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NEW MULTINATIONAL ENTERPRISES. INTERNATIONALIZATION MODES AND LEARNING ABROAD EFFECTS

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Internationalization modes and learning abroad effects

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CHAPTER I

INTRODUCCTION

"There are unsolved problems, not solved, that keep the mind active"

(Erwin Guido Kolbenheyer)

1.1. JUSTIFICATION

The notable increase of foreign direct investment (FDI) flows in last decades has been one of the main features of the globalization process. Recent trends have introduced relevant changes in the geography of FDI. One of these changes is the incorporation of some developing economies and how these have entered in scene. After several decades of high concentration of FDI within the richest countries of the world economy, developing economies have been acquiring a much more active role not only as receptors of these flows, adopting increasingly a host country position, but also enlarging outward FDI and then becoming home countries of multinational enterprises (MNE).

This observation has generated new questions in the research agenda that also has motivated the formulation and development of this PhD Thesis that is composed by three main papers. The first one focuses on the relevant characteristics of home countries to explain the emergence of MNE. The second paper tries to explain what elements of the national system of innovation are more relevant to explain the choice of the preferred FDI mode by emerging MNE. Finally, the third paper adopts a micro level perspective to analyze the effects that Spanish MNE have on innovation and productivity.

This chapter introduces first the main facts that have collaborated to the definition of the Thesis. The second section is devoted to the justification of the different research papers, explaining the main arguments and evidence of the literature background that support them. Section three contains the definition of main objectives and hypothesis. Afterward, section fourth contains a description of the datasets and methodology used

in the different analysis. Finally, section fifth presents the structure of the thesis and a brief summary of the following chapters contained in this document.

A first aspect to mention is that new trends in the international business landscape that are related to the growth and changes in Foreign Direct Investment (FDI)[1] flows worldwide has made emerge what is called the new multinational enterprises (MNE)[2] or Emerging Multinationals (EMNE)[3] phenomena. The huge increase of FDI flows from developing countries, emerging and catching up economies –i.e. Brazil, China, India or Spain- since the nineties, together with the dynamism of mergers and acquisitions (M&A) in the internationalization process of firms, have opened new research interests in international business. Some of the key topics are related to the explanation of the new trends in the geography of foreign investments, the reasons explaining firms' internationalization strategies and the prevalence or obsolescence of more traditional theoretical explanations.

Although this Thesis refers mainly to Emerging Multinationals (EMNE), it is also including New Multinationals being aware that the difference between Emerging and New Multinationals is due, according to Guillén and García Canal (2010), to the fact that the latter concept includes also those MNE from some countries which lacks a solid base of technological assets, as it can be the cases of Spain or Ireland. Nevertheless, for simplicity in this Thesis the term of EMNE will be used for both.

Postulates from International Business and Economics literature are obliged references to build the theoretical framework in which the development of this research is done, making especially emphasis in the field of emerging and new Multinationals. There are some recent contributions that remark how these new MNE may show a different set of ownership advantages than traditional MNE from developed countries; they also show how M&A are being mostly considered as the preferred chosen mode for the firms' expansion abroad in last decades; or even more, how knowledge seeking motives can become dominant motives for these EMNE because the relevance of the learning abroad process (Ramamurti, 2012; Cuervo-Cazurra, 2012; Gammeltoft, 2010a; Mathews, 2006; Luo and Tung, 2007). However, empirical evidence about the factors that would integrate the new set of particular ownership advantages in EMNE that

[1] In all the text FDI will refer to Foreing Direct Investment. Moreover, when the investment enters in a country or Inward FDI, IFDI will be used. However, when the investment goes out from a country or Outward FDI, OFDI will be employed.
[2] MNE refers to Multinational Enterprise and Multinational Enterprises (in plural).
[3] From now, EMNE will be used as acronym of New Multinational Enterprise or Multinational enterprises from developing countries.

could contribute to explain their success abroad; the elements that would justify the use of M&A as a rapid FDI mode for firms' international expansion; or the provision of micro evidence to study learning by FDI effects is still limited. This limitation is precisely a strength point that justifies the research interests of this Thesis.

The characteristics of the home country environment can be taken into account as relevant to enhance the development of firm specific assets in emerging markets, generating a new set of ownership advantages in these economies, according to previous contributions in the field that analyze the EMNE phenomena (Dunning, 2009; Tolentino, 2010, Guillén and García- Canal, 2010; Stoian, 2012; Luo and Wang, 2012). Following the background, the analytical proposal here is the qualification of a process of capabilities accumulation at country level that would justify the potential success of the firms' internationalization process from developing countries.

On the other hand, the next contribution of this Thesis is built over the fact that M&A are considered as a more rapid mode of international expansion employed by firms from emerging economies. Previous literature point out the relevance of technological and institutional escape hypothesis in this regard (Chen and Cuervo-Cazurra, 2012; Witt and Lewin, 2007). This serves as a starting point to present our proposal that is based on the relevance that weaknesses and strengths detected at the level of the national system of innovation in the home country (HNSI)[4] could have for explaining the use of M&A instead of other modes of firms' internationalization such as Greenfield FDI. Therefore, the potential weaknesses of HNSI would justify the use of M&A for the acquisition of knowledge abroad.

Finally, departing from the fact that Spain is a high income country although considered as an intermediate country in technological terms (Molero et al., 1995) on the one hand, and the recent development of a huge set of MNE from this country lacking a solid technological base on the other hand, a micro analysis referred to Spanish firms would be justified. Taking into account that Spain has also been considered as the "Mother country" of some EMNE such as those from Latin American countries, the issue gains even more interest from an international business perspective (Santiso, 2008; Guillén and García-Canal, 2010; Cuervo-Cazurra, 2008). Therefore, sharing the arguments of the EMNE, this Thesis provides micro evidence about the impact of the MNE status innovation output and productivity levels of internationalized firms adopting a learning abroad approach, and the findings can be easily added to the explanation of the EMNE phenomenon.

[4] HNSI is the acronym of home national system of innovation.

1.2. RELEVANCE OF THE RESEARCH

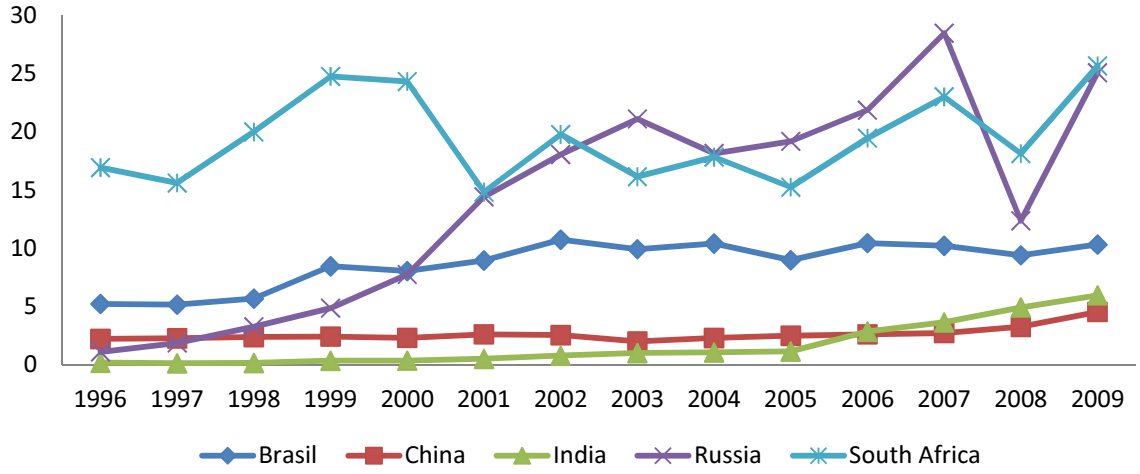
The relevance of this research is driven by the emergence of new players in the international business scenario since the nineties. The generation of MNE from emerging economies (Brazil, China, India, South Africa or Spain among them) implies to rethinking traditional postulates about firms' internationalization and international business studies have also devoted increased attention to the topic. Some of the specific questions are related to the impressive success on international markets of these firms coming from economies not included in the club of the richest countries. Aspects such as the traditional ownership advantages –technology, commercial branches- are not likely present in developing economies, reason why it was difficult to explain the most risky firm strategies for their expansion abroad. Part of the explanation comes from the leading motives for FDI and particularly how knowledge seeking is gaining room among the reasons for the international action of EMNE.

In the remaining section, a short descriptive of outward FDI flows from BRICS[5] economies to the rest of the world is provided in connection with some of the main arguments shown in this branch of the literature. In addition, also the Spanish position in terms of international investment flows in last decades is presented because as an intermediate income country in technological terms the emergence of MNE is included within the concept of new multinationals.

The growth of OFDI flows in recent decades from BRICS economies can be observed in Graph 1.1. This illustrates the growing importance that EMNE have been acquiring in the international context. As it will be explained in more detail in the next chapter, traditional international models such as the incremental international theory (Johanson and Valhe, 1977) and the product cycle model (Vernon, 1966) had not considered developing economies as outward investor in their predictions. Those models were built under the idea of flows between rich countries, mostly physically closed, and following a conception of gradual firms' internationalization processes, reason why the use of FDI is thought only in latter stages of the process. Moreover, the explosion of these OFDI flows from developing economies were not considered in other well known traditional theories such as the OLI approach (Dunning, 1988).

[5] BRICS=This acronym refers to the next set of countries; Brazil, Russia, China, India and South Africa

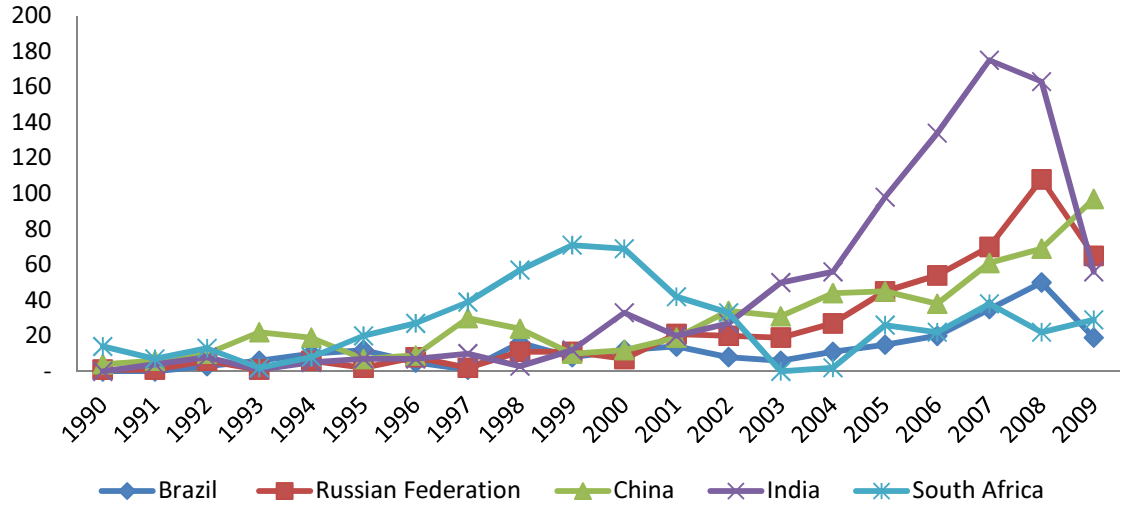
Graph 1.1 Evolution of OFDI (as % of GDP), BRICS economies



Source: Own elaboration based on UNCTAD (2011)

An additional aspect recent FDI trends is related to the mode of foreign expansion. There has also been a change with regard to this in both developing and developed countries. The fact is that firms from developing countries are often using M&A as the preferential mode of firms' international expansion, something that is contradictory with regard to the predictions of the incremental internationalization model (Johanson and Valhe, 1977). As a matter of illustration, Graph 1.2 shows how cross-border M&A operation has increased from the BRICS economies in the last years.

Graph 1.2 M&A from BRICS economies (Number of M&A projects)



Source: Own elaboration based on Unctad, 2011.

Finally, a remark can be done in relation to the direction of investment flows and particularly those from these economies to more developed countries or South-North flows. This aspect replaces the predominance of market-seeking motive as the key strategy of firms' internationalization process for the strategy of knowledge-seeking. Therefore, it can be thought that the search of knowledge is becoming a relevant strategy for international expansion of firms from developing economies[6].

All these facts have induced to revise some of the pillars of the MNE theory. In this line, contributions from scholars such as Gammeltoft et al., (2010a, 2012) Luo and Tung, (2007), Mathews (2002 and 2006), Guillén and García-Canal, (2010), Cuervo and Cazurra, (2008, 2011, 2012) Ramamurti, (2004, 2012) or Narula (2012), have started to provide new analysis and arguments to give better explanations for the previous described international business trends.

The first puzzle to resolve is connected, following Ramamurti (2012), with the concept of ownership advantages that have been considered basic for the MNE theories. In fact, pioneer contributions such as Caves (1971) and Hymer (1976) postulated that MNE had superior assets and these superior assets allowed firms to overcome the international barriers facilitating the success of firms abroad. However, firms from developing economies normally lack the traditional ownership advantages such as, brand awareness, technology proficiency or human capital; then, it can be though that MNE from these countries likely show disadvantages compared to those from developed economies (Lall, 1984; Wells, 1998; Cuervo-Cazurra and Genc, 2008; Gammeltoft, 2010a).

The efforts oriented to integrate the concept of ownership advantages given the new international business trends have been developed in two main directions in the literature; some contributions agree that it is possible to conceive a differentiated concept of ownership advantages in developing economies regarding firms from developed economies (among others Guillén-García-Canal, 2010; Gammeltoft et al., 2010b; Cuervo-Cazurra, 2012), while other authors support that the absence of some specific assets in firms from developing economies brings these firms to go abroad for acquiring them (Luo and Tung , 2007; Mathews, 2002 and 2006; Madhok and Keyhani, 2012).

[6] More details about the tendency of South-North flows can be found in the appendix A graph A1 (A1.1, A1.2, A1.3, and A1. 4).

Regarding the differences in the concept of ownership advantages, some authors recognize that the home country environment facilitates the development of a different set of ownership advantages (Guillén-García-Canal, 2010; Gammeltoft et al., 2010a; Kalotay and Sulstaroba, 2010; Dunning, 2009; Tan and Meyer, 2010; Child and Rodrigues, 2005; Rugman, 2010; Cuervo-Cazurra and Genc. 2011; Gammeltoft, 2012; Ramamurti, 2012; Narula, 2012; Luo and Wang, 2012). And given the fact that it is more difficult to find provides firms' traditional ownership advantages in emerging economies, those related to brands, technologies or skill abilities, a different set of ownership advantages would justify the success of these firms abroad. The way of reasoning is that the initial disadvantages of those countries such as weak institutional environment or technological level[7] can be converted in advantages through the firms' internationalization process (Guillén and García-Canal, 2010). In sum, the home country can affect the expansion abroad of MNE and it can contribute to generate a new set of ownership advantages (Dunning, 2009; Gammeltoft et al., 2010a; Tan and Meyer, 2010; Rugman 2010; Gammeltoft, 2010a; Luo and Wang, 2012; Stoian, 2012). In Rugman's words, the international expansion of firms from emerging economies will be more justified by Country Specific Advantages (CSA) rather than Firm Specific Advantages (FSA) (Rugman, 2010) and in Narula's words, firms specific assets (FSA) will be a function of localization advantages Oa=f(La) in MNE from developing economies, and especially in the early stages of the internationalization process (Narula, 2012).

The other argument in the literature that refers to the acquisition of ownership advantages abroad instead of their development in the home country, is being supported by several contributions such as Luo and Tung (2007), Mathews (2002 and 2006) and Madhok and Keyhani (2012). This would imply that firms go abroad following a learning strategy that is intensified by the use of M&A, and this is especially relevant for firms from developing economies. Some contributions such as Kedia et al., (2012), remark that considering latecomer multinationals, knowledge seeking motives prevail over market seeking motives and the location of firms abroad will depend on the type of knowledge they pursuit. This permits the distinction between four types of knowledge: technology, R&D, consumer and market expertise, and management and operational expertise. On the other hand, Li (2010) introduced a proposal of learning strategy according to learning trajectories, being these divided into exploitative and explorative learning processes. The main findings reveal the prevalence of the

[7] For a description of the weaker environment of developing economies compared with developed economies see Graphs A2 in Appendix A.

explorative trajectory in emerging economies and the use of M&A as the most recurrent mode of internationalization.

However, the linkage between the concept of ownership advantage and the proposal of learning abroad has received some criticisms given the fact that even when firms can learn abroad following knowledge-seeking motives, those firms should have a minimum level of ownership advantages developed in the home country (Dunning, 2009Yiu et al., 2007; Narula, 2012). According to the work of Ramamurti (2012), the use of M&A in an earlier stage of internationalization process following knowledge seeking strategies constitutes the second puzzle of the EMNE studies.

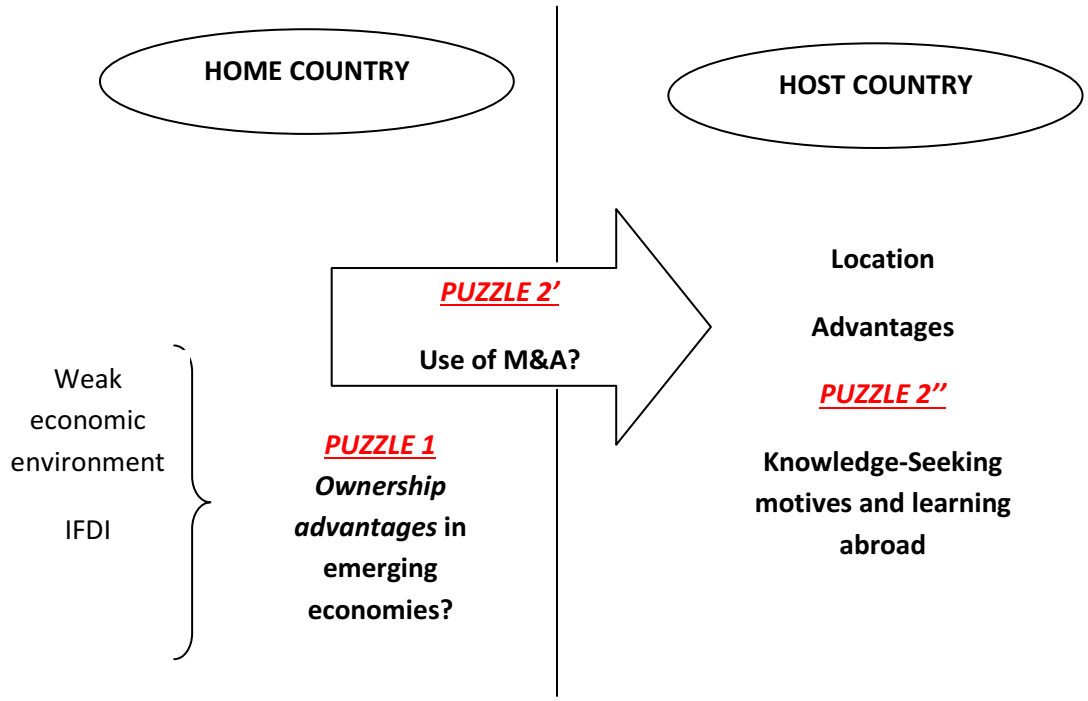
In relation to the ownership advantages debate, it can be said that the two directions of the literature should not necessarily be alternatives but they can complement each other. The idea of a minimum level of ownership advantages implies that these superior assets can be defined by some specific home country characteristics such as political abilities, the government support or linkages with the foreign MNE located in the country (Guillén and García-Canal, 2010; Stoian, 2012; Luo and Wang, 2012). In addition, these home country characteristics will be especially relevant in developing economies when those countries have not been able to generate the traditional set of ownership advantages and in early stages of internationalization (Narula, 2012). However, when this minimum set has been completed, firms can acquire some sort of FSA abroad (Ramamurti, 2012). As a consequence, the argument of learning abroad will also be a function of home countries characteristics.

In short, the especial characteristics of EMNE described previously are summarized in figure 1.1 for the case of BRICS in connection with the EMNE's puzzles. On the one hand, the first puzzle tries to solve the concept of ownership advantages in EMNE. On the other hand, the second puzzle tries to justify the accelerated internationalization process using M&A and the prevalence of knowledge- seeking motives over market seeking in the internationalization process.

Regarding the first puzzle exposed in figure 1.1, it is plausible to think that the specific characteristics of home countries will permit the development of some advantages that could explain the success of firms abroad. The core idea is that the consideration of institutional factors, external influences and the national technological level in the home country will allow the accumulation of some capabilities that would explain the extension of the concept of ownership advantages. This first puzzle frames the first

paper of this Thesis in which the analysis of OFDI flows differentiating by a sample of developing and developed countries is done.

Figure 1.1 Summary of the recent trends in the IB literature



Source: Own elaboration

The use of M&A in the explanation of EMNE is also an issue at the core of the literature (figure 1.1 -Puzzle 2'). The use of this mode of internationalization could also be related to the home countries characteristics, being plausible to propose that a weak home environment will more likely generate the need for learning abroad. This fact is developed in the institutional and technological escape hypothesis by Witt and Lewin, (2007) and Chen and Cuervo-Cazurra (2012), respectively. The idea is that a weak institutional or technological environment will boost the use of M&A instead of other mode of foreign firms' expansion such as Greenfield FDI given that firms will go abroad in order to compensate the weaknesses found in the home country and following a learning strategy. Therefore, the level of advance achieved by Home National Systems of Innovation (HNSI) would justify the use of M&A or Greenfield FDI. This is the topic proposed in the analysis contained in the second paper of this Thesis.

On the other hand, considering the increase of both outward and inward FDI flows from countries outside the group of world richest economies as it is the case of Spain[8] and taking into account that changes in firms internationalization strategies place knowledge-seeking over market-seeking motives, the internationalization decision can be driven by a learning process (Dunning, 2009). In our view, this is the specific idea of puzzle 2'' in international business (IB) literature and also studies at the firm level support the notion of learning abroad in the international economics literature. In particular, firms' heterogeneity models consider that firms' productivity level has a key role for explaining their internationalization strategy. In this sense, authors such as Melitz, (2003), Helpman et al., (2004) or Girma et al., (2005) introduce that the chosen mode between exports or FDI will depend on productivity, in addition to other well known components such as countries factors endowment or trade costs. Therefore, in a simple way of reasoning, these models propose that higher level of productivity will allow firms for the payment of the internationalization extra-costs, first exporting (trade costs) and them using FDI (installation costs).

On the other hand, this literature also proposes the inverse direction in the relationship between productivity and international commitment. It is argued that firms are able to learn abroad increasing the productivity level as a result of the integration of foreign knowledge in the production function. This fact has been called learning by exporting and it has been supported by several authors such as Delgado et al., (2002), Salomon and Shaver (2005), Salomon and Jin (2007), Damijan et al., (2010) and Silva et al., (2012) and Love and Ganotakis, (2013). However, the analysis of the learning abroad effects by FDI has been less attended in the literature and this justifies the analysis done in the third paper of this Thesis.

The consideration of MNE instead of exporter firms and its effects on productivity force us to consider the literature regarding international flows in MNE networks. Traditionally, the knowledge transfer literature has considered the flows in the direction from the headquarter (HQ) to subsidiaries, assuming that the HQ is the main source of knowledge and technology that is transmitted to different subsidiaries. However, more recent contributions underline that subsidiaries may acquire higher level of independence from the HQ and then knowledge can be developed by them and acquired from other sources and therefore, it can be transferred to the HQ. This has been called reverse knowledge flows (Mudambi, 2002; Mudambi and Navarra, 2004; Sanna-Randacio and Veugelers, 2007). Meanwhile, the international knowledge

[8] See the evolution of inward and outward investment flows in Graph A3 Appendix A.

has been considered as a source of competitive advantage given that it may allow the development of new ideas can increase firms' innovation outputs (Castellani and Zanfei, 2007; Belderbos, et al., 2013; Kafourus et al., 2012).

All in all, the combination of the new streams in IB with International Economics that have considered learning process of internationalized firms allow us to propose that firms can also learn abroad using FDI and that those effects can be showed in both technological output and productivity. This is the aspect analyzed in the third paper with a sample of Spanish manufacturing.

1.3. OBJECTIVES AND HYPOTHESIS

The research objective of this Thesis is to study what factors at the level of home national system of innovation are crucial to explain the success abroad of new and emerging MNE, dealing with both the different internationalization modes and the micro impacts on learning. With this objective in mind, some new empirical evidence is provided to the dynamics of MNE in the current scenario. The main contributions are related first, to the definition of a capabilities accumulation process in home countries that would also explain why M&A are preferred over Greenfield investment, making the comparison between developing and developed economies. And secondly, to qualify the process of learning abroad by FDI that is observable at the firm level in terms of both innovative outputs and productivity. Regarding the literature background, the objective is related to the discussion of concept of ownership advantages. Moreover, the new trend of M&A as a more rapid mode of internationalization that follows mainly a knowledge seeking strategy is analyzed. And finally, the effects of learning by FDI that is studied for a sample of Spanish manufacturing firms take different arguments of firms' heterogeneity and international knowledge flows.

This general objective could be divided in the three next specific objectives:

The first one is the analysis of home country characteristics as determinant of the ownership advantages development that justifies firms' internationalization, especially in developing economies. The second specific objective is to study the existence of the factors that defining the home national system of innovation can explain the use of M&A as the main mode of firms' internationalization from developing countries. In this sense, we develop a proposal based on the level of advance of the Home National

System of Innovation (HNSI). Finally, regarding the arguments that justify learning abroad by FDI following knowledge-seeking motives, the third specific objective is to analyze the effects of learning by FDI on the innovative outputs and productivity at the micro level using a sample of Spanish manufacturing firms. Each of these specific objectives is collected in the papers developed. Overall, this Thesis tries to contribute to the explanation of new trends in the international business scenario. Table 1.1 presents in a single manner the main objectives and hypothesis.

Table1.1 Research Proposal

General Objective	Specific objectives	Contributions	Hypothesis	Methodology
The identification of the factors that can explain the phenomenon of New Multinational Enterprises at country level and the learning process abroad at the firm level	To evaluate the role of home country in the for explaining the success of new (emerging) multinational enterprises	**Paper 1.** There are some characteristics of the home country that define a capability accumulation process that enhances firms internationalization and their success abroad	*H1. Home countries characteristics may have direct impacts in OFDI and this effect will be greater in the case of developing countries* *H2. Inward FDI positively affects Outward FDI and no differences should be expected between developed and developing countries* *H3. NSI will positively affect OFDI, being its effect greater in the case of developing countries*	Literature review of traditional MNE theories and New multinational approaches Datasets: UNCTAD statistics and World Development indicators database Dynamic panel data method
	To analyze the factors at home national systems of innovation level that explain the use of M&A as a mode of foreign expansion for New Multinationals enterprises	**Paper 2**. Conceptual proposal and empirical evidence about the relationship between the advance level of home national systems of innovation and the modes of investment (Greenfield FDI and M&A)	*H1. HNSI may affect the choice of FDI in firms' internationalization depending on the systems' level of advance, being this relationship negative for the case of M&A(H1a) and positive for the case of Greenfield FDI (H1b)* *H2. The presence of Foreign MNE affect the internationalization of firms through FDI* *H3. A positive relationship between IFDI and Greenfield mode of expansion is expected.*	Literature review of traditional MNE theories, new MNE and the NSI approach Datasets: UNCTAD Stadistics and World Development indicators database Factor analysis Dynamic panel data
	To study the effects of learning abroad on the innovative outputs and productivity levels of firms	**Paper 3.** Analysis of the effects that learning abroad by FDI generate on the innovative outputs and productivity of internationalised Spanish manufacturing firms	*H1: The MNE Status positively affect firms' ex post innovative outputs* *H2: The MNE Status of firms positively affect their ex post level of productivity*	Literature review of firms' heterogeneity literature and models of international knowledge transfer in MNE theory Data: " Encuesta de estrategias empresariales (ESEE) Discriminant analysis Dynamic panel data

Source: Own elaboration

1.4. DATA SOURCES AND METHODOLOGY

To accomplish with the research objectives previously defined and to test the working hypothesis, this PhD Thesis has been done using several data sources, using both aggregate data at country level and micro data at the firm level.

Regarding aggregate data, statistic information has been taken from some elaborated datasets such as the UNCTAD Statistics[9], the OCDE Stat[10] and the World Bank indicators database[11]. FDI data (outward and inward) and M&A data have been obtained from the UNCTAD and OCDE datasets while the World Bank databank has facilitated the information of several variables such as R&D expenditures, institutional index or patent applications. All these datasets have allowed us to build a panel of 15 years (1996-2010) which including developed and developing countries has been used for the analysis of the EMNE phenomenon in the two first papers of the Thesis.

Regarding the data at firm level, in this Thesis the *Encuesta sobre Estrategias Empresariales dataset* (ESEE) has been used[12]. This source of information has allowed us to analyze learning abroad effects through FDI on the innovative outputs and productivity of firms in a panel data of Spanish manufacturing firms. The ESEE is being elaborated since the nineties. The ESEE is a panel of data elaborated by the *Fundación SEPI* and the *Ministerio de Economía y Competitividad* from 1990 to 2009 and it contains information for Spanish manufacturing firms with more than 10 employees. The information about Spanish MNE has been collected only since 2000, reason why the period of analysis covers from 2000 to 2009. Then, the panel is composed by a 17870 observations that correspond to 1787 firms on a time span of 10 years. This dataset is rich in both internationalization and technological variables. On the one hand, it collects deep details about firms' internationalization by exports and by foreign investments, that is to say, firms that are MNE. On the other hand, firms are asked about some specific aspects related to innovation activities such as R&D expenditures, product innovations or patents. Moreover, this dataset also allows us for

[9] http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sRF_ActivePath=p,5&sRF_Expanded=,p,5

[10] http://www.oecd-ilibrary.org/finance-and-investment/data/oecd-international-direct-investment-statistics/foreign-direct-investment-flows-by-partner-country_data-00335-en?isPartOf=/content/datacollection/idi-data-en

[11] http://data.worldbank.org/

[12] This data are not free available. Authors acknowledge the access to the dataset through the project EIFEI "Empresas internacionales, formas de entrada e innovación" (International firms, modes of entry and innovation) funded by the Plan Nacional de I+D (Project Ref. ECO2010-16609), coordinated by Isabel Álvarez.

sector breakdown since the ESEE collects information for firms grouped in 20 manufacturing industries. It should be said that there are not other dataset in Spain which could provide so amount of information at the firm level about Spanish MNE and even more, considering the technological activities of these MNE. Therefore, all these issues make this dataset unique for the analysis of the third specific objective of this Thesis.

Various statistic and econometric techniques have been used to fulfill our main objectives. Although each of the following chapters has a section where the used methodology is explained, in the following paragraphs a summary of the main characteristics of the general methodology is exposed.

Due to the nature of the data used in each paper, the main econometric technique has been Dynamic panel data and particularly the generalized method of moment (GMM)[13]. This method has two key advantages in order to solve our research questions; firstly, it includes effects over time and secondly, this methodology allows us for the consideration of individual effects (countries or firms) following a dynamic perspective. The GMM method uses the first difference transformation dealing endogeneity considering all the available lags as instruments and avoiding individual effects.

In addition, two multivariate techniques have been used in this Thesis. On the one hand, a factor analysis has been employed to build a composed indicator of the home national systems of innovation. On the other hand, discriminant analysis has been used for the differentiation between domestic and MNE firms according to the technological variables in the sample of Spanish manufacturing firms.

1.5. STRUCTURE OF THE THESIS

This PhD Thesis is composed by six chapters, and this introduction is the first of them. The next chapter –chapter 2- contains a revision of main MNE theories and models, with special mention to the evidence on EMNE and learning abroad effects. It starts with the evolution of the trade models that has become the base of FDI models, including also firms' heterogeneity literature as well as those models that incorporate different modes of FDI such as Greenfield FDI and M&A. Afterward, MNE theory is

[13] For a complete analysis of this methods see Arellano and Bond (1991), Arellano and Bover (1995), Roodman (2006), Roodman (2009).

revised in connection with the characteristics of EMNE and the related debate, including new approaches that adapt traditional theories to the new MNE phenomena. Finally, analysis at firm level explaining learning abroad effects by investments have a special consideration, including also the particular evidence about Spanish firms.

The third chapter –chapter 3- is devoted to the first paper of this Thesis where aspects at the home country level are integrated as part of the explanation built over the concept of firms' ownership advantages in developing countries. The identification of those macro factors that can facilitate the promotion and success of EMNE in developing contexts, underlying that institutions and technology are key fields for the definition of policy and actions. In the empirical analysis, a panel data for both developed and developing economies in the period 1996-2009 is used in order to capture the international differences and the dynamics in a cross-country study. From a perspective of home national systems of innovation, this chapter show how the presence of some factors at national level are critical in the definition of a capabilities' accumulation process that enhances the generation of EMNE and what are the distinctive features in the case of developing economies.

The fourth chapter –chapter 4- contains the second paper of the Thesis that analyzes the relevance of the home national system of innovation (HNSI) in the choice between Greenfield FDI and M&A of EMNE. The question is whether and to what extent the weaknesses or strengths of HNSI affect the FDI mode choice; particularly, how the advance level of the HNSI and the preference for M&A are related to a dominant learning from abroad strategy. The empirical analysis is built upon a sample of 77 countries with dissimilar levels of development. Using factor analysis, a composed index of HNSI is built based on the main pillars of the NSI conceptual approach and a dynamic panel data model in the period 1996-2010 is estimated. Findings confirm that although the HNSI factor affects the two modes of FDI, there is a negative effect in cross-border M&A from developing countries leading to learning from abroad arguments as prevailing for EMNE. In the case of Greenfield FDI, there is a positive linkage with the HNSI. Moreover, the presence of foreign MNE in developing economies affects directly the internationalization via M&A, being this effect negative in developed countries.

The fifth chapter –chapter 5- is the third paper of this Thesis. In this one, the hypothesis of learning abroad using FDI is tested analyzing the effects that the MNE status have on the ex post innovative output and productivity of Spanish firms. Learning abroad by FDI is analyzed considering patents and product innovations, and

also the final effects on productivity. These learning effects are checked also by the technological content of industries. In the analysis, a sample of Spanish Manufacturing firms in the period 2000-2009 has been used and dynamic panel data estimation has been employed. Findings reveal a positive effect of investments abroad on the technological performance of Spanish manufacturing firms, being larger the effects on patent than on product innovations in which the effects are more dilated on time. Moreover, firms in industries with high and medium level of technological content show higher learning effects considering both measures of innovative outputs. Finally, learning effects are not immediately showed in an ex post increase of productivity but it will necessary requires at least two years for the observation of these effects

Finally, the last chapter of this thesis –chapter 6- summarizes the main findings, conclusions and policy recommendation that have been previously argued in each individual chapter, as well as the limitations of this set of papers and the proposal of future works.

CHAPTER II

MODELS AND THEORIES OF FOREIGN DIRECT INVESTMENT. A SPECIAL REVIEW OF THE EMERGING MULTINATIONAL PHENOMENON AND THE LEARNING ABROAD EFFECTS

"It takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

(Lewis Carroll)

2.1. INTRODUCTION

This chapter reviews the main models and theories that support the specific objectives of the Thesis. Even when in each of the following chapters a summary of the models and theories which support the specific analysis may be found, this chapter briefly describes the set of arguments as a all that justify this thesis. Three sections compose this chapter.

The first section reviews the theoretical models of foreign direct investment (FDI). The discussion will start with the analysis of the neoclassic models of trade which supports the models of FDI. Concretely, this section studies the trade models from the concept of comparative advantage to the Heckseher Ohlin (H-O) model. In addition, the main criticisms of the H-O, which has allowed the development of the FDI models, are considered. After that, the partial and general equilibrium models of FDI are analyzed and finally, some lines about the current models of FDI are added. A summary of the models exposed in this section can be found in Appendix B. Table-B1.

In the second section number two of this chapter, the traditional MNE theories and the emerging MNE arguments are combined in order to explain the special characteristics of the EMNE. Therefore, the new approaches of EMNE, the stream of the traditional MNE theories and the arguments which supports the maintenance of the traditional MNE theories are analyzed in detail in this section (Appendix B Tables B2-B3-B4-B5 contain a summary of the arguments exposed in this section).

The third section of this chapter deals the special characteristic of Spanish MNE which has allowed the success of those firms abroad, considering the learning effects on productivity and innovative outputs from different stream in the literature- the literature of firm heterogeneity and the literature of knowledge transfer in MNE-. The main arguments can be found in the Appendix B table B6-B7.

Finally this chapter will constitute the theoretical base for the empirical analysis developed in the third main researches of this thesis which may be found in chapter III, IV and V.

2.2. THEORETICAL MODELS OF FDI. PUTTING THE PUZZLE TOGETHER

As has been previously introduced the FDI models are based on the trade models, being these last models built over the concept of comparative advantage which refers to the fact that *"A country will be specialized in the production of a good in which the opportunity cost in the production of that good in term of other goods is inferior in this* country than in other countries" (Krugman et al., 2012). After this pioneer concept of comparative advantages, David Ricardo introduced the international trade of goods (Ricardo et al. 1819) and predicted that a country will be specialized in a good where there is a comparative advantage which allow the country to export that good obtaining always profit derived to the trade.

These two previous arguments and the principle of different factor endowments of the countries harvested the base of the most important neoclassic model in international trade, called as Heckscher-Ohlin model (by now H-O model) (Heckscher, 1919; Ohlin, 1933; Heckscher and Ohlin, 1991; Stolper and Samuelson, 1941; Samuelson, 1949).

The model was built with the following main basic assumptions; 1) The factor endowments are different for each country, 2) Goods are always intensive in a given factor independently of the relative prize of the factors, 3) Factors are mobile in the country but not internationally, 4) Perfect competence exits, and 5) There are identical technology in both countries.

The main finding of the model was the consideration of that countries could be rich in capital or labour forces and that those countries would be specialized in the production of goods in which the factors were abundant allowing, this specialization, also the trade among countries (H-O Theorem). In addition, this model predicted the

movement of the goods without the movement of the capital factors which would allow equal price of goods and productive factor (Prize equalization theorem). Finally, the model also added some evidence in connection with the real income, by which the owner of the abundant factor will obtain high income and the owner of the scarce factor will diminish its income (Stolper-Samuelson theorem).

However, the H-O model has received some criticism given that the empirical evidence has not always been confirmed and because this model is based on very strong assumptions.

On the one hand, regarding the empirical evidence of the model, Leontief found with a matrix of factor endowments that the model was not confirmed for US, and therefore this country will not export the good with abundant capital. This was called as the Leontief Paradox.

On the other hand, the relaxation of some assumptions of the model has allowed the introduction of some new models. We will be focused here only on two assumptions14; firstly, the consideration of different technology between countries and secondly, the introduction of the movement of factors between countries.

Regarding the consideration of different technology between countries the neo-technological theories has been developed. The main theory in this group has been the product cycle life theory developed by Vernon in 1966. This theory is based on the development of a new product assuming that countries have different technology and also that it is possible the movement of factors between countries due to the economies of scale. Therefore, this theory relaxes two main assumptions of the H-O model, those related to the technology and the movement of factor between countries.

Following the argument against the restriction of movement of factors between nations, it should be highlighted the work of Mundell in 1957. This author considered the international movement of the factors (Labour and Capital) based on the fact that the movements of goods were limited as a result of the international barriers. This reasoning also implied that the movement of factors and goods were substitutes and that the factor movements would occur from countries with abundant factors to countries with scarce factors with a trend of equalization of the prize in the long term.

[14] There has been a huge evolution in the literature against and in favor of the H-O-Model. For that reason we will be focus only on the discussion of two of the main assumptions which constitute the emergence of the FDI models.

The principle of movement of factors (Labour and Capital) between countries which started as a criticism of the H-O model has been definitely considered the base of the FDI models. In this sense, the movement of capital between countries always that it implies the ownership and control of the shares has been called as foreign direct investment (FDI)15. The FDI models have developed diverse theoretical contributions which can be classified in two groups -partial equilibrium models and general equilibrium models-. These two groups of models will be reviewed in the following paragraphs

In addition, the development of the FDI models joint to the introduction of the imperfect competence has also allowed the development of the international business theories. This will be also analyzed in the next section of this chapter.

2.2.1. Partial and General equilibrium model of FDI[16]

As has been argued in the previous section since the recognition of the movement of capital between countries, a huge theoretical literature which adds new evidence to the FDI models has been developed.

In this sense and in order to simplify the exposition here, the FDI models will be divided into two groups -partial and general equilibrium models of FDI-. As a main difference between both groups, it is important to highlight that the partial equilibrium model deal any aspect of FDI in a market or segment of the economy, while the general equilibrium model analyze the international expansion from a macroeconomic perspective, considering the supply and demand of the aggregate economy.

The partial equilibrium model allows the analysis of important details of the economy, such as, the individual decisions or individual behaviours. These details were not analyzed by the general equilibrium models. However, these partial equilibrium models also have serious weaknesses because it is only showed one part of the economy without the consideration of the rest of the economy, or the effects that the partial equilibrium models may have on the general equilibrium model. (Krugman et al., 2012).

[15] A company is considered foreign owned if the foreign participation in equity capital is more than 10%. This criterion has been adopted by the established definition of FDI in the IMF, V Balance of Payments Manual.

[16] For the analysis and classification of the models it has been followed the thesis of Jaime Turrión Sanchez titled as “La decision de internacionalización de las empresas: Un modelo teórico con inversion horizontal y vertical”. Universidad Complutense de Madrid, 2009.

Finally, partial and general equilibrium models are complementary in order to understand the complete picture of the international process of firms between countries.

Partial equilibrium model

In general terms, it could be said that these models are focused on some concrete aspects of the internationalization process. In this sense, it is possible to find different line of research of partial equilibrium models[17]. For instance, in the following paragraphs we will focus, firstly, on the models which consider the chosen mode of internationalization (export-FDI) as a cost-benefit decision. Secondly, the model that joints the decision of internationalization with others decision in the organization is analyzed (PSR Model). Finally, the decision between horizontal and vertical FDI will be also discussed.

On the one hand, one stream in the literature has considered the chosen mode of internationalization as a cost-benefits decision. This implies that the choice between the foreign expansion mode, considering exports and FDI, will depend on the expected gains and the cost associated in the decision. Following this simple line of reasoning, several authors have proposed models comparing the demand function and the marginal cost with the expected gains of each option of internationalization. This would be the case of the works of Markusen (2002), Blonigen et al.(2002),Baltagi et al., (2005), Markusen and Venables (2007).

On the other hand, comparing different decisions in the organization with the decision of internationalization, it should be highlighted the work of (Petit and Sanna-Randaccio, 1998). In this work the authors compared the decision of investment in R&D with the chosen mode of foreign expansion (exports-FDI). This model, called as PSR model, predicted a two-way relationship between both decisions, finding that the probability of going abroad using FDI will be higher whether firms invest in R&D (Petit and Sanna-Randaccio, 1998).

Moreover, other works have analyzed the decision of going abroad using horizontal or vertical FDI. As it has been well known horizontal FDI refers to the internationalization through production plant abroad while vertical FDI implies the delocalization of

[17] We have done a brief review of the main important stream of research about partial equilibrium model.

different units of the productive process (Markusen, 2002). Findings reveal that the decision between both types of FDI will be a condition of the international strategy followed in the company and the cost and benefits of the decision. Therefore, the decision will be based on the differences between the transport cost, the size of the markets and the installations cost. For that reason, horizontal FDI will be favorable when countries have a similar size, the transport cost are high and the installation cost are low, while vertical FDI will be chosen when the size of the country and the installation cost are low.

