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THE INTERNATIONALIZATION OF MNES
FROM AND TO BRICS COUNTRIES:
THE CASE OF THE INDUSTRIAL MACHINERY INDUSTRY

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THE INTERNATIONALIZATION OF MNES FROM AND TO BRICS COUNTRIES: THE CASE OF THE INDUSTRIAL MACHINERY INDUSTRY

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Abstract

Global investment trends changed radically in past decades. An important issue, still open in the literature, refers to emerging multinational enterprises (EMNEs) internationalization processes and whether they are dissimilar or not to those of developed countries multinational enterprises-DMNEs. The aim of this analysis is to study the different internationalization patterns and drivers of EMNEs and DMNEs by using the acquisitions and joint ventures from BRICs to Triad countries and from Triad countries to BRICs occurred in the industrial machinery industry from 2000 to 2014. Our data shows that DMNEs internationalisation pattern is profoundly different from the EMNEs internationalisation pattern. This is in line with EMNEs need to control critical assets and resources, especially technologies and “knowledge assets”. In fact they acquire firms high technological potentialities. DMNEs balance their transaction between acquisition and joint-ventures, looking at non innovative firms when they use the acquisition mode while they are more focused on innovative firms and branded firms when they establish a joint-ventures.

1. INTRODUCTION¹

Global investment trends changed radically in past decades because of noticeable metamorphosis of international markets. In particular, large multinationals from emerging markets are successfully expanding worldwide at impressive growth rates (Guillén and García-Canal, 2009). Developed countries still are the major outward foreign direct investment (OFDI) home economies (in 2014 they contributed to more than 60% of world’s total flows), but the role of developing countries has been increasing constantly in the last decade, and reached the 39% of total OFDI flows in 2014. According to UNCTADSTAT data (2016), from 2000 to 2014 the weight of developing economies on world’s total OFDI flows has increased of 12.12%, while the weight of developed economies decreased of 2.93%.

¹ This paper in a different version has been presented in the Catania university work-shop “What do we know and what should we know about international knowledge sourcing?” 12th-15th June 2015, and at the EIBA Conference in Rio de Janeiro 1st-5th December 2015.

An important issue, still open in the literature, refers to emerging multinational enterprises (EMNEs) internationalization processes and whether they are dissimilar or not to those of developed countries multinational enterprises-DMNEs (Cuervo-Cazurra and Ramamurti, 2014). Some scholars claim that EMNEs are similar to their Western counterparts, while others claim that they are a new phenomenon and, therefore, require new theories and new interpretative frameworks. On one hand, according to the OLI (ownership location internalization) framework and its extensions (Dunning, 1988; 2000), multinational enterprises (MNEs) internationalize on the basis of firm-specific existing ownership advantages. They expand abroad in order to exploit their assets. Dunning, Kim and Park (2008) and Narula (2006) support this interpretation for both DMNEs and EMNEs, stating that EMNEs are MNEs at their early stage, foreseeing that their geographical patterns will come soon to resemble those of developed MNEs. On the other hand, Mathews (2006), and Luo and Tung (2007) proposed two new frameworks specifically developed on EMNEs. They both start from EMNEs' lack of firm-specific ownership advantages, and their need to acquire externally technologies and capabilities in order to compete effectively in global marketplaces. The underlying reasoning is that an international expansion in pursuit of new capabilities (asset-augmentation perspective) requires a different framework than expansion designed to exploit existing capabilities (Kedia, Gaffney and Clampit, 2012). According to the LLL framework (Mathews, 2006), EMNEs' international expansion is driven by resource linkage, leverage, and learning. EMNEs establish links with other firms in order to access resources externally and they leverage these resources, as opposed to DMNEs, valuing their Knowledge imitability, transferability and substitutability. Then, the repeated application of linkage and leverage processes results in the firm learning to perform such operations more effectively. According to the Springboard Perspective (Luo and Tung, 2007), EMNEs use OFDI as a "springboard" to acquire strategic assets needed to compete more effectively against global rivals, and to avoid the institutional and market constraints of their home markets. Springboard behaviours are deliberately designed to facilitate firms' growth and to establish a strong competitive position in global marketplaces. Analysing EMNEs behaviours, authors identified several strategies and activities associated with international springboarding by following leapfrog trajectories such as rapid internationalization, overcoming psychic distance, reaching large commitment and competing with global rivals.

Ramamurti (2012) proposes an intermediated interpretation between these opposite views. On one hand, the OLI framework is considered inadequate to explain MNEs' internationalization strategies because it is static, highly abstract, and context-free. On the other hand, it is not totally clear how to interpret the frameworks based specifically on EMNEs, as "the heterogeneity of

multinational firms and profound changes in the international macro context make it hazardous to generalize about how EMNEs are like, or unlike, MNEs that came before” (Ramamurti and Singh, 2009). Probably, the truth is somewhere in between the two opposite views and the real challenge for scholars is now to assess which aspects of each theory are universally valid and which are not (Ramamurti, 2012). According to the author, EMNEs internationalize on the basis of non-traditional competitive advantages such as huge capitalization, low labour costs, and government’s favourable policies. Therefore, EMNEs do not invest only for resource-seeking motives, but also to exploit their peculiar ownership advantages (mainly related to the country of origin). Other authors, like Dunning, Kim and Park (2008) and Williamson and Zeng (2009), assert that EMNEs do not behave differently because of their origin, but because of globalization processes that affected international marketplaces in last decades. This may explain why in many cases “new-born” multinationals from developed countries behave similarly to EMNEs (Mathews, 2006). In conclusion, the third way (in between the OLI framework and the new frameworks developed exclusively on EMNEs) proposes that the analysis of EMNEs can contribute to the extension and modification of existing theories by clarifying their assumptions and boundaries, avoiding the development of new frameworks (Cuervo-Cazurra, 2012).

