EMERGING-MARKET MNES INVESTING IN EUROPE. A TYPOLOGY OF SUBSIDIARY GLOBAL-LOCAL CONNECTIONS

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ABSTRACT

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 whether they contribute to it as much as they benefit from it. To explore these issues we classify the behaviour 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 find that most of the EMNEs in our sample 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. We identify a new typology of EMNE subsidiary that contributes through its significant local innovative efforts to development processes in the host country. This somewhat mitigates the dire scenario often associated with the view of EMNE subsidiaries as predatory actors, and suggests possible win-win situations from which novel policy implications may be drawn.

Keywords: Multinational Enterprise (MNE), Emerging Economies, Knowledge transfer, Innovation, Local Development

1. INTRODUCTION

As European countries face one of the worst economic crises in recent history, emerging economies are demonstrating their dynamism and demonstrating significant resilience to the current global downturn. We are witnessing an unprecedented international expansion of emerging economy firms into multinational enterprises (MNE). 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. Futhermore, there were three Chinese firms, Sinopec, China National Petroleum, and State Grid, among the top ten Fortune Global 500 companies in 2011 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), and to understand whether EMNEs' behaviour is consistent with mainstream IB theories (Ramamurti and Singh, 2009; Dussauge and Kalasin, 2010; Awate et al., 2011; Baskaran et al., 2011; Girod and Bellin, 2011; James and Sawant, 2011; Madhok and Keyhani, 2012).[2] 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; Baskaran et al. 2011; Chen et al., 2011; Borini et al. 2012; Chen et al., 2012; Kedia et al. 2012; Li et al, 2012). These aspects are referred to by Moon and Roehl (2001) as '*unconventional*' FDIs, or strategic investments made to strengthen rather than to exploit the set of firm owned resources. Thus, internationalization is a strategy aimed at strengthening firms based on the accumulation of previously unavailable resources.[3]

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

[2] 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).

[3] This point is stressed in the literature. See among others: Aulakh, 2007; Chen and Chen, 1998; Child and Rodrigues, 2005; Li, 2007; Luo and Tung, 2007; Makino et al., 2002; Yiu et al., 2007.

information and individual interpretations and we would argue that there is an urgent need for more empirical research to provide a better understanding of this phenomenon. At the same time, little is known about how strategic assets are being acquired, and whether EMNEs are displaying a predatory 'take-and-leave' behaviour or are contributing to the development trajectories of advanced host economies. Lack of knowledge about these new market players is likely to undermine policy decision making, as well to underestimate their impact on Western competitors as suggested by Ramamurti (2012).

The literature on this subject has predominantly focused on EMNEs' strategies and motivations for investing in advanced economies, which is based mainly on firm case studies (see among others Liu and Li, 2002; Zhang and Filippov, 2009), on descriptive investigations of specific host countries (e.g. on Germany, Schüler-Zhou and Schüller, 2009; on Italy, Pietrobelli et al., 2011; on the UK, Cross and Voss, 2008; Liu and Tian, 2008), and on industry studies (e.g. on India's pharmaceutical sector, Athreye and Godley, 2009, Bhaumik and Driffiel, 2011; and steel industry, Kumar and 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 et al., 2011; Buckley et al., 2007; Pradhan, 2009; Kolstad and Wiig, 2012).

However, little attention has so far been paid to understanding the dual impact of EMNEs on the local contexts of advanced country host economies, and on their home country. Recently, scholars have analyzed the way EMNEs contribute to local innovation through their external linkages, and generate reverse knowledge spillovers inside the corporation (see Awate et al., 2011; Garcia-Vega et al., 2011; Figuiredo, 2011; Meyer et al., 2011; Borini et al., 2012; Chen et al., 2012), with a view to highlight the differences between AMNEs and EMNEs. We contribute to this new strand of literature by exploring empirically 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 behaviour differ from that of AMNEs?*

To investigate these questions we develop a novel conceptual framework (Section 2), to classify the behaviour of MNE subsidiaries into different typologies on the basis of how knowledge is transferred within the MNE and on the quality and nature of the local innovative connections, which is in line with earlier research in this field (Lorenzen and Mudambi, 2010; Marin and Giuliani, 2011; Mudambi and 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 and Greenaway, 2004; Smeets, 2008). More recently, it has become the focus of several IB studies (Buckley and Ghauri, 2004; Piscitello and Santangelo, 2007; Beugelsdijk et al., 2010). In the development economics literature, MNEs are generally seen a black box (for a critical appraisal see Marin and 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, and Ghoshal, 1986; Ghoshal and Bartlett, 1990; Birkinshaw and Hood, 1998; Cantwell and Mudambi, 2005).

