typology of MNE subsidiaries

The impact of MNE operations on local development and growth has been a consuming interest for development economists for many years (for a survey see Gorg & Greenaway, 2004; Smeets, 2008). More recently, it has become the focus of several IB studies (Beugelsdijk, McCann, & Mudambi, 2010; Buckley & Ghauri, 2004; Piscitello & Santangelo, 2007). In the development economics literature, MNEs are generally seen as a black box (for a critical appraisal see Marin & Bell, 2006), while the value of IB research lies in its efforts to unpack MNE heterogeneity and study the characteristics of MNE subsidiaries, their governance modes, and the interactions between them and their headquarters (among many others see: Bartlett & Ghoshal, 1986; Birkinshaw & Hood, 1998; Cantwell & Mudambi, 2005; Ghoshal & Bartlett, 1990).

In a bid to understand how MNEs contribute to the local economies of host countries, there has been a wave of studies analyzing global–local connections (Giuliani & Marin, 2007; Lorenzen & Mudambi, 2010; Marin & Giuliani, 2011). This body of work focuses on two main issues: (a) investigating how MNE subsidiaries’ global connections contribute to feeding local processes of innovation through the formation of local ties, and (b) exploring the reverse process, i.e. how MNE subsidiaries tap into local knowledge to feed the global intra-corporate knowledge pipeline (Bell, Arza, Giuliani, & Marin, 2008, among others). The IB literature has proposed several typologies in the attempt to highlight the differences across subsidiaries in terms of dependence on headquarters, level of innovativeness, and degree of entrepreneurship, among other factors (see e.g. Bartlett & Ghoshal, 1986; Jarrillo & Martínez, 1990; Marin & Bell, 2010; Panatsissiou & Pearce, 1999). In the present paper, we build on this research and develop a new typology of MNE subsidiaries based on the following two dimensions (Fig. 1):

1. The degree to which MNEs transfer and/or receive knowledge to/from their headquarters and to/from other subsidiaries.
2. The level of locally embedded innovative activities.

We chose these two dimensions because the first indicates the extent to which a MNE subsidiary either relies on corporate-generated knowledge or acts as source of knowledge for the rest of the corporation (i.e. intra-corporate knowledge transfer), and the second refers to the degree to which subsidiaries are embedded in local innovative activities, allowing the absorption of local knowledge, but also demonstrating a commitment to generate their own local networks and innovation activities.

The first dimension – i.e. the intra-corporate knowledge transfer – allows an evaluation of whether subsidiaries are simply passive branches of the corporate headquarters or, on the contrary, they are innovative and independent organizational units, capable of tapping into local knowledge, thus envisaging a knowledge transfer process that runs in reverse direction from what is
commonly presumed in top-down models (Almeida & Phene, 2004; Birkinshaw & Hood, 2000; Cantwell & Mudambi, 2005; Hedge & Hicks, 2008; Kuenmerle, 1999; Marin & Bell, 2010; Pearce, 1999; Shimizutani & Todo, 2008). MNE subsidiaries that are located in contexts that are more technologically advanced and knowledge-rich compared to the home country are expected to engage in considerable reverse knowledge transfer. Hence, this dimension predicts two types of opposite behavior:

(a) A ‘top-down’ approach where the subsidiary depends on corporate-generated knowledge and contributes little or nothing through reverse knowledge transfer.

(b) A ‘bottom-up’ approach where the subsidiary is a local, knowledge-generating branch, which transfers more knowledge to the remaining corporation than receives from it, therefore being a source of knowledge for the headquarters and the other subsidiaries.

The second dimension of our typology – i.e. the intensity of locally embedded innovative activities – aims at a better understanding of the degree to which the MNE subsidiary’s forging of local ties can generate value, not only for the MNE, but also for the local context. The literature shows that the degree to which subsidiaries can contribute to local innovation and development processes depends, among other things, on the extent to which the subsidiary undertakes innovative activities (Castellani & Zanfei, 2007; Marin & Bell, 2010; Marin & Sasidharan, 2010; Todo & Miyamoto, 2006) and on the knowledge-intensive interactions with local partners (Giuliani, 2008).

Consequently, in our framework, the level of locally embedded innovative activities includes the nature of the innovative activity carried out at subsidiary level and its degree of local embeddedness.

The proposed typology includes four main types of subsidiary (Fig. 1 clockwise):

- **Predatory subsidiary**, which combines bottom-up knowledge transfer and low local embeddedness. In this type of subsidiary, the activity to tap into local knowledge occurs mainly at subsidiary level via the appropriation of pre-existing skills (as in the case of mergers and acquisitions), learning by hiring local skilled human resources or imitation. The appropriation of local knowledge is mainly aimed at transferring it to the headquarters, and other subsidiaries. In this case, the subsidiary maintains very limited local innovative ties.

- **Dual subsidiary**, which combines bottom-up knowledge transfer with high local embeddedness. This type of subsidiary contributes both to corporate knowledge and to the local context via the formation of innovative networks with local actors.

- **Locally embedded subsidiary**, which combines top-down knowledge transfer and high local embeddedness. In this case, the subsidiary is strongly embedded in local innovative networks and at the same time relies on knowledge transferred from its headquarters.