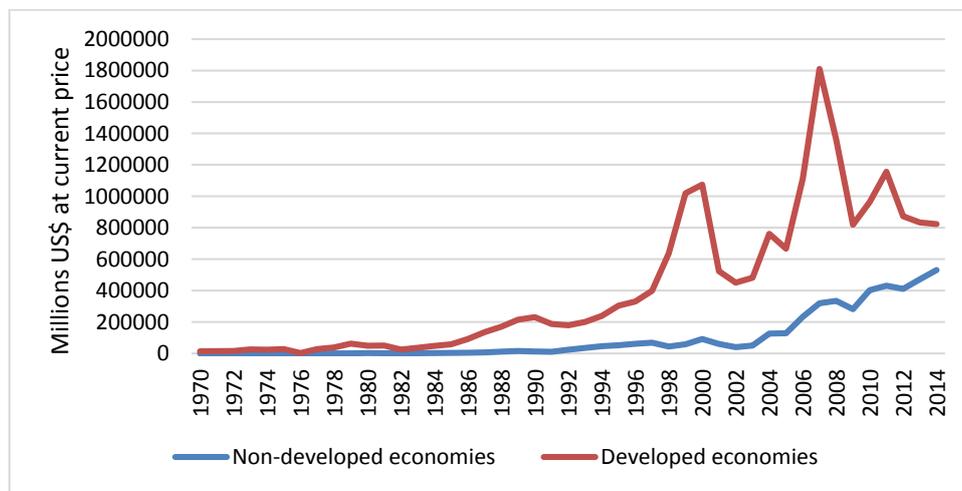
To check the validity of these proposed theories, this paper focuses on the internationalization patterns of EMNEs from BRICS countries (Brazil, Russia, India, China and South Africa) towards Triad countries (Europe-28, US and Japan). A comparative approach has been adopted, comparing EMNEs’ internationalization with DMNEs’ one. In particular, we investigated the motives underlying acquisitions and joint ventures from BRICSs to Triad countries and from Triad countries to BRICSs occurred in the industrial machinery industry from 2000 to 2014. The paper is organised as follows. In section 2 we reviewed the main theoretical contributions on patterns and trends of EMNEs’ internationalization in developed economies, with particular attention to the phenomenon of knowledge-seeking investments. Section 3 presents our hypotheses on EMNEs’ and DMNEs’ internationalization. Section 4 contains the sampling procedure, description, and methodology. The empirical estimation model and the regression results are presented in section 5 and discussed in section 6 together with the main conclusions.

2. EMNEs AND THEIR INVESTMENTS IN DEVELOPED ECONOMIES

For a long time, International Business (IB) studies referred only to multinationals originating from developed countries. The eclectic paradigm of international production, known as the OLI framework, was first put forward by Dunning in 1976 and has been widely used to explain the

internationalization patterns of MNEs. The surge of consistent foreign direct investment (FDI) flows from emerging economies from mid-1990s fostered IB attention on the new phenomenon of emerging multinational enterprises. Outward foreign direct investment (OFDI) flows from developing economies have been growing at an annual growth rate of +13.3% from 2000 to 2014, while, in the same period, OFDI flows from developed economies experienced an annual growth rate equal to -1.9% (UNCTADSTAT, 2016).

Figure 1: Outward Foreign Direct Investment flows (1970-2014)



Source: elaboration of the authors from UNCTADSTAT database

Investments from emerging markets have been analysed and classified into three OFDI waves in terms of time period, destination, motivation, and mode of entry (Gammeltoft, 2008). Emerging markets' internationalization activities have undergone considerable changes through the different investment waves not only in terms of magnitude, but also in the geographical focus and sectoral composition of flows (Kumar, 2006). The first wave occurred from 1960 to mid-1980s and comprehended few single pre-globalization success cases fostered by restrictions and export difficulties in the home market (Mathews, 2006). Internationalization was led by resources and market-seeking motives, moreover, companies invested abroad in an asset exploitation perspective, leveraging mainly on the availability of low-cost inputs and human capital. The second wave, from mid-1980s to 1990s, was encouraged by the increasing globalization and by liberalization reforms that occurred in many emerging markets. This period saw, in particular, the advent of Asian newly industrialized economies (NIEs): Hong Kong, Taiwan, Singapore, and South Korea. Investments targeted mainly neighbouring countries and occurred again for resources and market-seeking motives, together with new asset-seeking motivations. In fact, EMNEs felt the need to gain access

to technology, R&D and marketing capabilities, brands, distribution networks, managerial and organizational competencies. For this reason, they shyly started investing in developed economies. The third wave, from 1990s to 2000s, saw the surge of BRICS countries and a consistent increase in investments magnitude, actively encouraged by emerging markets institutions. Resources and market-seeking motives drove investments into other developing economies, while major asset-seeking and technology-seeking motives caused the increase of OFDI flows into developed economies. In fact, firms that intend to build advantages through OFDI, have a natural incentive to seek investments opportunities in specific locations where the needed assets are available (Makino, Lau and Yeh, 2002). In general, the motives underlying EMNES OFDI (Bertoni, Elia and Rabbiosi, 2008; Luo and Tung, 2007) can be summarized into: a) push factors (e.g., rising costs in the home market, home market restructuring policies, home market restricted growth opportunities, unexpected changes to regulatory policies, limited property rights protection, weak juridical and legal systems, or the decision of following competitors, customers, or suppliers); b) pull factors (e.g., international growth and/or investment opportunities of acquiring advance technology, obtaining managerial expertise and gaining access in key foreign markets, host government incentives, availability of natural resources, and desire to secure critical resources); c) management factors (e.g., availability of skills, knowledge, and managerial expertise needed to internationalization).