In a bid to understand how MNEs contribute to the local economies of host countries, there has been a wave of studies analysing global-local connections (Giuliani and Marin, 2007; Lorenzen and Mudambi, 2010; Figuereido, 2011; Marin and Giuliani, 2011; Meyer et al., 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 et al., 2008, among others). The IB literature has proposed several MNE 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 and Ghoshal, 1986; Jarrillo and Martinez, 1990; Papanastassiou and Pearce, 1999; Marin and Bell, 2010). In the present paper, we build on this research and develop a new typology of MNE subsidiaries based on the following two dimensions (Figure 1):

(1) the degree to which MNEs transfer and/or receive knowledge to/from their headquarters and to/from other subsidiaries;
(2) the quality 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 - 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 (Pearce, 1999; Kuemmerle, 1999; Birkinshaw and Hood, 2000; Almeida and Phene, 2004; Cantwell and Mudambi, 2005; Hegde and Hick, 2008; Shimizutani and Todo, 2008; Marin and Bell, 2010; Garcia-Vega et al., 2011; Borini et al., 2012). EMNE 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 behaviour:

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 it receives from it: it is a source of knowledge for the headquarters and the other subsidiaries.

Of course, there are intermediate behaviours between these two extreme positions.

The second dimension of our typology – i.e. the quality 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 (Todo and Miyamoto; 2006; Castellani and Zanfei, 2007; Marin and Bell, 2010; Marin and Sasidharan, 2010), and on the knowledge-intensive interactions with local partners.

Consequently, in our framework, the quality 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:

- **Global/Local Subsidiary** that combines bottom-up knowledge transfer with high local embeddedness. This type of subsidiary both contributes to corporate knowledge and enriches the local context via the formation of innovative networks with local actors;
- **Predatory Subsidiary** that combines bottom-up knowledge transfer and low local embeddedness. This type of subsidiary displays low levels of local embeddedness, and activity to tap into local knowledge occurs mainly at subsidiary level via, e.g. the appropriation of pre-existing skills (as in the case of mergers and acquisitions), learning by hiring local skilled human resources, imitation. The appropriation of local knowledge is aimed mainly at transferring it to the headquarters, and, possibly, other subsidiaries. In this case, the subsidiary maintains very limited local innovative ties;
- **Locally Embedded Subsidiary** that 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;
- **Passive Subsidiary** that 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 and Singh, 2009), and 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 advantages and strong country-level advantages. Anecdotal evidence on EMNE subsidiaries tends to portray them as behaving in a predatory way: taking maximum advantage through asset-seeking strategies and contributing little to the local context.

There are frequent reports of aggressive EMNE subsidiary strategies, designed to outcompete incumbent firms. For instance, the Chief Financial Officer of a Brazilian firm acquired by Huawei Technologies recently declared that: "*The Chinese are filling the space left empty by Americans and Europeans. They are very aggressive and they have a lot of money*" (China Daily, 2011). These EMNE particularities (compared to what we know about AMNE subsidiaries) may give rise to different behaviours in relation to the proposed typology. We would expect many EMNE subsidiaries to fall into the predatory category.