In general, the partial equilibrium models have added any specific issue to the decision of going abroad using FDI, such as; the chosen mode as a cost benefit relationship, the decision of FDI between different decision in the organization or the choice between horizontal or vertical FDI.

General equilibrium models

According to the huge literature about the general equilibrium models, a simple exposition could divide the models according to the type of FDI employed in the international process. This would allow the differentiation between horizontal FDI models, vertical FDI models and the model which collect both, the knowledge capital model (KC Model) (Turrión, 2009).

On the one hand, the main objective of the horizontal FDI models is to have the plant of production close to the customers avoiding the transport cost of other form of internationalization such as exports. Therefore, in this model the internationalization decision will depend on the transport cost and economies of scale (Markusen, 1984).

On the other hand, vertical FDI models are base on the idea of delocalization which means that firms will locate different units of the production process abroad looking for advantages in costs. The main author was Helpman in 1984, who found that the investment flows should occur between countries with abundant resources to countries with less abundant resources. This model is based on the recognition of some specific resources of the countries such as; cheaper labour force, marketing and research and development resources. Each country will be specialized in a resource which will allow the movement between countries looking for the cheaper productive resources. However, whether the countries have identical resources the model will not predict the movement of flows. Therefore, following this model the internationalization decision will depend on the differences on the factor endowment of countries (Helpman, 1984).

In sum, the Horizontal FDI decision will be based on transport cost and economies of scale without the consideration of the factor endowment of countries, while the vertical FDI decision will be based on the factor endowment of countries obviating the trade cost. The integration between both form of FDI is precisely which is added by the knowledge capital model (KC Model).

The KC Model find the equilibrium between the Horizontal and Vertical FDI, or in other words, this model tries to combine the differences between the factor endowment of the countries and the transport costs (Markusen, 2002) considering, at the same time, the arguments of the OLI paradigm. This integrative model could be expressed as follow in Eq (2.1):

Eq (2.1)

KC Model= Horizontal FDI+ Vertical FDI KC Model= Economies of scale+ transport cost+ factor endowments of countries

The KC Model is based in three premises. On the one hand, the model considers that there are knowledge assets that allow the economies of scale at the firm level. On the other hand, it is also considered that the knowledge assets require more qualified human skills for the final production. These two first premises will be in favor to the vertical FDI given that firms will consider market motives and price factors for the location abroad. As a third premise, the model introduces that the knowledge assets may be found in different plants simultaneously. Therefore, this will be in favour to the horizontal FDI given that it should be possible to produce different goods in various countries (Markusen, 2002).

In addition, the model also finds that firms will use vertical FDI whether the size of the home countries is small and those countries are provided by a high level of qualified labour force. However, the use of this investment when the host and home countries have similar factor endowments will be only allowed when the transport cost are lower than the installation cost in the host location. On the other hand, horizontal FDI will be preferable to vertical FDI when the factor endowment of the countries and the size between the home and host countries are similar.

Finally, current works have found that the differentiation between both strategies of FDI (horizontal and vertical FDI) lacks of sense given that normally firms use an

integrative strategy which consider both of them as complement (Helpman, 2006; Melitz, 2003).

2.2.2. Model Extensions: equilibrium of other foreign expansion mode and firm heterogeneity models

In this part two main extensions of the previous models are reviewed. On the other hand, we analyze the models which consider other forms of internationalization, such as M&A Joint Venture or Greenfield FDI (Bjorvath, 2004; Raff et al., 2009; Nocke and Yeaple, 2007; Neary, 2009; Markusen and Stahler, 2009). On the one hand, a review of the models which take into account the special characteristics of the firms has been added. This last model has been called as firm heterogeneity model (Melitz, 2003; Helpman et al., 2004; Greenaway and Kneller, 2007).

Equilibrium of other foreign expansion modes

More recently, some models have started to introduce other forms of internationalization, which was not incorporated in the previous models; such as M&A or Greenfield FDI. This is the case of the works of Raff et al (2009) and Bjorvatn (2004). Specifically, these works analyze the choice between both types of FDI (Greenfield FDI and Merger and Acquisition) and joint venture based on the installation cost. Finding reveals that a firm will prefer M&A whether there are high installation costs while, a firm will prefer Greenfield to M&A whether the installation costs are low. Finally, the Joint venture will be only considered if it is perceived any risk for the Greenfield FDI mode.

Following this stream in the theoretical literature, the work of Nocke and Yeaple (2007) has added some arguments about the choice between export, Greenfield FDI and M&A considering the special characteristics of the firms which have been called as firm heterogeneity. This work recognizes that the choice between the different modes of internationalization will depend on the resources and intangible assets of the firms. In this sense, the study finds that M&A will be used when firms desire to access to new capabilities of the firm acquired in the host country, while the use of Greenfield FDI will suppose that firms will only have access to its own capabilities. This allows the introduction of a new concept in the equilibrium models “Capabilities of firms” and

with this assumption the choice between Greenfield and M&A will depend on the capabilities of firms.

Finally, the work of Neary (2009) connects the transport cost with both types of FDI and exports. Previous model had argued that a decrease in the transport cost will encourage the internationalization process through exports reducing the use of Greenfield FDI and M&A. However, the last reasoning is not able for explaining the current world where transport cost has decreased and the use of M&A has increased. Considering this fact, this model adds that the flows of M&A will follow the same direction that exports and therefore, the reduction of the transport cost will encourage the use of M&A.

Firm heterogeneity models

A current stream in the literature has analyzed the special characteristics of the firms in connection with the chosen mode of internationalization. These models have been called firm heterogeneity models (Melitz, 2003; Helpman el al., 2004; Greenaway and Kneller, 2007). The main argument of this model is the connection between the productivity of firms and the chosen mode of internationalization. In fact, this model predicts that higher level of firm productivity would allow firms to afford the extra cost of internationalization, first exporting (transport cost) and after that using investment (installation cost). This also implies that investor firms will be more productive than exporter firms, and these last firms will show higher level of productivity than domestic firms. Moreover, it has been also analyzed the other direction of the relationship, that is to say, internationalization and productivity, showing that firms which go abroad can learn and this learning can be showed in higher level of productivity levels or innovative outputs.

In sum, this section has tried to review briefly the origin of the FDI model and the evolution that these models have had during the last decades. A summary of all the main arguments exposed here can be found in the appendix B Table B1. The previous extensions of the models are also the base of the rest of the chapters of this thesis given that in the following chapters (chapter IV), the choice between different mode of FDI (M&A and Greenfield FDI) according to the characteristics of the home country and the national system of innovation (NSI) are analyzed. Moreover, in chapter V the firm heterogeneity models are considered as a base of the proposal of learning through investment, or in other words, learning by FDI.

2.3. THEORIES OF MULTINATIONAL ENTERPRISES AND EMERGING MULTINATIONALS APPROACHES. A SURVEY OF THE LITERATURE

The global economics landscape in the recent decades has been composed by multinational enterprises (MNE) from countries with low level of development. Emerging MNE (EMNE) or new multinational enterprises have become global, even in spite of the adversity related to the possession of superior assets coming from a weak economic and institutional environment, and following an accelerated internationalization process (Ramamurti, 2012; Cuervo-Cazurra, 2012; Mathews, 2006; Luo and Tung, 2007). In fact, some firms from emerging economies such as Brazil India or China have represented the 40% of the non-financial TNC[18] in 2009. In this list has been included, for instance, the well known companies from China such as Lenovo or Acer.

The emerging multinational phenomenon has shifted the studies related to internationalization business through the consideration of developing countries as investor countries, and not only as host countries or exporter countries, as it was argued by previous contributions (Vernon, 1966). The consideration of developing countries as potential investor has been called as the third wave of OFDI (Gammeltoft, 2008).

In order to explain this new wave, some scholars have proposed new explanations or the extension of the traditional models, theories or approaches, considering that the traditional ones are unable for analyzing the EMNE phenomenon. Therefore, in the following paragraphs, this section will try to collaborate with the huge debate of the theories of MNE and EMNE through the revision of the traditional MNE theories and the EMNE arguments.

The main objective of the following paragraphs will be the contribution to the previous studies which have explained the linkages between the traditional theories and EMNE characteristics.

The remaining pages of this second part of the chapter will be organized as follow: the next part studies the models and theories that have explained the existence of MNE. Afterward, the new EMNEs approaches are discussed and then a combination between traditional and new approaches is proposed.

[18] TNC refers to transnational corporations

2.3.1. Traditional internationalization models and theories

Several contributions have tried to explain the process of internationalization of firms since the decade of the 60's. The main contribution was the introduction of the imperfect competence to the neoclassic theories models. It allowed an inflection point between the studies which considered that the investment abroad was based on the relative factors endowment of the countries, and the consideration of firm advantages or ownership advantages as a factor that explained the internationalization of firms (Hymer, 1976; Caves 1996).

In the following lines we will try to highlight subtly the main contributions of the traditional MNE analyses, distinguishing between models, theories and approaches. It will be also emphasized the main question that these contributions have tried to solved.

Traditional models of the internationalization process[19]

The process of firm internationalization has been mainly explained by two models: The product life cycle model (Vernon, 1966) and the incremental internationalization model (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975). Both models have been complemented in the explanation of how to enter in a foreign market while the latter has given the explanation of how to select among countries to enter (Cuervo-Cazurra, 2011). The main assumptions of these models will be explained in the following paragraphs.

Product life cycle model

Vernon in 1966 built the concept of product life cycle which is based on four stages of a product innovation: introduction, growth, maturity and decline. The model predicts that a firm will go abroad for selling a product as a result of the saturated market in the home country. Following this model, in the introduction stage, firms will innovate in the home market and gradually firms will start exporting in order to gain some economies of scale. In the growth stage, firms will increase the level of exports and FDI in the form of production facilities. Moreover, as the foreign demand increases and developed market are saturated, firms will move to developing countries.

This model highlights that the internationalization process is a slow and gradual process. A slow process, because firms will need time between its origin and its

[19] The analysis exposed here is based on the work of Cuervo-Cazurra (2011).

internationalization, and a gradual process, because firms will go abroad first, using exports, and only when there are a consolidated demand, using FDI. Moreover, the model proposes that firms will enter into countries with similar characteristics being them developed countries, and only as a result of the higher cost in the develop world and when the product has been standardized, firms will move to developing countries Cuervo-Cazurra, 2011).

Incremental internationalization model

The model developed by Johanson and Vahlne (1977) and Johanson and Wiedersheim-Paul, 1975 add some evidence to the question of how to enter in a country and how to select among countries to enter Cuervo-Cazurra, 2011).

Regarding the first question, the model considers the internationalization process as a gradual process by which the international commitment will depend on the achievement in the previous stages. FDI is considered as the climax of the internationalization process. However, the use of this mode of internationalization will need higher level of resources and knowledge of the foreign market.

The model is built on the behavioral economics assuming that managers are rational and risk adverse. Moreover, the ignorance of the foreign market is a huge barrier of the internationalization process. Given those premises, firms will follow an incremental internationalization process, starting by the mode which implies lower level of risk, that is to say, exports, and as the knowledge of the foreign market rise, firms will increase the level of international commitment using licenses, FDI-sales and FDI-production.

Regarding the second question, the model introduces the term “Physical Distance” by which firms will expand to countries with similar characteristics (ex: language, education, business practices, etc), in order to reduce the risk using the knowledge developed in the home market. Then, firms will enter into more distant countries as they have gained experience in the closed countries. In appendix B (Table B2) may be found a table which summarizes the key contribution of the traditional model of the internationalization process explained above.

MNE theories and approaches

In addition to the internationalization process models exposed in the previous section, there are some theories and approaches that explain the internationalization

expansion of a firm. In this exposition we follow the analysis developed in the work of (Cuervo-Cazurra, 2011).

On the one hand, the OLI paradigm (Ownership-Location and Internalization advantages) (Dunning, 1988) have summarized the pioneer contributions, introducing the resource base theory (Peronse, 1959) the transaction cost theory and the internalization theories (Buckley and Casson, 1976; Hennart, 1982). This paradigm adds some arguments about the reasons which explain the decision of internationalization through FDI. This approach refers to the need of three advantages (Ownership-Location-Internalization) for the explanation of the internationalization process of firms.

The concept of ownership advantage "Oa" refers to the recognition of superior assets in the MNE. This concept was conceived in the pioneer contribution of Hymer, (1976) and Caves (1996) and it is based on the resource based view theory (Penrose 1959). The main idea related to this concept is the consideration of firms as a collection of productive resources that are accumulated at the home country. Therefore, the internationalization process is guided by the desire of exploiting the resources developed in the home country, abroad. Thus, this refers to the exploiting motives in the internationalization process. Those superior assets, or ownership advantages, give to the firm an "oligopoly situation" which explains the success of firms in a foreign market. Moreover, this concept introduced an inflexion point in the international theories recognizing that the capital movement includes also the transfer of intangibles resources, such as; technology or management abilities (Hymer, 1976).

However, the possession of "Oa" is not enough for the internationalization process through FDI. The internalization theory (Buckley and Casson, 1976) and the transaction cost theory (Hennart, 1982)[20] have contributed to the internalization advantages "Oi" by which a firm will decide to use FDI when it is the most efficient mode of internationalization. Therefore, the use of FDI adds more benefits for the achievement of the firms' objectives, reducing the transaction cost of other modes of internationalization such as exports.

Regarding the location advantages "La" and following Porter (1990) firms will choose the market where there are some geographical advantages, such as; low costs, and where firms satisfy the pursued motives in the internationalization process -asset-

[20] We have chosen to explain the transaction cost theory and the internalization theory integrated in the OLI paradigm.

seeking, market-seeking or knowledge seeking- being market seeking the most usual motive that justify the choice of the location of firms abroad. The OLI paradigm is synthesized in the table B3 in appendix B

2.3.2. Emerging multinationals approaches

Recently, international MNE studies have analyzed multinationals enterprises from developing countries (EMNE) given the increase of flows from countries such as Brazil India or China. However, the studies of MNE from those countries started in the decade of the 1980s, becoming a source of wide set of the research in the current days (Cuervo-Cazurra, 2011).

Some authors as Ghymn (1980) and Khan (1986), in the decade of the 80s, recognized that the factors that explain the internationalization process of firm from developed and developing countries were different. In fact, they explained that EMNE went abroad taking advantage of its lower labor costs. Moreover, Kumar and Mcleod (1981) considered that the success of firms from developing countries in a foreign market was the result of the barrier that those firms may found in its home markets, such as export restrictions, as well as, the positive push factors as the government incentives. Furthermore, Lall (1984) affirmed that developing countries have disadvantages in term of superior assets (ownership advantages) and that those assets rise at the same time that there are improvements on the level of education, exports, science and technology and infrastructure in the home country.

In the decades of the 90s there are few studies about the EMNE, with some exceptions such as Aggarwal and Agmon (1990) and Yeung (1999). These studies pointed out that the motives that justify the internationalization process are more pull factors, or in other words, the search of markets and technological innovation rather than cost factors (Mathews, 2006).

Then, currently, in the 2000s the EMNE phenomenon emerges with a huge set of researches. In fact, two main works have harvested in this decade the next step of the IB agenda. On the one hand, the work of Meyer (2004) which introduced the need of studies which considered how and to what extent FDI could influence the host environment. On the other hand, the work of Ramamurti (2004) who also recognized the need of studies which considers the impact of the developing country context on the MNE behavior and the coevolution of these two variables over time.

In sum, the current studies may be classified in three groups. The first one considers that traditional theories are not able for the explanation of the EMNE phenomenon and provide new approaches. These are the case of the Linkage, Leverage and Learning (LLL) approach, the springboard perspective and the ideas of Guillén and García-Canal (2010) based on the transformation of disadvantages into advantages. The second one agrees with the maintenance of the traditional theories and the last one, being the more common; considers a spread of the traditional MNE theories. In the following lines the three groups of studies will be analyzed in detail.

New Approaches: Linkage-Leverage-Learning approach (LLL approach), the springboard perspective and transforming disadvantages into advantages

This section will review the new approaches which analyze the EMNE phenomenon. It is necessary to say at this point that there are two radical approaches elaborated under the concept of building rather than exploiting ownership advantages (LLL approach and springboard perspective). These two first approaches present more counterpoints with the traditional theories, while the analysis followed by Guillén and García-Canal (2010) (the last one) shows a more relaxed perspective.

Linkage-Leverage-Learning approach (LLL approach)

This approach is based on two arguments. On the one hand, the disadvantages that firms from developing countries have which may act as an obstacle for the internationalization process (Kumar and Mcleod, 1981), and on the other hand, the internationalization of those firms as a result of the globalization process (Mathews 2002 and 2006).

Considering the first argument, the approach recognizes that the resources base view theory should be modified given that firms may go abroad for the acquisition of ownership advantages and following a learning abroad strategy. These arguments are against to the traditional postulates which were based on the accumulation of assets in the home country and its exploitation abroad. Following this approach, ownership advantages are building using pull factors instead of push factors, as the traditional theories predicted.

Regarding the second argument, the approach considers that firms from developing countries will follow a rapid internationalization process due to the effects of the globalization around the world. Moreover, firms complete the internationalization

process using M&A in order to acquire the resources that firms lack and to reduce the high level of risk involved in their leverage strategic (Mathews, 2002 and 2006).

The postulates presented above were introduced in the Linkage-Leverage-Learning approach, where, Linkage means that firms can obtain advantages abroad given the solid base of linkages or collaborations with foreign firms in the home and host country. With those linkages firms diminish the risk of internationalization and overcome the foreign barriers. Moreover, the need of those linkages justifies the use of M&A or Joint venture against other modes of internationalization as exports or Greenfield FDI. Leverage refers to the fact that the disadvantages in the home countries are the reason for going abroad and overcome the barriers. Finally, learning abroad allows the acquisition of ownership advantages in foreign markets.

Springboard investment perspective

Luo and Tung (2007) considered that firms from developing countries invest abroad to obtain needed strategic asset to compete more effectively against MNE from developed countries in the home country, or in order words, EMNE lack ownership advantages and may acquire them abroad. Moreover, the investment abroad will avoid the institutional and market deficiencies in the home country compensating the competitive disadvantages.

The rapid internationalization process has been justified by the relationship between inward FDI and the existence of competence in the market. This idea refers to the fact that the presence of developed MNE in the home country generates higher level of competence with local firms, and therefore, the necessity of the development of new capacities. Those capacities will be developed abroad using M&A, which is the most efficient mode for the transfer of tacit knowledge. Moreover, these authors explain that the use of M&A will also be beneficial for developed MNE given that they can access to a huge market with lower labor cost.

Transforming disadvantages into advantages

The work of Guillén and García-Canal (2010) considers that the internationalization of the new multinationals (those from developing countries or countries without a solid technological base such as Spain or Ireland) follows an accelerated internationalization process using M&A due to the desire of acquiring new capabilities. Moreover, firms lack the traditional ownership advantages such as technologies or brand, but other assets such as political or organizational advantages may explain the

internationalization process, or in other words, firms are able to transform disadvantages into advantages.

In sum, these authors highlight that MNE from developing countries have different ownership advantages and follow a rapid internationalization process. Moreover, the process of accumulation of capabilities is different in developing countries than in developed ones, as a result of the weak institutions, poorer infrastructure, and the presence of foreign MNE.

Maintenance of the existing theories

There are two arguments in favor of the maintenance of the existing internationalization theories according to Cuervo-Cazurra (2011). The former is related to the Firms Specific Assets (FSA) and Country Specific Assets (CSA) framework and the latter is based on the extension of the OLI paradigm incorporating the EMNE characteristics.

Following de approach developed by Rugman (1981) known as FSA and CSA framework, the EMNE phenomenon may be explained with the existing internationalization theories. Under this approach companies have Firms Specific Advantages (FSA) and Country Specific Advantages (CSA), and those advantages constitute the basic matrix used for the internationalization process. In the case of developing countries, the internationalization process is justified by the possession of more CSA, such as; lower labor cost, natural and finance resources, or institutional factors rather than FSA.

In this line of reasoning, it has been affirmed that the success of some Chinese MNE is based on the country specific factors and that each country has its own country factors (Rugman, 2010). Therefore, the improvement of the macro economic conditions will positively affect the emergence of MNE, being necessary a combination among FSA and CSA.

On the other hand, several articles have argued in favor of the maintenance of the OLI paradigm, considering that the new facts showed by EMNE are only a fruit of the current internationalization era. Moreover, the shift between market-seeking and knowledge-seeking motive have occurred both in developed and developing countries (Narula and Dunning, 2010). Instead, the OLI approach in its earlier contributions recognized that firms may go abroad following asset augmenting strategy instead of asset exploiting strategy. Furthermore, Dunning's school has accepted that EMNE

could have country and firms specific advantages (Dunning, 2000), playing a special role the home country institutions (Dunning and Lundan, 2008).

The stream of traditional MNE theories

Several authors have pointed out that the EMNE phenomenon can be explained by the extension of traditional theories. The main arguments agree two improvements on the traditional theories (Ramamurti, 2012; Cuervo-Cazurra, 2012; Narula, 2012 Luo and Wang, 2012). On the one hand, scholars have considered the introduction of the special characteristics of the environment (Ramamurti, 2004), with especial mention to the institutional based view, as promoter of the internationalization process and as generator of ownership advantages. On the other hand, it has been also agreed by scholar the consideration of M&A as the used mode of internationalization of firms from developing countries.

Regarding the importance of the home country, which can be known as the Home ownership advantages, the characteristics of the home country, such as; the competition with foreign MNE, the status of later globalized, the weak institutional environment or the government support for the expansion, have been introduced in the work of Ramamurti (2012). Moreover, Cuervo-Cazurra (2012) have highlighted that the characteristics of the home country affects the internationalization behavior of firms, especially in developing countries, or in other words, push factors, will have a positive effect on the generation of different ownership advantages (Gammeltoft et al., 2010b; 2012; Tolentino, 2010; Tan and Meyer, 2010).

In these characteristics of the home country the institutional environment have played a main role. In fact, the OLI paradigm have introduced the term of institution as particular ownership advantages (Dunning and Lundan, 2008). Moreover, several studies have recognized that institution are determinant in the international strategy choice (Buckley et al., 2007; Peng, 2002), acting as promoter under an escaping view (Witt and Lewin, 2007) or as facilitator, in the form of policies in favor of the internationalization process (Gammeltoft et al., 2010b).

Following these arguments by which the characteristics of the home country could affect the internationalization process, Narula (2012) has added that firms need superior asset for the internationalization process, and in developing countries those superior asset are constrained by the home country. Therefore, in those contexts and considering infant MNES, ownership advantages are a function of location advantages, or expressed differently, F(O)=L.

As examples of recent works which consider the characteristics of the home country in the EMNE phenomenon it should be highlighted the following ones. The study of Cuervo-Cazurra and Genc (2011) gives one more step in the explanation of the EMNE phenomenon by home country characteristics. This analysis complements the resource based view theory, distinguishing between market and non-market advantages, being the non-market advantages those which have been developed through the interaction with the institutional environment. Moreover, the work of Luo and Wang (2012) analyzes the effects of the home country on the internationalization strategy, differentiating by scale, timing and location. This article considers push factors, such as competitive pressure, institutional framework or inward FDI, as stimulators of the initial step on the internationalization of firms. Recently, two works have recognized the role of the home country on the emergence of MNE; firstly the work of Stoian (2012) has introduced the home country institutional framework in the investment development path (IDP) postulates, and secondly, the work of White et al., (2013) has analyzed how home cultural norms affects the conflicts of MNE in foreign markets.

In sum, the works explained above have given some light of the arguments in favour of the maintenance of the traditional theories through the incorporation of the characteristics of the home country in the analysis of ownership advantages of EMNE. Even when there are scarce evidence of the role played by the characteristics of the home country, or home environment, as an explicative factor of the internationalization process of firms of developing economies, there are current works, as the previous mentioned, which allow us to harvest the ideas of a positive influence between home countries characteristics and the internationalization of firms from developing countries.

On the other hand, the second proposed improvement of the traditional theories is connected with the rapid internationalization process followed by firms from developing countries. Authors argue that the use of M&A is justified given the weak economic environment of those countries, highlighting that the speed in the process is a result of the global context (Ramamurti, 2012). Therefore, it is assumed that firms can go abroad in order to compensate the weaknesses found at home acquiring new knowledge. However, a minimum level of superior assets is needed when firms go abroad according to Narula (2012)

Table B4 in appendix B summarizes the approaches of the EMNE theories, highlighting the key ideas and the main authors.

2.3.3. Linkages between traditional and new EMNE theories

Following the arguments by which traditional theories explain the emergence of MNE from developing countries and based on the work of Cuervo-Cazurra(2011) and Cuervo-Cazurra (2012), this section try to combine the traditional theories with the new characteristics of the EMNE phenomenon in order to propose some extension of the previous considerations. All the arguments exposed in the following paragraphs – theories, limitation and possible extension- are summarized in Appendix B Table B5.

Regarding the product life cycle model (Vernon, 1966), two main ideas should be reviewed: the concept of similarities among home and host country, and the introduction of the concept of learning abroad, or in other words, the premise by which capabilities can be acquired in foreign market instead of exploiting. Focusing on the first idea, developing countries invest in countries with dissimilar characteristics, as the evolution of South-North flows has pointed out in the previous chapter in Appendix A graph A.1, A.2, A.3. This fact is against to the findings of the product life cycle model which predicted that investment flows occur among countries with similar characteristics. On the other hand, the use of M&A in developing countries as a main mode of internationalization challenge the home country base of innovative product and the market saturated as a sign of the internationalization process. The consideration of these last characteristics implies an extension of the model. This extension should have an open view of product innovation, considering that innovation can be acquired, and diminishing the weight of the home country in the model as an exploitation driver. In sum, product life cycle model should include the possibilities of dissimilarities among countries and the premise that capabilities can be acquired abroad incorporating the learning abroad perspective (Cuervo-Carurra, 2012).

Regarding the incremental internationalization model (Johanson and Vahlne, 1977) the arguments of gradual internationalization process by which FDI are the climax of the internationalization strategies and the concept of physical distance as country selection indicator should be modified. In fact, the third wave of OFDI has showed that developing countries invest in countries with similar and different characteristics (for instance Appendix A (Graph A1, A2, A3, A4) showed the increase of flows from the BRICS to the developed world). This implies that the concept of physical distance is unable for the selection of host location when the investment flows come from the emerging economies. Moreover, considering the South-North flows, the countries selection should introduced the market attractiveness as can be the wealth of

knowledge that firm can obtain whether the host location is a developed country. On the other hand, a huge set of firms from developing countries use M&A, instead of a gradual internationalization process, that is exports and when firms have gained experience, FDI. Therefore, firms begin with the mode which implies more level of international commitment. The use of this risky mode could suppose that firm from developing countries are more risk tolerance due to the weak economic environment where firms are embedded (Cuervo-Carurra, 2012).

The arguments expose above indicates that the incremental international model should relax the premise of physical distance, incorporating the market attractiveness as country selection criteria. Moreover, the special characteristics of the environment in developing economies implies that those countries are more risk tolerance which also means that firms can overcome the internationalization strategy using the model with more level of commitment, that is, M&A.

Regarding de OLI paradigm, the concept of ownership advantages (Oa) should be extended. This implies the consideration of home countries characteristics in these poor economies, or in other words, the consideration of the interaction among “Oa” and “La”. Therefore, the resource based view theory which is the base of the “Oa” should be extended. Following this theory, resources are created in the home countries and exploited abroad. However, the EMNE phenomenon has also demonstrated that resources can be obtained abroad (Mathews, 2002 and 2006; Luo and Tung, 2007).

Moreover, the group of location advantages (La) justifies the internationalization process due to the benefits such as; low labor cost or natural resources that host location have. This “La” should be extended in the case of developing economies, given that these economies will pursue market seeking motives (Low labor cost), as the previous approach predicted, but also knowledge seeking motives (Cuervo-Carurra, 2012).

Finally, the internalization advantages (Ia) considering developing economies, indicates that firms are able to internalize more operation using M&A, given the higher restriction over the use of other modes of internationalization such as the use of export.

In sum, the three advantages of the OLI paradigm require a subtly extension, given the specific characteristics of the EMNE. All the arguments exposed here, can be found in Appendix B Table B5.

2.3.4. Emerging Multinationals overview and proposals

New players in the international business field in the last decades have produced the rethinking about the pillars of the MNE theories. The current international landscape is composed by firms from developing countries which have limited resources and have followed an accelerated internationalization process using M&A, as have been observed in the descriptive analysis in the previous chapter for the case of the BRICS. These characteristics have developed new approaches in this field, for instance the Linkage-Leverage and Learning approach (LLL approach), the springboard perspective and the ideas of Guillén and García-Canal, 2010 by which disadvantages can be transformed into advantages.

In sum, it has been argued that a stream of traditional approach can explain this new phenomenon, including an open concept of Oa and considering that firms can follow different strategies that those followed by developed MNE, that is to say, knowledge seeking motives instead market seeking motives (Ramamurti, 2012).

The idea of the open concept of Oa introduces the special characteristics of the home country as explanation of the ownership advantages that allows the success abroad. Therefore, home country characteristics should be considered in EMNE as factors that can enhance the generation of Oa facilitating the internationalization process (Ramamurti, 2012; Cuervo-Cazurra and Genc 2011).

In addition, this new concept of Oa also implies that capabilities can be acquired abroad using M&A in the earlier stages of the internationalization process, and therefore, firms can learn in the foreign expansion process. Thus, the strategy of firms may be different in emerging economies dominating knowledge seeking motives instead market exploiting motives.

In these two extensions of the open concept of Oa and the special consideration of M&A as a main strategy in developing economies, we will focus the two next chapters of this thesis (Chapter III and Chapter IV). Therefore, we will try to add some new evidence of the concept of ownership advantages, considering the home country as a generator of Oa and the acquisition of these Oa abroad using M&A.

On the one hand, we will consider the home country characteristics as a sustainable argument which may enhance the generation of firm' specific advantages and which also help to the justification of the EMNE's success abroad. This analysis is based on the previous EMNE studies and the evidence which have recognized that a new set of

advantages as the home country environment are needed in order to explain the success of EMNE abroad (Cuervo-Cazurra, 2012; Ramamurti, 2012; Hennart, 2012; Luo and Wang, 2012; Stoian, 2012). Therefore, considering the national system of innovation approach, the institutional framework and the IDP theory we add some evidence about the Home advantage that can affect the generation of Oa in EMNE.

On the other hand, in chapter IV we deal with the other pillar of the new concept of Oa, that is to say, the arguments which recognize that firms can learn abroad using M&A and following a knowledge seeking strategy. Therefore, in addition of the idea of the home country as generator of Oa we argue that a weak home environment, called as home national system of innovation, will boost the use of M&A rather than Greenfield FDI. This idea will connect with the technological and institutional escape hypothesis previously argued by Cuervo-Cazurra, (2012) and Witt and Lewin, (2007).

Concluding, new players in the international business landscape require a huge effort for the adaptation of the new EMNE's characteristics to the traditional MNE theories. Therefore, new studies of EMNE which collect the EMNE characteristics such as; the new concept of Oa and the use of M&A, are needed. This is precisely what we have proposed in the next two chapters of this thesis.

2.4. LEARNING ABROAD BY FDI. THE SPECIAL CASE OF SPAIN

Spanish MNE has played a key role in the international business scenario since the decade of the 90s. Spain has not been included in the group of the richest countries around the world, but this country is one of the most advanced countries in international aspects in words of Guillén (2006). The main question regarding the Spanish MNE is what factors can explain the success of the Spanish MNE abroad. In order to solve the previous question the history of the international expansion of Spanish MNE and the special characteristics of the Spanish MNE will be analyzed in the following paragraphs.

Briefly, it could be said that three main aspects of the history of Spain have influenced the building of the solid fleet of Spanish MNE. The first factor that should be considered is the entrance of Spain in the European Community (EC) in 1985. This fact allowed the liberalization of markets of goods and services, being for the market of services the liberalization effective in 1992. Moreover, the EC also caused several restructuration policies such as the modernization of the financial system. The privatization policies imposed in Spain in the decade of the 90s is the second factor

that has also helped the impulse of the Spanish MNE. Privatization implied the creation of oligopolies which conferred firms more advantages for the investment abroad. The third factor is connected with the entrance in the European monetary union which allowed more facilities in the purchase of participation of European firms (For a completed analysis review Guillén (2006).

With these antecedents, Spanish firms become MNE. In fact, in the earlier 1995 the investment of Spanish firms abroad overcomes the presence of foreign MNE in Spain, or expressed according to the Investment Development Path (IDP) theory terms, Spain was in the stage three of this theory where outward investment flows were higher than inward investment flows (See Graph A3 of Appendix A).

The main authors who have analyzed the Spanish MNE have found Spain, as a special case in the international business studies (Durán, 2002 and 2005; Giraldez, 2002 Guillén, 2006; Santiso, 2008; Guillén and García-Canal, 2010; Álvarez and Botella, 2012). This special role is based on the following characteristics; Spain is in the queue of the advanced countries without a solid technological base, but firms in this country have gone abroad following a rapid internationalization process and following knowledge seeking motives. These characteristics have been also found in the EMNE literature or new multinationals in words of Guillén and García-Canal (2010). Therefore, as has been argued by Santiso, 2008, it is possible to consider the Spanish MNE firms as the first Latin MNE or Multilatinas. Table B6 in the Appendix B collects the special characteristics of the Spanish MNEs where the country of origin and the internationalization following knowledge seeking strategy by M&A are considered crucial in this New Multinationals.

These special characteristics of the internationalization process of Spanish firms have not followed the traditional theories of gradual internationalization process (Johanson and Vahlne, 1977), the concept of ownership advantages (Hymer, 1976), or the product cycle life theory regarding the saturation of the home market (Vernon, 1966). However, without the path of a general internationalization pattern according to the internationalization postulates Spanish MNE such as; Freixenet, Miguel Torres, Nutrexpa, Viscofán, Chupa Chups, Ficosa, Fagor, Acerinox, Ferrer, Alsa, Banco Santander, Iberia, BBVA, Cortefiel, Patentes Talgo, Telefónica, Repsol, Tabacalera, Agbar, Pescanova or IESE Business school were expanded around the world.

Two specials factors have justified the success of the Spanish MNE firms according to Guillén (2006) and Guillén and García-Canal (2010); the special characteristics of the country of origin and the desire of acquiring knowledge abroad.

On the one hand, regarding the country of origin, the internationalization of those firms has followed a learning process in which Spanish firms were benefited of the foreign firms located in Spain. This country was an important receptor of FDI (mostly M&A) in the previous decades of the Spanish MNE expansion. Thus, the presence of foreign firms allowed the transfer of knowledge and spillover effects (Álvarez and Molero, 2005) transferring also the abilities for dealing with M&A (Guillén and García-Canal, 2010). On the other hand, the change in the institutional environment with the privatization policies also affected the success of the Spanish MNE. Both factors allowed the development of organizational, directives or project implementation capabilities, networks, and relations policy, as a new set of capabilities which explained the success of Spanish MNE abroad (Guillén, 2006; Guillén and García-Canal, 2010). Those especial capabilities imply that in the case of Spain the process of internationalization of Spanish firms cannot be understood without the consideration of the country of origin characteristics (Guillén and García-Canal, 2010).

Regarding the motives following in the internationalization process, that is to say, the new trend in IB of knowledge-seeking motives or learning abroad perspective, several authors has argued that firms can learn abroad (Dunning, 2009; Luo and Tung, 2007; Mathews, 2006) and the international knowledge acquired may be a source of competitive advantages (Buckley and Carter, 1996; Mudambi and Navarra, 2004; Ambos et al., 2006, Rabbiosi, 2011). This last idea has been collected in two blocks of the internationalization literature.

On the one hand, the literature of knowledge transfer has considered that MNE have shifted the direction of the flows between headquarters and subsidiaries, considering relevant the knowledge that subsidiaries can learn abroad for the building of technological capabilities (Álvarez and Molero, 2004). Therefore, the international knowledge may enhance the innovative output (Hitt et al. 1997; Kafouros et al, 2008 Belderbos, 2003; Yeoh, 2004) and the growth of productivity (Coe and Helpman ,1995; Griffith et al., 2006; Kafouros et al., 2012; Belderbos et al., 2013). A table which collects the main arguments in this literature is showed in Appendix B-Table B7.

On the other hand, this idea of the learning abroad effects on the firms outputs has been largely analyzed for exporter firms in the literature of firm heterogeneity (Melitz,

2003; Helpman et al., 2004; Wagner, 2007; Greenaway and Kneller, 2007), but the evidence has been more scarce for investors firms (Navaretti and Castellani, 2004; Zanhra et al, 2009). This last stream in the literature considers that higher level of productivity justify the international commitment of firms, but also that the international commitment of firm will increase the levels of productivity due to the learning process (Bernard and Jensen, 1999). Table B8 in Appendix B collect the main ideas of these arguments.

Therefore, new analysis should be added to the learning abroad perspective using investment. In fact the chapter V of this thesis analyzes the fleet of Spanish MNE and the learning abroad arguments in order to add some new evidence to the Spanish MNE.

CHAPTER III

WHAT DOES IT MATTER ABOUT THE HOME COUNTRIES OF EMERGING MULTINATIONALS?

We are all interested in the future,

for that is where you and I are going to spend the rest of our lives

(Woody Allen)

3.1. INTRODUCTION

Recent literature on emerging multinationals (EMNE) claims that the successful story of these internationalized companies can be explained by some characteristics that defined at the home country level may enhance the generation of firm' specific advantages necessary to being able to compete with other multinational enterprises (MNE) from developed countries in an increasingly globalised market. The raise of outward FDI from developing countries such as China, Russia, Mexico, Chile, Malaysia, India, Brazil, Egypt or Turkey in the last decades has led to an increasing interest in the determinants of outward flows from these economies (UNCTAD, 2011), challenging the more traditional theoretical predictions in order to generate a more plausible explanation for this new emergent fact (Meyer et al., 2011) that would derive into implications for other developing countries as well.

The concept of ownership advantages (Dunning, 1988) or the one of firm' specific advantages –FSA- (Rugman and Verbeke, 1990) has dominated in most of the available evidence covering MNE, claiming the importance of aspects such as the presence of economies of scale, technological assets and human capital, marketing and management related skills, as elements that make more likely the successful management of companies abroad and explain their sustainable results. However, "new multinationals" -those from emerging economies or EMNE-, do not always have this wide range of advantages or the same set of advanced technological assets that

companies from developed economies posses, justifying the necessity for exploring deeper the EMNE phenomena.

One open question of the research agenda is then how to explain the recent and rapid success of these companies, an issue that could even make necessary the revision of the MNE's theory for the accommodation of this fact. Although the OLI paradigm is still the most used by scholars, some authors claim the importance of sustained investments that would permit EMNE accumulate real firm-specific advantages (FSAs), such as cutting-edge technologies and strong brands (Rugman and Li, 2007). Others argue that the OLI approach must be extended taking into account the role of the home country characteristics and particularly, how to provide a more complete picture and a more convincing explanation of the positive trajectories followed by outward FDI from developing countries (Cuervo-Cazurra and Genc, 2008; Luo and Wang, 2012; Narula, 2012).

Departing from the idea that EMNE can be understood by the increasing bargaining power of these companies to face market imperfections in host countries and how firms owned advantages combined with intangible-seeking foreign direct investments (Hennart, 2012), home country characteristics in developing countries can provide the possibilities for the development of the entrepreneurship conditions in a favorable environment that would permit investments in other countries and take advantage of the reverse knowledge flows that may impact positively in the development of the home country (Yang et al., 2008). The emergence of outward flows of investments in developing countries would affect the acquisition of knowledge abroad and this would enhance the development while, the improvements of home country characteristics, such as the absorption capacity would enlarge the positive effects of inward FDI flows that will positively affect the development path of those economies (Criscuolo and Narula, 2008). Absorptive capacity is significant for development because it allows domestic actors to capture knowledge that exists elsewhere. There are policy tools available for using FDI for economic development to promote the inter-linkages that would create the opportunities for economic actors to absorb and internalize potential spillovers (Lall and Narula, 2004).

In this chapter we analysis some of the factors that identified at the national level can contribute to qualify the impact of the national environment in the emergence of MNE and to differentiate them in the context of developing countries, in comparison to more advanced economies. We adopt here an approach that assuming the importance of the presence of ownership advantages or FSA, also considering some additional elements that are defined in the firm's environment or at the home country level of analysis. This frames our explanation of the international expansion of MNE as a process

of skills' accumulation that takes place in the home national system of innovation, and how this is directly conditioned by institutional and technological aspects that are affected by the country level of development. The purpose is therefore to provide an explanation of the EMNE based on the determinant factors of OFDI and whether these may significantly differ from developed economies or a more common pattern than belief exists. The analysis carried out in this piece of work is conducted for a broad sample that integrates 48 countries, including both developed and developing economies in a time spam from 1996 to 2009. The estimations of a dynamic panel data model allow us to explain outward FDI based on a set of regressors that including aspects of the home systems of innovation is also controlling by other more traditional factors.

Among previous contributions in the literature, some of them explore aspects of home countries that make more likely to explain OFDI from emerging economies, being mainly focused on conceptual and theoretical developments while only few provide empirical evidence (Lall, 1984; Peng, 2002; Child and Rodrigues, 2005; Kumar, 2007; Godstein and Wells, 2007; Cuervo-Cazurra, 2008; Mathews, 2006; Gammeltoft et al. 2010a). Other studies that analyze empirically the relationship between OFDI and home country characteristics (Tolentino, 2010) try to explain how macro aspects such as the interest rates, the exchange rates and the level of openness, can derive in a causal relationship of OFDI in China and India. In addition, the three recent works as the study of Luo and Wang (2012) shows an analysis at the micro level of how home country conditions affect OFDI strategies in emerging markets, the study of Stoian (2012) and White et al., (2013) has introduced the home country institutions in the analysis of the IDP theory and in the chosen strategy followed by MNE for solving conflicts abroad. Finally, there are some recent contributions that establish the relationship between the development path and the national system of innovation (NSI) approach (Álvarez and MarÍn, 2010) defining the NSI by the institutional setting and the national absorptive capacities, as well as others that takes the combination of trade and FDI to explain competitiveness in a context of market liberalization and how these effects depends on learning possibilities and the level of countries' development (Álvarez and MarÍn, 2013).

The following section contains a short revision of the main literature background. The third section focuses on the hypothesis development. Section fourth shows the description of the main variables used in the empirical model and section fifth contains the econometric model and the main results. Finally, in section sixth the discussions of results are presented.

3.2. LITERATURE BACKGROUND

Pioneering contributions in the theory of EMNE emphasize the importance that some resources, assets and knowledge have in the explanation of the firms' internationalization process. This set of elements were considered together as the broadly used concept of ownership advantages according to which companies overcome diverse barriers by making business in foreign contexts, increasing the likelihood of being successful in unknown locations abroad. This is an argument that holds not only in terms of transaction costs but also in terms of the information asymmetry problems and competition conditions in host economies (Caves, 1971; Hymer, 1976; Dunning, 1981; Hennart, 2012). While the concept of ownership advantages (Dunning, 1988) or FSA (Rugman and Verbeke, 1990) has become basic pillar supporting numerous analysis of MNE, the assumption of the assets superiority of MNE over local firms has been broadly accepted in studies adopting the perspectives of both home and host country. The basic argument is that the existence of certain assets provides ownership benefits to firms and then, greater advantage to the MNE over other companies, an aspect that is also contemplated in the equilibrium models that predict the relevant factors explaining the internationalization decision of firms through exports or FDI (Markusen, 2002).