Bartlett and Ghoshal (2000) started to discuss the investment methods of EMNEs and to hypothesize that they internationalize in order to seize opportunities abroad without possessing unique ownership advantages. Therefore, a key prerequisite of the OLI framework, the internationalization throughout ownership advantages, is not met in EMNEs cases. If all the assertions of the OLI framework are accepted, then EMNEs should be weak firms expanding to other developing countries at best, a notion that is clearly at odds with increasing empirical evidence (Malik and Aggarwal, 2012 p. 3). EMNEs' internationalization processes have been explained by many authors by the possibility of taking advantages from the entry in new contexts (Sauvant, 2005; Buckley et al., 2007; Goldstein and Shaw, 2007; Gammeltoft, 2008; Filippov and Saebi, 2008; Fortanier, and Van Tulder, 2009; and Duysters et al, 2009). Scholars have gradually reached consensus on the fact that both business strategies and corporate behaviours of EMNEs differ from that of MNEs originating in developed economies. Globalization is widely seen to be the dominant tendency since the last two decades (Clarks and Knowles, 2003). Rapid technological changes, shortened product life cycle, rapid technology diffusion, increasing importance of knowledge and dramatic changes in information and communication technologies characterize the global environment in which EMNEs prosper (Luo and Tung, 2007). Today, in emerging markets,

MNEs are leading business innovation, reinventing systems of production and distribution, and experimenting with entirely new business models (Economist, 2010). Their fast growth path and their innovativeness are the main breaking elements of EMNEs compared to traditional DMNEs (Mathews, 2006). Their rapid and non-incremental internationalization contrasts with the conventional process, the so-called Uppsala model, followed by DMNEs (Johanson and Vahlne, 1977; 2009). Nowadays, EMNEs invest simultaneously in other developing markets and in developed markets (Duysters et al., 2009; Malik and Agarwal, 2012; Luo and Tung, 2007; and Gammeltoft, 2008). Actually, the emerging markets OFDI phenomenon is strongly and directly linked to IFDI (Inward Foreign Direct Investments) flows that they experienced in the past (Sauvant, 2005; and Duysters et al., 2009). The issue of FDI spillovers in emerging countries is still an established area of research in IB, with several studies related to the industry and country context (see among others: Meyer, 2003 and 2004; Gorodnichenko et al., 2007; and Zhang et al., 2010).

As already mentioned, recent EMNEs' internationalization follows a dual path, involving simultaneously other developing countries, and developed economies. EMNEs invest in other emerging markets when pursuing market-seeking and asset-seeking scopes (Kedia, Gaffney and Clampit, 2012; and Malik and Agarwal, 2012). Thus, they gain knowledge about consumers and markets and have access to critical assets such as natural resources, low cost labour and processes, plants and equipment in low-tech industries. On the other hand, EMNEs invest in developed markets when interested in both knowledge-seeking (access to brands, new technology, R&D, and managerial and operational expertise) or market-seeking in mature businesses (targeting a price sensible segment in a low-tech industry). Also firm's motivations and capabilities to engage OFDIs influence the choice of the target economy. In fact, EMNEs experienced in labour intensive production invest in other developing markets in an asset-exploitation perspective. On the contrary, EMNEs willing to explore new capabilities, may invest in developed countries in an asset-seeking perspective, in order to gain access to a technology necessary to compete in a developed economy (Makino, Lau and Yeh, 2002).

Table 1: strategic orientation and motives driving MNEs internationalization

	Host country	Strategic orientation	Motives
EMNEs	EMERGING MARKET	ASSET-EXPLOITING	1) MARKET-SEEKING 2) RESOURCE-SEEKING
	DEVELOPED MARKET	ASSET-EXPLORING	1) KNOWLEDGE-SEEKING (a specification of asset-seeking) 2) MARKET-SEEKING

DMNEs	EMERGING MARKET	ASSET-EXPLOITING	1) ASSET-SEEKING (low-cost labour and inputs)
	DEVELOPED MARKET	ASSET-EXPLOITING	1) MARKET-SEEKING 2) NEW ASSET-SEEKING

Source: elaboration of the authors

Moreover, as for DMNEs, EMNEs' location choice is affected by the value chain structure of the company and by host country characteristics. Low labour cost markets may attract manufacturing plants, while more sophisticated activities (such R&D) might be more responsive to 'soft' socio-institutional factors. For example, R&D FDI are highly responsive to a favourable regional system of innovation conditions (Crescenzi, Pietrobelli and Rabellotti, 2013). Thus, developed countries, and in particular the regions with higher innovation capacity (measured in terms of presence of R&D and patent intensity), results to be the preferred host country for knowledge-seeking investments. The drivers of these investments differ for EMNEs and DMNEs. In fact, when EMNEs invest for knowledge-seeking or asset-seeking motives, their location strategies are strongly responsive to the host country technological competences, in fact low-tech regions are never significant attraction factors (Crescenzi, Pietrobelli and Rabellotti, 2015). Conversely, MNEs from developed economies are responsive to both low-tech and high-tech regions when investing for asset-seeking motives in other developed economies. A strong differentiation between EMNEs and DMNEs entry mode behaviours can be outlined. According to UNCTAD (2012 and 2014), EMNEs generally target firms in developed economies through Merger and Acquisition (M&A) modality, while DMNEs prefer to invest in emerging economies throughout greenfield investments. Through acquisitions, EMNEs can access the desired knowledge and technologies of the target company. In fact, the full control over the assets is critical in order to leverage them. On the other hand, DMNEs are not always interested in controlling their investments in developing countries if they are not driven by asset-seeking motives. For example, they are likely to prefer other investment methods when driven by market-seeking motives, such as partnerships and joint ventures. EMNEs' large investments in developed countries are also fostered by emerging markets' national policies: the case of Chinese MNEs is an emblematic example of how the national government can control companies' internationalization policies (Peng, 2012; and Morck, Yeung and Zhao, 2008).

3. HYPOTHESES

Although scholars disagree on which should be the most appropriate framework, differences between new EMNEs and traditional DMNEs' internationalization patterns are generally recognized. To what extent do emerging markets investments in developed economies differ from the opposite FDI flows, from developed to emerging economies? Which drivers can be associated to each strategy? We focused on FDI in the industrial machinery industry from BRICSs to Triad countries and from Triad countries to BRICSs. The aim of this analysis is to study the different internationalization patterns and drivers of EMNEs and DMNEs. In fact, both the literature and empirical studies on EMNEs' internationalization in developed economies are still scarce. For the purpose of our analysis, we investigated the drivers of MNEs investment choice: acquisition or joint venture. Given the theoretical background previously described and the characteristics of the analysed industry, we can formulate some hypothesis on EMNEs and DMNEs internationalization patterns.