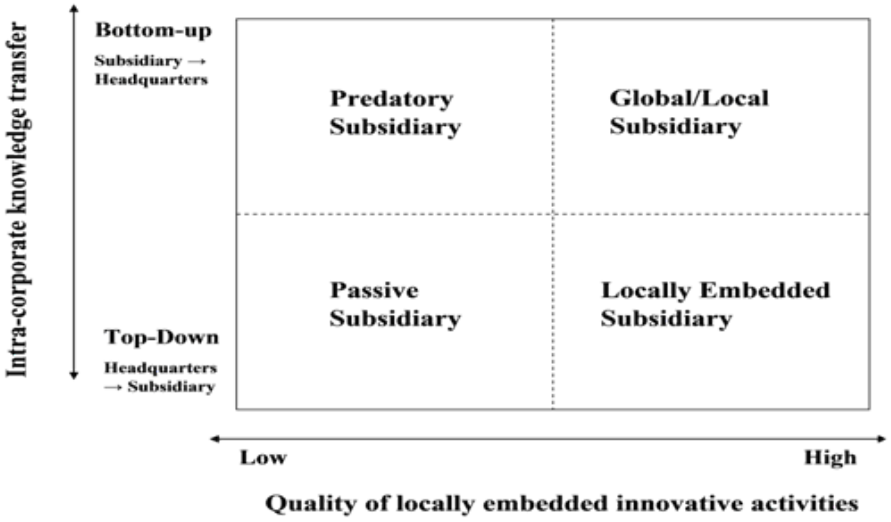


Figure 1. A typology of subsidiaries

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 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).

Table 1. The industrial machinery sector in Italy and Germany (2007)

	GERMANY	ITALY	EU27
Value added at value cost (€ millions) (% on total manufacturing value added)	77,899 (16.1)	33,400 (14.3)	210,930 (11.6)
N° of firms (% on total manufacturing firms)	21,043 (10.4)	41,497 (8.1)	176,884 (7.6)
Number of employees (% on total manufacturing employees)	1,093,567 (15.5)	512,969 (13.2)	35,970 (10.8)
Exports (€ millions) (% on total manufacturing exports)*	152,318 (15.8)	70,395 (19.3)	—

Source: Eurostat and Confindustria

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; Lissoni, 2001; Freeman, 1991). 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) 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, aluminium, 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 based on the responses from a sample of interviewees from EMNE and AMNE subsidiaries. In Italy, the list of subsidiaries was extracted from the 2009 edition of the ICE-Reprint database, which merges data from fDi Markets and AIDA. This list was 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 was extracted from the 2010 edition of the DAFNE database, which lists 842 foreign subsidiaries in the German industrial machinery sector including 58 EMNE subsidiaries. From the initial lists, we excluded all subsidiaries belonging to financial holdings because we are interested in FDI motivated by long-term economic goals rather than speculation. We also dropped subsidiaries that had ceased activities or became fully Italian or German by the time of our first contact. The final list includes 20 EMNEs subsidiaries in Italy and 35 in Germany.

We contacted all the EMNEs 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 conducted several tests to check the representativeness of the sample with respect to the population, and found no significant differences between respondents and non-respondents.[4] The AMNE subsidiary sample was stratified to be

[4] 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.

as similar as possible to the EMNE sample in relation to sub-sector, firm size (number of employees), and regional location.
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 minutes. Interviewees included R&D managers, production managers and CEOs, depending on availability.
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 some descriptive statistics related to key characteristics of the subsidiaries; Table 3 provides information on the home countries of the subsidiaries included in the sample.

Table 2. EMNE and AMNE subsidiaries' characteristics

Characteristics of subsidiaries		AMNEs (N = 23)	EMNEs (N = 24)	Total (N = 47)
COUNTRY OF LOCATION				
Italy		10 (43.5%)	10 (41.7%)	20 (42.5%)
Germany		13 (56.5%)	14 (58.3%)	27 (57.5%)
EQUITY HELD BY THE HQ				
10-50%		-	1 (4.2%)	1 (2%)
51-99%		6 (26.1%)	8 (33.3%)	14 (30%)
100%		17 (73.9%)	15 (62.5%)	32 (68%)
YEAR OF ESTABLISHMENT				
Before 1980		-	1 (4.2%)	1 (2%)
1980-1989		2 (8.7%)	-	2 (4%)
1990-1999		7 (30.4%)	4 (16.6%)	11 (24%)
2000-2010		14 (60.9%)	19 (79.2%)	33 (70%)
MODE OF ENTRY				
Acquisition		15 (65.2%)	18 (75%)	33 (70%)
Greenfield		6 (26.1%)	5 (20.8%)	11 (24%)
Joint Venture		2 (8.7%)	1 (4.2%)	3 (6%)
N° EMPLOYEES				
Small (1-19)		8 (36.4%)	9 (39.0%)	17 (38%)
Medium (20-99)		13 (59.1%)	7 (30.5%)	20 (44%)
Large (> 100)		1 (4.3%)	7 (30.5%)	8 (18%)