A key point in much of the literature is that firms' advantages shape a necessary condition when a firm decides to explore another market through direct investments, but it is not a sufficient condition itself since internationalization would also require the combination of other advantages such as location or host country and internalization ones, which altogether affect positively the behavior of MNE. This integrated view of advantages was compiled in the well known eclectic or OLI approach, developed by Dunning in the 70's, in which various theoretical approaches based on market imperfections, the existence of asymmetric information and transaction costs were synthesized (Dunning, 1988). Thus, "O" shows the existence of assets or ownership advantages that explain why firms decide to go abroad; these advantages being technological, managerial, marketing, or human capital assets. On the other hand, "L" stands for location advantages and these are related to the fact that the decision of localization abroad is influenced by both the characteristics of host countries and the own reasons that companies pursue with their internationalization process. Finally, "I" refers to aspects linked to the potential positive effects that the internalization of activities conducted in different geographic locations has under the same organizational structure. The latter, together with ownership and location

advantages would explain why FDI is the preferable choice compared with others modes such as exports or licensing (Dunning, 1988).

The "OLI" approach has led to numerous empirical studies and it has also opened new lines of research since the early 80's. Thus, research has focused on the motivation of firms to go abroad, the country characteristics that justify the location, the choice of the entry mode, or the ownership advantages that make more likely the success of being abroad. However, it is necessary to clarify that the possession of assets or “O” advantages has been mainly analyzed from the firms’ point of view while the advantages of location "L" have been analyzed at the host country level. Furthermore, OLI theory considers subtly that O advantages can be defined by some country specific advantages or, in other words, how some aspects of the home environment or some industrial specific advantages are finally integrated by the MNE to make larger their competitive advantages (Dunning, 2009; Tolentino, 2010).

In the early 80s MNE from emerging economies began to play a main role in the international business landscape, and some authors such as Lall (1984) and Wells (1998) pointed out that EMNE show disadvantages compared with MNE from developed countries, especially for the lack of traditional ownership advantages. The reason is that firms from these economies are not generally well endowed of the needed technological, human, managerial and marketing assets that will fully justify their success (Guillen and Garcia-Canal, 2010; Gammeltoft et al., 2010a).

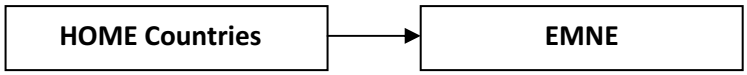
Several scholars have tried to combine traditional theories with the new phenomenon of EMNE, generating a new debate and new research that departing from the traditional MNE’ theory could derive into the explanation of the EMNE and trying to combine some elements and extensions of the OLI approach with new developments (Hennart, 2012; Ramamurti, 2012, Cuervo-Cazurra, 2012). Some contributions affirms that traditional theories cannot be applied to EMNE recognizing the need for the development of new theoretical bodies, as it is the case of Mathews (2002 and 2006) who proposes the LLL approach (based on the concepts of linkages, learning and leverage) as an explanation of the existence of EMNE, given the lack of ownership advantages and trying to explain how they proceed with the acquisition of them abroad. Furthermore, there are other perspectives such as the one on springboard investments proposed by Luo and Tung (2007), that highlights how EMNE invest abroad to obtain those strategic assets needed to compete more effectively against developed MNE (DMNE) and to avoid country institutional and market deficiencies (Cuervo- Cazurra, 2012).

Traditional theories are still valid to explain the phenomena of EMNE taking the idea rooted in a possible combination of Firms Specific Advantages (FSA) and Countries Specific Advantages (CSA) (Rugman 2010). In such a case, traditional MNE theories are valid whether they are able to consider that the internationalization's success of EMNE will depend more on the CSA than on the FSA. Meanwhile, other authors propose the extension of the concept of ownership advantages by the introduction of other "components" not so well known until now but that could contribute to a more precise definition of it. The introduction of the "context" or the characteristics of the home country as part of the ownership advantages justifies that internationalization would become a main driver for the obtainment of these advantages (Gammeltoft et al., 2010b; Cuervo-Cazurra, 2012; Ramamurti, 2012). Following this, it is plausible to expect that EMNE can enjoy advantages but these may differ from those owned by the traditional MNE with original countries being the developed economies. These perspectives are concerned with the introduction of some push factors in the explanation of EMNE including in the research agenda a deep consideration of the country specific factors in the analysis of EMNE' advantages that allow us to analyze ownership advantages as a function of the countries, especially in the case of infant MNE and in countries with lower level of development (Narula, 2012).

We then follow some suggested lines of research underlined in this field of the literature (Dunning, 2009; Ramamurti, 2012; Hennart, 2012); particularly, our main purpose is to analyze the determinant factors that can be defined at home-country of MNE, which could be denoted as "H" (which stands for "home" country). More specifically, we study the determinant factors of OFDI that are linked to the characteristics of the home countries to try to explain how these factors can influence the generation of ownership advantages in MNE and whether differences arise when both developed and developing countries are considered.

Our research proposal is then presented in Figure 3.1 that summarizes the idea exposed above:

Figure 3.1 Linkage between Home countries and EMNE



Source: Author's elaborations

We would assume that OFDI can be explained by the home countries characteristics and those effects are higher in the case of developing countries, in line with several contributions which have shown the role and influence of home countries in the emergence of MNE in developing contexts (Gammeltoft et al., 2010b; Cuervo-Cazurra, 2012; Ramamurti, 2012). In this sense, the positive relationship between inward FDI, the development process of a country and outward FDI dynamics predicted by the investment development path theory (IDP) is also a reliable argument (Narula, 1996; Narula and Dunning, 2010). The idea is that the reception of MNE in a country can potentially lead to skills transfer and spillover effects potentially beneficial for local firms. Nonetheless, the acquisition of the necessary absorptive capabilities to benefit from these external effects is clearly affected by the level of development and this process will subsequently reinforce the possibility for the internationalization of local firms. This will also facilitate the observation of the evolutionary path through which firms will access to the necessary ownership advantages that permits them to carry out FDI abroad and to become a MNE. In other words, this framework allow us to conceptualize the relationship between location advantages (L) that enable the attraction of MNE and ownership advantages in such a way that the advantages of location at time t can be converted into ownership advantages at time t +1, being therefore defined ownership advantages in terms of location (O = f (L)) (Dunning, 2009). However, as the IDP theory claims, the relationship between inward FDI, development, and outward FDI, is not linear and it not always behaves in the same way (Narula and Dunning, 2010). It can be observed that some developing countries have became very active investors through FDI despite the fact of being still in an early stage of development, without having reached the threshold level of development that would justify the acquisition of the expected ownership advantages.

The IDP theory can be easily connected with the national innovation system conceptual approach which define the set of political, social, economic and cultural factors that allows for the development of a country, region or sector through knowledge and would explain differences in innovation performance across countries

(Lundvall, 2007; Narula and Dunning, 2010), since the definition of these elements are associated with a positive development path. In this approach, elements such as technological capabilities (Lundvall, 2007; Narula and Dunning, 2010), the institutional framework (Kumar, 2007; Álvarez and Marín, 2010; Peng, 2002; Witt and Lewin, 2007; Dunning 2009; Nölke and Taylor, 2010; Goldstein and Wells, 2007) and the financial constraints (Tolentino, 2010; Kalotay and Sulstarova, 2010; Oxelheim et al., 2001) play altogether a distinctive role in the process of capability accumulation.

In addition, it is important to mention at this point that some studies have considered outward FDI flows as a source of competitiveness in developing economies (Álvarez and Marín, 2013), given that firms that go abroad can acquire knowledge, following knowledge seeking motives (Lall and Narula, 2004) and this knowledge can reverse to the home country in the form of development (Yang et al., 2008). The consideration of outward FDI as the engine of development in developing countries is relative new in the literature, given that the majority of the studies analyzed the relationship among inward FDI and its effects on the development (Lall and Narula, 2004). This latter relationship implies the consideration of MNE as a vehicle of knowledge that allow the development of the host country, always that those countries have an enough level of absorptive capacities and local capabilities. However, the reverse knowledge flows, those that connect outward FDI and development, imply the transference of knowledge or technology acquired abroad to the home country allowing the increase of the productivity in the home country (Criscuolo and Narula, 2008) and therefore the firm's performance (Hennart, 2007 and 2012).

In sum, there are enough arguments in the literature and mostly in the OLIH approach (Kalotay and Sulstarova, 2010) that agreed in some common aspects that defined at the home country (HC) level could influence the generation of firms' advantages to explain outward FDI, being plausible to consider outward FDI as a key issue in the development strategies of countries (Álvarez and Marin, 2013).

3.3. HYPOTHESIS DEVELOPMENT

In this chapter we develop the idea that there are a set of macro and institutional related aspects of home countries that enhance the likelihood of outward FDI flows because they contribute to the development of firm's advantages, being aware of the potential differences that may exist between developed and developing countries. EMNE can be explained by the combination of firms' level advantages and their capability to combine resources and assets elsewhere while potential positive effects

would generate further development impacts, a process that depends on the path of capabilities accumulation in countries.

The point of departure is to identify what are those factors at the home country level that could positively affect the firm' internationalization process. This suggests a new development, which has been called home-ownership advantages (H-ownership) in the literature, an analysis that is justified by the fact that these aspects may enhance the emergence of EMNE[21]. The contribution of this study is not only the adoption of an original approach that combines diverse macro aspects in the explanation of the firm' internationalization process but the effort to demonstrate empirically how OFDI is determined by some elements of the environment and how these describe a process of capabilities accumulation in the home country that is conditioned by the level of development.

The literature background presented in the previous section of this chapter provides an appropriate framework for the development of our working hypothesis.

On the one hand, the existent differences between MNE from developed and developing countries have challenged the whole validity of the concept of ownership advantages and FSA in the face of the growing number of MNE from developing economies. This makes especially interesting to deep the analysis of the home countries (H-ownership) as an integral part of the explanation of the EMNE phenomenon (Guillén and García-Canal, 2010; Cuervo-Cazurra, 2008; 2012; Dunning, 2009, Buckley et al., 2007; Ramamurti, 2012). In accordance with this view, it can be expected that home country characteristics would have greater effects in the generation of advantages in the internationalized firms from developing countries. The reasoning is that according to the traditional theories of firms' internationalization, the likelihood of firms in advanced economies to develop a huge set of advantages is higher because they enjoy a relative technological superiority that derive in extra profits as it is higher the brand awareness, while in the case of developing countries the interaction between O and L receive special connotations (Narula, 2012). This aspect allows us to develop our first hypothesis as follow: Home countries *characteristics may have direct impacts in OFDI and this effect will be greater in the case of developing countries* (H1).

[21] It should be emphasized that we are focusing here only with home country characteristics and the possibilities they show for the generation of ownership advantages. Factors related with host country characteristics and the differences between host and home countries are not considered in this analysis

On the other hand, it is well known that previous inward FDI flows may positively impact in host economies because of the potential spillover effects that those foreign companies may generate in domestic locations and how this becomes an enhancing factor for the development of further outward FDI. Accordingly to these arguments of the IDP approach, it is plausible to think that inward FDI may act positively in the capabilities building of countries defining a sort of cumulative process that would enhance the possibilities for the generation of spillover effects and can encourage OFDI. Therefore, we would assume that the link between Inward FDI and Outward FDI is conditioned by the development of the necessary national absorptive capacities, a concept that at the macro level would include among others the R&D efforts and the human capital endowment (Narula, 1996; Criscuolo and Narula, 2008; Narula and Dunning, 2010), aspects that become necessary to obtain a minimum level of these capacities that enable countries to benefit from external influences (Lall and Narula, 2004; Narula, 2012). Having this in mind, the second hypothesis of our work is that Inward FDI positively affects Outward FDI and no differences should be expected between developed and developing countries (H2).

Finally, in the tradition of the innovation literature we can find that some theoretical arguments of the NSI approach can be easily translated to the explanation of firms' internationalization based on home country characteristics. In particular, a weak NSI has been often associated with institutional constrains (Dunning and Lundan, 2008; Witt and Lewin., 2007; Buckley et al., 2007; Child and Rodrigues, 2005; Guillen and Garcia-Canal, 2010; Goldstein and Wells, 2007; Nölke and Taylor, 2010; Tan and Meyer, 2010; Luo et al., 2010), with the limitations shown by the financial system and with the lack of national technological capabilities (Tolentino, 2010; Oxelheim et al., 2001; Kimino et al., 2007; Hirschey, 1981; Cantwell, 1989; Buckley et al., 2007; Álvarez and Marín, 2010 and 2013). It is usual to find that in developing countries these aspects would positively affect the internationalization process of firms if we accept that an escaping argument prevails, this shown by Cheng and Cuervo-Carurra (2012). On the other hand, a different situation is found in developed countries where it is more likely the existence of a strong NSI that affect the evolution of OFDI, although the effects diminish because it is higher the likelihood that domestic firms enjoy the possession of traditional ownership advantages.

Our third hypothesis is then that NSI will positively affect OFDI, being its effect greater in the case of developing countries (H3).

We also include some important controls in the model considering some key economic factors that are related to the traditional explanation of FDI, such as the labor costs as well as some determinants of countries' competitiveness taking into account the potential effects of the globalization of the value chain. Each of these factors and the hypothesis are presented in Table 3.1, where the expected results and signs are shown for each group of countries. Table C1 in the appendix C contains the definition of the variables used in the analysis.

Table 3.1 Hypothesis and expected signs in Home country effects

Hypothesis Scope	Indicator of H	Expected sign	
		Developed Countries	Developing countries
Country of origin of the MNE	H1: Home country Characteristics	n.s	+
Presence of MNE	H2: Inward FDI	+	+
National System of Innovation	H3:-Institutions-Absorptive capacities and Financial System-	+	+
Controls			
Competitiveness	Gross Capital Formation	+	+
	Hight Tecnology Export	n.s	+
Labour Market	Labour Cost	+	-

Source: Own elaboration

3.4. DATA DESCRIPTION

The sample used in this analysis comprises 48 countries and it includes both developed and developing economies. Countries are classified by the criteria of income level used by the World Bank[22] (GDP per capita) and the selection of them has been conditioned by data availability in the period included in our analysis that goes from year 1996 to 2009, as well as by the list of countries included among the Top 50 non financial and Top

[22] List of countries and the country groups can be found in the Appendix C (Table C2).

Financial TNCs elaborated by UNCTAD23. The descriptive statistics of the variables used in the model are presented in Table 3.2.; these are calculated for developed and developing countries, respectively.

Following the dimensions that define our working hypothesis, technological and institutional variables -R&D expenditure, education and institutions – show notably lower values in the group of developing countries. This descriptive would anticipate that the national systems of innovation in developing countries seem to be weaker than in more advance economies as it is shown by the related indicators (this fact is illustrated in Graph 3.1). On the other hand, the descriptive of financial variables show that it is more likely to find lower interest rates in developed countries than in developing countries, and this could anticipate that a certain level of inefficiency can be found in the financial systems of the latter being also possible to denote a greater country-risk. In addition, there are clear differences on wages (average values) when developed and developing countries are compared, but there are not great differences in the distribution of this variable between the two subsamples. High-tech exports from developed countries are greater than those from developing countries, although the distribution is more dispersed in the latter. Furthermore, investments in infrastructures in developed economies are similar in average value to the one corresponding to developing countries, but the distribution is even more heterogeneous in the latter.

[23] UNCTAD database: www.unctad.org

Table 3.2 Descriptive Statistics. Average Values for the period 1996-2009

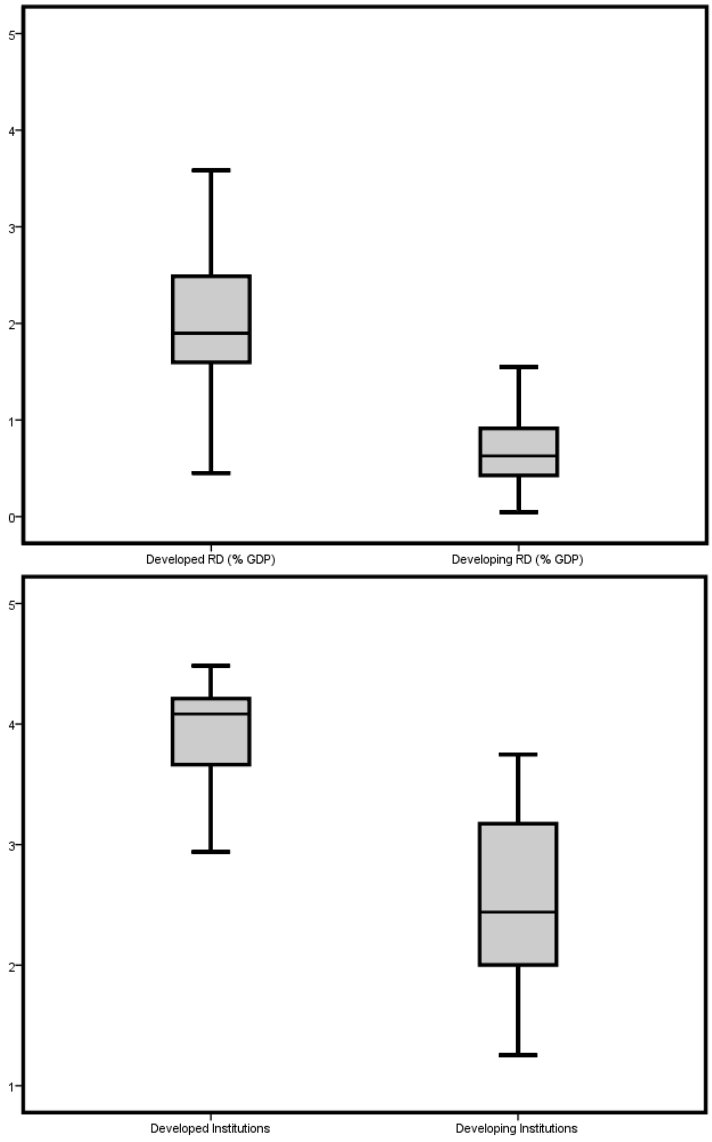
	Developed Countries		Developing Countries	
	Mean	Std. Dev	Mean	Std. Dev
Outward FDI (as % of the GDP)	50.66	64.20	7.218	7.67
Interest Rates (in %)	7.31	3.78	16.99	15.82
Institutions	3.84	0.43	2.56	0.64
R&D (as % of the GDP)	1.95	0.9431	0.68	0.33
Education (in % of total, School enrolment in secondary education)	107.44	16.15	82.23	14.612
Wages (millions of US$, PPP constant year 2000)	6.95E+11	3.30E+12	3.26E+12	9.21E+12
Gross Fixed Capital Formation (as % of the GDP)	21.62	3.86	23.044	5.99
High-Tech Export (as % of manufacturing exports)	1159.72	22993.35	12.16	12.16
Inward FDI (as % of the GDP)	51.73	66.99	28.82	19.03

[a] List of countries as well as the country groups can be found in the Appendix C (Table C1).

Source: Own elaboration

A particular reference can be made to the relationship between inward and outward FDI in the two groups of countries considered. The average values of inward FDI and outward FDI are very similar for the subsample of developed economies, showing the net position of both variables when the countries are in the last stages of the investment development path approach. However, in the case of developing countries inward FDI is higher in average than outward FDI, reflecting that these countries are mostly placed in the early stages of the IDP and more specifically in stage 3, where inward FDI exceeds outward FDI.

Graph 3.1 Innovation Systems (R&D and Institutions)



Source: Authors' calculation from the World Bank, WDI database

3.5. EMPIRICAL MODEL AND ESTIMATION RESULTS

With this empirical model we try to test to what extent outward FDI can be explained as a function of some characteristics of the home countries of MNE between 1996 and 2009, period that coincides with the emergence and consolidation of new multinationals from developing economies. Then, to capture the dynamics of the process, OFDI is regressed against a set of factors and controls presented previously in the hypothesis development section and this would require the introduction of the lagged dependent variable in the right hand of the equation. The regressors are some

macro factors that reflect financial aspects (FIN) and other elements of the home national innovation systems, such as R&D expenditure or absorptive capacity (RD), institutional factors (institutions INS-Index)[24] and education (EDU). In addition to them, the level of wages (W) in countries has been included to take into account factor' costs, in correspondence with those traditional predictions of firms' internationalization via FDI. Other variables related to some structural aspects of countries' competitiveness are also included, such as high-tech exports (HX) that would reflect the weight of more sophisticated manufacturing specialization and gross capital formation (GCF) that approach the general level of investments in capital goods and infrastructures.

Equation (3.1) is adopted for the estimation of the determinant factors of OFDI. Inward FDI is included to consider those IDP impacts not explicitly controlled in the model as it is shown in Equation (3.2). All these variables have been transformed into natural logarithms, with the exception of the Institutions Index. Two separate estimations of Eq (3.1) and Eq (3.2) have been done for the entire sample and specifically for the subsamples of developed and developing countries, respectively. The dependent variable in all the cases is outward of foreign direct investment. The variables and their definitions are listed in Appendix C Table C2.

Eq (3.1):

$$logY_{it} = \alpha\, logY_{it-1} + \beta_1\, logFIN_{it} + \beta_2\, logINS_{it} + \beta_3 logRD_{it} + \beta_4 logEDU_{it} + \beta_5 logW_{it} + \beta_6 logGCF_{it} + \beta_7 logHEX_{it} + \eta_{si} + \upsilon_{dt} + \epsilon_{it}$$

Eq (3.2):

$$logY_{it} = \alpha\, logY_{it-1} + \beta_1 logFIN_{it} + \beta_2 logINS_{it} + \beta_3 logRD_{it} + \beta_4 logEDU_{it} + \beta_5 logW_{it} + \beta_6 logGCF_{it} + \beta_7 logHEX_{it} + \beta_8 logIFDI_{it}\ \eta_{si} + \upsilon_{dt} + \epsilon_{it}$$

where;

$Y_{it}=OFDI$ and $Y_{it-1}=OFDI_{t-1}$

The model is estimated with dynamic panel data System GMM, given the limitations that other techniques such as OLS have when individual effects are considered in the regression (Castellacci, 2008) or in the case of Static Panel Data when some variables have endogeneity problems. The presence of endogenous variables, which could have a path dependence trajectory (Dosi, 1988) justifies the use of this method.

[24] Institutions Index is composed by the average of a set of indicators: voice of accountability, political stability, government effectiveness, regulatory quality, role of law and corruption (Kaufman,2003).

The dynamic panel analysis is performed according to two different estimations techniques: The first one is difference GMM (Arellano and Bond, 1991) and the second is system GMM which is an extension of the former that incorporates the regressors in level as instrumental variables (Arellano and Bover, 1995), making possible the use of all the available moment conditions and providing superior performance to the estimation. Moreover, a deep study about the results obtained by the difference and system GMM, Roodman (2006 and 2009) points out that the latter could reveal a problem of overidentification due to the proliferation of instruments and then imperfect estimations could be obtained (Roodman 2006, Roodman, 2009). At the same time, the analysis by Roodman considers that the overidenfication problem could be frequent when the time period of the sample is large. The instrument proliferation emerge more probably when the period is over 10, thus we have used biennial series time in order to maintain the entire period and to get the number of instruments inferior to the number of group (Roodman, 2009).

The application of GMM -system and differences- can be driven by the use of one-step or two-step estimations techniques. According to the econometrics literature, the first one uses the weighting matrix homoscedasticity but heterocedasticity problem may persist and therefore, the two-step estimation results are more appropriates. In addition, in the first case (one step) Sargan test is acceptable while if we are using two step Hansen test should be used (Roodman, 2009). The interpretation of Hansen test will be as follow; if Hansen Test has a p-value equal or superior to 0.10, the instruments used in the analysis are the adequate, but if the p-value is close to 1, the model presents overestimation. The GMM estimation requires that the errors are serially uncorrelated and for testing this, the Arellano and Bond test is used assuming that correlation problem should be corrected in Ar(2). This test can be driven using first differences or levels (Cameron and Trivedi, 2009).

The results of panel data estimations are presented in table 3.3. The correlation matrix for the variables used in the model can be found in Table C3 in the appendix C while the correlation matrix of the dependent variable and Inward FDI has been also included in the appendix C (Table C4).

The results of the estimation of the data panel allow us to confirm that home country factors may enhance the development of those firms' advantages that affect positively their internationalization process through FDI (Table 3.3., columns 1 to 6). Moreover, some differences can be detected among the different groups of countries analyzed: In the subsample of developing economies, the model fits better and it seems to be more

relevant since the number of significant coefficients is higher (Table 3.3, columns 5-6); this finding is consistent with the importance of home countries characteristics in the study of EMNE and for the definition of the advantages that would help to explain the success of these firms (H1 is then confirmed).

On the other hand, the existence of MNE is a path dependent aspect and a cumulative process which is defined by the positive impact that the presence of MNE has in the promotion of new entrances, a result that is confirmed when considering both the entire sample and the two subsamples respectively (Table 3.3, columns 1 to 6). This aspect is reflected in the significant coefficient of the lagged dependent variable –OFDI (-1). Moreover, when controlling for Inward FDI (Table 3.3, columns 2, 4 and 6), it can be noted that a positive relationship exists between inward and outward FDI in all the cases, leading us to affirm that the ownership advantages generated by inward flows and the absorption of local firms are crucial elements in the accumulation of capabilities that encourages OFDI (H2 is confirmed). In both groups of countries, inward FDI encourage outward FDI although the correlation is weaker in developing countries (Table C4 in the appendix C). These results allow us to emphasize that the generation of ownership advantages derived from the reception of MNE can be modulated by the absorptive capacity of the host economies, while in developed countries other advantages affect as well the process of firm's internationalization corresponding to a more traditional theoretical view.

The institutional quality (INS) generates positive effects in OFDI when the complete sample is considered (Table 3.3, columns 1 and 2) and also in the case of developed and developing countries separately, revealing the relevance of institutional quality in the firms' internationalization process. However, this variable is not significant when controlling for the impact of IFDI in the first subsample and the sign turns out to be negative in developing economies, a result that would presumably justify how inward investment may generate a higher impact in the emergence of MNE in this last group of countries that enables to overcome the weakness of the institutional set up by some more complex strategies of the EMNE abroad (H3 is confirmed only partially, for the Institutional quality factor). In addition, the infrastructure levels (using the proxy of GCF) also reveal to have a positive impact in the total sample. Regarding the subsample of developed countries (Table 3.3, columns 3 and 4), results show that home ownership advantages generate lower effects on the level OFDI. In fact, the institutional quality is the unique factor that positively affects the dependent variable. This is an expected result given the fact that MNE from developed countries more

likely enjoy the most traditional firms advantages, such as technological proficiency and brand awareness as it is justified by the traditional theories of internationalization (H3 is confirmed only partially, for the Institutional quality).

In the particular case of developing economies (Table 3.3, column 5-6), our main target group, home-country factors seem to act in favor of the advantages' development that would enhance the internationalization process. Considering the NSI variables, the institutional framework (INS) acts as a facilitator of the emergence of MNE in countries such as China and Brazil where it is broadly recognized the special role of the State as facilitator of the internationalization process of large firms (Table 3.3, column 5). However, at the same time, the result also can be interpreted assuming the lack of institutional quality and how this may act as a driver for EMNE because the presence of an unfavorable scenario in terms of the rules of the game in the home country, i.e.: the intellectual protection conditions, may encourage firms to go abroad trying to meet their needs through the internationalization process (institutions present a negative sing in Table 3.3, column 6). In sum, from the analysis of the Institutional framework both arguments can be hold.

Regarding the financial system, the difficulties or inefficiencies seem to be acting as a facilitator mechanism for the emergence of multinationals (Table 3.3, column 5), an aspect that could be justified by the capital surplus of some countries in this group – i.e. the case of China-, the potential inefficiencies of their banking systems, or even the higher country-risk that may cause the existence of high interest rates. In addition, it can be mentioned here the existence of two specific facts related to emerging multinationals: First, studies have checked that firms from these countries go abroad using other types of financing facilities such as the family group loans (Tan and Meyer, 2010) or even the internal funds of the firms, and one of the most frequent is the use of government support for the internationalization process. Secondly, the positive sing can reflect that firms from developing countries obtain funds in the location country.

The capacity of knowledge absorption is positively related to outward FDI for developing economies (Table 3.3, column 6), a result that is in line with the arguments provided in the literature about the role played by the investment in high value added activities, such as R&D, as a generator of ownership advantages that finally encourage outward FDI. On the other hand, education affects outward FDI in developing countries (Table 3.3, columns 1 and 2), being negative the direction that holds in this group; that is, smaller levels of labor formation encourage OFDI. This result could be justified by the argument found in the literature which is supportive for knowledge-

seeking motives of outward FDI against those more traditional ones that focus on market-seeking strategies (Singh, 2007; Dunning, 2009). Then, for the sample of developing countries H3 is confirmed.

Finally, the indicators of competitiveness show, on the one hand, that high-tech exports is positively related to outward FDI only in the case of developing countries (Table 3.3, column 5), a result that can be justified by the integration of these economies into the global value chain of industries with higher technological content, being the raise of exports one driving mode of internationalization even before OFDI, while the impact of infrastructures is not significant.

Table 3.3 Panel estimation of Home country effects

	All countries				Developed countries				Developing countries			
	(1)		(2)		(3)		(4)		(5)		(6)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
OFDI(-1)	0.881***	(0.076)	0.780***	(0.109)	0.786***	(0.125)	0.615***	(0.103)	0.983***	(0.237)	0.650***	(0.158)
FIN	0.025	(0.159)	0.198*	(0.118)	0.006	(0.221)	0.064	(0.212)	0.360*	(0.208)	0.142	(0.193)
INST	0.402**	(0.186)	0.431**	(0.216)	0.382**	(0.185)	0.189	(0.127)	2.092*	(1.380)	-0.337**	(0.166)
RD	-0.105	(0.226)	-0.124	(0.205)	-0.016	(0.108)	0.020	(0.085)	0.072	(1.278)	0.488*	(0.268)
EDU	-0.878**	(0.427)	-0.326	(0.294)	-0.266	(0.311)	-0.163	(0.236)	-1.660*	(0.947)	-0.850*	(0.456)
W	-0.059	(0.079)	-0.073	(0.102)	-0.002	(0.021)	-0.001	(0.105)	0.101	(0.990)	0.065	(0.098)
GCF	1.492*	(0.873)	0.502	(0.707)	0.245	(0.277)	-0.239	(0.377)	-0.101	(0.775)	-0.493	(0.405)
HEX	0.027	(0.072)	-0.078	(0.094)	-0.008	(0.043)	-0.003	(0.171)	0.291***	(0.112)	0.065	(0.074)
IFDI			0.263*	(0.146)			0.305***	(0.108)			0.653**	(0.319)
Hansen Test												
Chi-Square	34.09		39.03		0.6		1.72		4.66		4.12	
Ar(1)	-2.18**		1.74**		2.51***		2.07**		-2.34**		-1.94**	
Ar(2)	-1.16		1.46		1.11		1.2		0.04		0.12	
Num of Observations	258/34		258/43		162/27		162/27		96/16		96/15	
Instruments	43		51		10		14		17		15	

GMM- Dinamic Panel data- Two Step- Robust standard errors in parentheses 5 (Roodman, 2012)

*** p<0.01, ** p<0.05, * p<0.1

Source: Own elaboration

3.6. DISCUSSIONS OF THE RESULTS

This chapter provides new fresh empirical evidence on the studies of EMNE with an analysis of the national level factors that may contribute to the definition of those required advantages in firms from developing economies. One contribution of this chapter is to show that the EMNE fact seems to respond to the existence of a capability-accumulation process and how this qualifies the drivers of the process. Our findings come to confirm the role of the NSI and its effects on the generation of MNE in home countries, an aspect that would improve our understanding of the dynamics of these companies and permit to extract new policy implications. In addition, new evidence is provided about the inflection point between development and outward FDI according to the IDP theory.

The influence of home country factors in the enhancement of those firms' specific advantages that make possible their rapid internationalization is confirmed here trying to contribute to a deeper understanding of the EMNE phenomenon, as it has been claimed by many scholars. The well-known aspects included among firms' advantages, such as patents, human skills and qualifications or brands, are often relatively scarce in firms from developing countries, and this justifies studying what can be the additional drivers of the national environment for the successful story of emerging multinational firms.

The relative importance of these drivers acting as determinants of outward FDI at national level may differ according to the region under analysis, mostly when developed and developing countries are compared, gaining more relevance in the latter group of economies. An aspect to mention in this direction is the significant contribution of the NSI characteristics to the capability accumulation process that will encourage the generation of firms' advantages that permit the emergence of MNE in developing economies; our findings confirm how institutional quality and absorptive capacities act in favor of OFDI from these countries. Our empirical results are also coincident with the positive role assigned to Inward FDI in the home countries of EMNE and this can be understood as a determinant factor in the generation of advantages. Therefore, our findings support the existence of a positive relationship between inward and outward FDI and the potential effects on learning, although these effects differ depending on the level of country development.

These findings permit the definition of some policy implications related to the innovation and internationalization fields because both of them can be seen as complementary from a policy point of view. The assumption would be that the final end is the capabilities-building process that can be enhanced by the presence of an efficient NSI. The coordination of actions in these two policy fields will allow the absorption of the international knowledge with effects on the process of development. It is important to highlight here that inward FDI is a vehicle of knowledge that may upgrade countries in their development path but outward FDI is also a driver since it may facilitate the acquisition and absorption of knowledge abroad generating positive effects on development. Therefore, aspects such as the generation and improvement of entrepreneurship, scientific and technological capabilities as well as the guarantee of an institutional framework that would promote market relationships become issues that would promote a higher internationalization of firms that would favor the access to external knowledge –by both inward and outward FDI.

In further research we will extend the approach proposed here to other related aspects such as the analysis of bilateral flows, given the fact that one limitation of the paper is the impossibility of knowing about the location of investments. Moreover, we will try to analyze other effects of the HC characteristics by exploring different forms of firm' internationalization, making the distinction between trade and FDI as well as between different FDI modes such as cross-border mergers and acquisitions and FDI-Greenfield.

CHAPTER IV

HOW THE HOME COUNTRY SYSTEM OF INNOVATION AFFECTS THE CHOICE OF FDI MODE OF EMERGING MULTINATIONALS?

A successful man is one who can lay a firm foundation

with the bricks others have thrown at him

(David Brinkley)

4.1. INTRODUCTION

The emergence of MNE from developing countries -that has been named as the emerging multinational enterprises (EMNE) phenomenon in the related literature- occupies a prominent place in the international business agenda (UNCTAD, 2011). This fact is challenging nowadays the pioneer internationalization theories and also the OLI approach built over the combination of ownership, location and internalization advantages to explain the existence of multinational enterprises. One relevant question in the field is then to what extent the traditional premise built over ownership advantages stays still as driving force explaining the firms' internationalization process in the case of those countries outside the world frontier, these generally considered as developing economies, or it is necessary to complement and to combine those advantages within a framework with additional explanations.

Some particular features of EMNE are the speed of the firms' internationalization processes, the type of target countries and the revealed preference for mergers and acquisitions (M&A) as mode of entry (Buckey et al., 2007; Kalotay and Sulstarova, 2010, Ramamurti, 2012; Gammeltoft et al., 2012). Additionally, the relevance gained by the characteristics of the home country (HC) is becoming a key aspect for understanding the succeeding EMNE (Porter, 1990; Cuervo-Cazura and Genc, 2008; Dunning, 2009; Guillén and García-Canal, 2010, Gammeltoft et al., 2010; Kalotay and Sulstarova, 2010; Hennart, 2012; Luo and Wang, 2012; Ramamurti, 2012), and available empirical evidence refers to the weaknesses detected at the home country

level in order to understand the rapid expansion of MNE from some emerging economies such as China, Brazil, or India, among others. In this line of thought, knowledge-seeking can be assumed as one of the main driving forces for firms' foreign expansion, reason why the technological escaping from their HC would be the dominant strategy. In such a case, M&A may be conceived as a more suitable mode for acceding in a more accelerated manner to the knowledge assets of the firms acquired abroad and this makes more likely the substitution of those missing capabilities in their home national system of innovation (HNSI) (Anand & Delios, 2002; Chen and Cuervo-Cazurra, 2012).

In this chapter, we analyze the foreign expansion modes of EMNE adopting an approach based on the peculiarities of the HNSI that allows us to find the differential characteristics between developed and developing countries (Nelson, 1993; Lundvall, 2007; Alvarez & Marín, 2010). Our main contribution is the detection of those aspects in the home national systems of innovation (HNSI) that would explain the choice of foreign expansion modes, differentiating between Greenfield FDI and M&A in both, developed and developing countries. The relevant question is to what extent a more or less advanced HNSI affects the mode of FDI, and the answer to them will allow us to detect whether the exploitation of capabilities or its acquisition abroad is the prevailing strategy of EMNE. Moreover, we also contribute to the literature integrating in our analysis what is the role played by some arguments provided by the investment development path (IDP) framework (Dunning and Narula, 1996; Narula and Dunning, 2010) in the firms' internationalization of countries with dissimilar level of development when different FDI modes are considered –and particularly for M&A.

This contribution takes into account separately Greenfield FDI from cross-border M&A as the two possible modes of EMNE foreign expansion, while the vast majority of the existing evidence regards mainly the former one. On the other hand, it is relatively new to study the firms' internationalization process in developing economies according to the HNSI perspective. On the other hand, it has not yet been deeply analyzed up to our knowledge the effects of the IDP theory on the EMNE internationalization through M&A. Therefore, it can be expected that this could derive into potential new conceptual and empirical developments that would reveal how the HC may affect the preferable FDI mode of EMNE.

The development of our conceptual proposal makes the linkage between the two FDI modes and the HNSI providing an integrative framework according to two main internationalization motives: knowledge-seeking and market-seeking reasons, and

considering also the presence of foreign MNE in the home country. For the empirical test, we analyze the two modes of firms' foreign expansion in both developing and developed economies. The sample integrates data for 77 countries with dissimilar levels of development in the period 1996-2010. As a first step, we build a HNSI composed index resulting from a factorial analysis that takes technological, institutional and human capital as main pillars of the NSI. For the estimation of the model, dynamic panel data techniques are applied and the main sources of statistical information are UNCTAD and the World Bank.

Our findings show that the firms' internationalization releases on the existence of a path dependent process of capabilities accumulation. The factors defined at the home country level affect differently the two FDI modes and there are also differences between developing and developed countries. On the one hand, the M&A choice adopted by MNE in a less advanced HNSI encourage the acquisition of capabilities abroad, and this is led by the prevailing technological escape and learning from abroad arguments associated to predominant EMNE strategies. It is also important to recall the role that foreign MNE may play for knowledge transfer in host location, an aspect that would justify the option of M&A in the case of developing countries. On the other hand, HNSI has a positive effect in developed home economies while the presence of foreign MNE affects negatively, a result that would refer to a more compensated situation between both sources of knowledge -internal and external. Meanwhile, in the case of Greenfield FDI, the effects of both HNSI and the presence of MNE are positive, being consistent with the fact that a more advanced HNSI also enjoys a higher degree of capabilities accumulation in the home country.

The next section of the chapter revises the literature background. The third section contains the conceptual framework and the development of hypothesis. Section fourth shows the empirical analysis and the discussion of results. Finally, section fifth has some conclusions and guidance for policies.

4.2. LITERATURE BACKGROUND

4.2.1. Emerging Multinationals: Home country and learning abroad

A third wave of MNE has emerged since the nineties being the geography of home countries a differential aspect regarding the past. Some developing economies such as China, Brazil or India, among others, have become important actors as home countries of MNE and not only as receptors of FDI as they used to be, an aspect with direct

implications for the international business agenda. The fact is that the EMNE phenomenon has raise new research questions and the development of studies that tries to confirm the validity of the extant theories and the original explanations based on the MNE from developed economies and to compare which arguments hold in the case of developing countries (Cuervo-Cazurra, 2011; Cuervo-Cazurra, 2012;Ramamurti, 2012; Hennart, 2012).

It is generally agreed among scholars that different patterns of MNE emerge when comparing those from developed countries regarding EMNE and the differentiated characteristics of the latter are challenging traditional international business postulates, such as those proposed by the OLI approach (Hymer, 1976; Dunning, 1988), and by the resource-based view (Peronse, 1959). In particular, the specific understanding of ownership advantages, the speed of the internationalization process and the prevalence of M&A are assumed as key differentiated aspect of EMNE, as it is rightly summarized in Ramamurti (2012).

The concept of Ownership Advantages (Oa), largely considered as one of the main engines of the MNE's success abroad becomes more limited when we talk about EMNE. It is plausible to think that MNE from a developing environment normally lack superior assets such as technology or brand proficiency which were recognized since the pioneering contribution of Hymer (1976) and latter integrated in the OLI paradigm (Dunning, 1988) to explain the success of MNE abroad. To solve this dilemma, it is being broadly recognized the existence of a different set of Oa that could justify the existence of MNE in developing economies (Guillén and García-Canal, 2010; Cuervo-Cazurra, 2012, Ramamurti, 2012).

The search of more convincing arguments for the explanation of EMNE phenomenon, has assigned a differential role to the characteristics of the home country (Gammeltoft et al., (2010), Kalotay and Sulstarova, (2010); Cuervo-Cazurra (2012), Ramamurti, (2012), Álvarez and Torrecillas(2012). The idea is that the strength of internationalized firms from a developing home country can be able to transform initial environmental disadvantages into advantages (Guillén and García-Canal, 2010; Cuervo-Cazurra and Genc, 2008) and then, this process allows them to compensate the home weaknesses abroad (Child and Rodrigues, 2005; Guillén and García-Canal, 2010). In this line of though, the specific institutional framework of the home country –sometimes weak or unstable in the case of developing contexts- can confer several political abilities to firms and knowledge for their success in international locations (Cuervo-Cazurra and Genc, 2008). Therefore, less developed institutions may act as a push factor for EMNE,

an aspect that is recognized in the related literature as the *Institutional escape hypothesis*[25] (Witt and Lewin, 2007; Peng et al., 2008; Kalotay and Sustarova, 2010).

Moreover, the existence of *linkage*s between foreign and local firms is also agreed as another important aspect of the home country environment since these can facilitate the transmission of knowledge and capabilities that may encourage the internationalization of firms. For this reason, the presence of foreign MNE can generate positive effects in the domestic firms through the potential generation of positive spillover effects, and these aspects at the end can lever them and enhance their international expansion (Child and Rodrigues, 2005; Mathews, 2006; Luo and Tung, 2007; Narula, 2012; Álvarez and Marin, 2013).