The industrial machinery industry is considered a medium/high-technology manufacturing sector. In order to provide an internationally competitive product offering, EMNEs need to acquire externally the technology and the updated technical knowledge that they may not develop internally. OFDI in developed economies are usually the only way through which EMNEs can quickly access technologies and capabilities that are not available in their home market or in other emerging economies. The best way to leverage technologies, to acquire know-how, managerial expertise and other intangible assets is through obtaining property rights and assets control from other firms. Therefore, we expect that EMNEs pursuing knowledge-seeking scopes prefer a majority acquisition rather than a joint venture as an entry mode in developed economies.

H1: EMNEs from BRICS countries invest in developed economies for knowledge-seeking motives through acquisitions.

Generally, emerging economies are not technologically advanced. Therefore, we can exclude knowledge-seeking as a driver of DMNEs' investments in BRICS countries. In addition, natural-resources-seeking investments are not likely to be a critical driver in the industrial machinery industry, so we can exclude them too. We can conclude that DMNEs operating in the in the analysed industry may invest in emerging markets for two different reasons: asset-seeking or market-seeking. If they invest in an asset-seeking perspective, they are likely to be interested mainly in low-cost inputs (labour and capital) available in emerging markets (cost-efficiency-seeking investments), and thus to acquisition. In contrast, DMNEs may also invest in emerging economies for market-seeking motives, thus they may prefer joint-ventures. In fact, emerging countries are experiencing an extremely high growth and middle classes are increasing their economic power, so that national demands are increasing for many products and services. Thus, they offer very

attractive investment opportunities for DMNEs. Since these motivations are often present and exploited together, we expect that DMNEs are “neutral” with respect this contractual choice.

H2: DMNEs from Triad countries invest in emerging countries selecting both entering modes.

4. METHODOLOGY

4.1. SAMPLES DESCRIPTION

The analysis is run on two samples comprehending cross-border acquisitions and joint ventures in the industrial machinery industry² from 1st January 2000 to 31st December 2014. Data have been collected from Zephyr, the most comprehensive database on deal information by Bureau Van Dijk. Since there is no minimum transaction value in this database, all the transactions have been considered, irrespective of their size. This is important in order to address the characteristics of companies’ internationalization in more general and comprehensive terms, considering both large and small transactions and, consequently, both large and SMEs’ international activities. The two samples are composed as follows:

- ‘Sample 1 includes EMNEs, located in Brazil, Russian Federation, India, China, South Africa, Hong Kong and Taiwan, that have completed cross-border acquisitions or joint ventures in Canada and Triad countries.

- ‘Sample 2 includes DMNEs, located in Triad countries and Canada, that have completed cross-border acquisitions or joint ventures in BRICS countries, Hong Kong and Taiwan.

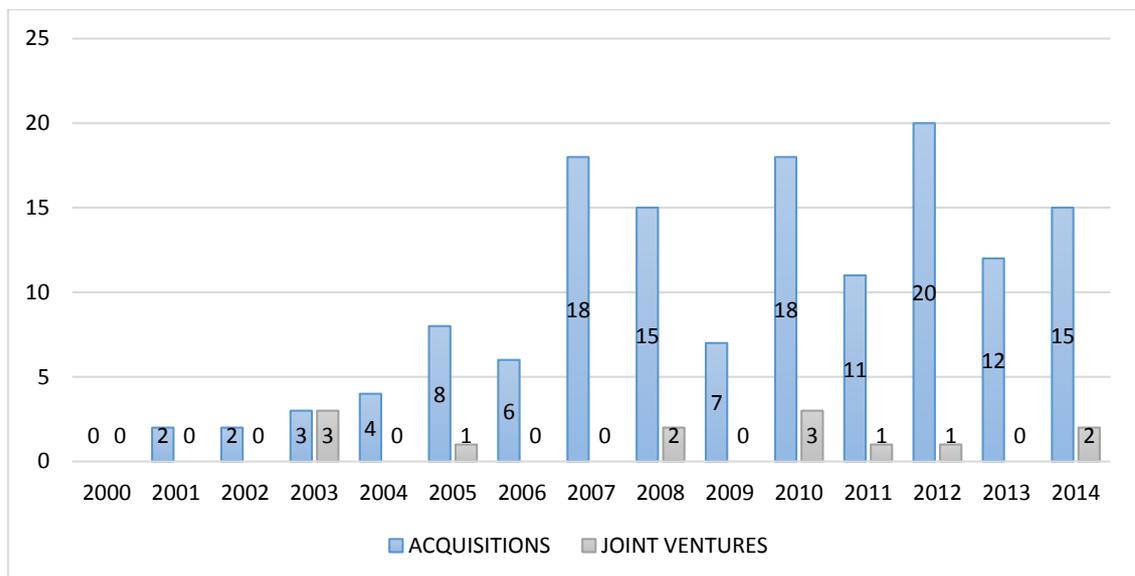
For simplicity of exposition, from now on we will call both participants of acquisitions and joint ventures as acquirer or as target company. The acquirer is the bidding company and the target is the acquired company. In joint ventures, instead, the acquirer is the company undertaking the foreign investment and the target is the partner company that is investing in a joint venture that operates in its home country, so that it is not undertaking an international investment. Whether the acquiring company had a previous non-controlling stake in the target company or not, only transactions leading the acquirer to a final stake of 51% or more have been considered. On the contrary, joint ventures have been considered irrespective of the participation quotas. In the two samples, either the acquirer or the target company may operate in the industrial machinery industry,

² As defined in Section C (Manufacturing), Division 28 (Manufacturing of machinery and equipment not else classified) of the European NACE Rev. 2 classification of economic activities (Eurostat, 2008)

not necessary both. Canada has been considered together with Triad countries because of its close relationship with the US economy. Hong Kong and Taiwan have been included in the dataset because of their similarities with BRICS economies.