Source: Authors' survey

Table 3. MNEs by country of origin

Country of origin	Frequency	Percent	Country of origin	Frequency	Percent
Argentina	1	4.2	**Austria**	2	8.7
Bahrain	1	4.2	**Denmark**	2	8.7
Brazil	3	12.5	**Finland**	1	4.3
China	7	29.2	**France**	1	4.3
Hong Kong	1	4.2	**Germany**	2	8.7
India	3	12.5	**Hong Kong**	1	4.3
Israel	2	8.3	**Italy**	1	4.3
Kuwait	1	4.2	**Japan**	3	13.0
Malaysia	1	4.2	**Netherlands**	1	4.3
Mexico	1	4.2	**New Zeeland**	1	4.3
Russia	1	4.2	**Switzerland**	5	21.7
South Korea	1	4.2	**UK**	1	4.3
Taiwan	1	4.2	**USA**	2	8.7
Total	24	100.0	**Total**	23	100.0

Source: Authors' survey

3.3. Operationalization of key variables

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

(1) The variable *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 linkages between subsidiary and headquarters and/or other subsidiaries;
- 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:

$$Intra\text{-}corporate\ Knowledge\ Transfer_{(i)} = SUMKT_{(i)} - SUMKR_{(i)}. \quad (1)$$

This can be interpreted as follows:

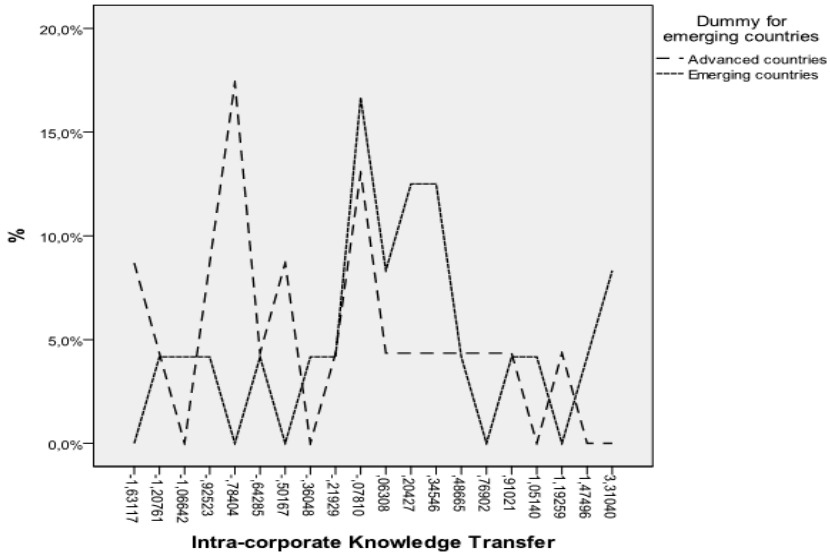
- Intra-corporate Knowledge Transfer <0: the subsidiary receives more knowledge from the headquarters and/or other subsidiaries than it transfers to them. The

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.

Figure 2 reports the distribution of our indicator 'Intra-corporate Knowledge Transfer' for EMNE and AMNE subsidiaries, and shows 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 reported an average of 3.0 versus -1.9 for AMNE subsidiaries, with differences being statistically significant at 5%).

Figure 2. Intra-corporate knowledge transfer for EMNE and AMNE subsidiaries



(2) *The quality of 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, by asking our respondents to identify all formal and informal ties formed by the subsidiary with different local actors (e.g. domestic firms, universities). For each subsidiary, we summed the 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.