On the other hand, the use of M&A has been the preferred mode of internationalized firms from developing economies (Buckley et al., 2007; Kalotay and Sustarova, 2010; Gammeltoft et al., 2012) and jointly with the speed achieved by the EMNE phenomenon, new challenges also emerge in the context of the incremental internationalization theory (Johnason and Vahlne , 1977). A solid idea that justifies the trend of M&A for EMNE is the *learning abroad* argument defended among others by Mathews (2006) and Luo and Tung (2007) who argued that abilities may be acquired and not exploited abroad according to both the Linkage-Leverage approach and the Springboard Investment perspectives; that is to say, the relevant process is that abilities are *building* instead of *exploiting* abroad (Mathews, 2006; Luo and Tung, 2007 Dunning, 2009; Gammeltoft et al., 2010), challenging thus the traditional argument of national capabilities' accumulation and their exploitation in foreign markets. In addition, we find the more recent development of the *technological escape hypothesis* in which it is argued that EMNE escape from its home innovation system and this comes to explain the acquisition of high-technology firms in more advanced economies (Chen and Cuervo-Cazurra, 2012). This would predict that a weak technological base in the HC will push firms to go abroad for learning using M&A.

In sum, a less advanced environment in the HC may allow firms to develop a new set of advantages (Guillén and García-Canal, 2010; Cuervo-Cazurra and Genc, 2008), related to their abilities to deal with specific institutional context and to those derived from foreign linkages. This new set will constitute a minimum level of Oa that EMNE need to have in order to be successful abroad (Narula, 2012). But when this minimum level of

[25] It is important to mention here that some aspects included in the term "institutions" as can be the governments and the governments' aid have been considered as a facilitator of the EMNE (Child and Rodrigues, 2005; Buckley et al., 2007)

Oa is guaranteed, firms can learn abroad thanks to the predominance of technological escape and learning abroad strategies (Mathews, 2006; Luo and Tung, 2007).

4.2.2. Foreign expansion mode and Home national system of innovation

The huge increase of M&A flows from developed and developing countries justifies the increased interest of economic analysis to study them separately from Greenfield FDI (Bjorvatn, 2004; Raff et al., 2007; Nocke and Yeaple, 2007; Neary, 2009) while traditionally, the two FDI modes were studied jointly under the general umbrella of foreign investments. Some of the main differences between the two forms can be found in the international strategy that guides the foreign expansion. The use of M&A is generally associated to the acquisition of assets and knowledge abroad (Li, 2010; Kedia et al., 2012; Nicholson and Salaber, 2013), while Greenfield FDI is mainly used when firms pursue to exploit their capabilities abroad. Therefore, it is ascertain that the chosen mode of FDI - M&A or Greenfield FDI- will depend on the dominance of knowledge-seeking or market-seeking firms' strategies abroad (Harzing, 2002; Anand and Delios, 2002; Madhok and Keyhani, 2012).

This line of thought can be complemented if the level of development in the home country is taken into account. In general, greenfield FDI and thus the exploitation of capabilities in foreign location is determined by the existence of a set of capabilities previously developed in the home country (Anand and Delios, 2002), while the choice of M&A does not necessarily requires them but it may be the consequence of a lack of firms' capabilities, an aspect more likely in the environment of least developed home economies (Chen and Cuervo-Cazurra, 2012). These reasons justify the general acceptance of role that the characteristics of the home country may play in the explanation of the chosen FDI mode of internationalization by MNE (Buckley et al., 2007; Tolentino, 2010; Kalotay and Sulstarova, 2010; Uddin and Boateng, 2011; Sauvant et al., 2011; Dailami et al. 2012; Stoian; 2012).

Considering the expected influence that the home country may have in the choice of FDI mode (Rossi and Volpin, 2004) and the recent emergence of MNE from developing countries (the EMNE phenomenon), it is possible to study the effects of the home country following the National System of Innovation (NSI) approach. Meantime, this can be easily associated with the IDP postulates considering the relevance of the institutional and idiosyncratic aspects, as it has been recently applied for Eastern European countries in Stoian (2012).

The NSI approach is suitable for the analysis of the relationship between the economic, technological and institutional environment of the home country and the mode of firms' foreign expansion. In particular, adopting the notion of the NSI as the set of political, social, economic and cultural factors that allows the development of a country, region or sector through knowledge, aspects such as the institutions and the technological factors are some crucial aspects in the explanation of MNE (Nelson, 1993, Carlsson, 2006; Lundvall, 2007; Narula and Dunning, 2010). Elements defining the national system of innovation such as learning capacities, absorptive capabilities and the institutional framework may become determinant of the strengths and weaknesses of countries and to understand the different possibilities for the expansion of MNE abroad. This idea is not absolutely new in the literature since the role of the home NSI as the engine of firms' foreign expansion was early recognized (i.e. in Patel and Pavit, 1991) being the main argument built over the possibilities of some home economies where global technological advantages are created and how this aspect of more advanced HNSI lead the exploitation of those capabilities abroad. Meanwhile, some recent relevant contributions have argued that less developed economies will encourage the internationalization of firms through M&A in order to acquire knowledge and compensate the weaknesses detected at the home NSI (Chen and Cuervo-Cazurra, 2012).

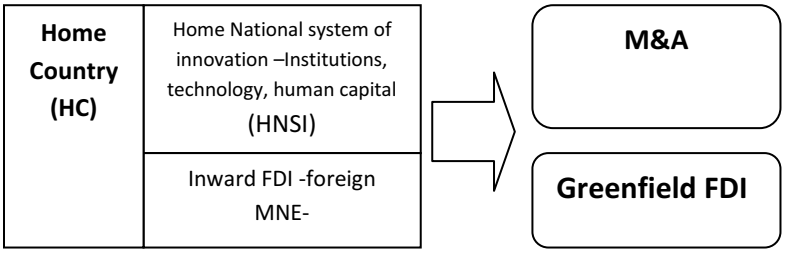
On the other hand, the IDP theory connects Inward FDI, the countries' level of development and the effect on outward FDI, being the presence of MNE considered as an important innovation driver and one source of knowledge in those less developed foreign location (Narula and Dunning, 2010; Cantwell and Santangelo, 2006). In this sense, the presence of foreign MNE may favor the process of capabilities accumulation because the potential transfer of capabilities and knowledge between foreign and local firms, and the generation of spillover effects are more likely in presence of domestic absorptive capacities, being possible that these effects may encourage the development of countries as well as the flows of outward foreign direct investment (OFDI). The theoretical prediction is the existence of different stages according to the level of IFDI, the countries' level of development and the emission of OFDI (Narula, 1996; Narula and Dunning, 2010). Accordingly, developing economies such as China Brazil or India would have higher level of IFDI and lower level of OFDI, being theoretically around stage 2; however, the huge increase of OFDI from these economies and the preferable use of M&A raises new research questions that would complement the validity of the IDP postulates by including these facts.

4.3. CONCEPTUAL PROPOSAL AND HYPOTHESIS DEVELOPMENT

The proposal of this chapter is built over the idea that some specific elements found at the level of home countries contribute to explain the mode of FDI chosen by internationalized firms. Particularly, we use the NSI approach to develop our working hypothesis and in such a framework the arguments of the IDP are also being included. In terms of our contribution, we will show that a more or less advanced HNSI may affect the choice of FDI mode along the main MNE' motivation and how this relationship may differ between developed and developing economies.

Two main elements of the HC can be found in Figure 4.1. On the one hand, the HNSI is defined according to the institutional, technological and human pillars. On the other, the external influence of foreign MNE through the capabilities transfer in the HC. These two aspects may contribute to enhance firms' internationalization but the effects may differ according to the different FDI modes. Considering here the two most important modes, Greenfield FDI and M&A, it is plausible to assume that each of them is more intensely connected with some motives[26]; in particular, the use of M&A is usually more associated to knowledge-seeking (Li, 2010; Kedia et al., 2012; Nicholson and Salaber, 2013) than others because this allows firms the acquisition of assets abroad in a faster manner. Meanwhile, the choice of Greenfield FDI can be easily justified –although not only- by market-seeking reasons (Anand and Delios, 2002; Álvarez and Marín, 2010).

Figure 4.1 Linkage between the Home Country and MNE choice of FDI mode



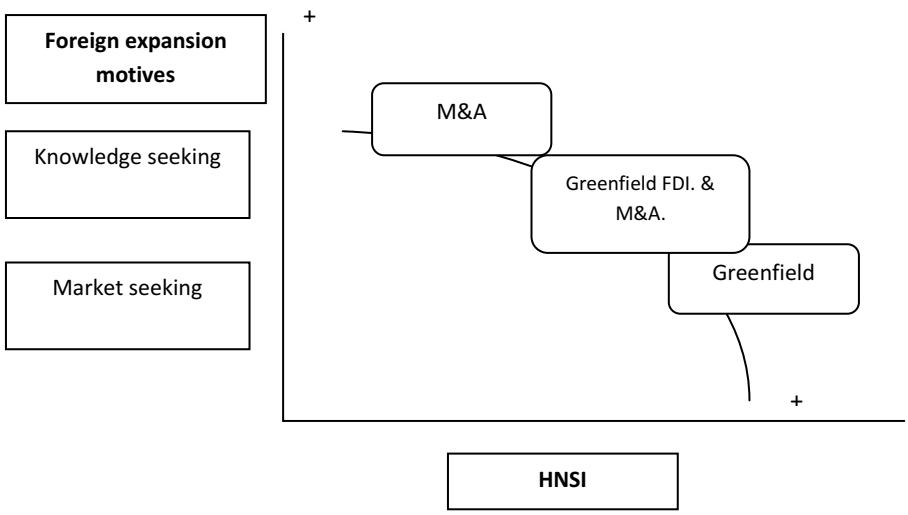
Source: Own elaboration

The NSI is a suitable framework for the qualification of those aspects that at the home country level may affect the internationalization process through FDI. In a very single way, figure 4.2 shows the theoretical relationship between the level of advance of the

[26] We are considering only market seeking and knowledge seeking motives. Other motives such as asset seeking or efficiency seeking motives are not incorporated in this analysis.

HNSI and the possible FDI motives, each of them qualified by the predominant internationalization motivation of MNE. We can assume that those firms from more advanced HNSI are able to choose indifferently between the two considered FDI modes. However, in the case of firms from countries where the NSI is less advanced, knowledge-seeking may be the dominant motive for OFDI and this would justify choosing M&A. Therefore, it is plausible to think that the choice of firms in *an advanced HNSI* would be either Greenfield FDI or M&A given the fact that in these economies the process of technological accumulation facilitates them to develop the necessary ownership advantages to succeed abroad. Thus, whether some countries have accumulated the advantages justifying the internationalization process via the two modes (Hymer, 1976; Dunning, 1988), it is more likely that the choice between Greenfield FDI and M&A will depend on the final motives that firms pursuit. However, in a *less advanced HNSI,* M&A can be seen as the mode that minimizes the time for acceding to knowledge, assets and capabilities abroad. This would be related to the learning abroad argument and the technological escape hypothesis because it would work as compensation of the potential weaknesses of the home country (Mathews, 2006; Luo and Tung, 2007; Chen and Cuervo-Cazurra, 2012; Witt and Lewin ,2007; Chen and Cuervo-Cazurra, 2012). Nonetheless, it is important to emphasize that although M&A can be justified by the predominant motive of acquiring new knowledge abroad, a minimum level of capabilities and advantages in the home country is needed to guarantee a successful internationalization via FDI (Narula, 2012).

Figure 4.2 Linkage between Foreign expansion modes and HNSI



Source: Own elaboration

This relationship allows us to develop our working hypothesis as it follows: The elements of the HNSI may affect the choice of FDI in the firms' internationalization process and this depends on the countries level of development (H1). Accordingly, this relationship can go in the following two directions: There is a negative relationship between the advance of the HNSI and the choice of M&A mode (H1a). The reasoning is built over the idea that a less advanced HNSI can motivate firms to go abroad because technological and institutional escape. On the contrary, when there has been a good level of capabilities accumulation in home countries and a more advanced HNSI exists, firms enjoy the necessary ownership advantages to go abroad and then the relationship between the advance level of HNSI and the choice of Greenfield FDI would be positive (H1b).

Considering the potential effects that external factors have in HNSI such as those generated by the presence of foreign MNE, the linkage between IFDI, the country's development and the level of OFDI can be analyzed along different stages of the IDP theory (Dunning and Narula; 1998). In general terms, developing economies are situated around the stage 2 where IFDI is higher than OFDI. Recent empirical facts have lead new arguments challenging the validity of this proposal given the high volume of outward investments from developing economies when those countries have not yet accumulated the sufficient capabilities that would justify their intense firms' internationalization process (Buckley et al., 2007; Gammeltoft et al., 2012). This will be the case of India where IFDI and OFDI has increased more or less simultaneously (Sauvant et al., 2010). Moreover, aspects such as the institutional elements and the preference for M&A must also be included (Luo and Tung, 2007; Gammeltoft et al., 2010; Kalotay and Sulstarova, 2010; Stoian, 2012). Generally speaking, a positive relationship between IFDI and OFDI can be expected (Montobbio and Rampa, 2005; Stoian, 2012, Luo and Wang, 2012); although, our research proposition is that this effect will depend on the FDI mode chosen by internationalized firms, an aspect that has received still scarce attention in the literature until now.

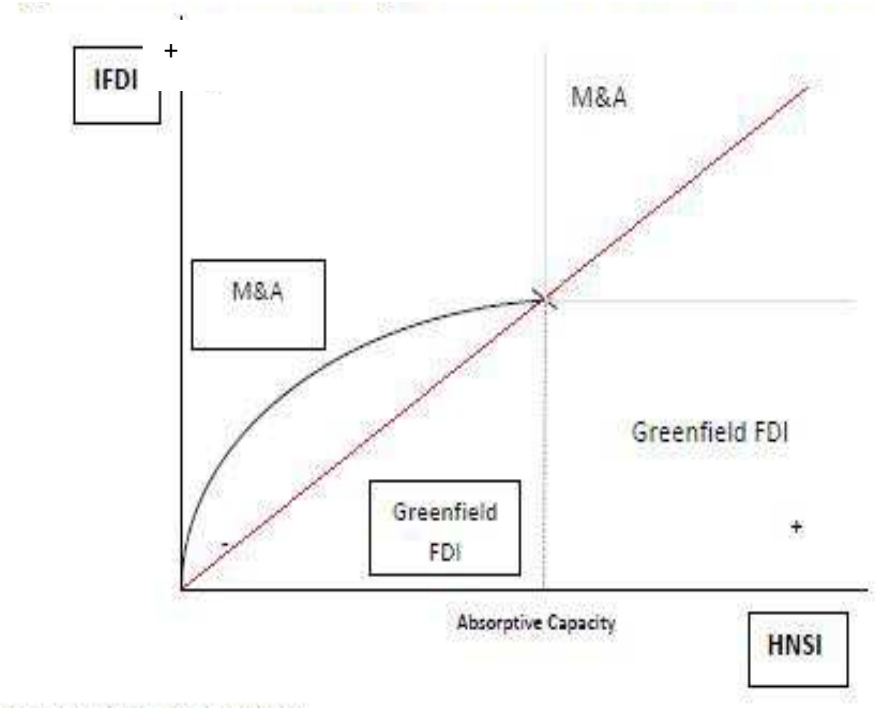
Therefore, our second working hypothesis is that the presence of foreign MNE will affect the internationalization of firms through FDI (H2), and it is developed following the next arguments: For understanding the potential relationship between IFDI, developing economies and M&A' preference, it is plausible to assume that firms from developing economies go abroad in most of the cases for acquiring those capabilities that are not available at the home country (Mathews, 2006). As already affirmed in previous sections of this chapter, a less advanced HNSI may push firms'

internationalization as a way to compensate home weaknesses and additionally, the effects of IFDI or the presence of foreign MNE has not been so positive to compensate them. The fact is that in some developing economies with a high level of IFDI and where the likelihood of capabilities transfer is higher than others, this is dependent upon the level of national absorptive capacities (Criscuolo and Narula, 2008); therefore, the external linkages provided by IFDI may also work as pushing force for domestic firms to use M&A as a faster way to acquire new knowledge assets abroad and to increase home absorptive capacities. This invites to propose that the absence of a direct relationship between the effect of IFDI, development and the choice of M&A by internationalized firms can be compensated by considering the speed of the internationalization process in developing countries, and a positive and direct effect of IFDI and M&A can be expected (H2a).

In more advanced HNSI, such as those of more developed economies, a net effect of inward and outward FDI flows that is consistent with the IDP theory is expected and therefore, it is more likely that the effect of IFDI would favor the transfer of capabilities in the HNSI. This would imply that as far as the advance level of the HNSI increases, the likelihood of M&A would decrease. Accordingly, it is possible to detect a threshold inflection point determined by absorptive capacities in which M&A motivated by IFDI may become neutral because the level of available knowledge in more advanced HNSI will not justify the learning abroad motivation (H2b). A graphical version of this proposal that connects IFDI, the advance level of HNSI and the chosen foreign expansion mode (M&A and Greenfield FDI) can be found in Figure 4.3. According to that figure, as the level of HNSI increases the use of M&A shows diminishing returns. However, at any level of advance of the HNSI the use of M&A or Greenfield FDI could be used equally. It is showed by the red line (45 degrees red line).

On the other hand, as far as IFDI can play a special role in the transmission of capabilities although it depends on the advance level of the HNSI, market seeking motives and the exploitation of home capabilities abroad would adopt the dominant effect in the case of Greenfield FDI. Accordingly, the third hypothesis is that a positive relationship between IFDI and Greenfield mode of expansion can be expected (H3). This is in line with the usual theoretical prediction and no differences would exist between developed and developing economies.

Figure 4.3 FDI choice according to the advance level of HNSI and IFDI



Source: Own elaboration

The consideration of some additional characteristics of the home country in the explanation of this issue would provide more robustness to the analysis in the following two directions: On the one hand, the economic –market- dynamism of the home country may encourage the attractiveness for external markets and, on the other, the level of factor costs may enhance the internationalization due to efficiency-seeking motives. These two elements that have been largely considered in most traditional theories of internationalization are included through the following two proxies: The growth of home country GDP for the first and the level of Wages for the second. As theoretically predicted, it is plausible to think that there exists a positive relationship between GDP growth and the two FDI modes while it would be negative with wages level (Kalotay and Sulstarova; 2010; Dailami et al., 2012; Markusen, 2004). Table 4.1 shows the set of hypothesis and the expected signs for the estimated coefficients in the empirical model, these differentiated for each FDI mode of internationalization.

Table 4.1: Hypothesis and expected signs

Hypothesis Scope	Expected Signs			
	M&A		Greenfield FDI	
	Developing	Developed	Developing	Developed
H1a), H1b):				
HNSI	-	+	+	+
H2a), H2b) H3: IDP	+	-	+	+
Market Dinamism	+	+	+	+
Labour Costs	(n.s.)	-	(n.s.)	-

(n.s.) not significant

Source: Own Elaboration

4.4. THE EMPIRICAL ANALYSIS

The objective of this empirical analysis is to test what are the elements that defined at the level of the home national systems of innovation can influence the choice of FDI modes by internationalized firms, exploring whether differences exist between developed and developing economies. In particular, we analyze the effects that the characteristics of HNSI has on the two main FDI modes -Greenfield FDI and M&A-, supporting the empirical test on the learning abroad argument based on the technological and institutional escape hypothesis found in previous contributions of scholars about the emerging MNE phenomena. The sample comprises 77 countries including 40 developed economies and 37 developing ones, all of them classified according to the income level criteria (GDP per capita) used by the World Bank. The selection of countries has been conditioned by the availability of data for the time period analyzed -1996 to 2010- and the list of countries included on the Top 50 non-financial and Top Financial TNCs elaborated by the UNCTAD (the list of countries can

be found in Appendix D, Table D1). This period coincides with the emergence of new multinationals from developing countries in a more globalized economy and also with the increase of M&A as a preferred mode for foreign expansion in these economies.

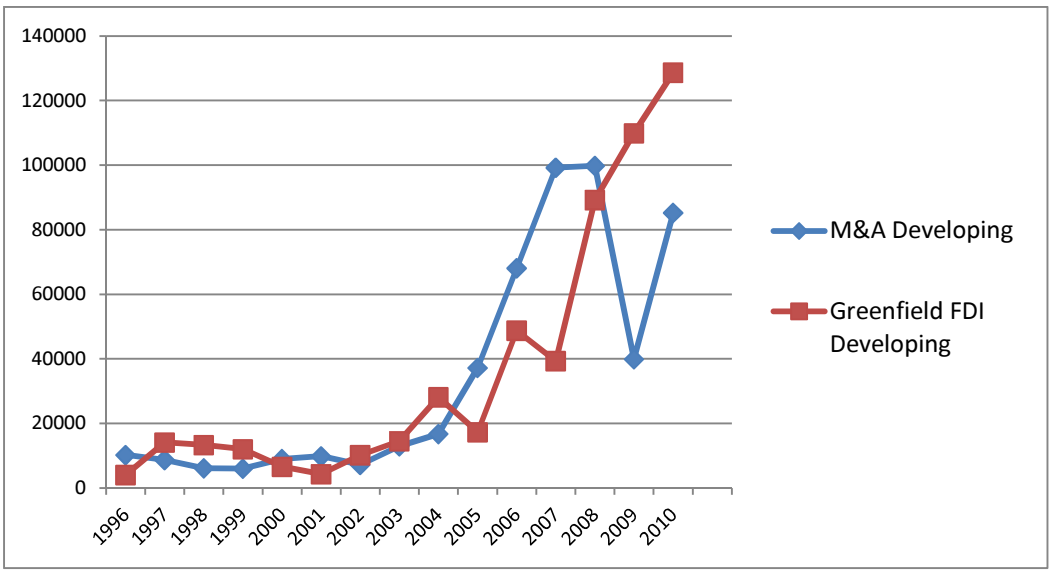
4.3.1. Data description

The description of the main variables introduced in our analysis is firstly done for those variables related to firms' internationalization through the different FDI modes and also for the set of variables related to those technological and institutional aspects that would characterize the national system of innovation of the home country or HNSI.

Graph 4.1 and Graph 4.2 show the evolution of M&A and Greenfield FDI flows in developed and developing countries respectively, in the period 1996-2010. It can be noted that in developing economies, M&A and Greenfield FDI[27] have followed an increase in the last decade, M&A playing a crucial role as a mode of foreign expansion in these economies. In fact, the use of M&A is higher than the use of Greenfield FDI in the period 2004-2008. Regarding the developed world, M&A and Greenfield FDI have increased constantly in the period analyzed although in this sample of countries the flows (Greenfield FDI and M&A) show more disturbances. In this set of countries, the level of Greenfield FDI is higher that the level of M&A, with the exception of year 2000 when M&A are higher than Greenfield FDI. Some basic descriptive statistics for the variables used in the analysis for the two set of developed and developing countries allow us to observe similarities and differences between them too -in Table 4.2.

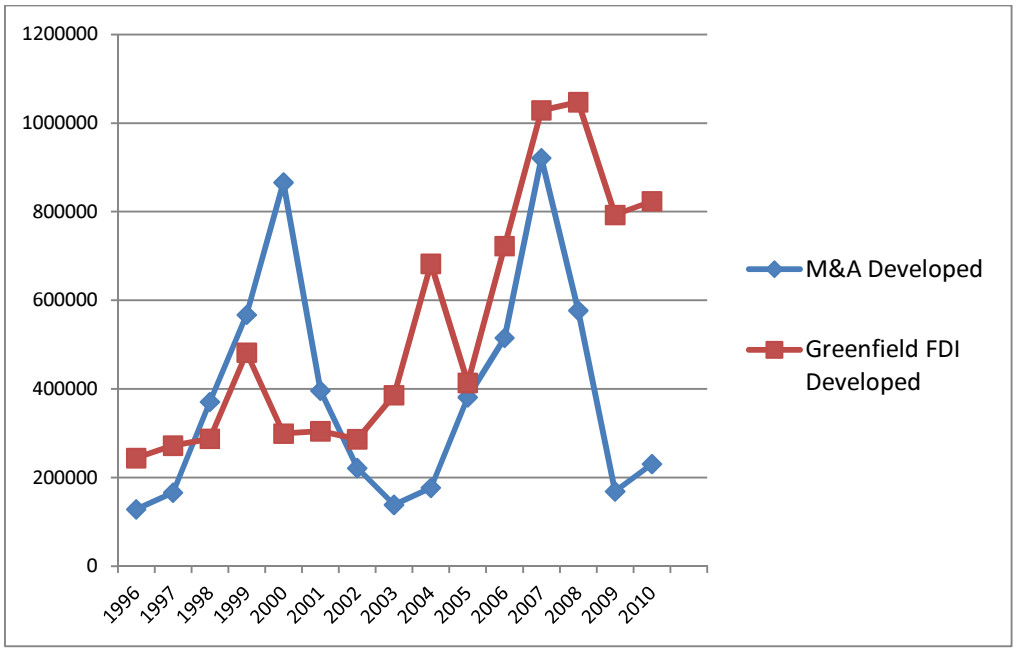
[27] Greenfield FDI is calculated as the difference between OFDI flows and M&A flows.

Graph 4.1 Cross-border M&A and Greenfield FDI in developing countries. 1996-2010.(Mill.US$)[28]



Source: Author's elaboration from UNCTAD database

Graph 4.2 Cross-border M&A and Greenfield FDI in developed countries. 1996-2010.(Mill.US$)



Source: Author's elaboration from UNCTAD database

[28] Graph D1 in the Appendix shows M&A in developing countries differenciating between Upper and Lower level of development according to the world bank clasification.

Table 4.2 Descriptive Statistics: Average for the period 1996-2010

	Developed Countries		**Developing Countries**	
	Mean	Std. Dev	Mean	Std. Dev
Outward FDI flows (%GDP)	4.51	4.5054	0.8842	2.903
M&A flows (%GDP)	0.3214	0.3214	0.2343	0.9805
Inward FDI Stocks (%GDP)	51.0474	61.4666	29.7991	22.2350
Institutions	3.6482	0.5484	2.3449	0.5426
R&D (% GDP)	1.6148	1.0369	0.5023	0.3167
Education (%, School enrolment in secondary)	104.0467	14.1868	78.6476	17.1172
Patent application (%Pop)	2.939e-4	5.336e-4	2.57e-4	3.88e-4
Scientific and technical journal articles (%Pop)	4.899e-4	3.156e-4	3.53e-4	3.45e-4
Wages (millions US$, PPP constant 2000)	6.33e+11	2.96e+12	1.81e+12	7.21e+12
ΔGDP	3.0889	3.6101	4.0734	4.5631

Source: Own elaboration

Our choice has been to include the following set of indicators that work as proxies for the HNSI: Patents, Scientific Journals, Education, Institutions and R&D Expenditures. The descriptive of them reveal lower values in average for the group of developing countries than for the developed ones, coming to indicate that a priory developed countries would enjoy a more advanced HNSI than developing countries. In order to build a classification of HNSI according to their advancement level, we have performed a Factor Analysis[29] using these indicators of the systems of innovation and this will allow us to differentiate between *advanced* and *less advanced* HNSI.

This technique is appropriated as results of the systematic approach of the NSI framework and the existence of correlation between the variables that may define a system. The factorial analysis reduces the set of existing variables to a set of non-observable hypothetical or theoretical variables, called factors, which summarize most of the information contained in the original set of variables. The uses of these factors

[29] Already existing composed indicators such as the Knowledge Economy index (World Bank) or the Global Competitiveness Index (World Economic Forum) are not valid to be used in this analysis given the restrictions of the time period and the lack of data for developing countries.

in the regression also allow us a more robust and solid interpretation of the results of the level of advance of the system of innovation. The strength of this technique is that the use of factors avoids a discriminatory selection of different proxies of the system that has been mostly done in studies about innovation system[30]. From the factor analysis, one factor has been obtained and this reflects both the *innovative capacity* measured by innovative Inputs (the proxy is R&D expenditure), scientific and technological output (patents), and the *absorptive capacities* measured by human capital (Education) and institutions (Castellacci and Natera, 2012) of the HNSI. The strength of this factor is that it better reflects the characteristics of the system than each of the individual variables could do. We applied a rotation technique that makes it possible to obtain more interpretable factors. Specifically, we have carried out a Varimax-type rotation, since the factorial pattern obtained by this procedure tends to be more robust than the one obtained from alternative methods while this option assures a maximum orthogonality between factors.

The validation or quality of the factor analysis is not only based on the statistical tests but also in the inherent logic of the factors obtained. The communalities of the variables (correlation of each variable with regard to the set of others making up this factor) are relatively high; in particular, KMO (Kaiser-Meyer-Olkin) test, which consider the correlation and the partial correlations between the variables is 0.72. This means that the factor analysis is adequate in our set of variables, an aspect that guarantees the reliability of the findings and also indicates the high degree of preservation of their variance. Bartlett test is significant (0.000) as expected and the communalities of the variables (variance of each variable explained by the factors) is almost higher than 0.6, with the exception of the variable of patent which is 0.229; that is, the factor keeps the majority of information contained in the original variables. The second important criterion to judge the outcome of the factor analysis is that the extracted factors are consistent and interpretable in accordance with the theoretical or conceptual framework of our study. In other words, a factor analysis is useful if the results can be interpreted correctly from a theoretical point of view. In our case, the model with 1 factor is supported by the fact that they result from an objective processing (the main components analysis). In addition, the model itself is easily interpretable (since the variables are not saturated in more than one factor), the factor obtained match the

[30] There are some exceptions such as Buesa et al (2010): As it has been argued by Buesa et al., (2010) the use of the factorial analysis demonstrates that an innovation system is built over multiple and interrelated factors that affect the innovation of a country. Therefore, the use of individual variables such as patent or R&D expenditure has some weaknesses for the measure of the global concept of innovation

theoretical postulates, and it is extremely robust, maintaining a high percentage of the original variance; in particular, the factor that we have named the HNSI Index is extremely robust and it retains almost the 60% of the original variance of the variables. In Table 4.3 the factor matrix is presented[31].

Table 4.3. Matrix of Factors

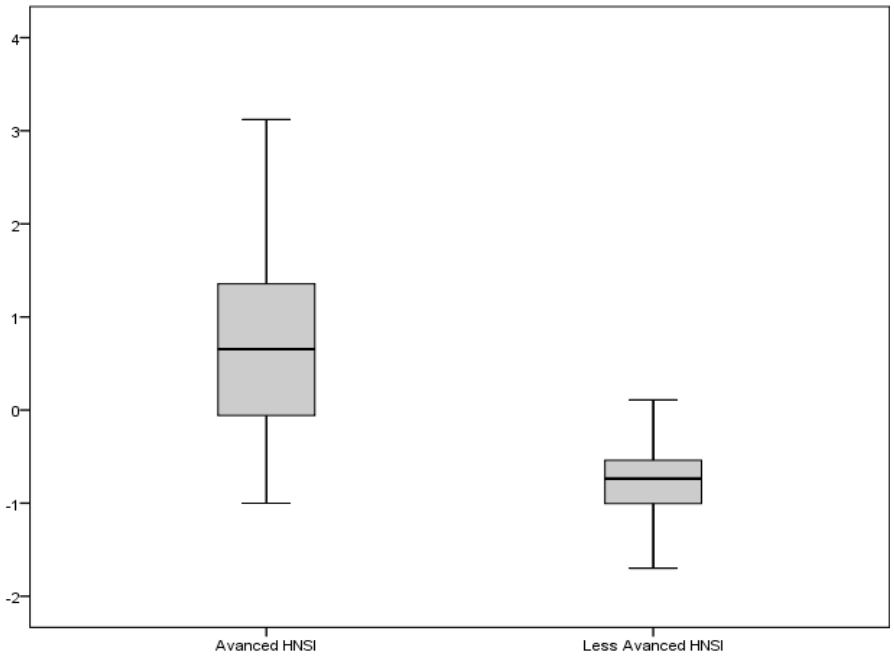
Variables	HNSI(Factor1)
R&D	0.807
Patent	0.479
Scientific and Journals Articles	0.907
Education	0.748
Institution	0.832

Source: Own elaboration

Graph 4.3 shows how the HNSI composed index derived from the previous factor analysis takes higher values in average for the sample of developed countries than for developing ones. This would indicate that developed economies enjoy a more advanced HNSI while a less advanced HNSI predominates in developing countries. The descriptive statistics also reveals that the presence of MNE (inward FDI) serving as a driver of innovation is higher in developed than in developing ones (Table 4.2). Finally, for the indicators included as control variables -GDP growth and wages level- traditionally considered in the internationalization studies, the former is greater in the group of developing countries while there are significant differences on the average values of wages between the two groups of countries, being higher the value of this variable for the group of developed countries as it was expected.

[31] Matrix of rotated factors is not able to calculate given that the outcome is only one factor.

Graph 4.3 HNSI in developed and developing economies



Source: Author's elaboration from World Bank database based on the Factor analysis

4.3.2. The econometric model and main findings

Making use of econometrics, we analyze here the relevance of the HNSI in the FDI modes choice of internationalized firms and the objective is also to contrast whether differences exist between developed and developing countries; in particular, we test the effects of the HNSI (advanced or less advanced HNSI) in firms' internationalization through Greenfield FDI or M&A. Therefore, the dependent variable of the model is the FDI mode; that is to say in the first model is Greenfield FDI, proxy by OFDI flows as a percentage of GDP and in the second estimation, it is M&A, proxy by cross-border M&A outflows as a percentage of GDP. The independent variables will be the HNSI composed index, the presence of foreign MNE proxy by IFDI and those control variables previously described. In its general form, the empirical model adopts the following equation:

$$FDI\ Mode_{it}=\beta_0 + FDI\ Mode_{it-1} + \beta_1\ HNSI_{it} + \beta_2\ IFDI_{it} + V_{it} + \eta_{si} + \upsilon_{dt} + \varepsilon_{it}$$

Where $FDI\ Mode_{it}$ is Greenfield FDI or M&A in each specific case; $FDI\ Mode_{it-1}$ shows the lagged dependent variable which would avoid the potential endogeneity problem of these models; $HNSI_{it}$ represents the value of the index obtained in the factor analysis; IFDI shows the presence of MNE in the home country; V_{it} collects the control

variables used in the analysis and η_{si}, υ_{dt}, ε_{it} are the specificities of the technique used, which represent individuals and time effects, and the random error term. Estimations have been done according to the following sequence: First, the dependent variable is regressed against the HNSI index; secondly, the dependent variable against the HNSI index and IFDI; and finally, the whole equation including the control variables too. This allows us to test the potential different effects of the independent variables on the dependent variable as well to perform some robustness test of the analysis.

The HNSI factor is composed by some basic elements of the NSI describing the innovative and the absorptive capacities of the home country. The value of this index or factor also determine whether it is an advanced or less advanced HNSI or, in other words, the likelihood of the lack or presence of firms' capabilities in its home country, which we expect will play an important role in the choice of the foreign expansion mode. Therefore, this factor collects some technological indicators of the *technological pillar* of the system, such as patents per capita, scientific and journal articles per capita and the expenditure in R&D (as a percentage of GDP) as well as the *institutional*[32] and the *human capital* pillars, proxy by the quality of the institutions and the education level. In addition, the presence of MNE is captured by the proxy of Inward FDI stock that tries to reflect the potential for capabilities transfer between foreign and domestic firms in the home country, an aspect that may also encourage OFDI. Finally, GDP growth and Wages capture the determinant factors that have explained the emergence of MNE in more traditional economic explanations (Markusen, 2004). Table D2 in the Appendix D shows the detailed description of the variables included in the analysis[33].

We use Dynamic panel data procedure, given the inherent endogeneity of the model; in other words, the path dependent trajectory or cumulative process that characterized the HNSI (Dosi, 1988; Castellacci, 2008). This method has two key advantages in order to solve our research question; firstly, effects over time are included in the model, and secondly, this methodology allows us to consider the individual effects (in this case country effects) in a dynamic perspective. The generalized method of moment (GMM) uses the first difference transformation dealing with the endogeneity of the model by the consideration of all the available lags as instruments and avoiding the individual effects (Arellano and Bond, 1991; Arellano

[32] Institution Index is composed by the average of a set of indicators: voice of accountability, political stability, government effectiveness, regulatory quality, role of law and corruption (Kaufman, 2003).

[33] All the variables, with the obvious exception of the HNSI factor that is composed by the variance of the original variables, have been transformed in natural logarithms for their inclusion in the estimations.

and Bover, 1995; Roodman 2006, Roodman; 2009). Panel data estimations results are collected in table 4.4. Correlation matrix for the variables used in the model can be found in table D3 in the Appendix D.

The results from panel data estimations (Table 4.4) confirm the relationship between the characteristics of the HC and the FDI mode of internationalized firms, and it is especially clear when both the characteristics of the HNSI and the presence of foreign MNE are jointly considered, revealing differences between developed and developing countries. The cumulative experience in internationalization is a common aspect of the two FDI modes -Greenfield and M&A-. This is reflected by the significant coefficient of the lagged variable $Y_{(t-1)}$ that would denote how past internationalization activities of Greenfield or M&A encourage firms' internationalization in the current time to choose the same FDI mode.

The estimation of M&A in the case of developing countries shows a negative relationship between the HNSI and this FDI mode (Table 4.4-Column 1, 2, 3-); this result manifests that firms go abroad in order to compensate the weaknesses of the HNSI, an aspect supporting the validity of both technological and institutional escape hypothesis and the learning abroad argument. Moreover, the presence of MNE affects positively the internationalization through M&A (Table 4.4-Column 2, 3-), revealing the potential external influence received by the HC, the role of capabilities' transfer for nourishing firms' advantages and justifying the use of this mode as a form of learning. These results allow us to confirm H1a and H2a for the sample of developing countries. On the other hand, the coefficients of control variables that serve as robustness test of the whole model (Table 4.4-Column 3-) confirm that the GDP growth is significant, denoting that the market dynamism and the development path of the home country is positively associated with an increase of M&A and the level of wages is also relevant in the explanation.

In the sample of developed countries, there is a positive relationship between the HNSI level of advance and the choice of M&A mode (Table 4.4-Column 4, 5-). This is coincident with the expectation due to the fact that a high level of advance achieved by the HNSI does not oblige to go abroad to compensate weaknesses of the home country, as it is predicted for emerging MNE, but it comes to confirm that a firm from a more advanced HNSI may choose indistinctly among FDI modes, knowledge-seeking becoming just one among other motives. On the other hand, the sign of IFDI is negative (Table 4.4-Column 5-), supporting the idea that in an advanced HNSI, the potential effect of capabilities transfer from foreign MNE diminishes in a more

advanced system where these firms are likely more embedded. Moreover, the increase of IFDI in one unit will avoid the necessity of going abroad using M&A. Therefore, H1a and H2b are confirmed for the sample of developed countries. Finally the control variable GDP growth is positive and significant and Wages has not effect in this estimation.

Regarding Greenfield FDI, HNSI affects positively the use of this mode of internationalization for the sample of developing countries (Table 4.4 -Columns 7, 8, 9). This finding confirms the argument of capabilities accumulation in the home country and therefore, the relevance of its exploitation abroad argued by traditional internationalization postulates. Moreover, the presence of MNE affects the internationalization through this mode of FDI (Table 4.4-Columns 8, 9). This implies that H1b and H3 are confirmed for the sample of developing countries. Meanwhile, the control variable GDP growth and Wages affects positively Greenfield FDI in this sample (Table 4.4-Column9).

This last finding for developing countries is also confirmed for the sample of developed countries, an aspect that allows us to affirm that Greenfield FDI is more neutral to the level of countries development. Therefore, H3 is also confirmed for the sample of developed countries. In this case, the control variable GDP growth affects positively to this mode of internationalization (Table 4.4-Column 10, 11, 12-).

These results confirm satisfactorily our working hypothesis. As it was expected, the characteristics of the HNSI affect the chosen FDI mode and the effects are different for the sample of developed and developing countries. The confirmation of the relationship between the characteristics of the HNSI and the internationalization through M&A is one of the main findings to be underlined. The result of this analysis provides support to the strength of the learning abroad argument and the potential compensation abroad of the weaknesses at the home country in terms of the scientific and technological capabilities and also the institutional framework, all these elements integrating the HNSI. In addition, our findings also contribute to explain that the effects of IFDI describe a differentiated trajectory for developing and developed economies when FDI modes are taken explicitly into account, an aspect that has not yet been deeply analyzed for the particular case of M&A inside the IDP approach.

The findings of our empirical analysis allow us to get some conclusions about the influence of the HC and particularly of the HNSI level of advance in the explanation of firms' internationalization between developed and developing economies, a pattern

that is clearer if the presence of foreign MNE is of concern. This contributes to build a better understanding of the use of M&A as a preferred FDI mode by EMNE, being plausible to affirm that the elements of a less advanced HNSI can be compensated by inward FDI.

Table 4.4 Panel Data Estimation Results

	M&A						Greenfield FDI					
	Developing			Developed			Developing			Developed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
L.Y(-1)	0.567***	0.744***	0.612***	0.416***	0.543***	0.312*	0.186**	0.215***	0.222***	0.421***	0.284**	0.426***
	(0.141)	(0.115)	(0.197)	(0.095)	(0.107)	(0.179)	(0.094)	(0.080)	(0.077)	(0.158)	(0.135)	(0.154)
HNSI	-1.208*	-1.245**	-2.771*	0.584**	0.608**	0.489	1.630**	0.592**	0.474*	0.548**	0.789**	0.309**
	(0.716)	(0.619)	(1.558)	(0.272)	(0.278)	(0.723)	(0.676)	(0.267)	(0.255)	(0.253)	(0.342)	(0.135)
IFDI		0.860**	1.917*		-0.355*	-0.028		0.687**	0.759**		0.504***	0.262
		(0.358)	(1.163)		(0.219)	(0.379)		(0.277)	(0.306)		(0.175)	(0.168)
ΔGDP			1.877**			2.613***			0.904***			0.885*
			(0.782)			(0.681)			(0.348)			(0.455)
W			0.978**			-0.040			0.161***			-0.040
						(0.241)			(0.046)			(0.116
Cons	-2.052**	-4.165***	-39.285***	-1.994***	-0.368	-8.765	0.190	-2.521**	-9.775***	0.046	-1.768**	-2.324
	(0.812)	(1.488)	(14.241)	(0.378)	(1.008)	-6.036	(0.469)	(1.042)	(1.781)	(0.221)	(0.759)	(3.238)
Hansen(prob> chi^2)	0.447	0.48	0.469	0.31	0.900	0.189	0.217	0.586	0.231	0.521	0.37	0.844
Ar(1)	-2.95**	-2.55**	-2.00**	-2.96***	-2.97***	-2.50**	-2.41**	-2-18**	-1.85*	-1.97**	-1.78**	-1.66**
Ar(2)	-1.11	-1.16	-0.76	1.73	1.76	1.66	0.94	0.75	-0.85	-0.49	-0.54	0.492
Observations	186	185	124	374	371	318	390	390	256	480	480	425
Intruments	5	25	19	29	55	27	6	29	7	30	39	49

GMM estimation two-step. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, *p<0.1 (Roodman, 2012)

Source: Own elaboration

4.3.3. Discussion of the results

The process of business internationalization is intimately related to the original environment where firms come from and, for this reason, it is plausible to think that the characteristics of the home country may become a determinant factor to explain the firm individual choice of FDI mode. The rapid increase of MNE from emerging economies has encouraged the interest of exploring the potential contribution of national factors in the generation of advantages at the firm level, given the fact that firms in developing contexts often lack the traditional ownership advantages. Considering that the more dynamic FDI mode in the last decades has been M&A in both developed and developing countries, knowledge-seeking has adopted a preferential place among the motives that would justify this choice.