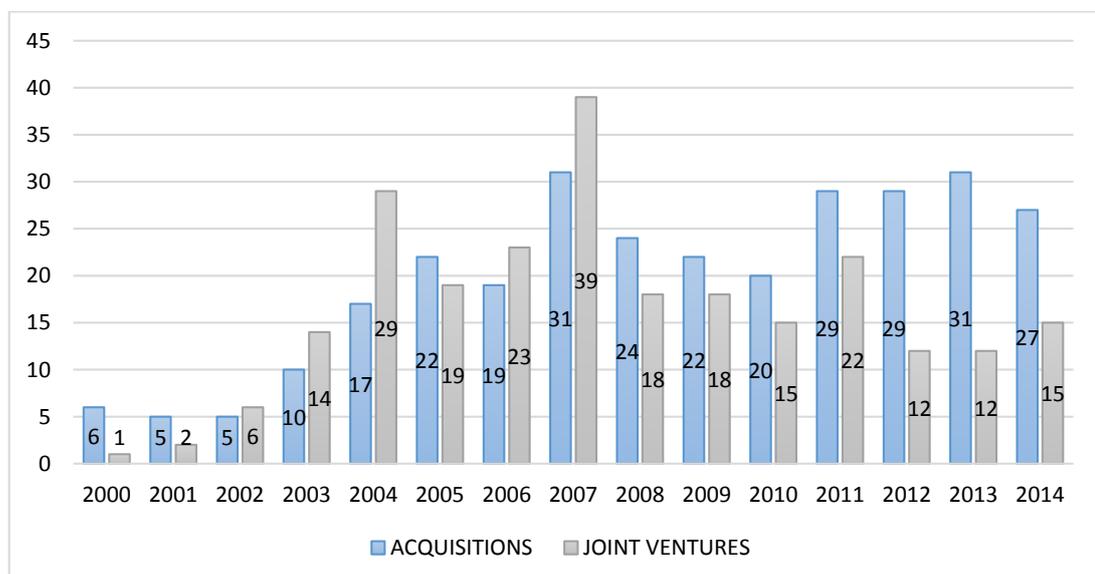
Sample 1 is composed by 153 transactions: 91.56% of transactions are acquisitions and 8.44% are joint ventures. Sample 2 is composed by 543 transactions: 54.7% acquisitions and 45.3% joint ventures. Table 2 and Table 3 are the absolute frequency tables of the two samples, showing the number of acquisitions and joint ventures occurred in each year.

Table 2: Sample 1 absolute frequency table



Source: elaboration of the authors on Zephyr database

Table 3: Sample 2 absolute frequency table



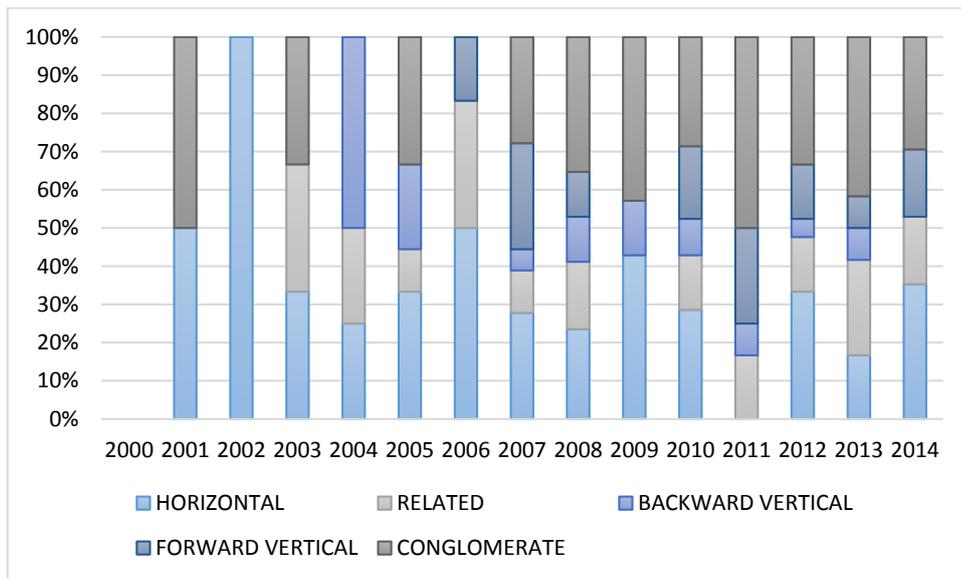
For what concerns investing countries and target economies, the two samples follow the general OFDI trends. China is the major investor among BRICS economies, followed by Russia, India, Hong Kong, Taiwan, Brazil and South Africa. In Sample 1, 85% of BRICSs investments are directed towards Europe, 12% towards USA and the remaining 3% towards Japan. The most targeted European countries are: Germany (35 transactions between 2000 and 2014), Italy (16), UK (15), Czech Republic (12), Netherlands (11) and France (9) and Austria (7). In Sample 2, the bulk of OFDI originates from European countries (50%), followed by USA (31%) and Japan (19%). Investments from developed countries are mainly directed toward China, followed by India, Brazil, Russia, South Africa, Hong Kong and Taiwan. Therefore, samples reflect the general trends of OFDI flows, confirming the Chinese leading role among emerging markets in manufacturing industries and the US leadership as world's largest outward investor.

4.2. TRANSACTIONS CLASSIFICATION

Following Bertoni, Elia and Rabbiosi (2008 and 2012) transactions have been classified applying the measure of acquirer-to-target relatedness. A transaction in which the acquirer and the target company have at least 3-digit NACE code in common among those in which they operated at the time of the transaction is classified as *horizontal*. Then, when the two companies have at least 2-digit NACE code in common, the transaction is classified as *related*. Those transactions that are neither horizontal nor related are classified as *forward vertical* when the industry of the acquiring firm sells more than 5% of its output to the industry of the target and *backward vertical* when the industry of the acquiring firm receives more than 5% of its inputs from the industry of the target. To operationalize this measure we used the input-output tables published by Eurostat, the statistical institution of the European Union. By using European input-output tables on samples that do not include transactions within Europe only, we implicitly make the assumption that sectorial ties are not country-specific but, rather, that they reflect fundamental characteristics of the production technology (Bertoni, Elia and Rabbiosi, 2012). This is particularly suitable to this analysis, that is focused on firm-level data and excludes country-specific drivers and variables from the estimation model. Finally, transactions that are not classified as horizontal, related or vertical are classified as conglomerate. Table 4 and Table 5 show how transactions are classified in the two samples.