6 There are possible intermediate behaviors between these two extreme positions, characterized by a more balanced exchange of knowledge between the subsidiary and the headquarters, which our classification does not explicitly take into account. In this sense, our classification does not differ from other 2 x 2 classifications as in Jarrillo and Martinez (1990) and Marin and Bell (2010).

7 The category of Dual subsidiary is derived from Marin and Bell (2010), who introduce it to identify subsidiaries with both high degrees of corporate integration and localization of functions. We are aware that our category does not fully match with theirs, but it is one of the most conceptually close definitions of subsidiaries available in the literature.

8 We are aware of the fact that the label Locally embedded subsidiary only refers to the local context and does not capture the type of relationship between the subsidiary and the headquarters, but it has been chosen for the sake of brevity.

Passive subsidiary, which combines top-down knowledge transfer and low local embeddedness. This type of subsidiary is neither embedded in local innovative networks, nor engages in reverse knowledge transfer to its headquarters, and relies almost exclusively on knowledge generated at the corporate level.

We explore the extent to which EMNE and AMNE subsidiaries differ in their capacity to contribute to corporate and local knowledge, based on whether they are overrepresented in one of the four subsidiary types. We are, of course, aware of the huge heterogeneity among both EMNEs and AMNEs (Ramamurti & Singh, 2009) and that finding common patterns within these two groups may be difficult. However, extant evidence suggests that, despite their heterogeneity, the new wave of EMNEs has some unprecedented commonalities, related mainly to weak-firm-specific and strong country-level advantages.

Anecdotal evidence on EMNE subsidiaries worldwide tends to portray them as behaving in a predatory way: taking maximum advantage through asset-seeking strategies and contributing little to the local context or even in some cases, causing harm. In the press, there are frequent reports of aggressive EMNE subsidiary strategies, designed to outcompete incumbent firms. For instance, the final report about the investigations conducted in the US on Huawei’s and ZTE’s provision of equipment to the US infrastructure concludes that they could undermine core US national-security interests (Charles, 2012). Similar concerns have led the Australian government to ban Huawei from participating to a $38bn bid for the National Broadband Network (Yueyang, 2012). The perception of a threat is often directed against acquisitions from Chinese state companies, as clarified in this quote from The Economist (2010): “Chinese firms are going global for the usual reasons: to acquire raw materials, get technical know-how and gain access to foreign markets. But they are under the guidance of a state that many countries consider a strategic competitor, not an ally.” Besides the threat to national security in strategic sectors, such as, for instance, natural resources and aviation, the acquisitions of famous national brands have also been considered as a loss of national identity and resources (Brummer, 2012).

In spite of this increasing attention in the press, research on whether and how EMNEs differ from AMNEs in terms of predatory behaviour is still scant. One problem related to the lack of robust empirical evidence is a possible tendency to generalise on the basis of what is at hand, concluding that what is observed in one case or in one specific sector, applies to others as well. In this paper we provide some new empirical evidence aimed at exploring if EMNE specificities, compared to what we know about AMNE subsidiaries, give rise to different behaviors according to the typology proposed above. Moreover, we investigate if the expectation that many EMNE subsidiaries fall into the predatory category is consistent with our empirical evidence.

3. Methodology and data

3.1. The industrial machinery sector

We focus on EMNE and AMNE subsidiaries in the industrial machinery and equipment sectors in Italy and Germany. These sectors, within the manufacturing industry, are ranked first in Italy and second in Germany (after Chemicals and Chemical products) for value of inward FDI stocks, and correspond respectively to 11% and 12% of 2008 FDI stocks over total manufacturing (UNCTAD, 2012). Also, both countries have a long tradition in this sector, with some world leading companies such as ROMI-Italia formerly Sandretto, Franco-Tosi Meccanica and Waldrich Coburg. Table 1 reports that in 2007 Italian exports of machinery and equipment
represented 19.3% of total manufacturing export value, and in Germany they were almost 16% of the total.

In both Italy and Germany, the machinery and equipment industry traditionally has been characterized by significant diversity of products, such as plastic injection molding machines, industrial steam turbines, pumps and filters, which are produced predominantly by small and medium sized companies, in small series or as specialized and customized machinery. In Germany, 75% of machinery and equipment firms have less than 100 employees, and 90% of firms employ less than 250 workers (VDMA, 2010, 2011). In Italy 96% of firms have less than 100 employees and 98% less than 200 (Federmeccanica, 2011).

With regard to innovation, the industrial machinery and equipment industry is characterized by highly tacit components and interactions of firms with external actors – such as customers, suppliers and universities – are very important in the innovation process (Belussi, 2003; Freeman, 1991; Lissoni, 2001). This may explain why EMNEs keen to catch up in this sector may decide to invest in countries and regions recognized as holding the most relevant knowledge. In other words, the internationalization strategy followed by EMNEs in this sector closely resembles what Ramamurti (2009, chap. 13) terms “global consolidator strategy”. According to Ramamurti, this strategy is pursued by EMNEs to achieve global scale in mature mid-technology industries such as cement, steel, aluminum, auto parts, computers (examples are Cemex, Lenovo, Tata Steel, etc.), in the search for ways to add new capacity and upgrade old capacity through greenfield investments and acquisitions.