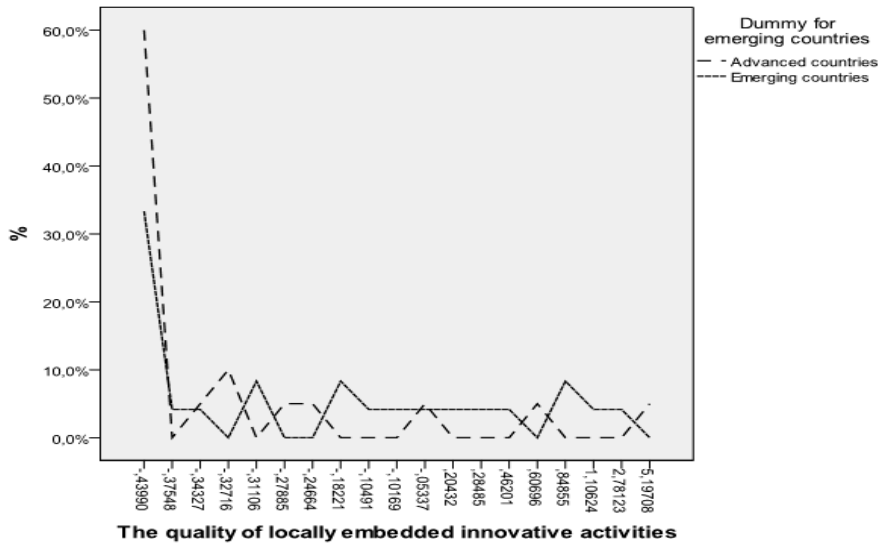
Also, the quality of local ties depends on the intensity of the subsidiary's innovative activity (Subsidiary innovation), since subsidiaries that invest more in innovation are more likely to transfer valuable knowledge through innovation ties. To evaluate the innovation activities undertaken by the subsidiary, we used a measure of product, process, organizational, and marketing innovation developed internally and independently by the headquarters and by the subsidiary (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 quality of locally embedded innovative activities, therefore, is measured as the number of innovative ties weighted by the level of innovation in the subsidiary:

$$\textit{Quality of locally embedded innovative activities}_{(i)} = \textit{Number of innovative ties} * \textit{Subsidiary innovation.} \quad (2)$$

EMNE subsidiaries reported slightly higher average values for this indicator (7.50) than AMNE subsidiaries (6.01) (see Figure 3), but the 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.

Figure 3. The quality of locally embedded innovative activities for EMNE and AMNE subsidiaries



The indicators 'Intra-corporate Knowledge Transfer' and 'Quality of locally embedded innovative activities' are used to classify subsidiaries according to the typology in Figure 1. We used the median values of both indicators as threshold values to discriminate among typologies. The qualitative evidence collected through the interviews confirms the validity of this classification. Although data were collected through a structured questionnaire, the interviews offer significant opportunities for discussing the nature of the firm and its learning behaviours. 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 typologies as follows:

- **Global/Local Subsidiaries**, combining bottom-up knowledge transfer with high local embeddedness: 17 firms of which 5 are AMNE and 12 are EMNE subsidiaries;
- **Predatory Subsidiaries**, combining bottom-up knowledge transfer and low local embeddedness: 15 firms of which 6 are AMNE and 9 are EMNE subsidiaries;
- **Locally Embedded Subsidiaries**, combining top-down knowledge transfer and high local embeddedness: 4 firms of which 2 are AMNE 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.

We would point first to the very small number of companies in the typology *Locally Embedded Subsidiaries*, and the lack of difference between AMNEs and EMNEs. In the other three typologies, the distribution of companies shows significant differences between EMNE and AMNE subsidiaries (Pearson Chi-Square 0.053), confirming that the two groups of companies undertake different strategies for tapping into local knowledge and transferring it internally. In the *Global/Local* and *Predatory* typologies, EMNEs are overrepresented, and in the *Passive* typology the majority are AMNEs. Therefore, we can confirm that EMNEs display predatory behaviour related to the appropriation of local knowledge with the purpose mainly of transferring it to their headquarters, which is in line with anecdotal evidence. However, our survey contributes to the existing empirical evidence by showing that EMNE subsidiaries are in the majority in the *Global/Local* category of companies that both contribute to corporate knowledge and also enrich the local context through the formation of innovation networks with local actors, and intense local innovative activities. This result suggests a new view of the increasing presence of EMNEs in advanced countries because it envisages a win-win situation. In the next section, we provide more insights from the rich qualitative empirical evidence collected during the interviews, on the characteristics of these different types of EMNEs.

4.2. Characteristics of Predatory and Global/Local Subsidiaries

Our research confirms existing evidence that predatory EMNE subsidiaries are a significant phenomenon on the EMNE investing scene in Europe. 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, and learning from acquired subsidiaries. We observed strong processes of reverse-knowledge transfer to the headquarters, described by the CEO of a German subsidiary interviewed during the survey, who said that: "*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*".