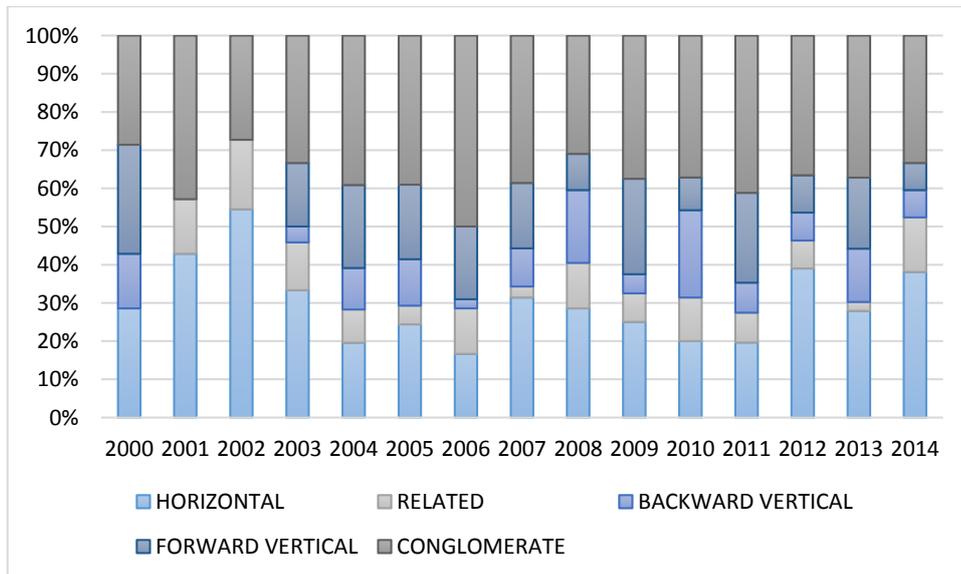
Quite surprisingly, the two samples are composed for the major part by conglomerate transactions. In Sample 1, 29.22% of transactions are horizontal, 16.23% are related, 22.73% are vertical and 31.82% are conglomerate. Horizontal transactions were actually expected to be the most common typology, as in general it is found for non-industry-specific BRICSs OFDI analyses (Bertoni, Elia and Rabbiosi, 2008 and 2012). This unexpected result may be due to industry-specific motives. In fact, also in Sample 2 the same trend is observed: 27.68% of transactions are classified as horizontal, 8.30% as related, 26.20% as vertical and 37.82% as conglomerate. How can this large presence of conglomerate transactions be explained? It can be hypothesized that many large multinationals may be interested in acquiring companies operating in the industrial machinery industry in order to internalize the production of the industrial machineries they need for other businesses (please note that these other businesses must not be vertically related to industrial machinery industry, otherwise the transactions would be classified as vertical). A test is needed to control if the large presence of conglomerate transactions is imputable only to transactions originating outside the analysed industry. For this reason, we controlled the amount of conglomerate transactions where the acquiring firm operates in an economic sector different from the industrial machinery industry. In Sample 1, in 69% of conglomerate transactions the acquiring company does not operate in Division 28. Also in Sample 2, in 57% of conglomerate transactions the acquiring firm does not operate in Division 28. Therefore, the distribution of transaction typologies in the sample is biased towards the acquirer's economic activity. Another explanation for the large number of conglomerate transactions may be the industry riskiness. The more companies perceive the industry or the country in which they operate as risky, the more they are incentivised to risk diversification investments.

Table 4: Transactions classification in Sample 1



Source: elaboration of the authors

Table 5: Transactions classification Sample 2



Source: elaboration of the authors

5. EMPIRICAL ESTIMATION

5.1. VARIABLES DESCRIPTION

The purpose of this empirical research is to analyse how investment drivers change in the two cases where investments occur through acquisitions or through joint ventures. As already

mentioned, previous empirical researches and internationalization theories suggest that a company should engage in acquisitions when the investment is aimed at acquiring technologies and critical assets. Sample 1 composition shows that in industrial machinery industry EMNEs from BRICS countries prefer acquisitions to joint ventures. This suggests that their main investing motive is the acquisition of knowledge and technology not available elsewhere. To explain companies' decisions between engaging in acquisitions or in joint ventures, the regression model is based on the dichotomous variable "Acquisition" that takes on the value of one if the MNE has undertaken an acquisition and zero otherwise. The empirical estimation is run on both Sample 1 and Sample 2, in order to compare the results. To determine how EMNEs and DMNEs choose between an acquisition and a joint venture to invest respectively in developed and emerging markets, we considered the following variables: 1) Technological level. Both the technological level of the acquirer and of the target company are critical in determining the investment choice. The logarithm of the number of patents owned by the company is used as a proxy to its technological level. In our analysis, we included the technological level of the acquirer and of the target company, both at the time of the acquisition and at present time. This is aimed at assessing if and how the technological level of the companies has changed after the cross-border transaction. The technological level is expected to be a driver of acquisitions rather than of joint ventures. In fact, only the control over technologies allows for the exploitation of this competitive advantage. All data on patents have been collected from Orbit database. 2) Company image. Target company's image is a crucial driver for market-seeking investments. Well-established and powerful brands are crucial when trying to penetrate new markets in a fast fashion, avoiding the demanding processes of brand recognition and brand awareness building. The logarithms of the number of brands that the acquiring company and the target company owned at the time of the transaction and at present time are used as proxies for the company image. Data on the number of brands owned by each company have been collected from WIPO Global Brand Database. 3) Design. On one hand, the 'design knowledge' (human resources' design expertise and industrial designs registered) may be a knowledge-seeking investments driver. On the other hand, products with a reliable and recognisable industrial design may attract market-seeking investments. The logarithms of the number of industrial design registered owned by the acquirer and by the target company at the date of the transaction and at present time are used to test the role of this variable in the choice between acquisitions and joint ventures. Data on industrial design have been collected from the WIPO Global Design Database. 4) Acquirer international experiences. Previous international experience is certainly an incentive for companies to undertake additional international activities. The accumulated learning on a specific type of transaction is likely to drive a company to engage in the same transaction in the future. Data