3.2. Data collection

The empirical analysis is based on a new and original dataset including the responses from a sample of interviewees from EMNE and AMNE subsidiaries. With regard to EMNEs, there is not an official definition, but there are several alternative classifications utilized by different research institutions.9 In this paper, we combine the definition provided by BBVA (2012) with that suggested by Vale Columbia Center.10 The result is an extensive definition also including high-income countries such as Israel, South Korea and Taiwan whose companies have in general begun to expand internationally more recently than those from Europe and the US. For the full list of countries included in the two groups see Table 2.

In Italy, the list of subsidiaries is extracted from the 2009 edition of the ICE-Reprint database, which merges data from Idi Markets and AIDA. This list has been crosschecked with the Euromonitor database and eventually integrated. The total number of foreign subsidiaries in the industrial machinery sector in Italy is 526, which includes 34 EMNE subsidiaries. In Germany, the list is extracted from the 2010 edition of the DAFNE database, which lists 842 foreign subsidiaries in the German industrial machinery sector including 58 EMNE subsidiaries.

The two lists have been checked and updated manually excluding the subsidiaries that have become Italian or German or ceased to exist. Besides, we have excluded those subsidiaries that are part of financial holdings, given that in this study we are interested in the foreign direct control of the subsidiary motivated by long-lasting economic goals rather than speculative reasons.

The country of origin of the subsidiary has been identified with the country where the investor’s flow of financial resources has originated. Therefore, joint ventures and firms owned by shareholders who, in spite of having foreign nationality, have their activity in Italy or Germany have not been included.11

The final list includes 20 EMNE subsidiaries in Italy and 35 in Germany. We have contacted all the EMNE subsidiaries on the list by telephone; we set up interviews with 10 companies in Italy (50% response rate) and 14 in Germany (40% response rate). We have conducted several tests to check the representativeness of the

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11 This is the case for instance of Sutter, a company of Swiss origin which has been considered Italian given that the Italian subsidiary created in 1910 represents the core of the group. Another example is Techint, which has been considered as foreign, in spite of its Italian origins (being founded by the Rocca family), since its industrial base is in Argentina, where the group maintains its core industrial activities (Mariotti and Mutinelli, 2010).
sample with respect to the population, and found no significant differences between respondents and non-respondents.\textsuperscript{12}

In our comparative analysis, we have selected subsidiaries from AMNEs comparable with the EMNEs sample in terms of firm size (number of employees) and regional location to take into account of the impact that these factors may have on the subsidiaries strategies. Following Klepper and Thompson (2006), we have also selected firms operating in the same submarket. Indeed, being the machinery sector a very differentiated one, for subsidiaries to be comparable they need to belong to the same submarket, sharing the same technology and being exposed to similar regulations.

Depending on availability, over a period of one year between 2010 and 2011, interviews were conducted face-to-face or by phone; in either case they lasted between 30 and 120 min. In most cases we interviewed only CEO and in few occasions – when the CEO was unavailable – the R&D or the production manager.\textsuperscript{13}

The interviews were based on a semi-structured questionnaire, previously tested in five pilot consultations. The questionnaire was designed to collect information on the general characteristics of the subsidiary; the relationships between subsidiary, parent company and other subsidiaries; innovative activities; innovation networks at the local level in the host country; and subsidiary entrepreneurship and performance. Table 2 reports information on the home countries of the subsidiaries included in the sample and Table 3 provides some descriptive statistics related to key characteristics of the subsidiaries.

### 3.3. Operationalization of key variables

In Section 2, we have introduced the two dimensions on which this typology developed in this paper is based. Here, we explain how these dimensions are operationalized.

\textsuperscript{12}The results of a Fisher exact test on the nationality of ownership have revealed that there are not statistically significant differences and the Mann–Whitney U test to determine if responding and non-responding firms are different in size (measured by the number of employees) and age has also resulted in not significant differences.

\textsuperscript{13}In those instances when the interviewee found herself unable to answer with accuracy about the activities of a specific division, the interview was followed up by email to obtain missing information.

(1) The variable \textit{intra-corporate knowledge transfer} is a measure of the degree to which subsidiaries transfer and/or receive knowledge to/from the headquarters and/or to/from other subsidiaries. The questionnaire asked about the extent to which the subsidiary transfers and/or receives knowledge to/from the headquarters and/or to/from other subsidiaries, in eight areas: R&D, product design, production, raw materials procurement, logistics, marketing, management systems and practices, and customer services (see Appendix A). Respondents were asked to score responses on a Likert scale ranging from 1 (not at all) to 4 (very much). For each subsidiary, we summed the values reported for the questions on knowledge transfer (SUMKT) and knowledge reception (SUMKR). The indicators obtained range:

- From a minimum value of 16, indicating no knowledge transfer between subsidiary and headquarters and/or other subsidiaries.
- To a maximum value of 64, meaning that the interviewee scored 4 for all 8 areas covered by the questions, for the headquarters and other subsidiaries.

We then built an indicator of subsidiary intra-corporate knowledge transfer for each subsidiary \(i\), as:

\[
\text{Intra-corporate knowledge transfer}_{(i)} = \text{SUMKT}_{(i)} - \text{SUMKR}_{(i)}
\]

This can be interpreted as follows:

- Intra-corporate knowledge transfer \(< 0\): the subsidiary receives more knowledge from the headquarters and/or other subsidiaries than it transfers to them. The lower this value, the closer to a top-down knowledge transfer approach, as referred to in Section 2.
- Intra-corporate knowledge transfer \(> 0\): the subsidiary transfers more knowledge to the headquarters and/or other subsidiaries than it receives from them; a high value indicates a bottom-up approach (see Section 2).
- Intra-corporate knowledge transfer \(= 0\): the subsidiary, the headquarters and the other subsidiaries engage in mutual and reciprocal knowledge transfer.