The combination of these issues allows us to present an integrative framework in which the firms' internationalization mode can be explained by the level of advance achieved by the HNSI and the presence of MNE. The contribution from our empirical analysis comes to confirm that a less advanced HNSI encourage the use of M&A in order to compensate weaknesses of the HNSI. Meanwhile, the presence of foreign MNE affects directly the preference for this mode but in the case of developing economies it should be noted that these external influences not necessarily compensate the lack of firms' capabilities to be successful abroad. The reason is the lack of absorptive capacities that can be at least partially gained through the acquisition of knowledge abroad via M&A. However, for the case of developed economies there is a positive relationship between the HNSI level of advance and the use of M&A while the presence of foreign MNE exerts a negative effect in this FDI mode; these last findings add some new evidences to the IDP theory in relation to the use of M&A that have not been provided previously. On the other hand, the advance level of the HNSI and the presence of MNE are positively associated to Greenfield FDI in both developed and developing countries, a result that reveals the importance of the capabilities accumulation process that this mode of FDI requires.

One potential implication for managers is that in the case of firms coming from an advanced HNSI the choice between Greenfield FDI and M&A is more clearly linked to the final motive that firms pursue in the internationalization process -market-seeking or knowledge-seeking- given that the HNSI provides the necessary knowledge basis that justify the choice. However, when firms come from a less advanced HNSI (this defined by both the science and technology base and the institutional framework) the

use of M&A may compensate the weaknesses in the home country and for the external acquisition of knowledge the linkages with foreign MNE may play a special role that justifies their success abroad.

This article provides some fresh empirical evidence about the firms' internationalization process considering the specific characteristics of the HNSI and its effects in the chosen mode of foreign expansion. Moreover, this contributes to the literature of EMNE and especially to the explanation of the intense use of M&A as an escape strategy from the home country. Furthermore, differences found between developed and developing countries reinforce previous arguments in the literature of EMNE. Finally, the IDP theory is complemented by the consideration of the NSI and the differentiation between Greenfield FDI and M&A.

As a limitation of this study, we are not able to precisely measure knowledge-seeking or market-seeking motives that justify the chosen FDI mode at the firm level. This limitation constrained the test at the firm level and the implication of the analysis. However, the use of macro variables enables to capture the environmental conditions that define the level of advance in HNSI that could affect the chosen of the two FDI modes analyzed. This previous limitation also implies that our finding cannot be generalized as a pattern for all firms in a given country. Additionally, as a final limitation we can mention that the host country is not known and this could constrain the assumption of acquisition or exploitation of capabilities. Therefore, future research could extend this proposal taking into account the micro elements of the internationalization process and considering both host and home economies.

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CHAPTER V

THE EFFECTS OF LEARNING ABROAD ON THE INNOVATIVE OUTPUTS AND PRODUCTIVITY OF SPANISH FIRMS

Those people who develop the ability to continuously acquire new and better forms of knowledge that they can apply to their work and to their lives will be the movers and shakers in our society for the indefinite future

(Brian Tracy)

5.1. INTRODUCTION

Learning abroad is an outstanding argument in international business and economics literature nowadays to explain why firms from countries outside the group of the richest economies and without solid technological capabilities, use foreign direct investment (FDI) in their internationalization process and become multinationals (Mathews, 2002 and 2006; Luo and Tung, 2007; Guillén and García-Canal, 2010). The support for this is found on the prevalence of a different set of firms' strategies, more oriented by knowledge seeking than by market motivations. The relevant idea is that firms from these countries can build new capabilities abroad following a particular learning process and this is illustrated here with an analysis of the effects on innovation and productivity of Spanish manufacturing firms.

As a matter of context, Spain is an intermediate country in technological terms (Molero, 1995) but the salient fact is that outward FDI flows has been notably growing

from the nineties, dealing with the generation of a huge fleet of multinational companies. Firms such as Repsol, Telefónica, or Iberdrola have been expanded around the world and these are found among the top list of 100 non financial MNE in 2013. The number of Spanish MNE has increased by 37% in average for the period 2000-2009[34], a figure that reveals the importance acquired by domestic MNE in the Spanish economy.

Besides the fact that these MNE are coming from a country without a solid technological base, they have been successful abroad even in a faster manner than those from other rich countries (Guillén and García- Canal, 2010). In the explanation of this fact, it has been recognized that Spanish firms have shown special learning abilities and therefore, the acquisition of knowledge has acquired notable importance in their internationalization process. There are at least two main dimensions for the possibilities of firms learning derived from foreign knowledge: On the one hand, learning effects can be generated through spillovers effects in locations and this process would permit domestic firms the acquisition of knowledge from foreign firms located in the country (Álvarez and Molero, 2005). On the other hand, firms can learn when they become internationalized because the fact of being a MNE allows them to acquire and translate international knowledge by learning abroad, being possible to expect impacts on their innovative output and productivity (Guillén and García- Canal, 2010). This last sequence is especially relevant when the knowledge base is weak and in such a case learning effects will be higher (Kafouros et al., 2012). Therefore, in less developed countries (Yang et al., 2008), or in those economies characterized by technological lagging industries, these learning effects may be crucial for upgrading. This is a process that may also happen and can be relevant in catching up economies such as Spain (Salomon and Jin, 2007).

Considering Spanish manufacturing firms, this chapter is devoted to analyze the effects of learning abroad by FDI on the innovative outputs and productivity; in other words, the question is to see whether the MNE status would have ex-post effects on patents, product innovation and productivity. This implies to study the relationship between

[34] This percentage has been obtained from the ESEE database (Encuesta de Estrategias Empresariales). This is a survey conducted annually by the Spanish Science and Technology Ministry among manufacturing firms with more than 10 employees. The sample represents around 22% of manufacturing employment, covering the total number of firms with more than 200 employees, and representative of firms with between 10 and 200 employees (more specific details can be found in Álvarez (2003) and Rodriguez (2010). The authors acknowledge the Fundacion SEPI for access to the data from that source.

innovation and MNE in a different direction than usual is done; that is to say, the causality relationship that is studied here goes from MNE to Innovation. The interest is to show to what extent the international experience acquired by FDI generates positive results on firms' innovative outputs or what can be called the process of learning from abroad by FDI.

There are two main theoretical streams that support this empirical analysis. On the one hand, the main models and evidence on firms' heterogeneity connect productivity with the level of international commitments (Melitz, 2003; Helpman et al., 2004; Wagner, 2007). The theoretical expectation is that due to learning by exporting effects, exporter firms show higher levels of productivity as a result of this process; however, this literature has devoted scarce or null attention to learning effects by FDI. This is precisely the research question we focus in this paper trough the analysis of the effects that higher levels of international commitment generate on firms' innovation and productivity as a consequence of being a MNE. Other theoretical roots about the possibilities offered by learning abroad are found in the argument of international knowledge as a main source of firms' competitive advantages. The explanation is that firms are in contact with new knowledge in host location and this would allow for learning through the incorporation of it on the production function, a process that would increase likely the innovative outputs and productivity of firms (Mudambi, 2002; Mudambi and Navarra, 2004; Castellani and Zanfei, 2007; Belderbos, et al., 2013; Kafourus et al., 2012).

The combination of firms' heterogeneity and knowledge flows in MNE literature provides us with the adequate theoretical body to justify our main research questions. The first one is to what extent firms learn abroad using investment as an international expansion mode; and the second question is whether the learning process may be observed in an ex post increase of innovative output and productivity levels. The aim is then to focus on the analysis of the MNE status and its effects on ex post innovative outputs and productivity for a panel of Spanish manufacturing firms. Time is a crucial dimension in our proposal, reason why a lag structure becomes a key aspect in the empirical design of the study. Moreover, we assume that differences may be due to other structural aspects such as industries, and for this reason a robustness test based on the technological content of industries sectors is included to show whether learning effects by FDI respond to an industrial component aspect.

For the empirical analysis, we examine a panel of Spanish firms that have at least one establishment in foreign location during a period of 10 years comprised between 2000

and 2009. In that time period we find 342 Spanish MNE that represents 19.4% of the total sample that is formed by more than 5040 manufacturing firms. To measure learning abroad effects, the two selected indicators on the innovative output are product innovation and patent applications. Meanwhile, the indicator of value added over sales is the indicator of productivity, given that several authors argue on the idea that learning abroad effects are not immediately materialized in an increase of productivity but it can be more easily observed through innovative outputs (Mudambi and Navarra, 2004; Salomon and Shaver, 2005 Castellani and Zanfei, 2007; Salomon and Jin, 2007; Silva et al., 2012). Finally, the existence and extent of learning effects are controlled by some variables related to absorptive capacities and by some specific structural characteristics of firms such as size and industry.

In comparative terms, simple descriptive shows that MNE have higher level of innovative results and productivity than domestic firms. Moreover, our empirical findings reveal that the firms MNE status plays an important role in the generation of ex post innovative outputs. This means that learning in internationalized firms through FDI is shown in an ex post increases of both product innovation and patent applications but these effects differ when considering each indicator. For the case of patent applications, effects of the MNE status of firms are found right in the year after the internationalization process (t+1) as well as in the consequent year (t+2). However, when innovation products is taken as indicator of innovative output, the ex post effects of internationalization don't appear immediately but it requires a longer period to see positive results on the innovative output; it is in the second year (t+2) when the effect of being MNE is shown. Meantime, considering sector differences, these effects (internationalization over innovation) is greater in high and medium tech industries for the case of both patent and product innovation, respectively.

On the other hand, even when learning abroad is confirmed for innovative outputs, these effects only appear in productivity two years after the internationalization. This general finding allow us to affirm that firms with the MNE status learn abroad and the acquired international knowledge generates an increase in the level of innovative outputs that is observed also in terms of firms' productivity level only after some time elapse has passed. Therefore, the lag time is higher for productivity effects than for innovative outputs in the learning definition of the firms' internationalization process by FDI.

The main contribution of this study is twofold. On the one hand, to measure learning by FDI effects, an issue that is additional to previous empirical evidence about learning

by other forms of internationalization such as exporting. For this purpose, we test the consequence of the firms' international expansion on both innovative outputs and productivity. On the other hand, the use of micro level data in the framework of a country such as Spain that has not developed a strong technological base but has several MNE abroad, add new arguments to the explanation of emerging multinationals. Finally, some implications for managers and policy makers can be extracted for the promotion of FDI taking into account the potential positive effects that can be derived in terms of innovative outputs and productivity, and particularly that in the latter the effects are more dilated on time than in the former.

The remaining chapter will be organized as follow. The next section contains the literature background which supports this research in short as well as the development of our hypotheses. The third section contains the data description while the fourth section is devoted to the empirical analysis. Finally, the last section discusses the main findings and implications from the analysis.

5.2. LITERATURE BACKGROUND AND HYPOTHESIS DEVELOPMENT

5.2.1. Firms Heterogeneity

The contributions of firms' heterogeneity are based on the Brainard pioneering model developed at the end of the nineties (Brainard, 1997) in which exports and horizontal FDI are considered as substituted strategies of firms' internationalization. The main prediction of that model is that the interaction of trade costs, market size and plant level economies of scale explain the choice between export and FDI strategy (Head and Ries, 2003). Accordingly to this, when the foreign market size and the cost of exporting increased, FDI was the preferable choice over exporting, while on the contrary FDI would be less favourable in presence of higher costs of production (Greenaway and Kneller, 2007).

However, several questions are not resolved within this theoretical framework such as those related to the fact that some firms serve the domestic market, while others export and others even use FDI to serve foreign markets, the rest of conditions being equal. This kind of questions tries to be answered by firms' heterogeneity models. In that body of the literature, one of the pioneering dealing with firm heterogeneity was Melitz's contribution (Melitz, 2003) in which some specific characteristics of the firms, such as sunk costs and productivity level are considered for explaining the choice of

participation in the export market, the main prediction being that only most productive firms would be exporter firms.

Meantime, the work by Helpman et al., (2004)- HMY model by now – permits to connect the firm' especial characteristics and the internationalization by both export and horizontal FDI. This model introduces heterogeneous firms into a simple multicountry, multisector model, in which firms face a proximity-concentration trade-off. The explanation is that productivity at the firm level interacts with the choice between export and horizontal FDI. This model predicts that differences in productivity between firms explain whether a firm can be domestic, exporter or investor (Helpman et al. 2004). Most productive firms engage in foreign activities according to previous arguments on firms' heterogeneity and trade (Melitz; 2003) and among those firms that serve foreign markets, only the most productive engage in FDI while FDI sales relative to exports are larger in sectors with more firms' heterogeneity. The key idea is that as the level of productivity increases, firms could pay an "extra cost" associated to the internationalization process.

In short, the HMY model can be summarized as follow: Considering that all firms pay fixed domestic cost (f_D)while international firms pay additionally (f_X) if export is the option for foreign expansion or (f_I) if firms choose internationalization by investments, being (f_I) higher than (f_X) and the latter higher than (f_D), as it is showed in equation (5.1). Therefore, in equilibrium no firm engages in both activities in the same foreign market (Helpman et al., 2004).

(5.1)

$$f_I > f_x > f_D$$

The assumption of elasticity substitution is represented as $\varepsilon = 1/(1-\alpha)$ with $\varepsilon > 1$. The demand function is given by $Ai\rho^{-\varepsilon}$, the price is $\rho = wia/\alpha$, where the mark up factor is expressed as $1/\alpha$ (Helpman et al., 2004). Assuming that wi=1 the profit equation (5.2), will be represented as follow:

(5.2)

$$\pi_D^i = a^{1-\varepsilon}\beta^i - f_D$$

$$\pi_x^{ij} = \tau^{ij} a^{1-\varepsilon}\,\beta^j - f_x$$

$$\pi_I^j = a^{1-\varepsilon}\,\beta^j - f_I$$

where;

$\pi_D^i\ \pi_x^{ij} \pi_I^j$ are the profit for domestic, exporter and investor firms, respectively, i=firm in a country and j=foreign market, $a = \text{Labour output coefficient}$; $\beta^i = (1-\alpha)A^i \propto^{1-\varepsilon}$; is the demand level and τ^{ij} the transport costs.. And, if $\beta^i = \beta^j$, those function increase with labor productivity 1/a (Helpman et al., 2004).

This implies the self-selection of heterogeneous firms (Melitz, 2003) which means that only the most productive firms become MNE. Thus, firms with intermediate level of productivity will export and the least productive firm will only sell domestically. It is showed in equation (5.3) (Helpman et al., 2004).

(5.3)

$$\left(a_I^{ij}\right)^{1-\varepsilon} > \left(a_X^{ij}\right)^{1-\varepsilon} > \left(a_D^{i}\right)^{1-\varepsilon}$$

These differences in productivity imply that firms can overcome the cost associated with the internationalization process or in other words, the increase in productivity allow the transport cost payment when firms export and the fixed cost payment when firm use FDI.

The HMY model has leaded to the development of posterior theoretical models among which the extension by Yeaple (2009) can be highlighted here. The main contribution is that most productive firms will invest in a larger number of foreign countries while less productive firms will only serve the most attractive country. Moreover, Melitz and Ottaviano (2008) model adds that market size will affect industry performance

measures given the fact that larger markets exhibit tougher competition resulting in lower average mark-ups and higher aggregate productivity (Melitz and Ottaviano, 2008). Meanwhile, the work by Engel and Procher (2012) shows that the HMY model predictions will only apply considering market-driven FDI. And finally, other works also extend the explanations to the different forms of international expansion and permit the choice between Greenfield FDI and M&A (Raff et al., 2009; Neary, 2009) introducing the consideration of firms' heterogeneity and also the existence of mobile or no mobile capabilities to justify the internationalization through M&A (Nocke and Yeaple, 2007).

Firms' heterogeneity models have also the merit of being supported by a huge set of empirical works. One of the seminal serving as seed for new developments is the work by Bernard and Jensen (1999) where the authors check for a sample of US firms the relationship between the productivity level and the domestic and export status. The findings confirm that exporter firms exhibit higher productivity level than non exporter firms within the same industry. Since this contribution, two main lines of research have been developed: The first one tries to explain whether exporter and non exporter firms differ in terms of productivity, while the second tries to explore the causes and consequences of the differences in productivity between exporter and not exporter firms (Wagner, 2007). It is important to highlight at this point that this pioneering evidence was focused only into the first middle part of the story, that is to say, these studies consider only the productivity differences between domestic and exporter firms without any consideration to foreign investor firms.

The consideration of exporter and domestic firms for different countries has built the related empirical evidence. The contributions of Delgado et al. (2002), Aw et al.,(2000), Arnorld and Hussinger (2005) have shown for a sample of Spanish, Korean and German firms, respectively, that exporter firms were more productive than non exporter firms, confirming one of the main arguments of this theoretical framework. However, this result has also been controversial according to the observation in the work of Greeneway et al., (2005) for a sample of Swedish exporter and non exporter firms in which shorter differences in performance between both types of firms were found.

On the other hand, some studies have also explored the complete internationalization story from the development of the HMY model (Helpman et al., 2004), that is to say, considering domestic, exporter and investor firms. In this line, the work of Girma et al., (2005) is one of the first analyses that adds empirical evidence to the HMY model for a sample of UK firms, finding that MNE firms are more productive than exporter firms

and exporter are more productive than domestic firms. Those results have been also supported by Head and Ries (2003) and Kimura and Kiyota (2006) for a sample of Japanese manufacturers firms and by Wagner (2006) for a sample of German firms.

Regarding this second line of research, it is possible to find two different arguments supporting the causes and consequences of the differences in productivity between domestic, exporter and investor firms. On the one hand, authors generally assume that there is self- selection process of the most productive firms or in other words, the most productive firms will go abroad given that only the most productive firms could pay the extra cost of the internationalization process. On the other hand, the internationalization expansion will allow the acquisition of knowledge and therefore, they will obtain the increase of productivity levels (Wagner, 2007), this result being called as learning abroad or learning by exporting in the case of exports (Bernard and Jensen, 1999).

This research is indeed focused on this aspect assuming that international firms show higher rates of productivity as a result of a learning abroad process. This line of research is relevant because the vast majority of studies have been focused on the analysis of learning by exporting. This will be the case of the works of Delgado et al., (2002), Salomon and Shaver (2005), Salomon and Jin (2007), Damijan et al., (2010), Silva et al., (2012) and Love and Ganotakis, (2013). The evidence on learning by exporting has showed a positive relationship between exporter firms and their level of productivity and two main arguments are reported to explain this positive effect: First, the easy access of exporter firms to new sources of knowledge (Liu and Buck, 2007) that can be transformed in productivity' increases. Secondly, the international pressure that may force firms to innovate to survive in more competitive international markets (Liu and Buck, 2007). However, some evidence also confirms that learning by exporting show little effects on productivity growth (Delgado et al., 2002; Salomon and Shaver, 2005; Arnorld and Hussinger, 2005), because these effects are dilated on time (Aw et al., 2007), and thus, they cannot be immediately materialized in an increase of productivity (Salomon and Shaver, 2005). Meanwhile, to check more specifically learning by exporting effects, some authors have proposed the use of innovation variables as the black box that can explain differences in productivity levels before internationalization and the effects of learning after internationalization (Castellani and Zanfei, 2007; Castellacci, 2011; Monreal-Perez et al., 2011; Cassiman and Golovko, 2010; Belderbos et al, 2013).

In sum, given the huge empirical evidence of learning by exporting and the scarce contribution that would give support to learning abroad effects by investments (Navaretti and Castellani, 2004; Zanhra et al, 2009), our analysis is focused on the MNE units to detect whether learning effects exist on the innovative outputs and productivity results. Taking analytical results and findings from learning by exporting evidence as a base, we check whether firms that become MNE show higher rates of ex post innovative output and productivity levels trying to provide new evidence on firms' heterogeneity as well.

5.2.2. Internationalization process, learning and knowledge

The internationalization effects on learning and the role of foreign knowledge as a source of competitive advantages is not a new research topic on the literature but on the contrary, the impact on innovations and productivity growth have been the bulk of several analysis and empirical contributions in the IB field (Buckley and Carter, 1996; Mudambi and Navarra, 2004; Ambos et al., 2006, Rabbiosi, 2011). We found the roots of them on the models developed within the behavioral theory that recognizes the possibilities of firms to learn abroad (Cyert and March, 1963) and it is also an issue on the Uppsala model of gradual internationalization that connects the international commitments of firms with the experiential knowledge (Johanson and Valhne, 1977; Johanson and Wiedersheim-Paul, 1975). These theoretical bodies would predict a positive relationship between the degree of firms' international expansion (first exporting and then using FDI) and the entry mode used and the number of countries attended; these will be higher as the firms' international commitment increases (Jonsson and Foss, 2011). Nonetheless, the recognition of generic learning effects in this model rests limited because the possibility of learning as a firm strategy is absent in the model. That is to say, the asset-augmenting strategy is missing in these theoretical propositions even when the aforementioned studies have recognized that FDI can be undertaken with the aim of acquiring knowledge abroad (Dunning and Narula, 1996; Eriksson et al. 1997; Forsgren, 2002).

A crucial aspect for understanding the effects of learning derived from the internationalization process is the nature and extent of knowledge flows in the MNE theory. The most traditional studies in the field focus on the knowledge transfer between the headquarter unit (HQ) and the subsidiaries (Dunning, 1988; Vernon, 1966) and how the latter adopt the corporation knowledge to particular locations. Moreover, a better understanding of the subsidiaries competences and the

possibilities for learning in foreign locations has followed. Several authors take into account not only conventional flows but also how new knowledge acquired by the subsidiary in foreign context can revert to the HQ and even to the rest of the MNE. These has been called as reverse knowledge flows and contribute to a better definition of the subsidiary learning process (Mudambi, 2002; Mudambi and Navarra, 2004). Some theoretical models explain how subsidiaries may be conceived as a source of available external knowledge in the MNE because their key role in innovation and organizing decentralized R&D (Sanna-Randacio and Veugelers, 2007). Meantime, this model has been extended in recent contributions that combine different entry modes (Greenfield FDI and M&A) and the potential reverse knowledge flows between HQ and subsidiaries according to the level of development in locations (Álvarez et al., 2011).

On the other hand, it has been formulated that the internationalization of firms may be considered as new inputs for the innovation process and therefore, knowledge acquired abroad can be converted in new innovation (Hitt et al. 1997; Kafouros et al, 2008 Belderbos, 2003; Yeoh, 2004; Yang et al., 2008). The reasons for this are related to the competitive pressures that firms face in foreign markets and how this can positively affect the development of innovations to defend their market shares. In this sense, it is important to note the difference between competence exploiting and competence creating subsidiaries because also expected knowledge flows may differ (Cantwell and Mudambi, 2005). Moreover, internationalized firms may learn by the incorporation of resources available globally through their presence in different foreign countries, an aspect that facilitate the access to new knowledge resources by the establishment of contacts with foreign suppliers, universities, and research centers (Kafouros, 2008).

The integration of foreign knowledge is then considered as a source of competitive advantages that can generate innovation (Buckley and Carter, 1996; Mudambi and Navarra, 2004; Ambos et al., 2006, Rabbiosi, 2011). Even more, there is a potential learning effect derives from the access to foreign knowledge sources that may lead to the increase of firms' productivity, as it is argued by different authors (Coe and Helpman, 1995; Griffith et al., 2006; Belderbos et al., 2013; Kafouros et al., 2012). All in all, the previous background allows us to affirm that firms may learn abroad through FDI. Nonetheless, these learning effects are not automatic but it should be possible to observe the definition of an incremental path during a reasonable period of time (Petersen et al., (2008) while in addition, these effects can be also moderated by an industry component.

All the arguments exposed above confer us a sustainable background for the development of our working hypothesis. On the one hand, models and empirical evidence on firms' heterogeneity provide the connection of firms' international commitment and productivity and this allows us to introduce the learning by FDI hypothesis. Similarly to exporter firms, those firms that go abroad by FDI could learn because they find abroad new sources for learning that can be reflected in an amount of the innovative outputs and productivity level. On the other hand, considering the relevance of knowledge acquired abroad as a special source of competitive advantages in MNE firms, it is possible to think that MNE firms are able to incorporate this knowledge in the production function and this derives into positives results.

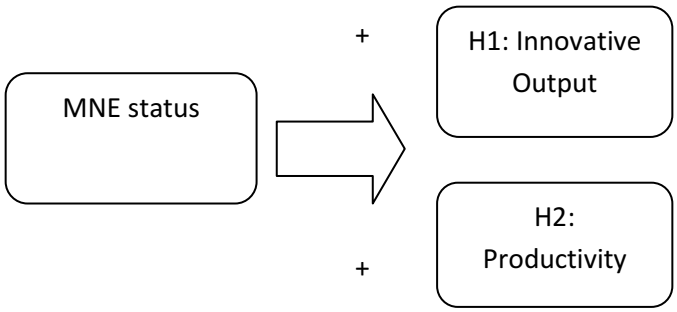
Therefore, the main two hypothesis of this research are the following:

First, subsidiaries units are able to learn abroad and this process may be showed in an increase of the innovative outputs of the MNE. Meanwhile, time is a special requirement given the fact that both learning and innovation can be defined as a long-term process. Then hypothesis 1 is *that the MNE status of firms will positively affect ex post innovative outputs* (*H1).*

The second hypothesis deals with the question of whether these learning effects are manifested in an increase of ex post firms' productivity level*. Therefore, H2 is that the MNE status of firms will positively affect their level of productivity.*

Figure 5.1 shows graphically these two hypotheses with the expected sign and the direction of the learning process.

Figure 5.21 The learning effects hypothesis



Source: Own elaboration

5.3. FEATURES OF THE SAMPLE AND DATA DESCRIPTION

The analysis presented here is undertaken for Spanish manufacturing firms. Data come from the *Encuesta de Estrategias Empresariales*-ESEE (Business Strategies Survey) for a period of 10 year, from 2000 to 2009. The ESEE survey is annually elaborated by the Fundación SEPI, Spanish Ministry of Economy and Competitiveness, since 1990 and it represents a panel of Spanish manufacturing firms with more than 10 employees. This dataset contains detailed information of innovation and internationalization activities as well -exports and foreign establishments activity-, reason why the MNE status can be studied. In particular, the data referred to MNE status were introduced since 2000 in the survey reason why it constraints our initial year in the period of analysis (2000-2009). Being aware that our main interest here is to analyze the MNE status of Spanish firms and its effects on innovative output and productivity levels, the sample has been restricted to those firms that report at least 4 consecutive years of MNE status. This criterion allows us to avoid possible noise in the sample. The result is that our sample is composed by 17,870 observations that correspond to 1787 firms during 10 years.

The utility of this dataset has been showed in several previous contributions in the literature that analyze the relationship between the innovative behavior of Spanish firms and its internationalization activities (Delgado et al., 2002, Álvarez and Molero, 2005; Salomon and Jin, 2007; Marín and Álvarez, 2009; Cassiman and Golovko, 2010; Esteve-Perez and Rodríguez, 2013; Moreal-Perez et al., 2011; Triguero and Córcoles, 2012; García et al., 2012). However, the analysis of Spanish MNE that focuses of our study has not been yet analyzed in deep using this dataset, with the exception of Almodóvar et al., (2009) and Almodóvar and Rugman (2013) who have considered the special sample of Spanish MNE firms.

Therefore, the strength of this dataset in this study is due to the fact that it collects a huge number of indicators referred to the MNE status of firms and this panel data allows us to provide analytical support to our research questions. Moreover, the dataset contains information on whether the firm invests in foreign markets as well as the percentage of participation in the foreign company [35]. This allows us to detect whether a firm can be considered as a MNE considering the criterion that the percentage of foreign participation in the firm capital equity would be superior to

[35]For investment in a foreign country (INVEST) firms respond to the question Do firms have participation in the foreign capital of other firms located abroad? For the level of participation (INPART) firms indicate the % of participation in the main participated firm. We constrain our analysis when the participation in a foreign firm is superior to 10%.

10%[36]. According to the last restriction, 342 firms are designed with the MNE status and this number represents around the 19.14% of the total firms in the sample.

Regarding the emergence of Spanish MNE in last decades, it is important to mention that firms with this status in the ESEE has increased a 37% in the period analyzed. Moreover, the relevance of MNE in the sample can be seen in the Table 5.1, where MNE firms represents a notable proportion in some performance variables such as added value (57.70%), sales (57.72%), exports (65.65%), employment (54.56%) and R&D Expenditure (75.41 %). This latest value shows that MNE firms perform more than three quarters of the total Spanish Business R&D expenditure in aggregate terms[37].

Table 5.1 Spanish MNE firms as percentage of total firms in the sample (average values for the period 2000-2009)

Firms	Added Value	Sales	Exports	Employment	Expenditure R&D
19.14	57.70	57.72	65.65	54.56	75.41

Source: Authors' elaboration from ESEE database

In addition, Table 5.2 shows that the technological sector in which MNE firms are more active is in medium tech industries, that is to say, 55.28% of Spanish MNE in our sample belong to medium tech industries while only 11.98% of them are high tech and 33.53% of them are in low tech industries. However, domestic firms have a more notable presence in both medium and low tech industries, with percentages of 49.41% and 47.79%, respectively.

Table 5.2 Distribution of MNE and domestic firms by technological content –in percentages. Average values for the period 2000-2009

	HTECH	MTECH	LTECH
M	16.01	55.28	28.70
D	2.784	49.41	47.79

*M=MNE/ D=Domestic

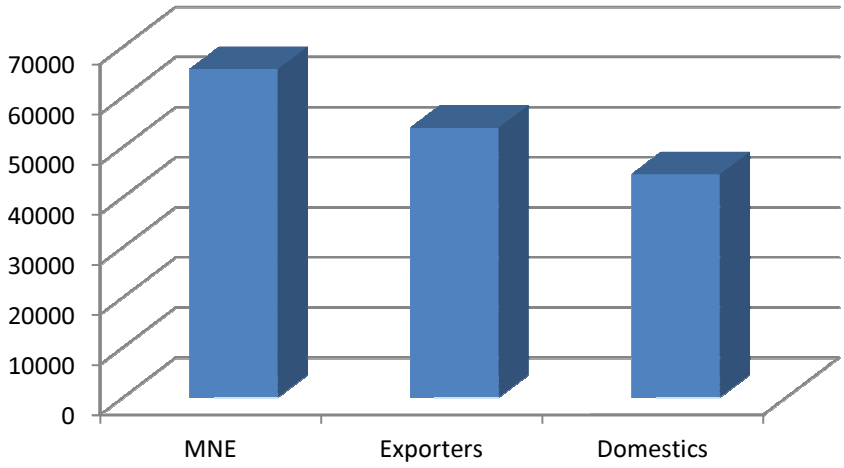
*Division of industries according to the OCDE Classification Rev.3 is included in the Appendix E table E1

Source: Authors' elaboration from ESEE database

[36]A company is considered foreign owned if the foreign participation in equity capital is more than 10%. This criterion has been adopted by the established definition of FDI in the IMF, V Balance of Payments Manual. In addition, it has been largely used in the international business literature, for instance, (Yeaple, 2009; Engel and Procher, 2012). Therefore we have considered as MNE, firms which have more than 10% of participation in foreign firms in the period analyzed.

Regarding the relationship between the international commitment and the firms productivity level proxy by the indicator of relative Value Added (value added as percentage of sales), Graph 5.1 shows that MNE firms have in average higher productivity levels than their domestic counterparts. This graph also comes to show that the level of productivity is higher in exporter than in domestic firms, an aspect coincident with the arguments underlined in the firms' heterogeneity literature presented in previous section. Moreover, considering the index of relative productivity, in Table 5.3, built between MNE, exporter and domestic firms, the values show the superiority of MNE firms in terms of productivity not only regarding domestic firms but also over exporters firms.

Graph 5.1 Productivity levels in domestic, exporter and MNE firms in the period 2000-2009 and in thousands.



Source: Authors' elaboration from ESEE database

Table 5.3 Relative index of productivity

Relative Index of productivity	
MNE/Domestic	1.470950302
MNE/Exporter	1.216349208

*Value in means of the total MNE-X-D

Source: Authors' elaboration from ESEE database

This single data description shows a relationship between the incremental international commitment of Spanish manufacturing firms and their larger productivity levels. In relation to this, an interesting issue to be taken with caution is the causality direction of this relationship, that is to say whether productivity results encourage internationalization or it is the internationalization commitment of firms what encourages productivity or even more it is a combined action of the two that is defined by a feedback process.

Regarding the technological variables, Table 5.4 shows that Spanish MNE report higher values in average in 2009 comparing with exporter and domestic firms. In fact, these firms show a higher patent propensity in both Spain and abroad. Moreover, the special group of MNE firms shows higher value in the indicators of R&D personal and R&D intensity (in relation to sales), being product innovation more representative for the group of exporters firms.

Table 5.4 Technological indicators of Spanish Manufacturing firms, average values, 2009

	Num.Patents Spain (per Employee)	Num.Patents abroad (per Employee)	Product innovation(per Employee)	R&D Personel(per Employee)	R&D intensity (R&D Exp/Sales)
MNE	0.198	0.281	0.837	1.735	2.020
Exporters	0.141	0.092	1.943	1.206	1.225
Domestics	0.003	0.019	0.338	0.218	0.138

Source: Authors' elaboration from ESEE database

5.4. THE EFFECTS OF LEARNING BY FDI

5.4.1. Differences between domestic and MNE firms

A simple comparison between the firms' international commitment and the values of technological indicators shows the existence of a different behavior in innovation between domestic and MNE firms according to the results obtained from discriminant analysis. MNE differ from domestic firms in technological variables, and the question is whether these differences can be explained and to what extent by the MNE status of the firm. A deep analysis of this relationship requires also to considering the technological content of industries and for that purpose we divide the sample into

high, medium and low tech content[38]. Table 5.5 shows the technological differences between the firms' international commitment and their technological performance.

The results from the discriminant analysis reveal that patents in Spain, product innovations and R&D personal are the variables that better differentiate between domestic and MNE firms in the entire sample. In particular, the level of product innovations, patents in Spain and R&D personal increase when a firm becomes MNE. On the other hand, when the technological content of the industries is taken into account, R&D intensity and product innovations are the key aspects that make differ between both types of firms in high tech industries. Meanwhile, patents in Spain, patents abroad, product innovations and R&D personal are crucial for the differentiation between domestic and MNE firms in medium tech subsample. Finally, patents in Spain and personal in R&D make different domestic and MNE firms in low tech branches. Additionally, the increase of the value in the groups centroids between Domestic and MNE (that takes a negative value for domestic firms and a positive value for MNE firms) shows that the firms technological profile is higher as the level of international commitment increases in the whole sample as well as for industry groups, denoting the possibilities for learning abroad effects.

These results allows us to justify the use of two different measures of innovative outputs -Patents and Product Innovations – in the analysis of the effects of the MNE status on the innovative results of firms, aspect to which the next section of this chapter is devoted.

[38] Classification of sector according to the OCDE Classification Rev.3 is included in the Appendix E table E1

Table 5.5 Differences between MNE and Domestic firms in their technological behaviour

Variables	All Sample	High Tech Content	Medium Tech Content	Low Tech Content
R&D intensity	n.s	0.896***	n.s	n.s
Patent Spain	0.612***	n.s	0.392**	0.858***
Patent Abroad	n.s	n.s	0.372***	n.s
Product innovation	0.608***	0.491***	0307***	n.s
Personal in R&D	0.246***	n.s	0.542***	0.523***
Chi-Squared	118.391	16.735	57.076	50.975
Nº observation	1783	171	883	649
Cases rightly classified	79%	68%	77%	82%
Wilk's lambda	0.936	0.905	0.935	0.924
Group of centroids				
Domestic	-1.27	-0.216	-0.132	-0.118
MNE	0.54	0.48	0.506	0.691

-Dataset used is composed by the average value of the variables in the period (2000-2009)

-Stepwise Discriminant Function Analysis

- n.s: variable not significant in the discriminant function between Domestic and MNE firms

***99% Confidence level (p-value F-test)

**95% Confidence level (p-value F-test)

Source: Own Elaboration

5.4.2. The econometric model

To proceed with the test of our first working hypothesis - the effects of the MNE status on the ex post innovative outputs of firms-, and considering that those effects are not immediate but a reasonable time elapse is needed to observe them, we use the GMM method for dynamics panel data using a lag structure. In general terms, the expression for estimations can be written in the following equation:

(5.4) $$Y_{it}=\beta_0 + \beta_1 Y_{it-1}+\beta_2 MNE_{t-p}+ V_{it} +\eta_{si} + \upsilon_{dt} + \varepsilon_{it}, \ \{i=firm, p= 1, 2\}$$

Where, Y_{it} correspond to the innovative outputs -product innovations ($INNO_{it)}$ and patents application (Pt_{it})-. Y_{it-1} is the lag of the dependent variable of firm i at time t which represents the dynamic of the model. X_{t-p} shows the MNE status variable for firm i and time p, being *p{ t=1 and t=2}.* V_{it} is a vector of other explanatory variables. η_{si}, $\upsilon_{dt,}$ ε_{it} are the specificities of the technique used and they represents individuals and time effects and the random error term.

The use of technological variables for capturing the effects of learning abroad, has been justified well by other authors in the literature (Salomon and Shaver, 2005; Castellani and Zanfei, 2007; Salomon and Jin, 2007; Silva et al., 2012). The main reasoning buildings arguments are referred to the fact that learning effects cannot be immediately materialized in an increase of productivity and also that productivity is a difficult measure of learning outcome due to its heterogeneity among firms. However, it is possible to observe some learning patterns through the direct analysis of technological outputs. Therefore, the use of innovative results such as patents application or product innovations have gained relevance as a proxy for the measurement of learning effects (Castellani and Zanfei, 2007; Salomon and Jin, 2007; Silva et al., 2012) due to the fact that these variables permit to observe learning in a more direct way than trough productivity (Salomon and Shaver, 2005). Moreover, patents have been also used as a measure of knowledge flows between different units of the MNE networks (Mudambi and Navarra, 2004).

The MNE status (MNE) is our main independent variable. This variable is a dummy that captures whether the firms have direct investments in foreign markets. Thus, this measure will take the value 1 whether firms have presence in foreign countries and the value 0 otherwise. We have considered the entire sample to avoid any potential bias while the analysis is constrained to firms that report to be MNE or those firms that having invested abroad take a percentage of participation superior to 10%.

Regarding other independent variables, the lagged dependent variable Yi_{t-1} would reflect the dynamics of the model, avoiding endogeneity problems associated to these variables and this variable also shows that previous productivity or innovative outputs can affect the current level of them as it is argued by Bernard and Jensen (1999). Moreover, our particular research interest on the effects of the firms MNE status on ex post innovative outputs and productivity implies to take into account the lag structure of the MNE status as independent variables as well (MNE_{t-1}, MNE_{t-2}). This will allow us to test whether previous MNE status will affect the current output. Moreover, the consideration of this variable is in concordance with the time that is required for the assimilation of knowledge (Salomon and Jin, 2007; Golovko and Valentini, 2011). Those authors support that it is necessary a reasonable period of time for the observation of the learning effects on the innovation activities and even more on productivity. Therefore, time for the assimilation of knowledge is a relevant dimension in this type of analysis (Aw et al., 2000).

For the robustness test, we analyze learning effects according to the technological content of the industries. This will allow us to test whether the MNE status, and therefore the acquisition of knowledge abroad will be conditioned by the sector in which the firm i operates in time t. In order to deal with this proposal we have built the variables that indicate the MNE status and the technological sector of this MNE, differentiating between high, medium and low tech contents. Thus, this robustness check is collected in the following equation:

(5.5) $$Y_{it}=\beta_0 + \beta_1 Y_{it-1}+\beta_2 (MNE*TechSector_{it-p})+ V_{it} +\eta_{si} + \upsilon_{dt} + \varepsilon_{it}\,,\ \{i=firm,\ p= 1, 2\}$$

where the main difference between this equation and Eq (5.4) is the variable $(MNE*TechSector_{it})$ which will take the values of MNE in high tech content (MNEHTECH), MNE in medium tech content (MNEMTECH) and MNE in low tech content (MNELTECH).

Regarding the control variables included in the estimation, we consider some characteristics of firms such as R&D intensity and firms size which have been used for explaining firms' heterogeneity effects by other authors (Greenaway and Kneller, 2007) and which may adopt a special role in the innovative results and learning abroad benefits. R&D intensity has been considered an important variable for the assimilation and transformation of knowledge acquired abroad[39] because it permits to build a minimum level of capabilities or absorptive capacity (Cohen and Levinthal, 1990). In this sense, authors as Greeneway and Kneller (2007) have recognized the relevance of R&D for materialization of new knowledge on learning abroad benefits that extremely depends on the firms' absorption capabilities since the higher absorptive capacity the higher expected benefits from the MNE status (Ambos et al. 2006; Aw et al., 2007; Golovko and Valentini, 2011; Kafouros et al., 2012). Therefore, the expenditure in R&D facilitates knowledge transfer and permits to improve the amount of knowledge received while absorbing and transforming it into innovation outputs. Moreover, it has been largely analyzed the association between R&D (innovative input) and innovative output in the literature (Salomon and Shaver, 2005; Golovko and Valentini, 2011; Triguero and Córcoles, 2012) and how the combination of external and internal knowledge (R&D) can generate the perfect set for enhancing firms productivity growth.

[39] According to Minbavea et al., 2003 absorptive capacity has four dimensions: acquisition, assimilation, transformation and exploitation

In addition, we also consider size as a structural characteristic of firms and this variable has been traditionally used in diverse studies on internationalization and innovation (Álvarez and Molero, 2005; Salomon and Jin, 2007; Cassiman and Golovko, 2010; Triguero and Córcoles, 2012). This evidence shows that MNE are more likely large firms and how large firms are more productive than exporter or domestic firms (Bernard and Jensen, 1999; Tomiura, 2007; Yeaple, 2009). It has also been argued the existence of a positive relationship between firms' size and innovative outputs and productivity levels (Dosi, 1992; Salomon and Shaver, 2005; Triguero and Córcoles, 2012).

On the other hand, to test our second working hypothesis- the effect of MNE status on ex post productivity levels- and for checking differences between learning effects on innovative outputs and on the traditional productivity measure, we use value added divided by sales as a proxy for productivity. This proxy is a simple way of measuring productivity, which has been used in several works as Castellani and Zanfei (2007), Esteve-Perez and Rodriguez (2013). Therefore, an alternative estimation is taking productivity as dependent variable Y_{it} in Eq(5.4).

All the variables explained above and their definitions are included in Table 5.6.

Table 5.6 Summary of variables in the analysis of learning effects

Dependent Variables	
Est. 1: $INNO_{it}$	Number of product innovation, firm i year t
Est. 2: Pt_{it}	Number of patents in Spain, fim i year t
Est. 3: Pd_{it}	Ln of productivity, firm i year t (proxy of Value Added /Sales)
Independent Variables	
MNE_{it}	Dummy Variable which indicate (1) is the % of participation in the social capital of foreign firms is >10%, (0) otherwise
Control variables	
Rd_{it}	Ln R&D intensity (R&D expenditures divided by sales)
$Size_{it}$	Ln Total Employees

Source: Own elaboration

Regarding the methodology, dynamic panel data analysis is performed. This methodology is adequate because it allows us to deal with the inherent endogeneity of

the model or, in other words, it takes into account the path dependent trajectory or cumulative process that characterizes the innovation process (Castellacci, 2008; Dosi, 1988). Moreover, this method permits to consider the lags of the independent variables that are essential for measuring learning abroad effects, given that as it has been previously argued these effects are not manifested immediately in terms of innovative outputs or in terms of productivity.