Our survey shows also that these 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

grasping 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 declared that they regularly searched for new business opportunities rather than continually adhering to centrally defined strategies. More than 70% of *Predatory* subsidiaries take decisions independently of the headquarters, about how to use their annual budget to develop new ideas and enter new markets. Some 50% declared that, when unexpected problems that go beyond the normal working routines occur, they do not wait for the headquarters approval before setting out to solve these problems; they usually act completely total 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 *Global/Local* subsidiaries, *Predatory* MNEs mostly draw their knowledge from the expertise of subsidiary workers, rather than through interactions with other local actors, such as universities or local suppliers; some 70% considered subsidiary workers to be an important source of knowledge. This is coherent with the fact that these EMNEs 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 were 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*. O*nce the knowledge will be entirely appropriated, they will go away, probably moving production and research somewhere else where labour 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 was 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, his concern about the progressive reduction of value-added activities being conducted in the local subsidiary in the future. Similar concerns were expressed by Italian and German managers in the *Predatory* subsidiaries: an Italian production manager of an EMNE subsidiary 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 a German EMNE subsidiary stated that "*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*."

Whereas predatory behaviours from EMNE subsidiaries might be expected, our study adds to the knowledge on another type of EMNE, whose behaviour to a certain extent is different: the *Global/Local* MNE. This type of subsidiary combines bottom-up knowledge transfer with high local embeddedness, and this applied to 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 had 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 access to the host country's technical knowledge – like in the case of Predatory subsidiaries. This motivation emerged clearly from a number of interviews, along

with some interesting qualifications, such as expressed by the CEO of an EMNE subsidiary in Germany, that: "*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 labour 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 investing*". In fact, a skilled labour force (16 out 17) and local universities and research centres (8 out 17) are considered important sources of knowledge for a large proportion of *Global/Local* category subsidiaries.

In relation to the ways that EMNEs learn from their subsidiaries, the cases of the Indian-owned subsidiaries in Italy were illuminating. During the interviews we asked about the roles of the several Indian employees in the subsidiary. The interviewee explained that they regularly receive people, chosen by the headquarters, for periods of training of approximately 6 months. Personnel exchanges were 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, in a few cases, compilation and use of common databases on problems and their related solutions.

In general, *Global/Local* 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 headquarters 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 in 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 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 German CEO expressed similar sentiments saying that: *"We recognize each other's strengths and weaknesses and we are learning from each other*." This way of looking at the increasing presence of EMNEs in advanced economies as a positive-sum game is very different from and is encouraging in the face of widespread alarm about the depredation of accumulated technology and knowledge in acquired companies and in locally specialized territories.

5. CONCLUSIONS

This paper has investigated the behaviour of EMNE subsidiaries investing in Europe in terms of their innovative contributions both to the corporation and the local host territory. While most anecdotal evidence suggests that EMNE subsidiaries are likely to adopt a predatory "take-and-leave" behaviour, questions arise about whether this is the only type of behaviour. The empirical evidence provided here suggests that EMNE subsidiaries sometimes do behave in a predatory way (i.e. the *Predatory*

subsidiaries in our typology), and that this behaviour is more common than among AMNE subsidiaries, but it also shows that there is another type of EMNE subsidiary, the *Global/Local* subsidiary, which contributes to local innovation networks. *Global/Local* subsidiaries have an explicit interest in maintaining established local innovative ties and in nurturing existing relationships because they represent an invaluable two-way learning opportunity. This facilitates considerable reverse knowledge transfer back to the headquarters and/or other subsidiaries, resulting in a potential win-win situation based on corporate and local learning advantages. Alongside potential conflict situations connected to the predatory behaviour of some aggressive investors, we detected prospects of opportunities for mutually reinforcing collaborations between emerging and advanced (host) country companies, managers, and entrepreneurs.

This evidence carries interesting implications for IB theory and policy making. As concerns the latter, we consider that policy makers should benefit from a better understanding of EMNE behaviours 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 behaviour 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.