Fig. 2 reports the distribution of our indicator ‘intra-corporate knowledge transfer’ for EMNE and AMNE subsidiaries, and shows

### Table 3

<table>
<thead>
<tr>
<th>Characteristics of subsidiaries</th>
<th>AMNEs (N=23)</th>
<th>EMNEs (N=24)</th>
<th>Total (N=47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>10 (43.5%)</td>
<td>10 (41.7%)</td>
<td>20 (42.5%)</td>
</tr>
<tr>
<td>Germany</td>
<td>13 (56.5%)</td>
<td>14 (58.3%)</td>
<td>27 (57.5%)</td>
</tr>
<tr>
<td>Equity held by the HQ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10–50%</td>
<td>–</td>
<td>1 (4.2%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>51–99%</td>
<td>6 (26.1%)</td>
<td>8 (33.3%)</td>
<td>14 (30%)</td>
</tr>
<tr>
<td>100%</td>
<td>17 (73.9%)</td>
<td>15 (62.5%)</td>
<td>32 (68%)</td>
</tr>
<tr>
<td>Year of establishment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before 1980</td>
<td>–</td>
<td>1 (4.2%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>1980–1989</td>
<td>2 (8.7%)</td>
<td>–</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>1990–1999</td>
<td>7 (30.4%)</td>
<td>4 (16.6%)</td>
<td>11 (24%)</td>
</tr>
<tr>
<td>2000–2010</td>
<td>14 (60.9%)</td>
<td>19 (79.2%)</td>
<td>33 (70%)</td>
</tr>
<tr>
<td>Mode of entry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition</td>
<td>15 (65.2%)</td>
<td>18 (75%)</td>
<td>33 (70%)</td>
</tr>
<tr>
<td>Greenfield</td>
<td>6 (26.1%)</td>
<td>5 (20.8%)</td>
<td>11 (24%)</td>
</tr>
<tr>
<td>Joint venture</td>
<td>2 (8.7%)</td>
<td>1 (4.2%)</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>No employees</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small (1–19)</td>
<td>8 (36.4%)</td>
<td>9 (39.0%)</td>
<td>17 (38%)</td>
</tr>
<tr>
<td>Medium (20–99)</td>
<td>13 (59.1%)</td>
<td>7 (30.5%)</td>
<td>20 (44%)</td>
</tr>
<tr>
<td>Large (&gt;100)</td>
<td>1 (4.3%)</td>
<td>7 (30.5%)</td>
<td>8 (18%)</td>
</tr>
</tbody>
</table>

Source: Authors’ elaboration based on own survey.
that the former tend to transfer more knowledge than they receive from their headquarters or from other subsidiaries, while the reverse is true for AMNE subsidiaries (EMNE subsidiaries report an average of 3.0 versus -1.9 for AMNE subsidiaries, with differences being statistically significant on the basis of a t-test at 5%).

(2) Locally embedded innovative activities. For this variable, we rely on two sets of questions: on the formation of local innovative ties, and on innovation activity developed locally by the subsidiary (see Appendix B for the questions). Information on local innovation ties was collected through a free recall method (Wasserman & Faust, 1994), by asking our respondents to identify all formal and informal ties formed by the subsidiary with different local actors (e.g. domestic firms, universities) with the objective of working together to develop different kinds of innovations through joint experimentation or joint R&D. For each subsidiary, we created a variable by summing up the number of innovative ties (i.e. number of innovative ties). EMNE subsidiaries reported an average of 3.6 innovative ties versus 0.9 for AMNE subsidiaries (differences are statistically significant at 5%). We consider a local innovation tie as providing a means for the subsidiary to contribute to local development because the activity involves a certain degree of joint innovative effort with local partners, which generates knowledge spillovers. Also, the quality of local ties depends on the intensity of the subsidiary’s innovative activity (i.e. subsidiary innovation), since subsidiaries that innovate more are more likely to transfer valuable knowledge through innovation ties (Marin & Bell, 2006). To evaluate the innovation activities undertaken by the subsidiary, we used the number of product, process, organizational, and marketing innovation developed internally at the subsidiary level and independently from the headquarters (see question in Appendix B.2). We found that the average value for AMNE subsidiaries (1.98) is lower than for EMNE subsidiaries (2.26) although the differences are not statistically significant.

The indicator of ‘locally embedded innovative activities’, therefore, is measured as the number of innovative ties weighted by the level of innovation in the subsidiary:

Locally embedded innovative activities\(i_j\) = Number of innovative ties × Subsidiary innovation

EMNE subsidiaries report slightly higher average values for this indicator (7.50) than AMNE subsidiaries (6.01) (see Fig. 3), but the t-test differences are not statistically significant, indicating that, although EMNE subsidiaries form comparatively more local ties than subsidiaries from advanced economies, when weighted by their innovative efforts, these differences are less marked. The robustness of this indicator was checked against an indicator that uses percentage of R&D personnel in total subsidiary employees, as a measure of subsidiary innovation. The resulting subsidiary typology did not vary substantially.