Another additional advantages of this method regarding our research question are firstly, that effects over time are included in the model and secondly, that it is possible to consider individual effects (in these case the firms effects) following a dynamic perspective. The generalized method of moment (GMM) uses first difference transformation dealing the variables endogeneity by considering of all the available lags as instruments and avoiding individual effects (Arellano and Bond, 1991; Arellano and Bover, 1995; Roodman, 2006; Roodman, 2009).

Dynamic panel data estimations of learning effects on innovative outputs are collected in Table 5.7. Moreover, the robustness checks by sectors are presented in table 5.8. Finally, the analyses of learning effects on productivity are showed in table 5.9. Correlation matrix for the variables used in the model can be found in table E2 and E3 in Appendix E.

5.4.3. Discussion of results

The results of the first panel data estimation (in Table 5.7) describe the existence of a learning process that expressed on innovative outputs can benefit internationalized firms trough FDI. The MNE status of firms positively affects the ex post innovative outputs because the coefficient lagged MNE status are positive and significant[40].

The learning sequence by FDI is confirmed given the fact that the MNE status in (t-p) affects the current volume of patents and product innovations. However, different results are obtained for the two innovation indicators considered. On the one hand, when patents is taken as dependent variable (Table 5.7-Column 1,2-) previous MNE status in t=1 and t=2 positively affect the current level of patent applications and the effects are higher in the sequential years after the entrance in a foreign market (the coefficient of this variable increases when the number of lags is higher). This would

[40] In addition, the correlations analysis between the dependent variables and the lags of the MNE status show a positive relationship (Table E2 of the Appendix E), an aspect that is also consistent with the existence of learning by FDI effects.

mean that innovative gap between MNE and domestic firms may also increase over time. However, when product innovation is the indicator taken as dependent variable (Table 5.7-Column 3, 4-), the MNE status only is significant when two years lagged are considered. This could imply that ex post effects of MNE on product innovations take longer than for the case of patent applications. H1 is then confirmed even when some differences across the possible dependent variables are found.

These estimations also show that previous innovative outputs affect the current level of patents and product innovation. Thus in line with innovation theory, the innovative experience plays a key role in the current innovative status of firms. Moreover, our control variables behave as expected because R&D intensity positively affects the level of product innovations and patent applications, while the coefficient of firms' size is positive and significant for the estimation of patents as dependent variable but it has any effect for the case of product innovations.

Table 5.7 Learning effects on innovative outputs

	Patent(Pt)		**Innoproduct(INNO)**	
	(1)	**(2)**	**(3)**	**(4)**
Y_{t-1}	0.412***	0.392***	0.831***	0.830***
	(0.126)	(0.135)	(0.0456)	(0.0493)
MNE_{t-1}	0.255***		-0.735	
	(0.087)		(0.5753)	
MNE_{t-2}		0.256***		0.403**
		(0.094)		(0.1618)
Rd	0.067*	0.065*	0.287**	0.278*
	(0.035)	(0.037)	(0.1400)	(0.1773)
Size	0.046*	0.052**	0.028	-0.492
	(0.027)	(0.026)	(0.5358)	(0.3069)
_cons	-0.151	-0.183	0.189	2.718
	(0.123)	(0.116)	(2.800)	(1.7322)
Ar(1)	-2.34**	-2.30**	-1.91**	-1.71**
Ar(2)	0.339	-0.93	0.62	0.64
Hansen Chi2	4.8	5.17	89.55	75.9
Observations	3404	3244	4174	3595
Instruments	11	11	86	76

GMM-Two Step. Robust Standard errors in parentheses (Roodman, 2012).*** p<0.01, ** p<0.05, * p<0.1

Source: Own elaboration

5.4.4. Robustness test. Learning Effects on MNE by technological sectors

Previous findings allow us to confirm that firms learn abroad and this effect can be manifested in ex post innovative results. Nonetheless, differences of learning possibilities between industries can exist, reason why we replicate the analysis described in previous section but now dividing the MNE status variable according to the level of technological content of industries. Results of estimations are shown in Table 5.8.

The results shows that the previous MNE status in high tech industry, called MNEHTECH, positively affect the current level of patent applications (Table 5.8-Column 1, 2). Although the independent variable is significant for both, 1 and 2 years lags, the effects is larger as the structure of lags increase, an aspect that is supported by the higher value of the coefficient in t-2. However, we have not found learning effects for firms for the medium and low tech sector (Table 5.8-Colum 3, 4, 5, 6). This means that MNE firms from high tech industries have higher propensity to learn abroad and this effect will be higher as MNE is more consolidated in foreign location. The rest of variables, Rd and size, behave as expected, being both of them positive and significant.

On the other hand, taking product innovations as dependent variable (Table 5.8-column 7, 8, 9) only MNE in the medium tech content seem to learn abroad, and this learning could be materialized in an ex post increase of product innovation. We have not found any significant results for MNE in the high and low tech industry (Table 5.8-Column7, 9).

A common aspect for the two different dependent variables considered that is derived from this robustness test is the difficulties for MNE from low tech industries to learn abroad. This finding can be justified by the fact that MNE in this type of sectors show in general lower level of R&D intensity and this could reflect their minor capacity for the absorption of knowledge abroad. Nonetheless, the results of these robustness tests allow us to affirm that the learning by FDI effects would depend on the technological content of the industry where the MNE is integrated, being higher the impact in MNE from high and medium tech industries.

5.4.5. Learning effects on productivity

In this step we test the effect of the MNE status on firms' productivity and for doing that we replicate the model used in previous estimations. The results are collected in Table 5.9.

The coefficient of the MNE status variable shows that there is not ex post effects on productivity in the year immediate posterior, that is to say when the variable is lagged 1 year. But considering a higher period of time there is positive effect; it is in t=2 when the previous MNE status generate impact on ex post firms productivity levels[41]. Then, learning effects by FDI on productivity are not immediately generated but a reasonable time elapse is required to being materialized. These results confirm our second hypothesis (H2), being necessary to underline time dimension to adequately read our findings. Moreover, regarding control variables Rd present a negative relationship with productivity while the coefficient of size is positive. These latter would reveal that it is more likely to find productivity improvements in larger firms while for those more intense R&D firms' knowledge generation and absorptive capacities are more guaranteed even at the domestic context and then the potential learning effects abroad diminish.

[41] There is positive correlation between productivity and the MNE lag structure, which is also consistent with the learning by FDI process. (Table E3 Appendix E)

Table 5.8 Results of learning effects by the technological contents of industries

	Patent(Pt)						Innopro(INNO)		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Y_{t-1}	0.429***	0.424***	0.316***	0.319***	0.412***	0.391***	0.819***	0.834***	0.805***
	(0.106)	(0.116)	(0.900)	(0.093)	(0.125)	(0.135)	(0.050)	(0.049)	(0.052)
$MNEHTECH_{t-1}$	0.571*								
	(0.307)								
$MNEHTECH_{t-2}$		0.678*					0.012		
		(0.369)					(0.594)		
$MNEMTECH_{t-1}$			0.124						
			(0.079)						
$MNEMTECH_{t-2}$				0.108				0.503*	
				(0.079)				(0.298)	
$MNELTECH_{t-1}$					0.048				
					(0.129)				
$MNELTECH_{t-2}$						0.096			0.476
						(0.140)			(1.153)
Rd	0.058**	0.055**	0.052**	0.057***	0.061*	0.060	0.176	0.302*	0.178
	(0.025)	(0.026)	(0.021)	(0.021)	(0.036)	(0.038)	(0.290)	(0.180)	(0.300)
Size	0.069**	0.074***	0.041*	0.046**	0.075**	0.076**	-0.895	-0.537	-2.292
	(0.028)	(0.027)	(0.023)	(0.023)	(0.032)	(0.032)	(0.959)	(0.499)	(1.577)
_cons	-0.224*	-0.261**	-0.126	-0.151	-0.237*	-0.243*	5.166	3.027	12.551
	(0.126)	(0.120)	(0.110)	(0.104)	(0.138)	(0.136)	(5097)	(2.701)	(8.456)
Ar(1)	-2.48**	-2.54**	-2.10**	-2.11**	-2.34**	-2.29	-1.70**	-1.72**	-1.69**
Ar(2)	-0.93	-0.96	-0.95	-0.92	-0.94	-0.93	0.65	0.64	0.65
Hansen Chi2	3.37	3.28	35.04	34.6	4.72	5.18	69.49	66.88	81.64
Observations	3244	3404	3404	3244	3404	3244	3595	3595	3595
Instruments	11	11	7	31	11	11	75	76	73

GMM-Two Step. Robust Standard errors in parentheses. (Roodman, 2012). *** p<0.01, ** p<0.05, * p<0.1

Table 5.9 Results of learning effects of MNE status on productivity

	Productivity(Pd)	
	(1)	**(2)**
Pd_{t-1}	0.191***	0.193***
	(0.041)	(0.048)
MNE_{t-1}	0.018	
	(0.050)	
MNE_{t-2}		0.177***
		(0.050)
Rd	-0.050***	-0.054
	(0.015)	(0.041)
Size	0.099*	0.069***
	(0.051)	(0.015)
_cons	8.242***	8.340***
	(0.529)	(0.506)
Ar(1)	-5.64***	-6.16***
Ar(2)	2.03	1.78
Hansen Chi2	169	79.62
Observations	4314	3706
Instruments	167	66

GMM-Two Step. Robust Standard errors in parentheses. (Roodman, 2012)

*** p<0.01, **p<0.05, * p<0.1

Source: Own elaboration

5.5. FINAL DISCUSSION

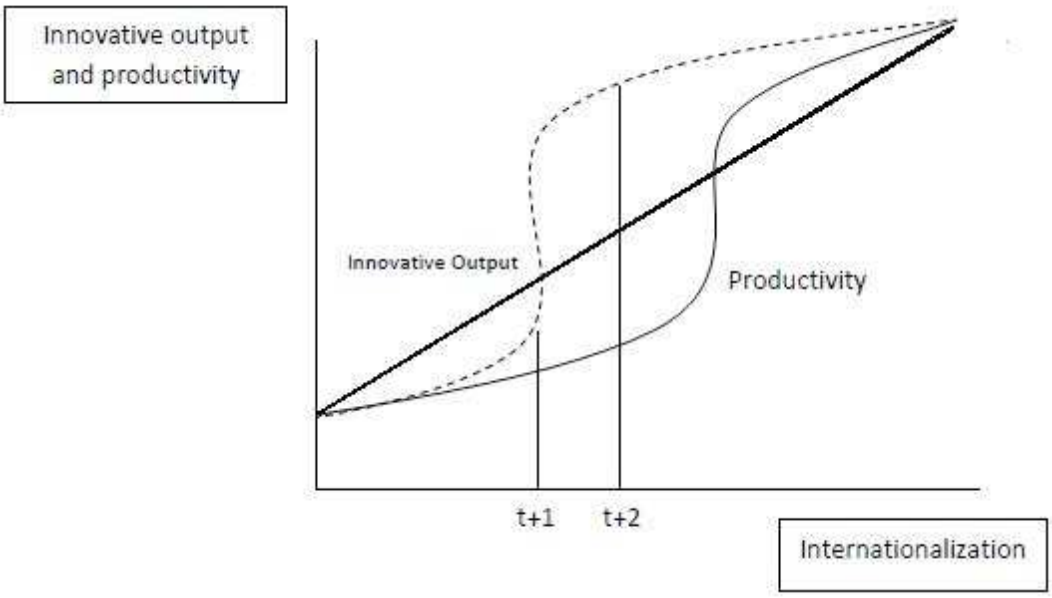
The vast majority of MNE studies have been focused on the effects that MNE have in host location. However, as it has been shown in this chapter, evidence about the effects that the MNE status confer to firms and in terms of technological or productivity performance at home is more scarce. Therefore, we have tried to cover this gap in the literature providing new evidence of the firms learning effects by FDI on innovative outputs and productivity levels.

Our findings contribute to confirm that the MNE status boosts the firms' innovative capacity because it provides access to new and important channels of technology and knowledge, defining what we call the learning by FDI process. Accordingly, the MNE status of firms generate ex post positive benefits on innovative outputs especially in terms of patent applications while it takes longer for product innovations. Moreover, learning effects are different across industries, being positive in high and medium

technological content industries for both measures of technological outputs, and no significantly confirmed in low tech industries.

On the other hand, the MNE status of firms also affects ex post levels of productivity although these results are not immediately manifested but these effects are dilated on time. This result allows us to open a discussion in the next direction: The internationalization of firms by foreign investments (FDI) permits them to acquire knowledge abroad that is firstly manifested in an increase of innovative outputs (patents) while learning effects can be materialized in an increase of firm productivity only after some longer period of time has passed. This relationship can be graphically illustrated taking into account the time horizon as it is done in Figure 5.2, where the X (horizontal) and Y (vertical) axis show internationalization commitment and innovative and productive results, respectively. This figure has been based on the curvilinear relationship between Multinationality and Performance shown among others by Kotabe et al., (2002) and Gomes and Ramaswamy (1999). The main difference of our contribution is the consideration of the innovative output and productivity in this relationship. In this regards, following a sigmoid curve, it is possible to observe two curves. This first one (in points) shows the effects of learning on the innovative outputs, which occurs in t+1, while the second one shows the final effects of learning on the productivity level in t+2. This mean that following the same learning function (the line in the graph) the productivity effect in the learning process appears at the end of this process. This idea is precisely which has been demonstrated in this chapter.

Figure 5.2 The relationship between learning effects by FDI on innovative outputs and productivity



Source: Own elaboration

It is important to mention that this relationship has been less studied and the fact that our contribution introduces as differential element the direction of the relationship that goes from Internationalization to Innovation and Productivity.

Moreover, our results show some differences regarding those studies that analyzed learning by exporting effects on innovative output and productivity (discussed in previous section of this chapter). Firstly, learning by exporting studies argued that firms from laggards industries are able to learn more abroad than firms included in the medium and high tech content (Salomon and Jin, 2007). However, our results show that learning by FDI effects are manifested only in high and medium tech industry. Secondly, the connection between learning by exporting on productivity has not provided conclusive results while our findings reveal that learning effects of MNE could be manifested in an increase of productivity even when it takes a reasonable period of time to be materialized.

Finally, this analysis confirm the characteristics of learning by FDI based on knowledge seeking motives and adding some issues to the relationship between internationalization, and innovation and productivity, according to both IB and international economics literature. Although some limitations related to the measurement of innovative outputs or productivity can exist, in future research we will

try to deal with these limitations. In addition, it should be mentioned that being aware of the fact that learning is a complex process, this analysis has been carried out for a sample of Spanish manufacturing firms, and this implies to be cautioned with the generalization of results.

CHAPTER VI

CONCLUSIONS, LIMITATIONS AND IMPLICATIONS

”Success is not final, failure is not fatal: it is the courage to continue that counts”

(Winston Churchill)

The recent emergence of MNE from countries not included among the richest ones, the change in the direction of investment flows (South-North), and the preference for the use of M&A and the knowledge seeking motives in firms’ internationalization strategies are some of the main issues in the IB research agenda nowadays. We find different contributions from scholars dealing with the EMNE or new MNE phenomena since the beginning of the 2000s, but there are still some open questions that justify the development of new studies.

MNE theory has been mostly developed from the seventies and among the most salient models we find the incremental model of internationalization, the product life cycle model, the transaction’ costs theory and finally, the OLI theory that summarizes the vast majority of previous approaches based on market imperfections. These frameworks do not accommodate perfectly well the current phenomenon of globalization and the dynamics of FDI flows. Particularly, the fact that countries such as Brazil, China India or even Spain become investor economies abroad was not originally included in the pioneer explanations about MNE. Those countries with lower level of development were considered just as host location because the existence of advantages in factors cost or economies of scale that justified firms’ internationalization following mainly market-seeking strategies. Therefore, some works previous to the current decade were devoted to the role of developing countries as host location for MNE mostly coming from the developed world. However,

countries with lower level of development than the richest ones have became home country of several MNE such as Lenovo, Acer, Iberdrola or Telefónica, among others.

The issue is not only that these new players entered into the international business scene but also the fact that firms from those countries present a different behaviour and characteristics that the traditional MNE. The new trends on the FDI flows direction, the preferable entry mode and the international strategies driven by Knowledge-seeking motives, converge in the explanation of the success acquired by MNE from home emerging economies or with low level of development. The relevant idea is that these MNE overcome the barriers found at home on foreign locations of more developed economies using mostly M&A as the internationalization mode. These aspects were obviously not explicitly included in the pioneer contributions of the MNE theory because they are newer on time.

Considering the new characteristics of FDI flows, there are some arguments against the validity of the pioneer postulates for the explanation of EMNE. Meanwhile, others accommodate the issue trying to improve the original contributions. One of the crucial aspects is the revision of the superiority of firms' assets or ownership advantages that is one of the pillars of the MNE theory, and the other is the justification of the use of M&A in earlier stages of internationalization built over the idea of the prevalence of knowledge seeking over other motives for FDI.

Regarding the first cornerstone, some studies agreed that new multinationals have different superior asset than the traditional MNE (those from the developed world). The idea that has been outlined in the literature is that an open concept of ownership advantages is more adequate for the analysis of new multinationals. The main assumption is that home country matters and therefore, is precisely this that enhances a different set of ownership advantages. For this reason, some studies agree that the final success of firms abroad is justified by the combination of country specific advantages (CSA), or in other words the location advantages (La) of home economies that play an especial role in the development of ownership advantages (Oa) in those economies. In fact, recent studies have confirmed the positive effects of some characteristics of the home country such as the institutional and technological levels to explain the emergence of EMNE.

Regarding the second cornerstone, some contributions agree that firms have the ability to learn abroad faster by using M&A, even when those firms come from a weak economic environment and in the earlier stages of the internationalization process.

Two arguments could be obtained of this last idea. On the one hand, it is precisely the weak environment at home that justifies the use of M&A, among other modes of internationalization due to the necessity of knowledge acquisition and this is precisely what encourages firms to use M&A according to the home country escape hypothesis. On the other hand, assuming that learning abroad is mostly oriented by knowledge seeking strategies, the effects on innovation and productivity can be positive, this allowing also for building new firms competitive advantages.

Considering these arguments, this PhD Thesis tries to contribute to this line of the international business landscape. Departing from a revision of traditional MNE theory and taking into account the new MNE characteristics, the delimitation of the conceptual framework of this study permits to detect how to adapt the pioneer contributions to the new trends in the field.

At the same time, the analysis of the literature background allowed us to identify some unanswered questions and to justify that it is possible to add some evidence on the issue. Even when there have been a huge set of recent contributions about EMNE, empirical studies are not so abundant. On the one hand, although the role of the home country characteristics has been currently seen as crucial for the difference between traditional and new multinational enterprises, there is scarce empirical evidence in this sense. On the other hand, regarding the use M&A as a preferred mode of internationalization, there is broad agreement on the relevance of the home country escape hypothesis for explaining EMNE. However, this idea would need more supportive evidence. Finally, the effects of learning abroad or, in other words, the analysis of the MNE status of firms on the innovative outputs and productivity have scarcely been studied although there has been a huge set of studies focused on other forms of internationalization such as exports. Therefore, given the relevance that knowledge seeking strategies have acquired in current times and the recognition of foreign knowledge as a source of learning, new contributions at the micro level of analysis are justified.

The first research question of this thesis has tried is related to the identifications of those characteristics at the home country level that contribute to explain the EMNE success abroad. Therefore, adopting an approach which assumes the importance of the presence of ownership advantages or FSA, and also considering some additional elements that are defined in the firm's environment, the first research or paper tries to check empirically the effects of the home country on the outward investment, differentiating between a sample of developed and developing countries. The main

idea is that some macro and institutional aspects of the home countries may enhance the likelihood of outward FDI flows because they contribute to the development of firm's advantages, being these effects different for the sample of developed and developing countries.

Our findings confirm that the international expansion of MNE may be considered as a process of skills' accumulation that takes place in the home national system of innovation, and it is directly conditioned by institutional and technological aspects and by the presence of foreign MNE in the country. These effects on the firms' internationalization process are compared for both developing and developed countries and the results show higher effects in the former. Moreover, the presence of MNE located in the country plays a special role on the encouragement of OFDI, according to the IDP postulates, and the institutional quality and the generation of absorptive capacities also affect the emergence of MNE from developing economies.

This analysis provides new fresh empirical evidence on the studies of EMNE considering the analysis of the national level factors on the definition of those required advantages in firms from developing economies. Our findings come to improve our understanding of the dynamics of these companies while new evidence is provided about the inflection point between development and outward FDI according to the IDP theory. These findings also contribute to provide some policy implications related to the innovation and internationalization fields because both of them can be seen as complementary dimensions. The proposal would be that the capabilities-building process needed for the generation of EMNE can be enhanced by the presence of an efficient NSI. The coordination of actions in these two policy fields will allow the absorption of international knowledge and this has effects on countries development. It is important to highlight here that inward FDI is a vehicle for knowledge that may upgrade countries in their development path being also outward FDI a driver since that may facilitate the acquisition and absorption of knowledge abroad generating positive effects on development. Therefore, aspects such as the generation and improvement of entrepreneurship, scientific and technological capabilities, as well as the guarantee of an institutional framework that would promote market relationships become relevant issues for a higher internationalization process of firms that would favor the access to external knowledge by both inward and outward FDI.

One limitation of the first paper is related to the use of aggregate instead of firms' level data. However, this can be justified by the problem under study since the key aspect of the proposal is the home environment of emerging MNE. There is not any

other option for the analysis of the home country effects on MNE in developing economies. In addition, although it is interesting to explore host location to predict the effects of the home country according to the firms' internationalization strategy, the lack of bilateral data has limited the possibility for such analysis and, therefore, this is another possible limitation of this research paper.

The second cornerstone of New Multinationals is the use of M&A as a more rapid mode of internationalization. This idea is taken as core in the second research paper of this Thesis. It is focused on building a conceptual and empirical proposal of the relationship between the HNSI level of advance and the chosen mode of FDI (Greenfield FDI and M&A). This proposal is based on those previous contributions that underline how the use of M&A may compensate home country weaknesses. Therefore, departing from the NSI framework, the objective is to explain how a more or less advance level of HNSI may affect the choice of FDI mode along the MNE' motivations. Meanwhile, this relationship may differ between developed and developing economies. The main contribution of this paper is to detect what aspects in the HNSI would explain the choice of foreign expansion modes, according to the prevalent strategy of exploitation or acquisition of capabilities abroad. We also contribute to the literature integrating in our analysis what is the role played by some IDP arguments in the firms' internationalization of countries with different levels of development.

The empirical findings confirm that a less advanced HNSI encourage the use of M&A to compensate HNSI weaknesses and therefore, a negative relationship between the advance level of the HNSI and the use of this mode of internationalization is predicted. Moreover, the presence of foreign MNE affects directly the use of this mode because their external influences do not compensate the lack of domestic firms' capabilities. However, for the case of more advanced HNSI, a positive relationship with M&A is found while the presence of foreign MNE has a negative effect. These last findings add some new evidence to the IDP theory in relation to the use of M&A. On the other hand, the advance level of the HNSI and the presence of MNE are positively associated to Greenfield FDI in both developed and developing countries, a result that reveals the importance of the capabilities accumulation process that this mode of FDI requires.

This research provides also some fresh empirical evidence that contributes to the literature of EMNE especially in the explanation of the intense use of M&A as a home escape strategy. Furthermore, differences between developed and developing countries reinforce previous arguments in the literature of EMNE. Finally, the IDP

theory is complemented by the consideration of the NSI and the differentiation between Greenfield FDI and M&A. One potential implication derived from these findings for managers is that in the case of firms coming from an advanced HNSI, the choice between Greenfield FDI and M&A is more clearly linked to the final firms' motive for internationalization -market-seeking or knowledge-seeking- given that the HNSI provides the necessary knowledge basis that would justify the choice. However, when firms come from a less advanced HNSI (in terms of both institutions and technological basis) the use of M&A may compensate the weaknesses at home. In addition, linkages with foreign MNE seem to play a special role for foreign knowledge acquisition.

As a limitation, we are not able to precisely measure knowledge seeking or market seeking motives and this is constrained for the lack of firm level data in the analysis. However, the use of macro variables enables to capture the national system conditions that could affect the chosen mode of FDI. This limitation also implies that our finding cannot be generalized as a pattern for all the firms in a country. Another limitation is that the host country is not known and this would limit the assumption of acquisition or exploitation of capabilities. Therefore, future research could extend this proposal taking into account the micro elements of the internationalization process while considering both host and home economies.

Finally, the last research paper of this Thesis analyzes the effects of learning through FDI on innovative outputs and productivity for a sample of Spanish manufacturing firms. The main idea is connected with the positive impacts that the MNE status can generate on firms' innovative outputs and productivity since international knowledge can be considered as a source of competitive advantages. Therefore, this paper necessary adopts a temporal perspective given that international learning is a long term process. The empirical findings reveal that the MNE status of firms play an important role in the ex post innovative outputs and firms internationalized by FDI learn abroad. Learning is directly observed in an ex post increase of product innovations or patent applications, being the latter effects larger than the former in which learning effects take more time. Furthermore, differences across sectors exist since the effects are higher in high and medium tech industries in both patents and product innovations. Finally, even when the effects of learning have also been confirmed for productivity, these only appear after two years of the MNE status. This general finding allow us to suggest that firms learn abroad by FDI and the acquisition

of international knowledge is shown in an increase of the innovative outputs that only after some time elapse derives in an increase of firms' productivity levels.

The main contribution of this study is the measurement of learning abroad by FDI effects which adds some new knowledge to existing empirical evidence. We check the consequence of the international expansion of firms on the innovative performance and productivity, and it is possible to confirm these effects in a country which has not developed a strong technological base but it accounts with several MNE, contributing to explain the New Multinationals and the success of them in Spain.

As limitation of this research paper is related to the potential criticism of the dependent variables. The use of patent application refers only to codified knowledge and it not necessarily reflects all the new knowledge generated by firms. On the other hand, the accountability of product innovations may be biased by the questionnaire itself being possible that managers can be mistaken in their understanding about product innovation. However, these are unique valid indicators for the measurement of knowledge and the effects of learning as it is well known. Finally, the measure of productivity is one of the most common tools used although it is not necessary the most corrected as it was explained in Chapter V. Another aspect to mention is the complexity of learning and the analysis of the related effects. Even when we have described a lag structure of the model to capture the effects of prior MNE status on ex post innovative outputs, we are not able to guarantee that these results is ultimately caused by learning abroad. Given the composition of our sample, the vast majority of MNE were also exporter (only six were not exporter) and this imply that our study also collect implicitly the effects of learning by exporting. Finally, this analysis is focused on a sample of Spanish manufacturing firms and then, reason why caution in the generalization of findings should be taken.

In future research we will deal with all these limitations. Moreover, it would be interesting to test this approach with other samples for different countries. In addition, we are currently working in the improvement of the productivity measure, building an index of TFP. On the other hand, we have also proposed to divide the variable of MNE status differing between firms which have been MNE for longer and firms that in the period observed has opened new subsidiaries; this will allow us to capture the effect of changes on the firms status on the technological performance and we will also consider the host countries for investments.

Finally, some political implications and recommendation for managers from this last research paper. The potential learning process of internationalized firms becoming MNE can be reflected in an increase of the innovative outputs and after some time in an increase of the productivity level of firms. Therefore, governments can promote foreign investment given the ex post positive effects for domestic firms competitiveness. Moreover, in the case of managers they can be aware that international expansion although it requires a higher cost, can offer additional benefits related to the acquisition of new knowledge that also provide opportunities for the firms' innovative performance.

In terms of summary, the commented three research papers have satisfactory accomplished with the main proposal of this PhD Thesis, adding some new fresh knowledge to three problems referred to the present trend of new multinationals. In fact, the three specific objectives developed in this thesis have been fulfilled. On the one hand, the analysis of the home country in the emergence of MNE has confirmed that CSA play a key role in the internationalization process of firms from developing economies. On the other hand, it has been also cheeked how the use of M&A is justified by the home country weaknesses and the need of learning abroad. These findings confer a key role to the home country because it may facilitate the development of some firms' specific advantages. And also because the home national system of innovation could justify the chosen mode in the internationalization process, being M&A the most used mode when firms come from a weak national environment. Finally, the last research paper has showed how international knowledge acquired through investments abroad may have positive effects on firms' innovative outputs and productivity levels and these findings suggest new directions for the analysis of the internationalization-innovation-productivity relationship.

All these findings have collaborated to the research field of EMNE or New Multinationals phenomenon. Nonetheless, this Thesis also faced some limitations that would motivate the development of future works in this line of research, trying to specifically analyze the internationalization dominant motives and the bilateral flows in the study of learning abroad by FDI. Moreover, some policy implications have to deal with the need of coherence between innovation and internationalization topics and how a more efficient innovation system will boost the internationalization process of firms and how international knowledge acquired abroad will also boost the innovative outputs and productivity of firms. Therefore, both policies should be considered

complementary, and this will be especially relevant in countries with low level of development.

Finally, some publications have been already obtained from the research carried out in this PhD Thesis –in next paragraph- while others are either submitted to Journals and under the review process or even in the preparation phase. It has also to be mentioned that the PhD candidate has already received a Research Award for the first paper of this Thesis.

Publications:

Articles and Chapters

ÁLVAREZ, I., TORRECILLAS, C. *What does it matter about the home countries of emerging multinationals?* Discussion paper- IIIS-Institute for International and Integration Studies, Trinity College of Dublin, nº 434 (Sep, 2013)

ÁLVAREZ, I., TORRECILLAS, C. Investigación, Desarrollo e Innovación. *Economía española. Estructura y Regulación*, García de la Cruz, M., Ruesga Benito, S. (Coord.). Thomson, Madrid. (2013) (In press)

ÁLVAREZ, I., TORRECILLAS, C. Factores determinantes de la emisión de inversión directa extranjera: un proceso de acumulación de capacidades. *Revista de economía Mundial*, 2013 (34), pp. 21-45. ISSN: 1576-0162

TORRECILLAS, C., FISCHER, B. How attractive are Innovation Systems for knowledge Intensive Services' FDI? A Regional Perspective for Spain. *Journal of Technology Management and Innovation*, 2011, 6(4), pp. 45-59. ISSN: 0718-2724.

Articles in evaluation

ALVAREZ, I., TORRECILLAS, C. The effects of home country systems of innovation in the FDI mode of emerging multinationals, Submitted to *Journal of International Business Studies*

Research Award

V Premio José Luis San Pedro to the best Paper of the Conference *Internationalization in time of crisis,* organized by Sociedad de Economía Mundial, held in Jaén (Mayo, 2012). ÁLVAREZ, I., TORRECILLAS, C., 2012: "Factores determinantes de la emisión de inversión directa extranjera: un proceso de acumulación de capacidades".

RESUMEN Y CONCLUSIONES[42]

"Cuando creíamos que teníamos todas las respuestas, de pronto,

cambiaron todas las preguntas"

(Mario Benedetti)

TÍTULO

NUEVAS EMPRESAS MULTINATIONALES. MODOS DE INTERNACIONALIZACIÓN Y APRENDIZAJE EN EL EXTRANJERO

[42]Acorde con el artículo 33.b del reglamento de los estudios de doctorado de la Universidad de Jaén este documento avala el contenido principal de la tesis.

ÍNDICE

INTRODUCCIÓN

La existencia de nuevos actores y prácticas en el escenario de los negocios internacionales en las últimas décadas, ha provocado el desarrollo de una actual agenda de investigación en este campo, conocida como empresas multinacionales emergentes o nuevas empresas multinacionales. Así pues, los flujos de inversión provenientes de empresas multinacionales de países en desarrollo o países que no se encuentran entre los más avanzados del mundo, tales como Brasil, China, India o incluso España, así como la dirección de los flujos (no necesariamente Norte-Sur), y el uso de las fusiones y adquisiciones (F&A) siguiendo una estrategia de búsqueda de conocimiento, están haciendo tambalear las teorías y modelos de las empresas multinacionales que se han venido desarrollando desde la década de los 70.

La contribución de esta Tesis se enmarca en el fenómeno de las nuevas empresas multinacionales, aportando nueva evidencia empírica en los planos macro y microeconómico para explicar el éxito de estas empresas multinacionales en el extranjero.

Específicamente, esta agenda ha llevado a plantear dos preguntas principales de investigación; por un lado, en qué medida estas empresas se han internacionalizando haciendo uso del concepto de ventajas de propiedad o recursos específicos de las empresas, que ha venido justificando la existencia de empresas multinacionales desde los estudios pioneros de Hymer(1976), Caves (1996), Peronse (1959) y, por otro, cómo se justifica que estas empresas hayan seguido un proceso rápido de internacionalización con el objetivo de buscar conocimiento y aprender en el extranjero (Ramarmuti; 2012 Chen and Cuervo-Cazurra, 2012; Witt and Lewin 2007).

Así pues, considerando la idea de que existen diferencias entre las ventajas de propiedad de las empresas multinacionales de los países desarrollados y en desarrollo Lall, 1984; Wells, 1998; Cuervo-Cazurra and Genc, 2008; Gammeltoft, 2010a) debido a que las empresas de estos últimos países no siempre pueden justificar el proceso de internacionalización por la posesión de los activos clásicos, tales como activos tecnológicos, marcas, o habilidades de marketing y, teniendo en cuenta que la literatura ha argumentado que el país de origen (*home country*) (Dunning, 2009; Gammeltoft et al., 2010a; Tan and Meyer, 2010; Rugman 2010; Gammeltoft, 2010a; Luo and Wang, 2012; Stoian, 2012; Rugman, 2010; Narula, 2012) es clave para la emergencia de empresas multinacionales de estos países, en esta Tesis se abordan estas cuestiones. Los dos primeros análisis o investigaciones de la Tesis estudian el

papel que tiene determinadas características del país de origen en el proceso de internacionalización empresarial. La primera investigación analiza cómo el marco institucional, las características tecnológicas y efectos externos tales como la presencia de empresas multinacionales, pueden afectar al desarrollo de un entorno favorable que promueva la internacionalización. En definitiva, se plantea un nexo entre los niveles macro y micro, considerando que el entorno empresarial es un factor de empuje que afecta específicamente a la internacionalización de las empresas de los países emergentes. Esta perspectiva de análisis que considera el país de origen es relativamente nueva ya que la mayoría de los estudios existentes hasta la fecha han analizado el país de destino de la inversión, obviando el papel que el entorno del país de procedencia de las empresas puede tener en el proceso de internacionalización, siendo este especialmente importante en las nuevas empresas multinacionales.

La segunda investigación trata conectar la perspectiva del país de origen, una vez que ha sido contrastada su importancia en la investigación anterior, con la justificación del modo elegido para la internacionalización, considerando la inversión Greenfield y las F&A, habiéndose justificado este último como el modo principal para la internacionalización de empresas de las economías menos desarrolladas. Así pues, se propone y se comprueba empíricamente una propuesta conceptual que plantea la relación entre el nivel de avance del sistema nacional de innovación y el uso de las F&A en el proceso de internacionalización, justificando el uso de este modo como una vía de escape de las debilidades del país de origen y como forma para adquirir capacidades en el extranjero.

Por otro lado, en relación con la nueva tendencia en la internacionalización de las empresas que buscan conocimiento en el extranjero, la tercera investigación de esta Tesis plantea y comprueba empíricamente cómo el conocimiento adquirido en el extranjero, esto es, el aprendizaje mediante inversión, puede quedar reflejado en un incremento del resultado innovador y de la productividad de estas empresas, siguiendo un planteamiento micro y la literatura sobre heterogeneidad empresarial (Hitt et al. 1997; Kafouros et al, 2008 Belderbos, 2003; Yeoh, 2004; Coe and Helpman ,1995; and Griffith et al., 2006; Kafouros et al., 2012; Belderbos et al., 2013).

Estas investigaciones dan forma a los objetivos específicos de la presente Tesis, estando la principal pregunta de investigación y el objetivo general de la Tesis contemplados en la Tabla 1.

Tabla 1. Propuesta de investigación de la Tesis

Objetivo general	Objetivos específicos	Investigaciones	Metodología
Identificar los factores que explican el éxito de las nuevas empresas multinacionales atendiendo específicamente a los procesos de aprendizaje en el extranjero	Evaluar el rol del país de origen como un factor que explica el éxito de las nuevas multinacionales en el extranjero	Investigación 1. Análisis de las características del país de origen como factores principales que fomentan los recursos específicos de las empresas y explican el éxito de las nuevas multinacionales en el extranjero	Revisión de la literatura de las teorías tradicionales de empresas multinacionales y de las nuevas aportaciones de las empresas multinacionales Bases de datos: Unctad y World Development Indicators (Banco Mundial) Datos de panel dinámicos
	Analizar el sistema nacional de innovación del país de origen en la explicación del uso de las F&A como modo elegido de expansión de las nuevas empresas multinacionales	Investigación 2. Propuesta conceptual y análisis empírico de la relación entre el nivel de avance del sistema nacional de innovación del país de origen y el modo elegido de inversión en el extranjero (Inversión Greenfield y F&A)	Revisión de la literatura de las teorías tradicionales de empresas multinacionales y de las nuevas aportaciones de las empresas multinacionales Bases de datos: Unctad y World Development Indicators (Banco Mundial) Análisis Factorial Datos de panel dinámicos
	Estudiar los efectos de aprendizaje en el extranjero mediante inversión en el resultado innovador y en la productividad de las empresas	Investigación 3. Análisis de los efectos del aprendizaje en el extranjero mediante la inversión en el resultado innovador y en la productividad, para una muestra de empresas manufactureras españolas	Revisión de la literatura sobre transferencia de conocimiento entre distintas unidades de la empresa multinacional y la literatura de heterogeneidad empresarial Datos: Encuesta de Estrategias Empresariales ESEE Análisis Discriminante Datos de panel dinámicos

Fuente: Elaboración propia

Para el cumplimiento de las investigaciones que se plantean en esta Tesis se han usado diversas bases de datos. Por un lado, las dos primeras contribuciones han empleado datos a nivel agregado para distintos países, habiendo sido estos datos obtenidos mayormente de las bases de datos de UNCTAD, OCDE y el Banco Mundial. Por otro lado, la tercera contribución se ha realizado con datos a nivel de empresa procedentes

de la Encuesta sobre Estrategias Empresariales (ESEE)[43] elaborada por la fundación SEPI del Ministerio de Economía y Competitividad.

Respecto a la metodología, en los análisis empíricos que se realizan en esta Tesis se ha hecho uso del método de datos de panel dinámicos, y más concretamente se ha utilizado el método general de momentos (GMM). La elección de esta metodología se justifica en el análisis de distintos periodos de tiempo y distintos individuos (en las dos primeras investigaciones son países, y en la última, empresas). Además, esta metodología permite lidiar con los problemas de endogeneidad que estos estudios pueden presentar. Finalmente, también se han usado varias técnicas de análisis multivariante en las investigaciones propuestas, como el análisis factorial en la segunda investigación y el análisis discriminante para dos grupos (empresas multinacionales y empresas domésticas) en la tercera investigación.

Todo lo anterior ha quedado estructurado en los seis capítulos que conforman la Tesis Doctoral. El primer capítulo es la introducción, en la que se da cuenta de la relevancia del objeto de estudio y la justificación de los análisis planteados, apoyándose en evidencia empírica previa. También se plantea la principal pregunta de investigación, así como los objetivos generales y específicos, y se describen las estadísticas y la metodología que se han usado en el desarrollo de la Tesis.

El segundo capítulo presenta el marco teórico de la investigación (de manera sintetizada las principales teorías usadas en esta investigación aparecen reseñadas en el anexo que acompaña al presente resumen) En la primera sección se revisa la evolución de los modelos de inversión directa extranjera y de comercio, llegando a las últimas extensiones de los mismos y considerando, por un lado, los modelos que han incorporado otras formas de internacionalización, como las F&A o Joint Venture y, por otro, los modelos que relacionan el nivel de productividad con el grado de compromiso internacional de las empresas. Posteriormente, en la segunda sección se atiende a las teorías de las empresas multinacionales en conexión con las características específicas de las nuevas empresas multinacionales. Es necesario matizar que las características de las nuevas multinacionales han provocado un gran debate en los estudios de negocios internacionales, habiéndose propuesto por parte de la literatura varias soluciones; entre ellas, cabe destacar tanto la corriente que considera el mantenimiento de las teorías tradicionales y la extensión de las mismas como los análisis que plantean

[43] Ha sido posible acceder a esta encuesta gracias a la financiación del proyecto del plan nacional de I+D del año 2010, número ECO2010-16609, dirigido por la Prof. Isabel Álvarez y titulado " Empresas, internacionales, formas de entrada e innovación-EIFEI"

nuevos enfoques. Por lo tanto, esta segunda sección intenta tender vínculos entre las teorías tradicionales de las empresas multinacionales y el fenómeno de las nuevas empresas multinacionales. Finalmente, la última sección del capítulo analiza la evidencia a nivel de empresa que justifica el aprendizaje en el extranjero mediante la inversión, considerando el caso específico de las empresas multinacionales españolas y teniendo en cuenta los efectos esperados en los resultados innovadores y la productividad empresarial.

El tercer capítulo de esta Tesis analiza los efectos que se detectan a nivel de país de origen en la explicación del concepto de ventajas de propiedad en las economías emergentes, por lo tanto, este tercer capítulo contiene la primera investigación propuesta en esta Tesis. Concretamente, se demuestra qué factores del país de origen pueden facilitar la promoción y el éxito de las nuevas multinacionales, permitiendo la generación de recursos específicos en las empresas, especialmente en el contexto de países en desarrollo. La propuesta empírica demuestra como el marco institucional y tecnológico del país de origen, lo cual puede denominarse como sistema nacional de innovación, así como la presencia de empresas multinacionales, son factores clave para explicar el fenómeno de las nuevas empresas multinacionales. Comparando varias grupos de países, países desarrollados y en desarrollo, en un periodo de 14 años (1996-2009) y usando la metodología de datos de panel dinámicos, los resultados demuestran como algunos factores nacionales son críticos a la hora de explicar el proceso de acumulación de capacidades que fomenta la generación de nuevas multinacionales y que este efecto es más elevado para los países en desarrollo que en los países desarrollados.

El cuarto capítulo estudia el papel que juega el sistema nacional de innovación del país de origen en la elección del modo de inversión de las nuevas empresas multinacionales. Con esta segunda investigación se pretende conocer en qué medida las fortalezas y debilidades del sistema nacional de innovación del país de origen afectan a la elección entre inversión Greenfield y F&A. Particularmente, lo que se quiere contrastar es la relación entre el nivel de desarrollo del país de origen y el uso de F&A como principal método de internacionalización, relación que ha quedado argumentada por las hipótesis de escape del país de origen para la adquisición de conocimiento en el extranjero. El análisis empírico se ha construido para una muestra de 77 países con distinto nivel de desarrollo, en el periodo 1996-2010. Se ha utilizado un análisis factorial para la construcción de un índice compuesto del sistema nacional de innovación del país de origen, y se ha empleado la metodología de datos de panel

dinámicos en el análisis empírico. Los resultados muestran como el sistema nacional de innovación del país de origen afecta a los dos modos de inversión. No obstante, existe una relación negativa entre el sistema nacional de innovación y el uso de las F&A, indicando que las empresas de estas economías usan este modo como forma de escape de las debilidades institucionales y tecnológicas del país de origen, y siguiendo una estrategia de aprendizaje en el extranjero. En el caso de la inversión Greenfield existe una relación positiva entre el sistema nacional de innovación del país de origen y el uso de este modo de internacionalización. Por otro lado, la presencia de empresas multinacionales extranjeras en economías emergentes afecta directamente a la internacionalización vía F&A mientras que para el caso de las economías desarrolladas esta relación es negativa.