availability allow only for a weak proxy of companies' previous international experiences. We use as a proxy of the acquirer international experience the logarithm of the number of years since the very first international transaction in the sample. 5) Transaction types. As previously described, acquisitions and joint ventures have been classified as horizontal, related, forward vertical, backward vertical and conglomerate on the basis of the acquirer-to-target relatedness. To verify the role of the acquirer-to-target relatedness in the choice between acquisitions and joint ventures, we used as a proxy the logarithm of the 'degree of diversity' between the acquirer and the target. The degree of diversity is equal to zero when the transaction is horizontal, to 0.33 when the transaction is related, to 0.66 when the transaction is vertical (both backward and forward) and to one when the transaction is classified as conglomerate. 6) Acquirer industry. A dichotomous variable has been included to test the role of the acquiring firm's industry on the choice between acquisition and joint venture transactions. This variable takes on the value one if the acquiring firm operates in the Division 28 and takes on the value zero otherwise.

5.2. MODEL DESCRIPTION

As the dependent variable is a dichotomous variable (it assumes the value of 0 if it is a joint ventures and value 1 if it is an acquisition), the most appropriate way to run a regression is the adoption of a Probit Model. The empirical estimation model for both samples takes on the following form:

$$\text{ACQUISITION (or JOINT_VENTURES)} = X_i \beta + u_i$$

Where ACQUISITION (or JOINT_VENTURES) is the dependent variable that assess whether a company engaged in an acquisition or in a joint venture, X_i is the vector of the independent variables, β is the vector of Probit coefficients and u_i is a normally distributed error term. The model can be expanded including the previously identified components of vector X_i .

$$\begin{aligned} \text{ACQUISITION (or JOINT_VENTURES)} = & \beta + \beta_1 \text{ Acquirer patents at transaction date} + \beta_2 \\ & \text{Target patents at transaction date} + \beta_3 \text{ Acquirer actual patents} + \beta_4 \text{ Target} \\ & \text{actual patents} + \beta_5 \text{ Acquirer brands at transaction date} + \beta_6 \text{ Target brands} \\ & \text{at transaction date} + \beta_7 \text{ Acquirer actual brands} + \beta_8 \text{ Target actual brands} + \\ & \beta_9 \text{ Acquirer designs at transaction date} + \beta_{10} \text{ Target designs at transaction} \\ & \text{date} + \beta_{11} \text{ Acquirer actual designs} + \beta_{12} \text{ Target actual designs} + \beta_{13} \\ & \text{Transaction type} + \beta_{14} \text{ Acquirer international experience} + \beta_{15} \text{ Acquirer} \\ & \text{industry} + u_i \end{aligned}$$

5.3. RESULTS

In both samples, variables measuring the number of patents, brands and designs in different points in time result highly correlated. In order to deal with the high correlation among independent variables, the statistical software omitted two variables in each regression. Robust standard errors have been used to deal with possible heteroskedasticity and non-normality problems. Tables 6 and Table 7 report the marginal effects of the Probit model.

Table 6: Sample 1 Probit regression reporting marginal effects

ACQUISITION	dF/dx	Robust Std. Err.
Acquirer patents at transaction date	-0.1121192*	0.0360903
Target patents at transaction date	-0.0864748**	0.08493
Acquirer post-acquisition number of patents	0.1030723*	0.0328058
Target post-acquisition number of patents	0.0809055**	0.0786342
Acquirer brands at transaction date	0.0017758	0.0229592
Target brands at transaction date	0.0094178	0.0284795
Acquirer post-acquisition number of brands	-0.0012747	0.0194063
Target post-acquisition number of brands	-0.0119537	0.02862
Target designs at transaction date	0.5225828*	0.4413446
Target post-acquisition number of designs	-0.4914181*	0.4108611
Transaction type	-0.0378143	0.0435331
Acquirer international experience	0.0104159	0.0217027
Acquirer industry	0.0027972	0.0218737
Pseudo R-square	0.1293	
Wald chi ²	24.03	
Log likelihood	-38.732031	
Number of obs.	153	

Notes: * Significant at 10%; ** Significant at 5%; *** Significant at 1%.

As we have already observed, the majority of transactions of EMNEs are involving acquisitions and not joint-ventures. The Pseudo R^2 of the regression is equal to 0.1293 that is an acceptable result in a cross-sectional analysis, also considering the limited sample numerosity. The average of predicted probabilities for having an acquisition is 91.6%, that is very similar to the actual frequency of the sample (91.5%). The percentage correctly predicted values that in this case are equal to 90.85%, which is very high. Therefore, this model is quite a good predictor on the choice of EMNEs of engaging in an acquisition or in a joint venture international investment.

Tab. 6 shows that acquiring firms are not targeting the most innovative firms but firms with high innovation potentialities (see the post acquisition performance of targets). In fact, the number of patents owned by the target company at the time of the transaction is negative but significant on the probability of an acquisition. This means that for any increase in the number of patents of the target at transaction date, a company is 8.6% less likely to be engaged in an acquisition rather than a joint venture. The same trend is visible also for acquires: EMNES acquirers are not the most innovative firms of emerging countries (the variable is negative and significant). However, the post acquisition effect pushes the innovation capability of acquires. This is in line with the observation of innovativeness capability of targets after they are integrated in the acquiring firms.

This is in on sense an unexpected result, as we expected BRICs to invest in developed countries for knowledge-seeking motives via acquisitions, and, therefore we were expecting the variable of existing patents to be a critical driver. In contrast, we found that it is not the number of patents possessed at the time at the acquisition the crucial variable but the number of registered patents after the acquisition to have a positive and significant effect. This may be interpreted by asserting that EMNEs are interested in acquiring developed companies with a good potential to improve their technology level. They do not rely only on the technological level owned by firms at the time of the acquisition, but they rely also on the probability that firms, after the transaction realized, develop and/or improving both target's and acquirer's technology. This means that firms take more into account the potential technological capacity of firms, rather than the accumulated technology previously developed.