The indicators ‘intra-corporate knowledge transfer’ and ‘locally embedded innovative activities’ are used to classify subsidiaries according to the typology in Fig. 1. We used the median values of both indicators as threshold values to discriminate among typologies. Given the fact that the data were collected through a semi-structured questionnaire, the interviews offer significant opportunities for discussing the nature of the firm and its learning behaviors, and qualitative evidence collected through the interviews supports the validity of this classification.

Our analysis consists in testing whether the distribution of EMNEs and AMNEs differ across the four typologies of subsidiaries and to do so we have applied a Chi-square analysis on our categorical variables. In the next section, the results of the classification are discussed.

4. Empirical findings

4.1. The typology of the subsidiaries

Based on our analysis, we find that the subsidiaries are distributed across the four categories as follows:

- **Predatory subsidiaries**, combining bottom-up knowledge transfer and low local embeddedness: 15 firms of which 6 are AMNE and 9 are EMNE subsidiaries.
- **Dual subsidiaries**, combining bottom-up knowledge transfer with high local embeddedness: 17 firms of which 5 are AMNE and 12 are EMNE subsidiaries.
• **Locally embedded subsidiaries**, combining top-down knowledge transfer and high local embeddedness: 4 firms of which 2 are AMNEs and 2 are EMNE subsidiaries.

• **Passive subsidiaries**, combining top-down knowledge transfer and low local embeddedness: 8 firms of which 7 are AMNEs and 1 is an EMNE subsidiary.

The first interesting result is the diversity between EMNEs and AMNEs confirmed by the distribution of companies showing statistically significant differences (Pearson Chi-square 0.053) in all categories except for the *Locally embedded* subsidiary, which comprises a very small number of subsidiaries, equally divided between EMNEs and AMNEs.

The majority of *Passive* subsidiaries are AMNEs, while EMNEs are overrepresented in the *Predatory* and *Dual* subsidiaries’ types. Our sample suggests that EMNEs display predatory behavior related to the appropriation of local knowledge with the purpose mainly of transferring it to their headquarters, a finding in line with anecdotal evidence. Furthermore, our survey also adds new empirical insights to conventional wisdom because EMNE subsidiaries are overrepresented among the group of *Dual* subsidiaries, which contribute to both the corporate knowledge and the local context through the formation of innovation networks with local actors and their intense local innovative activities. This result proposes a new view on the increasing presence of EMNEs in advanced countries because it envisages a possible win-win situation.

Although we cannot derive any conclusion due to the limited number of observations, it may be interesting to note that, in the case of China, the majority of subsidiaries fall in the *Dual* category, while the majority of Brazilian and Indian subsidiaries are of the *Predatory* type. This should come as a surprise given that most of the anecdotal evidence about EMNEs’ predatory behaviour is mainly referred to China.

4.2. **Characteristics of Passive, Predatory and Dual subsidiaries**

Based on the rich qualitative empirical evidence collected during the interviews, in the next section we provide more insights on the characteristics of the *Passive, Predatory* and *Dual* subsidiaries (Table 4).14

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of subs</th>
<th>Main characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive subsidiaries</td>
<td>7 AMNEs</td>
<td>Orientation to the domestic market</td>
</tr>
<tr>
<td></td>
<td>1 EMNEs</td>
<td>Market-seeking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low level of innovative activity at the subsidiary level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strong central coordination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No formal or informal local collaborations</td>
</tr>
<tr>
<td>Predatory subsidiaries</td>
<td>6 AMNEs</td>
<td>Orientation to the global market</td>
</tr>
<tr>
<td></td>
<td>9 EMNEs</td>
<td>Technology-seeking (technical and managerial knowledge, qualified labor skills)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autonomy in decision-making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMNEs pro-active and entrepreneurial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No formal or informal local collaborations</td>
</tr>
<tr>
<td>Dual subsidiary</td>
<td>5 AMNEs</td>
<td>Orientation to the global market</td>
</tr>
<tr>
<td></td>
<td>12 EMNEs</td>
<td>Technology-seeking (technical and managerial knowledge, qualified labor skills)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autonomy in decision-making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMNEs pro-active and entrepreneurial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMNEs local R&amp;D unit</td>
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<tr>
<td></td>
<td></td>
<td>EMNEs patenting activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formal collaborations with domestic firms and research centers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Informal collaborations mainly with research centers</td>
</tr>
</tbody>
</table>

Source: Authors’ elaboration based on own survey

Another characteristic of such subsidiaries is that they do not generally undertake local R&D activities, also in line with earlier research (Marin & Giuliani, 2011). As compared to other typologies, in our study we find that *Passive* subsidiaries do not apply for patents and their poor embeddedness at the local level is due to reduced innovative efforts. The CEO of an AMNEs investing in Italy revealed that they have moved all of their R&D function from Italy to China, and has commented on the fact that such a change has also reduced their involvement with local universities and the local context in general.

4.2.2. **Predatory subsidiaries**

Our research supports existing anecdotal evidence that *Predatory subsidiaries* are a significant phenomenon among the EMNEs investing in Europe. It does also advance the IB literature in conceptualizing and further understanding this kind of subsidiary, which earlier research has so far overlooked. Our evidence suggests that, in addition to accessing the EU market, the main motivation for investing in Europe is appropriation of local technology and knowledge, learning from acquired subsidiaries. The Italian manager of a subsidiary acquired by an Indian company said: “It’s not only the technical know-how they [the Indian company] are interested in, but also the ability to stay in the market. They are also looking for an important brand to enter the energy market, which is characterised by large investments and strong concentration.”