The paper carries also implications for IB theory. Whereas most IB research has focused on why EMNE internationalize and on the drivers of their comparative advantage, comparatively less research has paid attention to the impact of MNEs on host and home countries, in terms of the knowledge spillovers EMNEs generate in both contexts. The conventional understanding of this process comes from studies looking at MNEs from advanced countries investing in either other advanced countries or in developing countries and it is based on a knowledge-centred view of the MNE, suggesting that the impact of MNEs on host economies, through knowledge spillovers, is likely to take place lace when at least three conditions are met: there is relatively low cognitive distance between home and host country knowledge bases; the host/home country has high absorptive capacity, and the MNE subsidiary has sufficient innovative capacity to be able to transfer valuable knowledge. This paper shed further light on this process, by questioning the fact that AMNEs – thanks to their accumulated firm-specific advantages and low cognitive distance with other AMNEs– are likely to contribute more to the development of host advanced economies than EMNEs. In fact, in our study AMNEs appear to play a very marginal role in relation to contributing to the local host economy, whereas some of the EMNEs show a more active and entrepreneurial attitude in pursuing external collaborations at the local level. These results suggest that there is scope for further refinement of the established theoretical framework about MNEs' impact on host and home economies. In particular, it seems that, besides looking at the knowledge bases of MNEs, we also need to consider other corporate characteristics, which appear crucial for explaining EMNEs behaviour in host economies, such as the degree of their subsidiaries' autonomy and entrepreneurship. Further research along these lines is encouraged to improve our theoretical understanding of EMNEs' contribution to advanced countries.

This paper has some limitations. Although it throws light on certain micro-level behaviours of EMNE subsidiaries, it does not provide answers to some other questions. Why do *Predatory* subsidiaries behave so differently from *Global/Local* 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?
Since this is a case study, it focuses on only one sector and two contexts and it may apply only to firms following global consolidator strategies in mature mid-tech industries (Ramamurti, 2009). However, we believe our findings provide new empirical evidence to add to the debate on the dramatic expansion of EMNEs, and will be informative for other advanced economy industries. Accessing detailed and complex information on EMNE subsidiaries is both times consuming and problematic, and often limits sample sizes. However, this study introduces the idea of EMNE investment as a positive sum gain 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.

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APPENDIX A

Questions about intra-corporate knowledge transfer

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								
THE SUBSIDIARY PROVIDES "knowledge and skills" TO:	**SISTER SUBSIDIARIES**				**HEADQUARTERS**			
Please tick according to the following scale: 1= Not at all 4= Very much	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Activities:	❒	❒	❒	❒	❒	❒	❒	❒
Research & Development	❒	❒	❒	❒	❒	❒	❒	❒
Product Design	❒	❒	❒	❒	❒	❒	❒	❒
Manufacturing	❒	❒	❒	❒	❒	❒	❒	❒
Materials Procurement & Purchasing	❒	❒	❒	❒	❒	❒	❒	❒
Product Distribution and logistics	❒	❒	❒	❒	❒	❒	❒	❒
Marketing (branding, communication)	❒	❒	❒	❒	❒	❒	❒	❒
Costumer Service	❒	❒	❒	❒	❒	❒	❒	❒
Management Systems & practices	❒	❒	❒	❒	❒	❒	❒	❒
Others (specify_____)	❒	❒	❒	❒	❒	❒	❒	❒
THE SUBSIDIARY RECEIVES "knowledge and skills" FROM:	**SISTER SUBSIDIARIES**				**HEADQUARTERS**			
Please tick according to the following scale: 1= Not at all 4= Very much	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
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

Questions on the quality of locally embedded innovative activities

Appendix 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 <u>formal</u> collaborative agreements for innovative purposes? (By "FORMAL" we mean based on a contract)	To be answered in LIST 1 – EGO
Can you name the actors with which you have established <u>informal</u> collaborative agreements for innovative purposes? (By "INFORMAL" we mean based on a contract)	To be answered in LIST 2 – EGO

Appendix B.2.

Questions on subsidiary innovation

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

Please tick the options below using the following scale*:*

1= None; 4= All

	1	**2**	**3**	**4**
Product innovation	❒	❒	❒	❒
Process innovation	❒	❒	❒	❒
Organisational innovation	❒	❒	❒	❒
Market innovation (pricing, distribution, branding, packaging, etc.)	❒	❒	❒	❒