The number of design registered by the target before the acquisition has a positive influence on acquisition, but after the acquisition a negative influence, because the EMNE acquiring company seems not to have the capability to register new designs. In contrast the brand variable is not statistically significant.

In Tab. 7 we observe the behaviour of DMNEs. In this case, the Pseudo R^2 is equal to 0.1298, so we can conclude that the model has a quite good capability of predicting the dependent variable. In addition, the average of predicted probabilities for having an acquisition is 54.8% that is very

similar to the actual frequency of the sample (54.6%). The goodness of fit of the model can be seen also in the percentage of correctly classified predictions: this model correctly classifies the 67.77% of the predicted values.

Table 7: Sample 2 Probit regression reporting marginal effects

ACQUISITION	dF/dx	Robust Std. Err.
Acquirer patents at transaction date	-0.0271993	0.0447665
Target patents at transaction date	0.0695914	0.0457805
Acquirer post-acquisition number patents	-0.0012733	0.0440503
Target post-acquisition number patents	-0.1243405***	0.035725
Acquirer brands at transaction date	0.070343	0.0505172
Target brands at transaction date	-0.1544048*	0.0926396
Acquirer post-acquisition number brands	-0.0552038	0.049681
Target post-acquisition number brands	-0.0095491	0.063375
Acquirer designs at transaction date	0.0128933	0.0495859
Acquirer post-acquisition number design	0.374023	0.046244
Transaction type	0.1495567*	0.0887625
Acquirer international experience	0.0461587	0.0355515
Acquirer industry	0.0831617	0.052718
Pseudo R-square	0.1298	
Wald chi ²	65.15	
Log likelihood	-325.45179	
Number of obs.	543	

Notes: * Significant at 10%; ** Significant at 5%; *** Significant at 1%.

First of all, as expected, there is not a predominance of acquisitions over joint-ventures. Considering the acquisitions, target firms are not the most innovative (the variable is not significant) and they are not becoming innovative after the acquisition (the variable is negative and significant). The probability to engage in an acquisition is inferior of 12.4% for each increase in the number of patents registered by the target in the post acquisition period. This means that, on the

contrary, DMNEs tend to focus on the most innovative firms using joint ventures. When a joint venture is established between a DMNE and an emerging market company, the accumulated capabilities of the target are not important, but market-seeking motives becomes relevant, as shown by the variable of brands possessed by the target. In fact, a DMNE who wants to pursue market-seeking scopes, is likely to look for target firms with a strong brand presence in the market they want to enter. The ‘degree of diversity’ , measured as transaction type variable, has a significant positive effect on acquisition. Therefore, the more the acquirer and the target company operate in different industries, the more it is probable to have an acquisition. A joint venture project is likely to occur between similar horizontal firms. Interestingly, the belonging of the acquirer and the target to the same industry appears not significant, such as the degree of experience of acquirers.

6. DISCUSSION AND CONCLUSIONS

This paper investigated the phenomenon of both multinational companies originating from emerging markets and developed market in the industrial machinery industry. EMNEs have been constantly increasing the number and the amount of their cross-border investments in last decade. With their innovative approach to internationalization processes, these companies successfully gained a competitive global presence revolutionizing international marketplaces. Along our review of the main theoretical contributions on the topic, EMNEs’ characteristics and strategies have always been compared to DMNEs’ ones, in order to address the main differences and possible common elements between their internationalization patterns. The analysis of the two samples of transactions in the period 2000-2014, from BRICs to Triad countries and from Triad countries to BRICs, highlighted the diversity of behaviours. Our data shows that DMNEs internationalisation pattern is profoundly different from the EMNEs internationalisation pattern.

BRICs countries firms are engaging in much more acquisitions than joint ventures. This is in line with their need to control critical assets and resources, especially for technologies and “knowledge assets”. In addition, the post-acquisition number of patents of both acquirer and target company resulted as significant drivers of the acquisition entry mode, signalling that EMNEs value more the potentialities of the target company in improving the technological level rather than the technological level at the time of the acquisition.

We can say that these results confirm H1 hypothesis as in this sample EMNEs invest in developed countries mainly for knowledge-seeking motives and prefer acquisitions to joint ventures.

On the other hand, DMNEs investments are almost equally distributed between acquisitions and joint ventures. This confirms our H2 hypothesis. We can state that DMNEs would prefer a joint venture rather than an acquisition when firms have a high technological potential (also because the small number of existing innovative firms in emerging countries is not available to be acquired). In this case, the number of brands owned by the targets revealed to be a crucial driver for the decisions of DMNEs to invest in a local joint-venture. Therefore, we can conclude that, DMNEs' market-seeking investments in emerging countries occur mainly through joint ventures.

Another interesting point concerns transactions classification into horizontal, related, forward vertical, backward vertical and conglomerate transactions. Sample 1 and Sample 2 show an unexpected high number of conglomerate transactions. This may indicate that the industry is perceived as a good opportunity for diversification investments and/or that the industry is perceived as highly risky and that companies feel the need to broaden their scope in order to diversify. The 'degree of diversity' between the acquirer and the target company has turned not-significant for EMNEs. On the contrary, it is positively significant for DMNEs, so that the more the two companies are unrelated, the more DMNEs are likely to undertake an acquisition.

We found evidences that confirm the knowledge-seeking predominant motive of BRICS EMNEs investing in developed countries. Also the market-seeking motive of Triad countries investing in emerging economies, was confirmed by the balanced number of acquisition and joint-ventures. The use of a single model is a limitation for the estimation of samples with such different characteristics. Nevertheless, we accepted this limit in order to maintain a parallel comparative analysis among DMNEs and EMNEs.

For future analyses, we would suggest to control for additional variables such as the company size and the transaction value, even if these data are likely to be available only for large MNEs. For this reason, and to avoid the data scarcity problem that may be encountered in the analysis of a single industry, we would suggest to enlarge the sample to more than one single industry, maybe to a pool of related sectors. Moreover, it would be interesting to analyse acquirer and target's sizes, in order to address more specifically the technological drivers of EMNEs OFDI in developed countries a medium/high technology industry.

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