We have also observed strong processes of reverse-knowledge transfer to the headquarters, as described by the CEO of a German EMNE subsidiary interviewed during the survey: “The knowledge transfer is strictly one-way. Without the local knowledge acquired through the subsidiary, the headquarters would not be able to achieve the product quality standards it currently does”. The CEO of a North-American subsidiary has also provided some insights on the issue of reverse-knowledge transfer to the rest of the group. According to him: “Some of products developed in the Italian subsidiary are now sold worldwide, and this is due to our knowledge

14 The fourth remaining category Locally embedded subsidiaries is not included in this section because of the very small number of cases classified as such.
of the market, which has provided a significant contribution to the company’s R&D”.

Our survey also shows that these subsidiaries, in particular EMNEs subsidiaries, are fairly autonomous from the headquarters and tend to be entrepreneurial, and have a marked propensity for risky decisions to achieve business objectives. Qualitative insights reveal that headquarters believe that giving autonomy to the subsidiary can facilitate rapid learning and grabbing of new business opportunities. Almost 90% of the subsidiaries in the Predatory type consider their intra–corporate governance pattern as partially or totally decentralized and a similar percentage has declared that they regularly search for new business opportunities rather than continually adhering to centrally defined strategies. The CEO of a Japanese subsidiary located in Italy said that “The management is all local, and it has always been this way”, and that “within certain limits we have a freedom to exploit our expertise”.

The CEO of the Italian subsidiary of an Indian company believes that their degree of decentralisation will increase over time. Discussing the situation when the subsidiary is confronted with unexpected problems, he said: “We solve the problem and then we tell the headquarters. In general the subsidiary enjoys quite enough freedom, also in budget allocation, which allows us to take independent decisions”.

More than 70% of Predatory subsidiaries in our sample take their decisions independently of the headquarters with regard to their annual budget for developing new ideas and entering new markets. Some 50% have declared that when unexpected problems going beyond the normal working routines occur, they do not wait for the headquarters approval to solve these problems; they usually act autonomously. These respondents also saw highly uncertain situations as challenges and opportunities to explore new business, rather than a situation requiring minimization of risk.

Compared to Dual subsidiaries (see below), Predatory MNEs mostly draw their knowledge from the expertise of their workers, rather than through interactions with other local actors, such as universities or local suppliers; some 70% consider the subsidiary workers to be an important source of knowledge. This is coherent with the fact that these MNEs have taken over well-established world market European firms, operating at the technological frontier of the industry. Therefore, it is not surprising that internal knowledge is considered highly valuable.

While these subsidiaries are very determined about contributing to their home knowledge and skills, they leave no traces at the local level. Several of the managers interviewed are concerned about this. The Italian manager of a Chinese MNE subsidiary expressed his concern thus: “Foreign companies come and take away local knowledge accumulated over centuries. Once the knowledge will be entirely appropriated, they will go away, probably moving production and research somewhere else where labor is cheaper. We will be left with nothing.” Having worked for an Italian company for 10 years before it was taken over by a Chinese group, this manager is well aware of the firm’s long standing connections in the local territory, and of the importance of these ties for the economic and social development of the local community. Hence, he is very concerned about the progressive reduction of value-added activities being conducted in the local subsidiary in the future. Similar concerns are expressed by other Italian as well as German managers in the Predatory subsidiaries: an Italian production manager of another Chinese subsidiary located in Italy remarked that many MNEs are moving their R&D activity to their home countries and, in his view, this trend would become even more pronounced in the near future. A manager from an EMNE subsidiary in Germany has stated: “Of course it is possible that our employees, today training Chinese staff, are creating their own future unemployment, but we do not have an alternative.”

In relation to the ways that EMNEs learn from their subsidiaries, the case of an Indian-owned subsidiary in Italy is illuminating. During the interview we asked about the role of the several Indian employees we noticed in the subsidiary. The interviewee explained that the subsidiary regularly receives people sent by the headquarters for periods of training of approximately 6 months. Personnel exchanges are a frequent strategy for many of the EMNE subsidiaries interviewed. Other channels for knowledge exchange highlighted by interviewees are product development projects conducted jointly with the headquarters and the use of common databases reporting problems and their related solutions.

4.2.3. Dual subsidiaries

This type of subsidiary combines bottom-up knowledge transfer with high local embeddedness, characterizing half of the EMNEs interviewed. Confirming their strong local innovative effort, a major characteristic of this category of subsidiaries is their patenting activity, which is significantly higher than for the other MNE typologies: 12 out of 17 subsidiaries have applied for patents, including 6 applications to both the European and US patent offices.

The main reason for these types of subsidiaries to invest in Italy and Germany is the access to the host country’s technical knowledge – like in the case of Predatory subsidiaries. This motivation has emerged clearly from a number of interviews, such as one with the CEO of an EMNE subsidiary located in Germany, who says: “The foreign owner is especially interested in improving the quality of existing products, taking advantage of the technical expertise residing in the incorporated subsidiary. In this regard, the highly qualified labor force as well as all the knowledge deriving from the subsidiaries’ longstanding relationships with clients and from the collaborations with other domestic firms and universities are key motivations for investment”. In fact, a skilled labor force and local universities and research centers are considered important sources of knowledge for a large proportion of Dual subsidiaries. The relationship with local suppliers, universities and firms have been particularly emphasised by the CEOs of several EMNE subsidiaries as important sources of incremental product innovation. One of the managers interviewed said “We have projects to enter partnerships with a few local firms. One of these is a small firm specialised in design; another partnership is aimed at introducing process innovation and we are also collaborating with a local firm specialised in software development.” He also added: “We have collaboration with firms abroad, but these collaborations are usually formal in nature and not as strong and frequent as those developed locally.”