La tercera investigación propuesta en esta Tesis aparece recogida en el capítulo quinto. Aquí se analizan los efectos del aprendizaje debidos a la inversión en el extranjero en los posteriores resultados innovadores y la productividad empresarial. Para cumplir con este objetivo, se estudia cómo la adquisición de conocimiento internacional puede provocar efectos positivos en el número de innovaciones de producto y en el número de aplicaciones de patentes, así como en el nivel de productividad de las empresas. Por otro lado, también se comprueban estos efectos diferenciando entre el nivel de contenido tecnológico de las industrias. Para realizar este análisis, se ha usado una muestra de empresas manufactureras españolas en el periodo 2000-2009 y se ha empleado la metodología de datos de panel dinámicos en el análisis. Los resultados demuestran la existencia de efectos positivos entre la inversión en el extranjero y el rendimiento innovador de las empresas manufactureras españolas, mostrando que estos efectos son más elevados cuando la unidad de análisis son las patentes que para la innovación de producto, cuyos efectos aparecen más dilatados en el tiempo. Además, como resultado del aprendizaje en el extranjero, las empresas en industrias de alto contenido tecnológico internacionalizadas mediante inversión han mostrado efectos positivos en las patentes, mientras que las empresas de medio contenido tecnológico muestran efectos positivos en innovaciones de producto. Finalmente, estos resultados de aprendizaje no se reflejan directamente en un aumento de la productividad sino que se comprueba que es necesario el transcurso de un periodo de tiempo para poder observar dichos efectos.

Por último, el sexto y último capítulo de la Tesis recoge los principales resultados obtenidos así como las conclusiones más importantes y algunas implicaciones para las

políticas. Además, también aparecen aquí recogidos el conjunto de limitaciones de la Tesis y las futuras líneas de investigación.

La siguiente sección del presente resumen analizará brevemente las tres investigaciones que han constituido el núcleo central de esta Tesis y que, como se ha mencionado anteriormente, corresponde a los capítulos 3, 4 y 5. Finalmente, en el último punto de este resumen se expondrán las principales conclusiones, limitaciones y futuras líneas de investigación de la Tesis.

RESUMEN

Investigación 1[44]: ¿Qué elementos del país de origen son relevantes en la explicación de las nuevas empresas multinacionales?

La literatura reciente de las multinacionales de los países en desarrollo o las nuevas empresas multinacionales propone que el éxito de estas compañías en el extranjero puede explicarse por algunas características del país de origen, que fomentan la generación de activos específicos necesarios para competir con otras empresas multinacionales de países desarrollados. El incremento de la emisión de inversión de economías emergentes tales como China, Rusia, México, Chile, Malasia, India, Brasil, o Turquía, en las últimas décadas, ha aumentado el interés en el análisis de los factores determinantes que justifican la salida de inversión de estas economías (UNCTAD, 2011), desafiando las predicciones de las teorías tradicionales, y tratando de aportar una explicación más plausible al fenómeno de las empresas multinacionales emergentes (Meyer et al., 2011).

En este sentido, el concepto de ventajas de propiedad (Dunning, 1988) o el de ventajas específicas de las empresas (FSA) (Rugman and Verbeke, 1990) ha dominado la gran mayoría de la evidencia disponible sobre la que se han construido las teorías de las empresas multinacionales. Estas teorías consideran que la presencia de economías de escala, de activos tecnológicos, de capital humano o una adecuada gestión de marketing son elementos clave que hacen más probable el éxito de estas empresas en el extranjero y, a su vez, justificaban los buenos resultados derivados de la internacionalización. Sin embargo, el fenómeno de las "nuevas multinacionales", que provienen de países emergentes o de países que no se encuentran entre los más ricos

[44] Versiones previas de esta investigación han sido publicadas en la Revista de Economía Mundial (2013)

del mundo, ha cuestionado la existencia de tales ventajas, y por lo tanto, los pilares básicos sobre los que descansan las teorías de las empresas multinacionales.

Así bien, en la literatura sobre las nuevas multinacionales se argumenta que las empresas multinacionales de los países en desarrollo no poseen los mismos activos que estas compañías procedentes de los países desarrollados. Este hecho ha justificado la necesidad de explorar en detalle las características que han permitido el éxito de estas nuevas multinacionales en el extranjero, haciendo emerger también nuevas preguntas en la agenda de investigación de los negocios internacionales.

Ello ha desembocado en la revisión de las teorías de las empresas multinacionales para permitir incorporar este nuevo fenómeno. Aunque el paradigma OLI es todavía el enfoque más usado, algunos autores han reconocido la importancia de combinar los activos específicos de las empresas (FSA) con algunos elementos a nivel macroeconómico del país de origen (CSA), siguiendo el enfoque FSA-CSA que se plantea, por ejemplo, en Rugman and Li (2007). Otros autores, por el contrario, argumentan la necesidad de extender el paradigma OLI teniendo en cuenta aspectos macroeconómicos, como el marco institucional del país de procedencia, con el objeto de proveer una explicación convincente de la trayectoria positiva seguida por las salidas de inversión de los países en desarrollo (Cuervo-Cazurra and Genc, 2008; Luo and Wang, 2012; Narula, 2012).

Considerando los argumentos previos, el primer estudio de la presente Tesis analiza los factores a nivel nacional que pueden afectar a la generación de empresas multinacionales, diferenciando entre países desarrollados y países en desarrollo. Esta investigación pretende demostrar que las ventajas de propiedad o los recursos específicos de la empresas son importantes a la hora de determinar el proceso de internacionalización, pero en el caso de las nuevas multinacionales deben considerarse también las características del entorno de la empresa o el país de origen como elementos clave de este proceso. Por lo tanto, se trata de esbozar una combinación de características a nivel de empresa y de país, en el proceso de internacionalización de las empresas, entendiéndose como un proceso de acumulación de capacidades que ocurre en el país de origen. Este proceso estará directamente condicionado por aspectos institucionales y tecnológicos que a su vez afectarán al desarrollo de los países. Con lo anterior, en la investigación se analizan cómo variables como la estabilidad institucional y financiera, el nivel educativo, y la capacidad de absorción de los países, aproximada mediante el gasto en I+D, junto con las presencia de empresas multinacionales afectan a la generación de ventajas de propiedad que permiten el

proceso de internacionalización y, a su vez, diferencia el proceso de internacionalización entre los países desarrollados y en desarrollo.

Persiguiendo este objetivo, el análisis llevado a cabo en la primera investigación de esta Tesis ha sido conducido para una muestra de 48 países, incluyendo países desarrollados y en desarrollo, en un periodo de tiempo de 14 años (desde 1996-2009). La estimación mediante un modelo de datos de panel dinámico ha permitido explicar las salidas de inversión en función de un conjunto de regresores que incluyen los aspectos del sistema nacional de innovación del país de origen, tales como el marco institucional, la capacidad de absorción o los niveles de educación, así como otros factores tradicionales que explican el proceso de internacionalización, como los salarios o la competitividad de los países. El conjunto de variables del entorno de la empresa aparecen recogidas en la siguiente tabla (Tabla 2).

Tabla 2. Variables usadas en el análisis de la primera investigación

Variable	Definición	Fuente
Salidas de inversión (Y)	Salidas de inversion en Stock, (% PIB)	Unctad, FDI database
Intereses (FIN)	Intereses. % Intereses cargados por los bancos a los prestamos de los clients.	Banco Mundial, 2011
Calidad institucional (INS)	Calidad y estabilidad institucional	Banco Mundial, 2011
Gasto en I+D (RD)	Gasto en I+D (como % of the PIB)	Banco Mundial, 2011
Educación (EDU)	%de Alumnos matriculados en eduación secundaria (% Total),	Banco Mundial, 2011
Salarios(W)	Salarios($US dollars).	Banco Mundial, 2011
Formación Bruta de Capital (GCF)	Acumulación de capital físico	Banco Mundial, 2011
Exportaciones de alta tecnología (HX)	Exportaciones de alta tecnología(% exportaciones en las manufacturas)	Banco Mundial, 2011
Entradas de inversión (IFDI)	Entradas de inversión (Stock,% GDP)	Unctad, FDI, 2011

Fuente: Elaboración Propia

El uso de estas variables encuentra soporte en contribuciones previas en la literatura que han explorado cómo algunos aspectos del país de origen hacen más probable la explicación de las salidas de inversión en las economías emergentes (Lall, 1984; Peng, 2002; Child and Rodrigues, 2005; Kumar, 2007; Godstein and Wells, 2007; Cuervo-Cazurra, 2008; Mathews, 2006; Gammeltoft et al. 2010a). Sin embargo, estos estudios se han centrado más en contribuciones conceptuales, o análisis mediante estudios de caso o entrevistas, en vez de desarrollos empíricos, en donde radica una de las mayores contribuciones de esta investigación. Estudios que analizan la relación entre las salidas de inversión y las características del país de origen muestran que factores como los tipos de interés, los tipos de cambio o el nivel de apertura de la economía pueden derivar en una relación causal de las salidas de inversión en China e India (Tolentino, 2010). Más recientemente ha habido tres trabajos que han considerado algunas características del país de origen en la explicación de las salidas de inversión. Así pues, el trabajo de Luo and Wang (2012), a partir de en un análisis a nivel de empresa explica como los aspectos institucionales y la presencia de empresas multinacionales en el país de origen afectan a la estrategia de inversión en economías emergentes. Por otro lado, el trabajo de Stoian (2012) y White et al., (2013) han introducido las instituciones del país de origen en el análisis de la teoría de la senda de la inversión (IDP). Finalmente, algunas contribuciones han establecido una relación entre la trayectoria de desarrollo y el sistema nacional de innovación (NSI) del país de destino (Álvarez and Marín, 2010), definiendo el NSI como el conjunto de elementos institucionales y tecnológicos así como otros relacionados con el comercio y la inversión que explican la competitividad en un contexto de liberalización de mercado (Álvarez and Marín, 2013).

A la luz de la literatura de las nuevas empresas multinacionales, cabe esperar que las características del país de origen medidas mediante el sistema nacional de innovación (instituciones, capacidad de absorción y nivel educativo) y las variables de competitividad (formación bruta de capital y exportaciones de alta tecnología), así como la presencia de empresas multinacionales (Guillén and García-Canal, 2010; Cuervo-Cazurra, 2008; 2012; Dunning, 2009, Buckley et al., 2007; Ramamurti, 2012) tengan efectos mayores en los países en desarrollo que en los países desarrollados dado que para estos últimos las empresas ya poseen ventajas de propiedad superiores, como las tecnológicas, que explican el proceso de internacionalización tradicional. Sin embargo, para el caso de los países en desarrollo es el entorno el que juega un papel clave para la internacionalización de estas empresas. Esta idea constituye la primera hipótesis de este estudio (H1), mediante la cual cabe esperar que las características del

país de origen en su conjunto tenga mayores efectos para la muestra de países en desarrollo que para los países desarrollados.

Por otro lado, teniendo en cuenta la teoría de la senda del desarrollo de la inversión, las entradas de inversión en estos países puede permitir una acumulación de capacidades que a su vez afectará positivamente a las salidas de inversión (Narula, 1996; Criscuolo and Narula, 2008; Narula and Dunning, 2010). De esta manera, es plausible plantear una relación positiva entre las entradas y las salidas de inversión, aunque está dependerá del nivel de desarrollo de los países, constituyendo esta relación la segunda hipótesis que se pretende contrastar (H2) en esta investigación. Finalmente, considerando la literatura de innovación es posible aplicar el enfoque teórico de los sistemas de innovación en la explicación de las salidas de inversión. Así, la tercera hipótesis que se plantea es en qué medida las características tecnológicas e institucionales del sistema de innovación del país de origen juegan un papel clave en el proceso de internacionalización, esperando que los elementos del sistema nacional de innovación afecten de manera positiva a las salidas de inversión y que estos efectos sean mayores para la muestra de países en desarrollo (H3).

Este conjunto de hipótesis específicas que se analizan en esta investigación quedan recogidas en la siguiente tabla (tabla 3).

Tabla 3. Hipótesis y signos esperados en el análisis de los efectos del país de origen

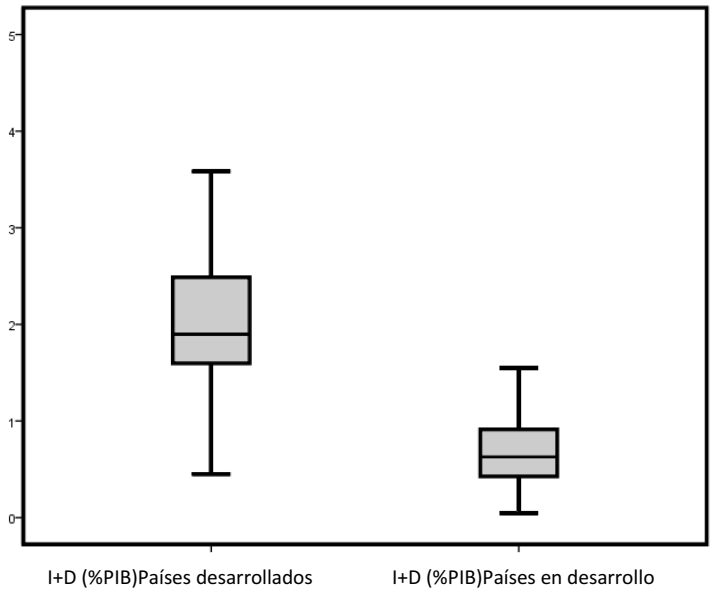
Hipótesis		**Signo Esperado**	
		Países desarrollados	**Países en desarrollo**
País de origen de la empresa multinacional	H1: Características del país de origen	n.s	+
Presencia de Empresas multinacionales	H2: Entradas de inversión	+	+
Sistema nacional de innovación	H3:-Elementos institucionales, del sistema financiero y capacidades de absorción	+	+
Controles			
Competitivdad	Formación bruta de capital	+	+
	Exportaciones de alta tecnología	n.s	+
Mercado de trabajo	Costes laborales	+	-

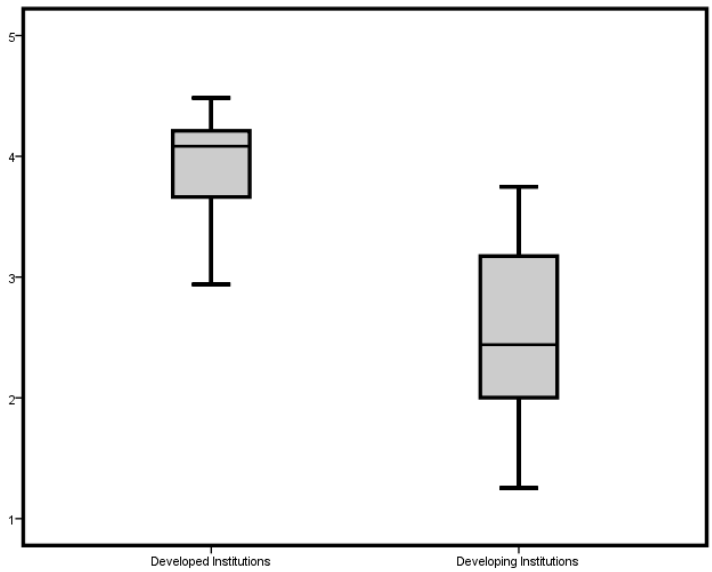
Ns: es no siginificativa

Fuente: Elaboración propia

Los análisis descriptivos muestran que las variables usadas en el estudio presentan, en términos medios, valores menores para los países en desarrollo que para los países desarrollados. Esto indica que las empresas de estos países, están inmersas en un entorno más débil. Los gráficos que se acompañan representan la diferencia entre las principales variables del sistema de innovación (Gasto de I+D e instituciones) en países desarrollados y en desarrollo (Gráfico 1).

Gráfico 1. Sistema de innovación diferenciado entre países desarrollados y en desarrollo.





Fuente: Elaboración propia

Mediante el modelo empírico se analiza como los elementos del entorno del país de procedencia de la empresa afecta al proceso de internacionalización. Para ello, se ha aplicado la metodología de datos de panel dinámicos para toda la muestra y para una submuestra de países desarrollados y de países en desarrollo. También, el análisis se ha realizado controlando por las entradas de inversión, con el objetivo de probar específicamente el papel que tiene la teoría de la senda del desarrollo de la inversión en las salidas de inversión. De esta manera, el modelo quedaría representado como sigue:

Eq (1)[45]:

$$logY_{it} = \alpha\, logY_{it-1} + \beta_1\, logFIN_{it} + \beta_2\, logINS_{it} + \beta_3 logRD_{it} + \beta_4 logEDU_{it} + \beta_5 logW_{it} + \beta_6 logGCF_{it} + \beta_7 logHEX_{it} + \eta_{si} + \upsilon_{dt} + \epsilon_{it}$$

Eq (2):

$$logY_{it} = \alpha\, logY_{it-1} + \beta_1 logFIN_{it} + \beta_2 logINS_{it} + \beta_3 logRD_{it} + \beta_4 logEDU_{it} + \beta_5 logW_{it} + \beta_6 logGCF_{it} + \beta_7 logHEX_{it} + \beta_8 logIFDI_{it}\, \eta_{si} + \upsilon_{dt} + \epsilon_{it}$$

Donde;

Y_{it}=*Salidas de inversion y* Y_{it-1}= *Salidas de inversión*$_{t-1}$

Los resultados de la estimación (Tabla 4) revelan la influencia de las variables del país de origen en el proceso de internacionalización de las empresas. Sin embargo, el papel del país de origen depende de la región de análisis. Así, cuando se ha realizado la comparación entre países desarrollados y en desarrollo, en el segundo grupo de países (Tabla 4, columna 5 y 6) las variables calidad institucional, estabilidad institucional, gasto en I+D y la presencia de empresas multinacionales afectan a las salidas de inversión, siendo esta relación mayor que para los países desarrollados (Tabla4 Columna 3 y 4). Este resultado viene a confirmar la primera hipótesis de esta investigación.

Por otro lado, analizando en detalle las variables, el análisis empírico también confirma como las características institucionales y la capacidad de absorción (gasto en I+D) del sistema nacional de innovación actúa en favor de la emisión de inversión en los países en desarrollo, siendo los resultados no concluyentes para la muestra de países desarrollados. Ratificándose la H3.

[45] Los acrónimos de las variables aparece en la tabla 1 del resumen de esta investigación.

Además, nuestros resultados también sostienen una relación positiva entre las entradas de inversión en el país de origen y las salidas de inversión (Tabla 4, columna 2, 4,6). Este hallazgo se obtiene tanto para la muestra de países en su conjunto como para las distintas submuestra, concediendo por lo tanto a las entradas de inversión un papel clave en la posible generación de ventajas de propiedad y cumpliéndose igualmente la H2.

La principal contribución de este estudio ha sido no solo la adopción de un enfoque original que combina diversos aspectos a nivel macro en la explicación del proceso de internacionalización de las empresas, sino el esfuerzo demostrado para probar empíricamente cómo las salidas de inversión pueden estar determinadas por algunos elementos del entorno y cómo estos elementos describen un proceso de acumulación de capacidades en el país de origen que fomenta la emisión de inversión.

Cabe afirmar que la importancia de estas características difiere al considerar si las empresas son originariamente de países desarrollados o lo son de países de menor desarrollo relativo, ya que la posibilidad de generación de ventajas de propiedad también es distinta. Así, para el caso de las empresas de economías en desarrollo, el marco institucional y la capacidad de absorción entra en juego con más fuerza en el fomento de salida de IDE al exterior. Al tiempo, los resultados del análisis empírico permiten confirmar el papel que juega la recepción de inversión en los países de origen de las empresas multinacionales, en la medida que promueve la generación de ventajas de propiedad que potencialmente se traducen en salida de inversión.

Este artículo aporta, por lo tanto, nueva evidencia empírica sobre los flujos de inversión y contribuye a la literatura de los factores determinantes de las salidas de inversión de los países, a partir de una concepción basada en los procesos de acumulación de capacidades que resulta ser clave para comprender la dinámica de las empresas multinacionales procedentes de países en desarrollo.

Tabla 4. Estimación del país de origen y las salidas de inversión

	Todos los países				Países en Desarrollo				Países desarrollados			
	(1)		(2)		(3)		(4)		(5)		(6)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
OFDI(-1)	0.881***	(0.076)	0.780***	(0.109)	0.786***	(0.125)	0.615***	(0.103)	0.983***	(0.237)	0.650***	(0.158)
FIN	0.025	(0.159)	0.198*	(0.118)	0.006	(0.221)	0.064	(0.212)	0.360*	(0.208)	0.142	(0.193)
INST	0.402**	(0.186)	0.431**	(0.216)	0.382**	(0.185)	0.189	(0.127)	2.092*	(1.380)	-0.337**	(0.166)
RD	-0.105	(0.226)	-0.124	(0.205)	-0.016	(0.108)	0.020	(0.085)	0.072	(1.278)	0.488*	(0.268)
EDU	-0.878**	(0.427)	-0.326	(0.294)	-0.266	(0.311)	-0.163	(0.236)	-1.660*	(0.947)	-0.850*	(0.456)
W	-0.059	(0.079)	-0.073	(0.102)	-0.002	(0.021)	-0.001	(0.105)	0.101	(0.990)	0.065	(0.098)
GCF	1.492*	(0.873)	0.502	(0.707)	0.245	(0.277)	-0.239	(0.377)	-0.101	(0.775)	-0.493	(0.405)
HEX	0.027	(0.072)	-0.078	(0.094)	-0.008	(0.043)	-0.003	(0.171)	0.291***	(0.112)	0.065	(0.074)
IFDI			0.263*	(0.146)			0.305***	(0.108)			0.653**	(0.319)
Hansen Test												
Chi-Square	34.09		39.03		0.6		1.72		4.66		4.12	
Ar(1)	-2.18**		1.74**		2.51***		2.07**		-2.34**		-1.94**	
Ar(2)	-1.16		1.46		1.11		1.2		0.04		0.12	
Nº												
Observaciones	258/34		258/43		162/27		162/27		96/16		96/15	
Instrumentos	43		51		10		14		17		15	

GMM- Dinamic Panel data- Two Step- Robust standard errors in parentheses 5 *** p<0.01, ** p<0.05, * p<0.1

Fuente: Elaboración propia

Investigación 2 ¿Qué elementos del sistema de innovación del país de origen son significativos en la elección del modo de inversión exterior en las nuevas empresas multinacionales?[46]

Una pregunta importante que se ha venido planteando ante el incremento de las empresas multinacionales de los países en desarrollo es en qué medida el concepto tradicional de ventajas de propiedad se considera todavía una fuerza conductora que explica el proceso de internacionalización de las empresas en el caso de los países que están fuera de la frontera mundial o si, por el contrario, es necesario la combinación de las ventajas de propiedad tradicionales con otros argumentos que expliquen más adecuadamente el fenómeno de las nuevas multinacionales.

Considerando lo anterior, la segunda investigación de esta Tesis analiza la relación entre el modo elegido para la expansión extranjera de las nuevas empresas multinacionales y las peculiaridades del sistema nacional de innovación (Nelson, 1993; Lundvall, 2007; Álvarez & Marín, 2010), en combinación con algunos de los argumentos esgrimidos de la teoría de la senda del desarrollo de la inversión (Dunning and Narula, 1996; Narula and Dunning, 2010).

La pregunta de investigación que se trata de resolver es en qué medida el nivel de avance del sistema nacional del país de origen (HNSI) puede explicar la elección del modo de expansión extranjera y, por lo tanto, la determinación de si prevalece la estrategia de explotación o la de adquisición de capacidades en el extranjero. Además, en esta investigación se analiza de manera separada la inversión Greenfield y la internacionalización mediante F&A, como los dos modos posibles de expansión de las empresas multinacionales de países en desarrollo, mientras que la gran mayoría de los estudios solamente se han centrado en el análisis del primero. Por otro lado, también es relativamente nuevo el estudio del proceso de internacionalización de las empresas considerando el sistema nacional de innovación del país de origen. Al tiempo, el análisis de los argumentos de la teoría de la senda de desarrollo de la inversión en los estudios de las nuevas multinacionales considerando el caso de las fusiones y adquisiciones podría derivar en nuevos desarrollos conceptuales y empíricos.

La propuesta conceptual de esta investigación propone la unión entre los dos modos de inversión y el sistema nacional de innovación del país de origen acorde con dos

[46] Se gradecen los comentarios de Alvaro- Cuervo Cazurra en versiones previas de esta investigación en la conferencia en Reading (Londres) “International Business Conference”, Abril 2013”

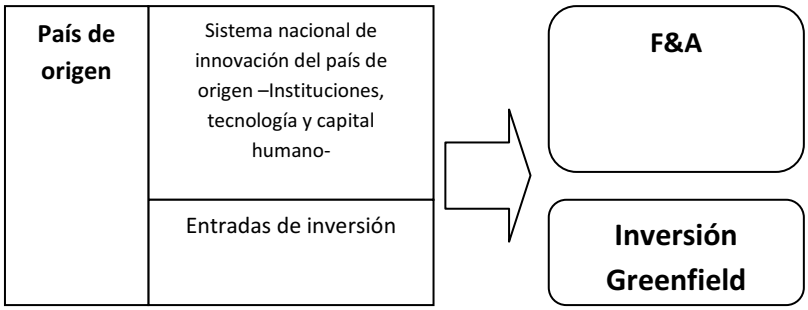
motivos principales que han justificado el proceso de internacionalización, esto es, la búsqueda de conocimiento y la búsqueda de mercado[47], considerando también, la presencia de empresas multinacionales en el país de origen.

Para probar esta propuesta se han analizado los dos modos de expansión extranjera en países desarrollados y países en desarrollo, estando la muestra integrada por 77 países con diferentes niveles de desarrollo en el periodo 1996-2010. Como primer paso para el análisis se ha construido un índice compuesto del Sistema Nacional de Innovación del país de origen (HNSI), resultado de un análisis factorial en el que se contemplan las características tecnológicas, institucionales y de capital humano como pilares básicos del sistema.

En la Figura 1 se refleja la propuesta de análisis en la que dos elementos principales del país de origen de las empresas multinacionales contribuirán a la elección de los distintos modos de internacionalización analizados. Por un lado, el sistema nacional de innovación del país de origen, definido como el conjunto de pilares institucionales, tecnológicos y humanos. Y por otro, la influencia externa que las empresas multinacionales extranjeras instaladas en el país de origen puede tener en la elección del modo de internacionalización, mediante la transferencia de capacidades hacia las empresas locales. Considerando los modos de inversión, en el análisis se diferencia entre inversión Greenfield y F&A. Además, es posible asumir que cada modo de inversión está conectado con un motivo específico del proceso de internacionalización, considerando en este punto la búsqueda de conocimiento como el motivo que más favorecerá el uso de F&A, mientras que la elección de inversión Greenfield responde más fácilmente, aunque no solo, al motivo de explotación de competencias o búsqueda de mercado (Anand and Delios, 2002; Álvarez and Marín, 2010).

[47] Existen otros motivos que justifican el proceso de internacionalización mediante IDE como la tradicional búsqueda de recursos o la búsqueda de mercado. Sin embargo, en esta investigación se considera únicamente la búsqueda de mercado y la búsqueda de conocimiento basándonos en las reciente aportación de Narula and Dunning, (2010). En esta aportación se realiza un análisis detallado de la evolución de los motivos que justifican la inversión en el exterior, considerando el acceso al conocimiento o Efficiency Seeking como el principal objetivo que han seguido las nuevas empresas multinacionales en su proceso de internacionalización. Esta búsqueda de conocimiento también ha constituido la base de los estudios que analizan las nuevas empresas multinacionales y que ocupan el argumento central de esta tesis. Veáse por ejemplo, Mathews, (2006); Luo and Tung, (2007); Chen and Cuervo-Cazurra,(2012); Witt and Lewin ,(2007).

Figura 1: Unión entre el país de origen y la elección del modo de internacionalización

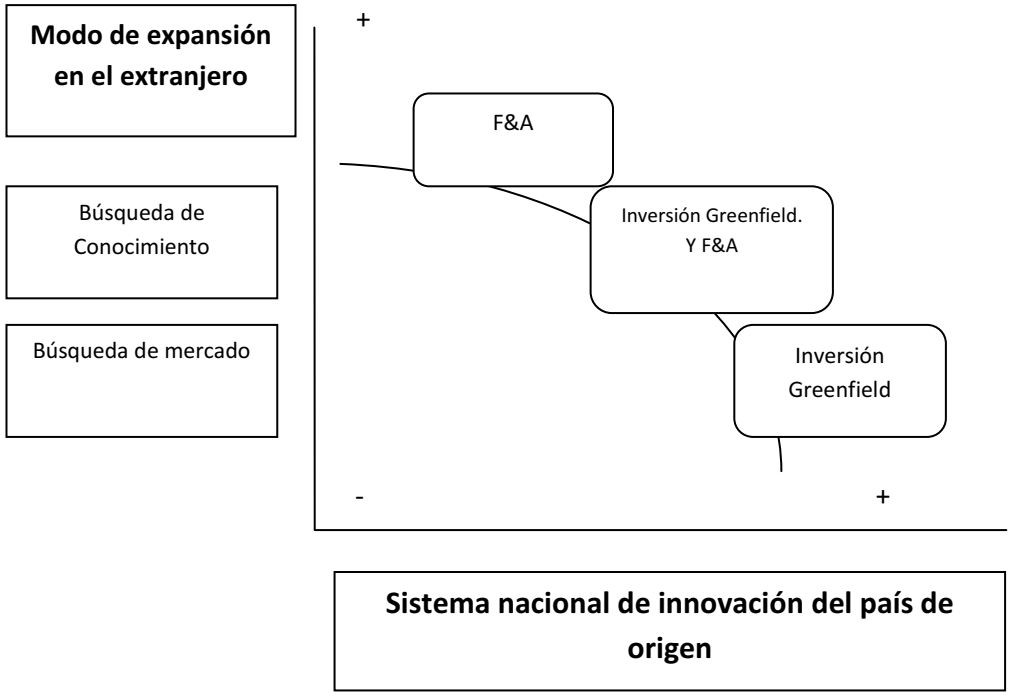


Fuente: Elaboración Propia

El sistema nacional de innovación es un enfoque adecuado para la identificación de los aspectos del país de origen que afectan al proceso de internacionalización mediante inversión. De una manera simple, la figura 2 muestra la relación teórica entre el nivel de avance del sistema nacional de innovación del país de origen y los posibles motivos que justifican la inversión en el extranjero. En este sentido, es posible esperar que las empresas que forman parte de sistemas de innovación del país de origen más avanzados puedan elegir indiferentemente entre los dos modos de inversión considerados. Sin embargo, en el caso de las empresas donde el sistema nacional de innovación es menos avanzado, el motivo de búsqueda de conocimiento será el motivo dominante para la inversión y esto justificará el uso de F&A como modo elegido para la expansión. Por lo tanto, es posible pensar que la elección de las empresas en un sistema nacional de innovación avanzado sería tanto la inversión Greenfield como F&A, dado que en estas economías el proceso de acumulación tecnológica ha contribuido al desarrollo de las ventajas de propiedad necesarias que justifican el éxito en el extranjero. Esto quiere decir, que si los países han acumulado las ventajas de propiedad que justifican el proceso de internacionalización (Hymer,1976; Dunning, 1988), es más probable que la elección entre inversión Greenfield y F&A dependa del motivo final que las empresas persiguen. Sin embargo, en los sistemas de innovación menos avanzados, el uso de F&A minimizaría el tiempo para acceder a nuevo conocimiento y capacidades en el extranjero, estando esta última idea justificada por los argumentos de aprendizaje en el extranjero como modo de escape de las debilidades del país de origen (Mathews, 2006; Luo and Tung, 2007; Chen and Cuervo-Cazurra, 2012; Witt and Lewin ,2007). No obstante, es importante enfatizar que aunque las F&A pueden usarse para compensar las debilidades del país de origen mediante la búsqueda de conocimiento en el extranjero, un nivel mínimo de capacidades y ventajas son necesarias para garantizar una exitosa internacionalización vía inversión.

La relación expresada en la figura 2 da sustento al desarrollo de las hipótesis de trabajo de esta investigación. Por un lado, como primera hipótesis, se comprueba cómo los elementos del sistema nacional de innovación del país de origen pueden afectar a la elección del modo de inversión, siendo esta relación dependiente del nivel de desarrollo de los países. No obstante, esta relación puede seguir dos direcciones, esto es, se espera una relación negativa entre el nivel de avance del sistema nacional de innovación del país de origen y la elección de las adquisiciones como modo de internacionalización (H1a). El razonamiento detrás de esta hipótesis se encuentra en los argumentos de escape de las debilidades institucionales o tecnológicas del país de origen, que justifican el uso de las F&A como método para adquirir conocimiento. Por otro lado, un nivel alto de avance en el país de origen permitirá la acumulación de capacidades, lo que generará que las empresas dispongan de las ventajas de propiedad necesarias para ir al extranjero y, a su vez, que la relación entre el nivel de avance del sistema nacional de innovación del país de origen y el uso de la inversión Greenfield sea positiva (H1b).

Figura 2: Nexo entre los modos de inversión en el exterior y el sistema nacional de innovación del país de origen.



Fuente: Elaboración propia

Considerando los efectos potenciales que los factores externos del sistema nacional de innovación del país de origen, tales como la presencia de empresas multinacionales extranjeras pueden generar, el nexo entre las entradas de inversión, el desarrollo de los países y las salidas de inversión puede ser analizado acorde a las diferentes etapas de la teoría de la senda del desarrollo de la inversión (Dunning and Narula; 1998). En términos generales, los países en desarrollo están situados alrededor de la etapa 2, donde el nivel de entradas de inversión es superior al nivel de salidas. No obstante, algunos autores han propuesto argumentos que desafían la anterior teoría, basándose en el aumento de salidas de inversión de países en desarrollo a pesar de que estos países no han acumulado las capacidades necesarias que justifican este intenso proceso de internacionalización (Buckley et al., 2007; Gammeltoft et al., 2012). Este es, por ejemplo, el caso de India, donde las entradas y salidas de inversión han crecido más o menos simultáneamente (Sauvant et al., 2010). Además, otros desafíos a la anterior teoría se han centrado en el papel que juegan los elementos institucionales y la preferencia de F&A como modo de internacionalización. (Luo and Tung, 2007; Gammeltoft et al., 2010; Kalotay and Sulstarova, 2010; Stoian, 2012).

Con estos antecedentes, en términos generales, es posible esperar una relación positiva entre las entradas y las salidas de inversión (Montobbio and Rampa, 2005; Stoian, 2012, Luo and Wang, 2012), no obstante esta investigación considera que los efectos de la relación anterior dependerán del modo de inversión elegido por la empresa internacionalizada, un aspecto que ha recibido poca atención en la literatura hasta ahora. Por lo tanto, la segunda hipótesis de trabajo de esta investigación plantea la relación entre la presencia de empresas multinacionales y las salidas de inversión (H2), pudiendo esta hipótesis quedar dividida en dos. Por un lado, la relación entre las entradas de inversión, las economías en desarrollo y el uso de fusiones y adquisiciones, requiere considerar que en muchos casos las empresas de estos países se internacionalizan para adquirir capacidades que no han sido desarrolladas en el país de origen. Esto implica que un menor nivel de avance en el sistema de innovación del país de origen puede empujar a las empresas a ir al extranjero para compensar las debilidades de su país, porque los efectos de las entradas de inversión no han permitido la compensación de tales debilidades. En particular, las economías emergentes reciben altos niveles de entradas de inversión, y por lo tanto, la probabilidad de transferencia de capacidades puede ser alta, pero si las necesarias capacidades de absorción no están presentes debido a que existe un débil sistema de innovación, estos factores externos empujarán a las empresas al uso de las F&A como una manera rápida para adquirir nuevos activos. El razonamiento anterior permite

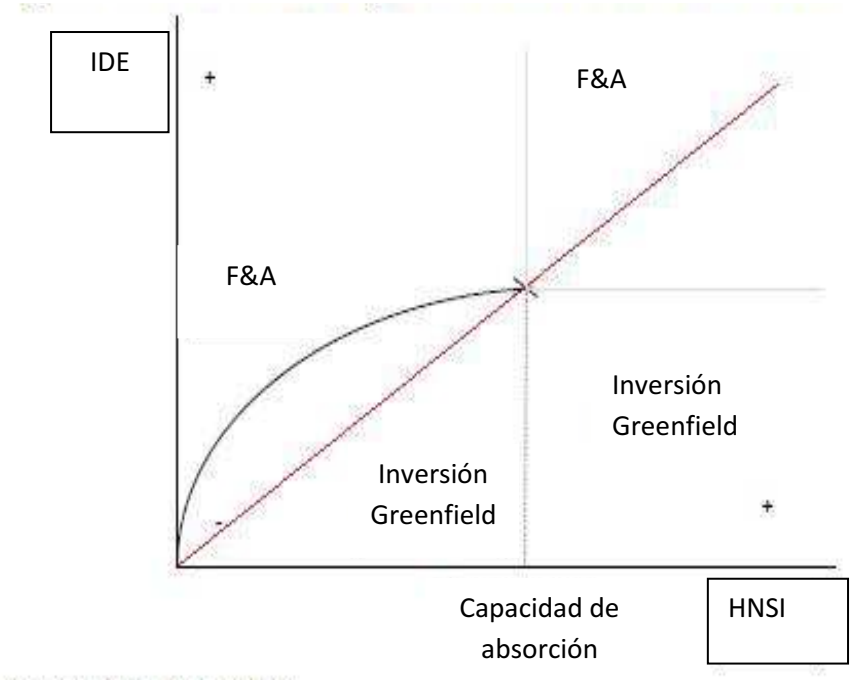
proponer que no hay un efecto directo entre las entradas de inversión, el desarrollo y la elección de las F&A como modo de internacionalización, sino que al considerar la velocidad del proceso de internacionalización de las empresas de los países en desarrollo, cabe esperar una relación positiva y directa entre las entradas de inversión y la internacionalización mediante adquisiciones (H2a).

Por otro lado, en sistemas de innovación más avanzados o economías desarrolladas, es posible encontrar un efecto neto de entradas y salidas de inversión, siendo esto consistente con los argumentos de esta teoría. De esta manera, el efecto de entradas de inversión permitirá el desarrollo del sistema nacional de innovación del país de origen mediante la transmisión de capacidades. Esto implica que a medida que aumenta el nivel de avance del sistema de innovación, la probabilidad del uso de F&A como modo de internacionalización disminuye. Así pues, es posible encontrar un punto de inflexión determinado por las capacidades de absorción, en donde el uso de las F&A tiene un efecto neutro en el nivel de conocimiento disponible y, por lo tanto, a medida que aumenta el nivel de desarrollo de un país, el uso de F&A no persigue una función de aprendizaje (H2b). Una visión gráfica de esta relación puede observarse en la figura 3. Aquí se muestra como a medida que el nivel de avance del sistema nacional de innovación aumenta el uso de las F&A muestra rendimientos decrecientes. Sin embargo, para un determinado nivel de avance del sistema (punto de inflexión) las empresas pueden elegir entre usar F&A o inversión Greenfield indistintamente (Línea roja de 45 grados).

Por el contrario, en el caso especial de las salidas de inversión por Greenfield las entradas de inversión pueden jugar un papel clave en la transmisión de capacidades y, aunque esto dependa del nivel de desarrollo del país de origen, la búsqueda de mercado y la explotación de las capacidades en el extranjero tendrán un efecto dominante. Así, cabe esperar una relación positiva entre las entradas de inversión y la inversión Greenfield, lo que constituye la tercera hipótesis (H3), siendo esta predicción aplicable tanto para los países desarrollados como para los países en desarrollo.

Es importante considerar, al mismo tiempo, algunas características adicionales del país de origen para la explicación del problema y la robustez del análisis. Por un lado, el dinamismo económico del mercado en el país de origen y, por otro, el nivel de costes, ambos incorporados también en el análisis.

Figura 3: Elección de las inversión Greenfield o F&A acorde con el grado de avance del sistema nacional de innovación y las entradas de inversión.



Fuente: Elaboración propia

La tabla que se acompaña a continuación (Tabla 5) muestra el conjunto de hipótesis y el signo esperado en la estimación de cada uno de los modos de inversión por separado.

Tabla 5: Hipótesis y signo esperado en el análisis de la elección del modo de internacionalización y el sistema de innovación del país de origen

Hipótesis	**Signo esperado**			
	F&A		**Inversión Greenfield**	
	Países en desarrollo	**Países desarrollados**	**Países en desarrollo**	**Países desarrollados**
H1a), H1b): HNSI	-	+	+	+
H2a), H2b) H3: IDP	+	-	+	+
Controles				
Dinamismo del mercado	+	+	+	+
Costes laborales	n.s	-	n.s	-

n.s es no significativa

Fuente: Elaboración propia

Una vez expuesta la propuesta conceptual que se pretende contrastar con la presente investigación, las variables que se han utilizado en el análisis empírico quedan recogidas en la siguiente tabla (Tabla 6).

Tabla 6. Definición de variables y fuente de información

Variables	Definición	Fuente
Inversión Greenfield (Y)	Salidas de inversión (%PIB	Unctad,
F&A(Y)	Valor de las F&A por region del compradod (%PIB) s	Unctad
Entradas de inversión	Entradas de inversión(% PIB)	Unctad
Instituciones (INS)	Calidad y estabilidad institucional	Banco Mundial, 2013
Gasto en I+D (RD)	Gasto en I+DD (% PIB)	Banco Mundial, 2013
Patentes (PT)	Número de aplicación de patentes per capita	Banco Mundial, 2013
Artículos científicos y técnicos (SC)	Número de artículos publicados per capita	Banco Mundial, 2013
Educación (EDU)	% de matriculados en educación secundaria (% Total)	Banco Mundial, 2013
Salarios (W)	Salarios ($US dollars)	Banco Mundial, 2013
Crecimiento del PIB	Crecimiento del PIB (%)	Banco Mundial, 2013

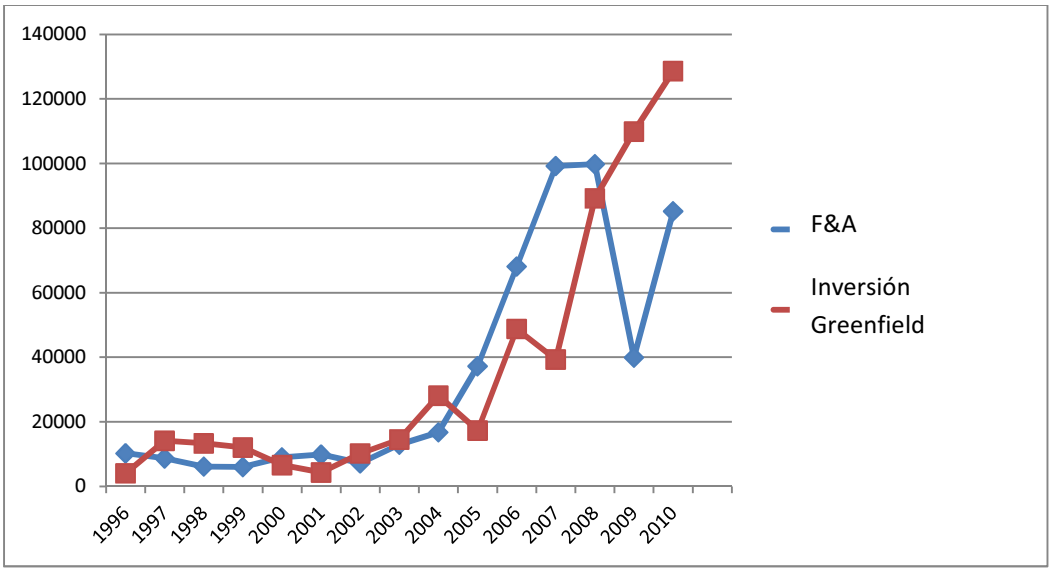
Fuente: Elaboración propia

Los análisis descriptivos muestran como para el periodo analizado los flujos de inversión mediante F&A procedentes de países en desarrollo han aumentado notablemente, ratificándose de esta manera la literatura que considera las F&A como el principal modo de internacionalización de las empresas multinacionales emergentes (Gráfico 2).