In general, Dual subsidiaries, as opposed to Predatory subsidiaries, are characterized by the possibility of a win-win situation. This was expressed by the manager of a German EMNE subsidiary: “The MNE strategy is to segment the market: the German subsidiary maintains a specialization towards the high end segment and instead the headquarters mainly produces for the Chinese middle market segment.” The headquarters takes advantage of the knowledge acquired from the German subsidiary to improve the quality of the products sold in the Chinese market, and to gain customers’ trust through acquisition of a well established German brand. However, the benefits accrue not only to the headquarters: “Both of us have increased our market potential: the headquarter is now able to serve customers in a higher but still middle quality market segment thanks to the knowledge and experience transferred by the subsidiary, and for the German subsidiary there is an opportunity to indirectly enter a new large and expanding segment of market in which we were not present before the acquisition. It’s a true win-win situation”. An
Italian manager of a Brazilian EMNEs subsidiary stressed the mutual learning dimension saying that: “The foreign owner is deeply conscious about our skills and competences acquired during the years and many decisions are jointly taken.” Another CEO from a EMNEs subsidiary located in Germany expressed similar sentiments saying: “We recognize each other’s strengths and weaknesses and we are learning from each other.”

4.3. Summing up

The first interesting piece of evidence is that AMNEs predomi-
nate in the Passive MNEs typology, whereas EMNE subsidiaries fall either in the Dual or in the Predatory typologies. Therefore, our research is on the one hand supporting the anecdotal evidence on the predacious, “take-and-leave” attitude of multinationals from emerging countries, but on the other hand it also envisages the possibility that these companies can contribute with their investments to the local development of the host countries.

Our analysis adds some interesting detailed insights on the strategic behavior of the different types of subsidiaries. Concerning the motivation for investing: Passive subsidiaries are mainly driven by market reasons, whereas both Predatory and Dual subsidiaries are also seeking technology and knowledge.

The main difference between the Predatory and the Dual subsidiaries is the stronger tendency of the latter in developing local ties, through which they diffuse some of the knowledge received from the headquarters or developed internally, contribu-
ting to the local context rather than depredating it. Dual subsidiaries have an explicit interest in maintaining their established local innovative ties and in nurturing existing relationships because they represent an invaluable two-way learning opportunity. This results in a potential win-win situation based on corporate and local learning advantages.

The significantly higher presence of Dual subsidiaries among the EMNEs, compared to the AMNEs, suggests that the increasing presence of EMNEs in advanced economies may lead to a positive rather than to a zero-sum game as often implied. This is encouraging and mitigating the widespread alarm about the depredation of accumulated technology and knowledge in acquired companies and in locally specialized territories.

5. Conclusions

This paper investigates the behavior of EMNE subsidiaries investing in Europe in terms of their innovative contributions both to the corporation and the local host territory. Alongside potential conflict situations connected to the predatory behavior of some aggressive investors, we have detected prospects of opportunities for mutually reinforcing collaborations between emerging and advanced (host) country companies, managers, and entrepre-
neurs.

Our study contributes to the growing IB literature on the impact of MNEs on host countries and their local economies (e.g. Beugelsdijk et al., 2010; Buckley & Chauri, 2004; Piscitello & Santangelo, 2007), whose concern is about how the increasing power of large global corporations will shape – sometimes in a detrimental way – our society and economy. While the impact of MNE operations on host countries has been traditionally at the core of development economics and IB studies have been mainly oriented at understanding the internal functioning of MNEs, this paper contributes further to that branch of the IB literature that studies the interactions between the MNEs and their host environments. Its original contribution stands also in reversing the conventional North-South perspective of most studies on MNEs’ economic impacts, which has long looked at AMNEs impacts on host developing countries and has assumed that AMNEs are superior to the domestic firms in the developing host countries, and, on these grounds, they are expected to generate a positive impact. Such a conventional model has been discarded in this paper, since our study shows that in a scenario characterized by growing foreign direct investments from emerging countries, AMNEs appear to play a very marginal role in relation to contributing to the local host economy and EMNE subsidiaries tend to be more entrepreneurial and more active. Hence, our study leads to reconsider the relevance of the technological superiority of MNEs as a key factor shaping the formation of innovative ties at the local level, pointing at the importance of subsidiary-centered activities and entrepreneurship, as also suggested by other scholars before us (Marin & Bell, 2006; Marin & Giuliani, 2011; Marin & Sasidharan, 2010).

Questions arise about whether EMNE subsidiaries will become credible actors that can be exploited by local economies. This leads to a further contribution of our work on EMNE strategies and our understanding of how global consolidator multinationals in mature, mid-tech industries appropriate or contribute to local strategic assets (Ramamurti, 2009, chap. 13). We have found that most of the EMNEs in our sample significantly contribute to the creation of firm-level advantages through reverse knowledge transfer and that an unexpectedly high number of firms also contribute to generate mutually enriching opportunities for the corporation and the local context. This somewhat mitigates the dire scenario often associated with the view of EMNE subsidiaries as predatory actors.

Policy makers should benefit from a better understanding of EMNE behaviors in Europe in order to minimize predatory investment, attract new investment, and encourage win-win situations. World Trade Organization agreements have made it unviable to force MNE subsidiaries to form local linkages, e.g. through local content policies and the like, but networking opportunities involving the new investor and the host actors should be stimulated and encouraged. This would reduce predatory behavior and open up opportunities for advanced host country managers and entrepreneurs to learn from new investors, which could be exploited to bridge the cultural and market distance with emerging economies.

This paper has some limitations. Although it throws light on certain micro-level behaviors of EMNE subsidiaries, it does not provide answers to some other questions. Why do Predatory subsidiaries behave so differently from Dual subsidiaries? Are these differences due to intra-firm conditions (e.g. corporate culture) or to the local conditions in the host country (e.g. existence of appropriate local partners for the formation of ties)? And, what is the impact of reverse knowledge transfer on the headquarters? On what factors (e.g. absorptive capacities, skills, market similarities) does the assimilation of transferred knowledge depend? Are there differences in performance among the different category of subsidiaries? Furthermore, the empirical evidence collected is a snapshot while it will be interesting to investigate if local embeddedness is changing after some time that companies have been acquired.

Since this is a case study, it focuses on only one sector and two contexts. However, we believe our findings provide new empirical evidence adding to the debate on the dramatic expansion of EMNEs, and it is informative for other advanced economy industries. Accessing detailed and complex information on EMNE subsidiaries is both time costly and problematic, and often limits sample sizes.

This study introduces the idea of EMNE investment as a positive sum game where both the emerging and advanced countries benefit. Further empirical research is needed to understand the conditions that will make a win-win situation and mutual advantages more likely.
Acknowledgements

The authors would like to express their gratitude to Ravi Ramamurti and the participants in the OFDI Conference at the Copenhagen Business School for their comments on a draft version of this paper. Thanks go to Kristin Semmler for providing excellent research assistance. Financial support provided by PRIN and by Stiftelesen Riskbankens Jubileumsfond is gratefully acknowledged.

Appendix A

Please indicate the extent to which this subsidiary PROVIDES or RECEIVES “KNOWLEDGE & SKILLS” related with the following activities:

(By “STRATEGIC knowledge and skills” we exclude operational aspects, such as exchange of monthly financial data, administrative staff reports, order fulfilment rates, etc.)

Leave blank if the subsidiary is not involved in any particular activity

<table>
<thead>
<tr>
<th>THE SUBSIDIARY PROVIDES “knowledge and skills” TO:</th>
<th>SISTER SUBSIDIARIES</th>
<th>HEADQUARTERS</th>
</tr>
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<tbody>
<tr>
<td>Please tick according to the following scale:</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
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<tr>
<td>1= Not at all</td>
<td></td>
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<tr>
<td>4= Very much</td>
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</tbody>
</table>

Activities:
- Research & Development
- Product Design
- Manufacturing
- Materials Procurement & Purchasing
- Product Distribution and logistics
- Marketing (branding, communication)
- Costumer Service
- Management Systems & practices
- Others (specify_________)

<table>
<thead>
<tr>
<th>THE SUBSIDIARY RECEIVES “knowledge and skills” FROM:</th>
<th>SISTER SUBSIDIARIES</th>
<th>HEADQUARTERS</th>
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<tr>
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<td>1 2 3 4</td>
<td>1 2 3 4</td>
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<tr>
<td>1= Not at all</td>
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<tr>
<td>4= Very much</td>
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</table>

Activities:
- Research & Development
- Product Design
- Manufacturing
- Materials Procurement & Purchasing
- Product Distribution and logistics
- Marketing (branding, communication)
- Costumer Service
- Management Systems & practices
- Others (specify_________)
Appendix B

B.1. Questions on innovative ties

During the three years period 1 January 2006 31 December 2008 (since starting of subsidiaries’ operations in Germany if less than three years ago), did the subsidiary collaborate with other actors (firms, universities, local institutions, etc.) for innovative purposes (i.e. new products, new processes etc.)? (By “COLLABORATION FOR INNOVATIVE PURPOSES” we mean working together to develop product/processes/organizational/market innovations through joint experimentation, R&D or trial and error).

Yes/No

If YES,

Can you name the actors with which you have established formal collaborative agreements for innovative purposes? (By “FORMAL” we mean based on a contract)

Can you name the actors with which you have established informal collaborative agreements for innovative purposes? (By “INFORMAL” we mean based on a contract)

To be answered in LIST 1 – EGO

To be answered in LIST 2 – EGO

B.2. Questions on subsidiary innovation

How many of the innovations introduced have been developed by the subsidiary internally and independently from the headquarters during the three years period 1 January 2006 31 December 2008?

Please tick the options below using the following scale:

1 = None; 4 = All

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<th>1</th>
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<tr>
<td>Product innovation</td>
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<td>Process innovation</td>
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<tr>
<td>Organisational innovation</td>
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<td>Market innovation (pricing, distribution, branding, packaging, etc.)</td>
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</table>

References


The Economist. (2010, November). China Buys up the world. And the world should stay open for business.