Como ha sido mencionado anteriormente, para probar empíricamente la propuesta conceptual desarrollada se ha construido un índice compuesto del sistema nacional de innovación del país de origen mediante un análisis factorial. Para ello, siguiendo a Buesa et al. (2010) se han incluido en el análisis algunas variables como patentes, artículos científicos, educación, instituciones y gasto en I+D. Los resultados de este

análisis han creado un factor (HNSI[48]) que retiene el 60% de la varianza de las variables originales. Quedando la matriz de factores representada en la tabla (Tabla 7).

Gráfico 2. Inversión Greenfield y F&A en las economías en desarrollo (1996-2010, MillUS$)



Fuente: Elaboración propia con datos de la Unctad

Tabla 7. Matriz de factores

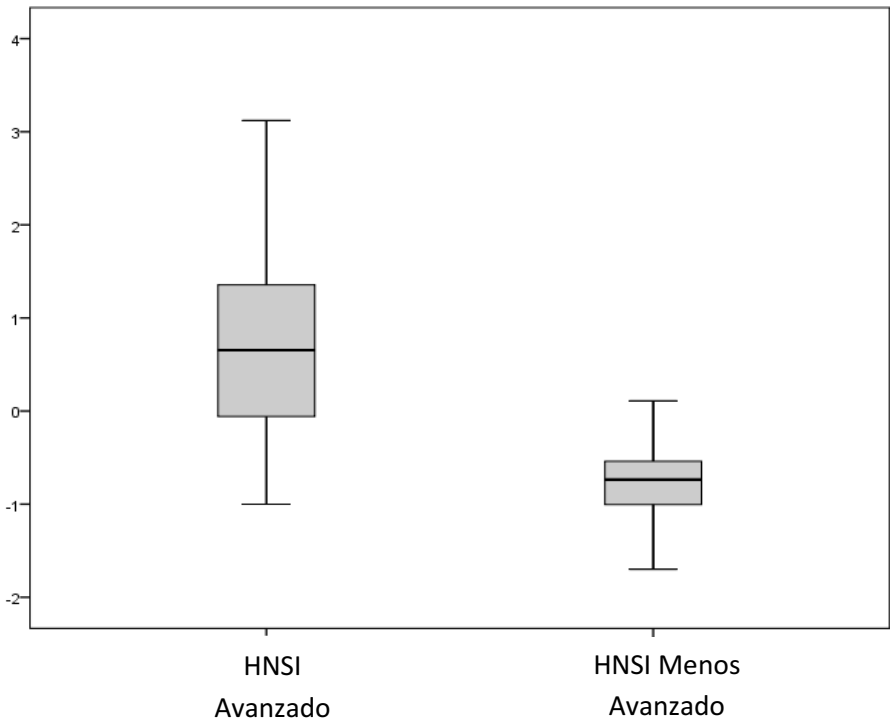
Variables	HNSI(Factor1)
Gasto en I+D	0.807
Patentes	0.479
Artículos científicos y técnicos	0.907
Educación	0.748
Instituciones	0.832

Fuente: Elaboración propia

Al tiempo, el siguiente gráfico 3 muestra la distribución del factor creado (HNSI) entre países desarrollados y países en desarrollo. Se puede observar como el HNSI tiene valores más elevados, en términos medios, para los países desarrollados que para los países en desarrollo.

[48] HNSI es el acrónimo de sistema nacional de innovación del país de origen.

Gráfico 3 HNSI y países desarrollados y en desarrollo



Fuente: Elaboración propia

El modelo econométrico que se plantea para probar la propuesta conceptual desarrollada en los párrafos precedentes, esto es, la relevancia del sistema nacional de innovación del país de origen en el modo elegido para la internacionalización, considerando distintas muestras de países, queda sintetizado en la siguiente ecuación.

$$FDI\ Mode_{it}=\beta_0 + FDI\ Mode_{it-1} + \beta_1\ HNSI_{it} + \beta_2\ IFDI_{it} + V_{it} + \eta_{si} + \upsilon_{dt} + \varepsilon_{it}$$

Donde la variable dependiente representa el modo empleado para la internacionalización –inversión Greenfiled y F&A-, y las variables independientes son el índice de sistema nacional de innovación (HNSI), la presencia de empresas multinacionales ($IFDI_{it}$) *y* algunas variables de control V_{it} , como los salarios y el crecimiento del PIB. Finalmente, $FDI\ Mode_{it-1}$ y $+\eta_{si} + \upsilon_{dt} + \varepsilon_{it,}$ son las características específicas de la metodología empleada. Por otro lado, es necesario mencionar que las estimaciones se han realizado en la siguiente secuencia: primero, se ha analizado los dos modos de inversión en función del índice del sistema nacional de innovación ($HNSI_{it}$). En segundo lugar, se ha incorporado la variable entrada de inversión ($IFDI_{it}$), y finalmente, se realiza el análisis de la completa ecuación al incorporar las variables de control. Esta técnica aporta robustez a las variables empleadas en el análisis. Así bien, los resultados del análisis aparecen recogidos en la siguiente tabla (Tabla 8)

Tabla 8. Resultados de la estimación

	F&A						Inversión Greenfield					
	Países en desarrollo			Países desarrollados			Países en desarrollo			Países desarrollados		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
L.Y(-1)	0.567***	0.744***	0.612***	0.416***	0.543***	0.312*	0.186**	0.215***	0.222***	0.421***	0.284**	0.426***
	(0.141)	(0.115)	(0.197)	(0.095)	(0.107)	(0.179)	(0.094)	(0.080)	(0.077)	(0.158)	(0.135)	(0.154)
HNSI	-1.208*	-1.245**	-2.771*	0.584**	0.608**	0.489	1.630**	0.592**	0.474*	0.548**	0.789**	0.309**
	(0.716)	(0.619)	(1.558)	(0.272)	(0.278)	(0.723)	(0.676)	(0.267)	(0.255)	(0.253)	(0.342)	(0.135)
IFDI		0.860**	1.917*		-0.355*	-0.028		0.687**	0.759**		0.504***	0.262
		(0.358)	(1.163)		(0.219)	(0.379)		(0.277)	(0.306)		(0.175)	(0.168)
ΔGDP			1.877**			2.613***			0.904***			0.885*
			(0.782)			(0.681)			(0.348)			(0.455)
W			0.978**			-0.040			0.161***			-0.040
						(0.241)			(0.046)			(0.116
Cons	-2.052**	-4.165***	-39.285***	-1.994***	-0.368	-8.765	0.190	-2.521**	-9.775***	0.046	-1.768**	-2.324
	(0.812)	(1.488)	(14.241)	(0.378)	(1.008)	-6.036	(0.469)	(1.042)	(1.781)	(0.221)	(0.759)	(3.238)
Hansen(prob>chi^2)	0.447	0.48	0.469	0.31	0.900	0.189	0.217	0.586	0.231	0.521	0.37	0.844
Ar(1)	-2.95**	-2.55**	-2.00**	-2.96***	-2.97***	-2.50**	-2.41**	-2-18**	-1.85*	-1.97**	-1.78**	-1.66**
Ar(2)	-1.11	-1.16	-0.76	1.73	1.76	1.66	0.94	0.75	-0.85	-0.49	-0.54	0.492
Observaciones	186	185	124	374	371	318	390	390	256	480	480	425
Intrumentos	5	25	19	29	55	27	6	29	7	30	39	49

GMM estimation two-step. Robust standard errors in parentheses

Fuente: Elaboración propia

Los resultados de la estimación mediante datos de panel dinámicos confirman la relación entre el sistema nacional del país de origen y los distintos modos de internacionalización-F&A e inversión Greenfield-, aunque existen diferencias entre la submuestra de países desarrollados y países en desarrollo.

Así, atendiendo a la estimación de internacionalización mediante F&A para los países en desarrollo, los resultados revelan una relación negativa entre el nivel de avance del sistema nacional de innovación y este modo de internacionalización (Tabla 7, columnas 1, 2, 3). Este resultado pone de manifiesto que las empresas procedentes de estas economías se internacionalizan con el objetivo de compensar las debilidades encontradas en el país de origen y para aprender en el extranjero. Por otro lado, la presencia de empresas multinacionales afecta positivamente a la internacionalización vía F&A (Tabla 7, columnas 2,3). De esta manera, estos resultados confirman la H1a y H2a previamente desarrolladas.

Para la muestra de países desarrollados existe una relación positiva entre el nivel de avance del sistema nacional de innovación y la elección de las F&A como método de internacionalización (Tabla7, Columna 4,5). Este resultado indica que un alto nivel de avance en el país de origen no obliga a las empresas a internacionalizarse en el extranjero para adquirir conocimiento, sino que cuando existe cierto nivel de avance, las empresas puede decidir libremente si internacionalizarse mediante inversión Greenfield o F&A. Por otra parte, el signo de variable IFDI es negativo (Tabla 7, columna 4), lo que apoya la idea de que en un avanzado HNSI, la transferencia de capacidades entre empresas multinacionales allí instaladas disminuye. Al tiempo, también se confirman la hipótesis H1a y H2b de esta investigación.

Haciendo referencia al segundo modo de internacionalización -la inversión Greenfield- los resultados muestran como existe una relación positiva entre esta forma de internacionalización y el índice HNSI para la muestra de los países en desarrollo (Tabla 7, Columna 7, 8). Además, la presencia de empresas multinacionales afecta al modo de internacionalización positivamente. Estos resultados ratifican los argumentos tradicionales de explotación de capacidades en el extranjero en el proceso de internacionalización. Estos últimos resultados también se ratifican para la muestra de los países desarrollados, confirmándose la H3 para ambos grupos de países.

Finalmente, la principal contribución de este estudio ha sido no solo la elaboración de una propuesta conceptual, sino también el esfuerzo realizado por comprobarla empíricamente. Los resultados obtenidos aportan algunas luces al fenómeno de las

nuevas empresas multinacionales y específicamente a la justificación del uso de las F&A como modo de internacionalización predominante en economías que no se encuentran incluidas entre las más ricas del mudo.

Investigación 3. Aprendizaje en el extranjero mediante la inversión: un análisis de los efectos en el resultado innovador y en la productividad de las empresas multinacionales españolas

Actualmente, la literatura de negocios internacionales y la literatura de economía internacional señala que hay una opción de aprendizaje mediante la inversión para las empresas procedentes de países que no se encuentran incluidos entre los más ricos del mundo, y que carecen de una buena base tecnológica (Mathews, 2002 and 2006; Luo and Tung, 2007; Guillén and García-Canal, 2010). Esta idea encuentra soporte en la búsqueda de conocimiento como estrategia clave de internacionalización empresarial de estos países. Esto significa que las empresas que proceden de los países menos avanzados tecnológicamente pueden aprender mediante la expansión internacional, pudiendo en este contexto incorporarse el caso específico de España.

Desde la década de los noventa España ha acumulado una gran flota de empresas multinacionales. Empresas como Repsol, Telefónica o Iberdrola se han expandido por el mundo y están incluidas entre los 100 primeros puestos de la lista mundial de empresas multinacionales no financieras[49]. De hecho, el nivel de empresas multinacionales españolas se ha incrementado en un 37% en la última década (periodo 2000-2009) de acuerdo a los datos de la Encuesta de Estrategias Empresariales-ESEE-, revelándose de esta manera, la importancia de las empresas multinacionales en la economía española.

Una características común de estas empresas multinacionales es que proceden de un país como España en el que se carece de una base tecnológica sólida (Guillén and García- Canal, 2010). No obstante, se ha desarrollado un gran número de empresas multinacionales que han tenido éxito en el extranjero, un proceso que ha ocurrido de una manera más rápida que en los países que se encuentran entre los más ricos del mundo (Guillén, 2006). En este sentido, el caso de las empresas multinacionales españolas es un caso especial en los estudios de negocios internacionales, siendo el

[49] Lista de Non Financial MNE del año 2011 obtenida de la Unctad database. http://unctad.org/en/Pages/Home.aspx

análisis de los factores que determinan el éxito de estas empresas un reto de investigación abierto al que muchos académicos españoles han tratado de contribuir (Durán, 2002, 2005; Giraldez, 2002 Guillén, 2006; Santiso, 2008; Guillén and García-Canal, 2010; Álvarez and Botella, 2012).

Un factor relevante en la explicación del éxito de las multinacionales españolas reside en la propia trayectoria de la era española. Tanto la entrada en la UE en los ochenta, así como la entrada en el euro y las políticas de restructuración y modernización del sistema financiero han influido positivamente en la emergencia de estas empresas (Guillén, 2006). Estas características del país de origen han permitido que las salidas de inversión de las empresas multinacionales superaran desde los 90 a las entradas de inversión, acorde con la teoría de la senda del desarrollo de la inversión.

También, se le ha atribuido a estas empresas unas habilidades especiales en términos de transferencia de conocimiento y aprendizaje, ya que han jugado un papel clave en el proceso de internacionalización, aportando al menos dos fuentes de conocimiento: por un lado, la posibilidad de generación de derrames tecnológicos o spillover de las empresas multinacionales instaladas en España (Álvarez and Molero, 2005) y, por otro, el aprendizaje mediante la internacionalización de las empresas españolas, esto es, la adquisición de conocimiento en el extranjero (Guillén and García- Canal, 2010), siendo este último tipo de aprendizaje el que se aborda en esta investigación. La idea clave es que las empresas pueden aprender mediante el proceso de internacionalización, pudiendo generar este conocimiento internacional efectos tanto en el resultado innovador como en la productividad de las empresas. Este proceso de aprendizaje es especialmente relevante porque las ganancias del proceso de internacionalización serán mayores cuando existe una base débil de conocimiento en el país de origen (Kafouros et al., 2012). Esto quiere decir que en países que no se encuentran entre los más ricos del mundo, o en economías caracterizadas por industrias rezagadas, como puede ser el caso de España (Salomon and Jin, 2007) los efectos del aprendizaje en el exterior pueden llegar a ser cruciales.

En esta investigación se analizan los efectos del aprendizaje en el extranjero de las empresas manufactureras españolas mediante la inversión en los resultados innovadores y en la productividad, esto es, en qué medida la inversión en el exterior afecta al nivel posterior de patentes, innovación de producto y productividad. En este sentido, es preciso puntualizar la relación de casualidad que se estudia en este análisis, siendo esta en la dirección *Empresa Multinacional-Innovación*, lo cual es relativamente nuevo en la literatura.

Este análisis encuentra respaldo en dos bloques principales de la literatura. Por un lado, la literatura teórica y empírica que ha introducido la heterogeneidad en las empresas como factor clave que conecta los niveles de productividad y el grado de compromiso internacional (Melitz, 2003; Helpman et al., 2004; Wagner, 2007). En esta literatura se analizan los efectos de aprendizaje en el extranjero mediante exportaciones, encontrando que las empresas exportadoras muestran niveles más altos de productividad como resultado del proceso de aprendizaje en el extranjero que las empresas domésticas. No obstante, la escasa evidencia sobre los efectos de aprendizaje mediante la inversión nos ha llevado a abordar esta forma de internacionalización en la que el nivel de compromiso en el extranjero es mayor, asumiendo igualmente que las empresas pueden aprender mediante la inversión. Por otro lado, la unidad de análisis micro nos conduce a considerar la literatura de los flujos de conocimiento entre las diferentes unidades de las empresas multinacionales, ya que éste puede ser una fuente fundamental de ventajas competitivas para las empresas. La idea principal es que el conocimiento internacional puede producir un aumento del resultado innovador y la productividad empresarial (Mudambi, 2002; Mudambi and Navarra, 2004; Castellani and Zanfei, 2007; Belderbos, et al., 2013; Kafourus et al., 2012).

La combinación de la literatura de heterogeneidad empresarial y los flujos de conocimiento en la red de las empresas multinacionales proporcionan los argumentos adecuados que justifican la principal pregunta de investigación de este análisis, esto es, en qué medida el aprendizaje en el extranjero usando la inversión se manifiesta en un incremento posterior del nivel de productividad o puede reflejarse en los resultados innovadores de las empresas. Por lo tanto, el objetivo de esta investigación será analizar si el hecho de ser empresa multinacional afecta al nivel de productividad y al número de patentes o innovación de producto posteriores a la internacionalización. La consideración de los efectos posteriores incluye al mismo tiempo la introducción de una perspectiva temporal en la propuesta, por lo que el tiempo para la asimilación de conocimiento se considera un factor clave en esta investigación. Además, dado que el aprendizaje en el extranjero puede depender del sector en el que la empresa se encuentra integrada, el análisis se realizará diferenciado entre sectores acorde con el contenido tecnológico, esto es, sectores de contenido tecnológico alto, medio o bajo[50].

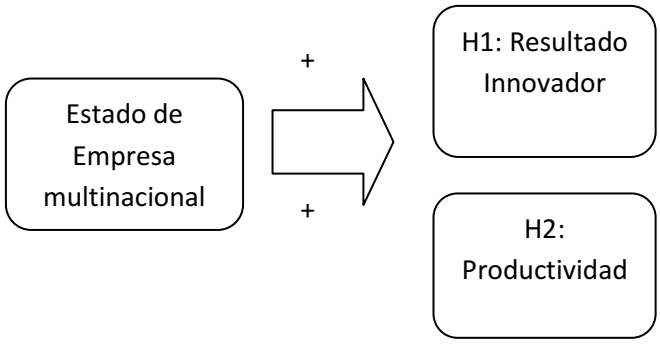
Los argumentos expuestos en los párrafos precedentes justifican la proposición de las hipótesis de trabajo de esta investigación. Como primera hipótesis se plantea que las

[50] Clasificación de acuerdo con ISIC Rev.3 Technology Intensity Definition (OCDE)

empresas pueden aprender en el extranjero y que estos efectos pueden quedar reflejados en el incremento posterior de los resultados innovadores. Teniendo en cuenta el tiempo de asimilación de conocimiento como un requisito especial del proceso de aprendizaje, dado que el aprendizaje y los resultados innovadores no son automáticos, la (H1) propone que el estado de empresa multinacional afectará positivamente al resultado innovador posterior de las empresas.

Por otro lado, la segunda hipótesis (H2) tratará de probar si los efectos de aprendizaje en el extranjero se manifiestan en un aumento posterior del nivel de productividad, o en otras palabras, si el hecho de que una empresa sea multinacional aumenta el nivel posterior de productividad. Este conjunto de hipótesis han quedado recogidas en la siguiente figura (Figura 4).

Figura 4. Propuesta de análisis de los efectos de aprendizaje en el extranjero en el resultado innovador y productividad



Fuente: Elaboración propia

Las hipótesis expuestas en la figura anterior han sido contrastadas para un panel de datos de empresas manufactureras españolas en un periodo de 10 años (2000-2009), utilizando la Encuesta de Estrategias Empresariales (ESEE) elaborada por la *Fundación SEPI* del *Ministerio de Economía y Competitividad.* Centrándonos en nuestra variable principal, es preciso mencionar que el 19.4% de la muestra son empresas multinacionales, lo que corresponde a 342 empresas multinacionales españolas. Por otro lado, los efectos del aprendizaje en el extranjero se han medido usando las variables de innovación de producto, aplicación de patentes y productividad, dado que se ha venido argumentado en la literatura que los efectos del aprendizaje en el extranjero no se manifiestan inmediatamente en un aumento de la productividad y que, por tanto, es más fácil observar dichos efectos en los resultados innovadores

(Mudambi and Navarra, 2004; Salomon and Shaver, 2005 Castellani and Zanfei, 2007; Salomon and Jin, 2007; Silva et al., 2012). Finalmente, los efectos de aprendizaje en el extranjero han sido controlados por algunas variables que miden la capacidad de absorción (Gasto en I+D), así como las características específicas de las empresas como el tamaño de la empresa y el sector tecnológico. La lista específica de las variables empleadas en el análisis aparece en la siguiente tabla (Tabla 9)

Tabla 9. Variables empleadas en el análisis de los efectos de aprendizaje en el extranjero

Variables dependientes	
Est. 1: $INNO_{it}$	Número de innovaciones de producto, empresa i año t
Est. 2: Pt_{it}	Número de patentes en España, empresa i año t
Est. 3: Pd_{it}	Productividad, empresa i año t (ln proxy of Valor añadido/ventas)
Variables independientes	
MNE_{it}	Dummy Variable que toma el valor (1) si el % de participación en el capital social de otras empresas es >10%, (0) en otro caso
Variables de control	
Rd_{it}	Gasto en I+D/Ventas(en logaritmo)
$Size_{it}$	Número total de empleados (en logaritmo)

Fuente: Elaboración propia

Con el objeto de probar las hipótesis de trabajo propuestas, el análisis empírico queda expresado como se muestra en la siguiente ecuación:

$$Y_{it}=\beta_0 + \beta_1 Y_{it-1}+\beta_2 MNE_{t-p}+ V_{it} +\eta_{si} + \upsilon_{dt} + \varepsilon_{it}, \ \{i=firm,\ p= 1, 2\}$$

Donde, Y_{it} corresponde a las variables dependientes de innovación de producto, número de patentes y productividad, respectivamente. $MNE_{t-p,}$ hace referencia al

estado de empresa multinacional, y V_{it} recoge las variables de control usadas en este análisis como el gasto de I+D y el tamaño de las empresas.

Dado que los efectos de aprendizaje mediante inversión pueden depender del sector de actividad de las empresas, se analiza como prueba de robustez el mismo modelo expresado en la ecuación anterior, pero ahora relativizando por el contenido tecnológico de las empresas. Esto quedaría como sigue:

$$Y_{it}=\beta_0 + \beta_1 Y_{it-1}+\beta_2 (MNE*TechSector_{it-p})+ V_{it} +\eta_{si} + \upsilon_{dt} + \varepsilon_{it}\ , \{i=firm,\ p= 1,\ 2\}$$

Donde la principal diferencia con la ecuación anterior es la variable $MNE*TechSector_{it-p}$, que tomará los valores de las empresas multinacionales integradas en el sector de alto contenido tecnológico (MNEHTECH), medio contenido tecnológico (MNEMTECH) y bajo contenido tecnológico (MNELTECH).

El análisis discriminante entre empresas multinacionales y empresas domésticas revela que las variables que mejor diferencia entre empresas multinacionales y empresas domésticas son las patentes, la innovación de producto y el personal empleado en I+D. Separando por contenido tecnológico, los resultados muestran que la intensidad en I+D y la innovación de producto son elementos clave que distinguen a ambos tipos de empresas en industrias de alto contenido tecnológico. Al tiempo, las patentes y la innovación de producto son factores clave para la diferenciación entre las empresas multinacionales y domésticas en industrias de medio contenido tecnológico. Finalmente, las patentes y el personal en I+D son las variables que mejor discriminan entre ambos tipos de empresas en las industrias de bajo contenido tecnológico. Estos resultados aparecen recogidos en la tabla que aparece a continuación (Tabla 10).

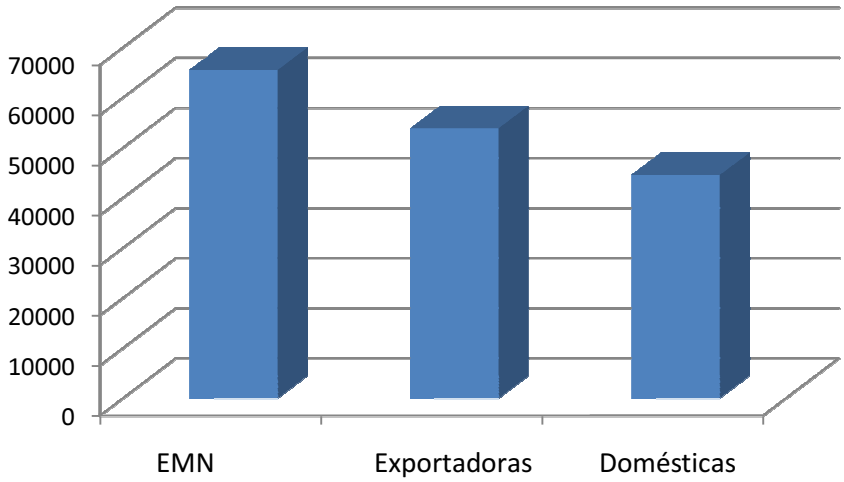
Además, comparando la relación que existen entre el grado de compromiso internacional y el nivel de productividad de las empresas (aproximada por el valor añadido/ventas), el siguiente gráfico (Gráfico 4) muestra como las empresas multinacionales, en términos medios, tienen niveles más altos de productividad que las empresas domésticas, siendo a su vez, las empresas exportadoras más productivas que las domésticas y menos productivas que las empresas multinacionales.

Tabla 10. Análisis discriminante entre empresas multinacionales y empresas domésticas por nivel de contenido tecnológico

Variables	Toda la muestra	Alto contenido tecnológico	Medio contenido tecnológico	Bajo contenido tecnológico
I+D (intensidad)	n.s	0.896***	n.s	n.s
Patentes en España	0.612***	n.s	0.392**	0.858***
Patentes en el extranjero	n.s	n.s	0.372***	n.s
Innovación de producto	0.608***	0.491***	0307***	n.s
I+D Personal	0.246***	n.s	0.542***	0.523***
Chi-Squared	118.391	16.735	57.076	50.975
Nº observaciones	1783	171	883	649
Casos clasificados correctos	79%	68%	77%	82%
Wilk's lambda	0.936	0.905	0.935	0.924
Grupo de centroides				
Empresas domésticas	-1.27	-0.216	-0.132	-0.118
Empresas multinacionales	0.54	0.48	0.506	0.691

Fuente: Elaboración propia

Gráfico 4. Niveles de productividad en relación con el nivel de compromiso internacional (2000-2009, en miles)



Fuente: Elaboración propia en base a la ESEE

Por otro lado, el análisis empírico revela que el estado de empresa multinacional juega un papel clave en los posteriores resultados innovadores. En la tabla 11 se observa

como las empresas internacionalizadas mediante inversión aprenden en el extranjero, y este nuevo conocimiento internacional puede quedar reflejado en un aumento posterior del número de innovaciones de producto y aplicaciones de patentes. Sin embargo, estos resultados varían dependiendo de la medida de innovación objeto de análisis. Así pues, los efectos de aprendizaje en patentes ocurren antes que los efectos en innovación de producto, dado que estos últimos requieren más tiempo. Esto permitiría confirmar la primera hipótesis de trabajo de esta investigación

Tabla 11. Efectos del aprendizaje sobre el resultado innovador

	Patentes(Pt)		**Innovación de product (INNO)**	
	(1)	**(2)**	**(3)**	**(4)**
Y_{t-1}	0.412***	0.392***	0.831***	0.830***
	(0.126)	(0.135)	(0.0456)	(0.0493)
MNE_{t-1}	0.255***		-0.735	
	(0.087)		(0.5753)	
MNE_{t-2}		0.256***		0.403**
		(0.094)		(0.1618)
Rd	0.067*	0.065*	0.287**	0.278*
	(0.035)	(0.037)	(0.1400)	(0.1773)
Size	0.046*	0.052**	0.028	-0.492
	(0.027)	(0.026)	(0.5358)	(0.3069)
_cons	-0.151	-0.183	0.189	2.718
	(0.123)	(0.116)	(2.800)	(1.7322)
Ar(1)	-2.34**	-2.30**	-1.91**	-1.71**
Ar(2)	0.339	-0.93	0.62	0.64
Hansen Chi2	4.8	5.17	89.55	75.9
Observaciones	3404	3244	4174	3595
Instrumentos	11	11	86	76

Fuente: Elaboración propia

Al tiempo, considerando el análisis por sectores tecnológicos como prueba de robustez, los efectos de aprendizaje en el extranjero son mayores en las industrias de alto contenido tecnológico, utilizando las patentes como variable dependiente. Sin embargo, al utilizar las innovaciones de producto como variable dependiente los efectos son mayores en las industrias de medio contenido tecnológico, no siendo significativos dichos efectos en los resultados innovadores (patentes e innovaciones de producto) en las industrias de bajo contenido tecnológico. Estos resultados aparecen recogidos en la tabla 12.

Tabla 12. Efectos del aprendizaje en el extranjero por sectores tecnológicos

	Patentes (Pt)						Innovación producto(INNO)		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Y_{t-1}	0.429***	0.424***	0.316***	0.319***	0.412***	0.391***	0.819***	0.834***	0.805***
	(0.106)	(0.116)	(0.900)	(0.093)	(0.125)	(0.135)	(0.050)	(0.049)	(0.052)
$MNEHTECH_{t-1}$	0.571*								
	(0.307)								
$MNEHTECH_{t-2}$		0.678*					0.012		
		(0.369)					(0.594)		
$MNEMTECH_{t-1}$			0.124						
			(0.079)						
$MNEMTECH_{t-2}$				0.108				0.503*	
				(0.079)				(0.298)	
$MNELTECH_{t-1}$					0.048				
					(0.129)				
$MNELTECH_{t-2}$						0.096			0.476
						(0.140)			(1.153)
Rd	0.058**	0.055**	0.052**	0.057***	0.061*	0.060	0.176	0.302*	0.178
	(0.025)	(0.026)	(0.021)	(0.021)	(0.036)	(0.038)	(0.290)	(0.180)	(0.300)
Size	0.069**	0.074***	0.041*	0.046**	0.075**	0.076**	-0.895	-0.537	-2.292
	(0.028)	(0.027)	(0.023)	(0.023)	(0.032)	(0.032)	(0.959)	(0.499)	(1.577)
_cons	-0.224*	-0.261**	-0.126	-0.151	-0.237*	-0.243*	5.166	3.027	12.551
	(0.126)	(0.120)	(0.110)	(0.104)	(0.138)	(0.136)	(5097)	(2.701)	(8.456)
Ar(1)	-2.48**	-2.54**	-2.10**	-2.11**	-2.34**	-2.29	-1.70**	-1.72**	-1.69**
Ar(2)	-0.93	-0.96	-0.95	-0.92	-0.94	-0.93	0.65	0.64	0.65
Hansen Chi2	3.37	3.28	35.04	34.6	4.72	5.18	69.49	66.88	81.64
Observaciones	3244	3404	3404	3244	3404	3244	3595	3595	3595
Instrumentos	11	11	7	31	11	11	75	76	73

Fuente: Elaboración propia

Finalmente, aún cuando los efectos de conocimiento internacional aparecen manifestados en el resultado innovador posterior, es difícil observarlos en un aumento de productividad, ya que estos efectos no aparecen inmediatamente, sino que es una vez que han transcurridos dos años desde que la empresa adquiere el estado de multinacional cuando el hecho de ser multinacional afecta a la productividad empresarial. (Tabla 13). Este resultado revela que el conocimiento internacional afectará al resultado innovador para posteriormente manifestarse en términos de productividad, es por ello que puede proponerse, una relación entre *internacionalización-innovación-productividad* como la que queda reflejada en la siguiente figura (Figura 5).

Tabla 12 Resultados de los efectos de aprendizaje sobre la productividad empresarial

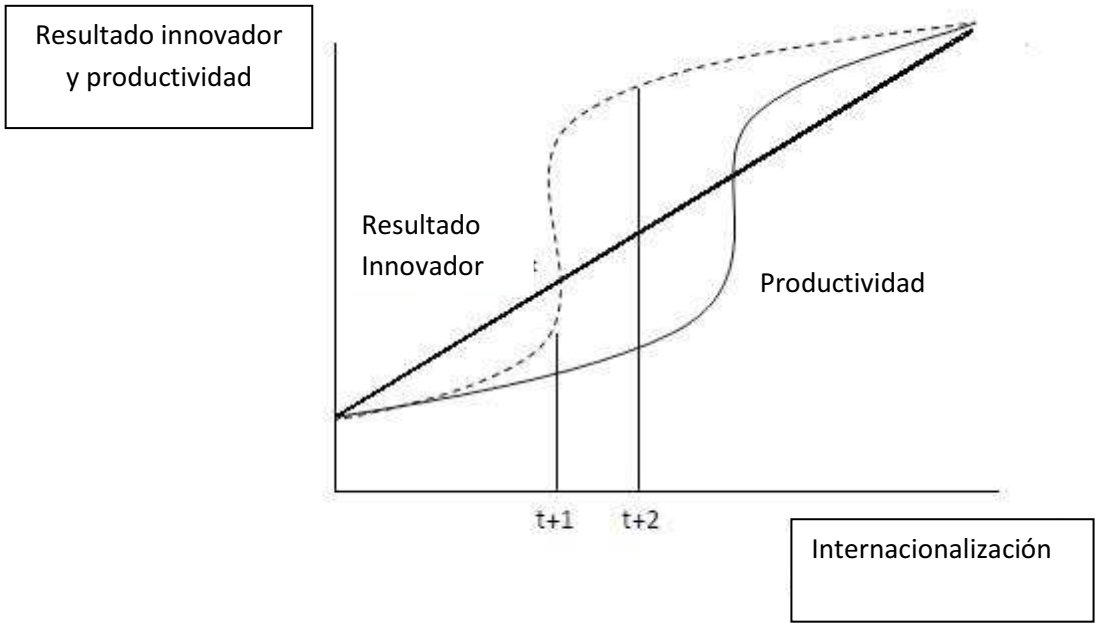
	Productividad(Pd)	
	(1)	(2)
Pd_{t-1}	0.191***	0.193***
	(0.041)	(0.048)
MNE_{t-1}	0.018	
	(0.050)	
MNE_{t-2}		0.177***
		(0.050)
Rd	-0.050***	-0.054
	(0.015)	(0.041)
Size	0.099*	0.069***
	(0.051)	(0.015)
_cons	8.242***	8.340***
	(0.529)	(0.506)
Ar(1)	-5.64***	-6.16***
Ar(2)	2.03	1.78
Hansen Chi2	169	79.62
Observaciones	4314	3706
Instrumentos	167	66

GMM-Two Step. Robust Standard errors in parentheses. (Roodman, 2012)

*** p<0.01, **p<0.05, * p<0.1

Fuente: Elaboración propia

Figura 5. Internacionalización-Innovación-Productividad



Fuente: Elaboración propia

Como principal contribución de este estudio es preciso destacar que la medida del aprendizaje en el extranjero mediante inversión añade nuevo conocimiento a los estudios empíricos que consideraban que las empresas podían aprender en el proceso de internacionalización mediante exportaciones. Por lo tanto, esta investigación comprueba los efectos del estado de empresa multinacional, tanto en el resultado innovador, como en la productividad empresarial. Por otro lado, la realización de este análisis para una muestra de empresas de un país que no ha desarrollado una base tecnológica fuerte añade nuevos argumentos para justificar el éxito de las empresas multinacionales españolas.

CONCLUSIONES

Esta Tesis intenta contribuir a la explicación de algunas de las preguntas que han surgido en el nuevo escenario de la economía internacional. Por un lado, la revisión de la literatura sobre las diferencias entre las teorías tradicionales de las empresas multinacionales junto con las características específicas de las nuevas empresas multinacionales ha permitido la delimitación conceptual de este estudio, identificando la necesidad del análisis conjunto de las nuevas multinacionales con las multinacionales tradicionales.

Al tiempo, el análisis de la literatura previa ha permitido la identificación de algunas preguntas abiertas, en las cuales cabría añadir alguna evidencia. Es preciso destacar en este punto, que incluso cuando ha habido varias contribuciones recientes al fenómeno de las nuevas empresas multinacionales, los estudios empíricos son todavía escasos. Así pues, aun cuando el rol de las características del país de origen como factores determinantes en el proceso de internacionalización de las empresas procedentes de países emergentes se ha considerado un factor clave para diferenciar a las nuevas empresas multinacionales, existe todavía escasa evidencia empírica que soporte esta idea. Por otro lado, el uso de las F&A en las economías emergentes como modo preferido para la internacionalización se está empezando a justificar por las hipótesis de escape del país de origen y aprendizaje en el extranjero, aunque siguen siendo necesarios más estudios. Finalmente, los procesos de aprendizaje en el extranjero o, en otras palabras, el análisis de los efectos de una empresa multinacional en el resultado innovador y productividad ha sido escasamente estudiado para las manufacturas españolas, aunque si se han realizado estudios para el caso de las exportaciones. Por lo tanto, dada la relevancia que el conocimiento internacional tiene como fuente de competitividad empresarial, este análisis del aprendizaje en el extranjero mediante la inversión es una contribución clave en el plano microeconómico.

En este sentido, la identificación de las características del país de origen que funcionan como elementos clave en la explicación del éxito de estas empresas constituye la base de la primera investigación de esta Tesis. Asumiendo la importancia de las ventajas de propiedad o activos específicos de las empresas en el proceso de internacionalización, se demuestra empíricamente los efectos que tienen las características del país de origen en las salidas de inversión, efectos que son diferentes entre los países desarrollados y aquéllos en desarrollo.

Los resultados confirman que los factores del país de origen fomentan la generación de ventajas específicas de las empresas lo que, al mismo tiempo, hace posible el proceso de internacionalización en economías en desarrollo. De hecho, comparando los países desarrollados y en desarrollo, los resultados muestran que los efectos de las características del país de origen son más altos en este último grupo de países, lo cual encuentra soporte en la evidencia previa.

Considerando los elementos del país de origen por separado, la presencia de empresas multinacionales extranjeras ha jugado un papel clave en el fomento de las salidas de inversión. Este resultado está a favor de los postulados de la teoría de la senda del desarrollo de la inversión, la cual ha mostrado una relación positiva entre las entradas y las salidas de inversión. Finalmente, los aspectos tecnológicos e institucionales de los países afectan positivamente a la generación de empresas multinacionales en estas economías.

Este análisis provee nueva evidencia sobre las nuevas multinacionales y da soporte a los planteamientos teóricos acerca del papel que las características a nivel de país pueden jugar en el proceso de internacionalización de las empresas en países en desarrollo.

Estos resultados permiten la definición de algunas implicaciones políticas en el campo de las políticas de innovación e internacionalización, ya que es necesario analizar ambas políticas conjuntamente. La coordinación de las acciones en estos dos ámbitos conduciría a mejoras en la capacidad de absorción de conocimiento internacional, lo que puede surtir efectos en el desarrollo de los países, siendo importante destacar que la presencia de empresas multinacionales es un vehículo de conocimiento que puede facilitar la adquisición y absorción de conocimiento, generando efectos positivos en el desarrollo. De esta manera, aspectos tales como la generación y mejora de las capacidades científicas y tecnológicas, así como la garantía de un adecuado marco institucional promoverá las relaciones de mercado y, al mismo tiempo, facilitará la internacionalización de las empresas, lo que afectará positivamente a las economías.

Una limitación de esta primera investigación podría estar relacionada con la unidad de análisis, dado que se han usado datos a nivel agregado, en vez de datos a nivel de empresas. Sin embargo, el uso de los datos a nivel agregado está justificado por la idea clave de esta propuesta que es el conocimiento de los efectos que puede tener el país de origen, o el entorno, en la generación de empresas multinacionales.

Además, otra limitación se encuentra en que el análisis no ha permitido identificar el país de destino de la inversión, lo que sería importante para conocer mejor la estrategia que han seguido las empresas multinacionales. Sin embargo, la carencia de datos estadísticos de flujos bilaterales ha impedido realizar este tipo de análisis, y por tanto, ésta puede ser considerada como otra limitación de la primera investigación de esta Tesis.

Por otro lado, el segundo núcleo de los argumentos de las nuevas empresas multinacionales considera el uso de las fusiones y adquisiciones como el modo más rápido y preferido para la internacionalización de las empresas de los países emergentes. Esta idea se ha desarrollado en la segunda investigación de esta Tesis, en la que se realiza una propuesta conceptual y empírica sobre la relación entre el nivel de avance del sistema nacional de innovación del país de origen y el modo elegido de inversión, considerando la inversión Greenfield y las F&A. Esta propuesta se ha basado en las contribuciones previas que subrayan el uso de las F&A como forma de adquirir conocimiento y que permite al mismo tiempo compensar las debilidades existentes en el país de origen. De esta manera, considerando el marco teórico de los sistemas nacionales de innovación, esta propuesta intenta explicar cómo el grado de avance de este sistema puede afectar a la elección entre el modo de inversión, y que esta relación puede ser diferente para países desarrollados y en desarrollo. La principal contribución de esta propuesta es la detección de los aspectos del sistema nacional de innovación que podrían explicar la elección del modo de expansión extranjera, diferenciando entre inversión Greenfield y F&A, acorde con la estrategia de explotación o de adquisición de capacidades en el extranjero. Además, con este análisis también se contribuye a refutar los argumentos elaborados por la teoría de la senda del desarrollo de la inversión al diferenciar entre los dos modos de inversión.

Los resultados empíricos de esta propuesta han confirmado que el menor grado de desarrollo del sistema nacional de innovación del país de origen fomenta el uso de las fusiones y adquisiciones como modo de compensar las debilidades existentes en este país, confirmándose la existencia de una relación negativa entre las debilidades del país de origen y el uso de fusiones y adquisiciones. Por otro lado, la presencia de empresas multinacionales afecta directamente al uso de este modo de internacionalización en estas economías emergentes. Sin embargo, para el caso de las economías desarrolladas, el sistema nacional de innovación tiene una relación positiva con el uso de las F&A, mientras que la presencia de empresas multinacionales muestra una relación negativa. Este último resultado ha añadido evidencia a la teoría de la

senda del desarrollo de la inversión en relación con el uso de las F&A. Por otro lado, con respecto a la relación del sistema nacional de innovación y la internacionalización mediante inversión Greenfield, los resultados han demostrado una relación positiva, relación que ha sido también confirmada con respecto a la presencia de empresas multinacionales.

Una implicación relevante para directivos es que en el caso de que las empresas provengan de un avanzado sistema de innovación del país de origen, la elección entre la inversión Greenfield y F&A estará determinada por los motivos finales que persiguen las empresas en el proceso de internacionalización, esto es, búsqueda de mercado y búsqueda de conocimiento, dado que el sistema nacional de innovación provee del conocimiento necesario para justificar la elección. Sin embargo, cuando las empresas provienen de un sistema nacional de innovación menos avanzado, el uso de las fusiones y adquisiciones puede compensar las debilidades en el país de origen, jugando un papel clave para la justificación del éxito en el extranjero, los contactos con las multinacionales presentes en este país.

Por otro lado, esta investigación provee nueva evidencia sobre el proceso de internacionalización, considerando el país de origen y las características específicas del sistema nacional de innovación de este país y sus efectos en el modo elegido de expansión. Además, se ha contribuido a la literatura de las nuevas empresas multinacionales y especialmente a la explicación del uso de las F&A como una estrategia de escape, basada en el aprendizaje en el extranjero. Finalmente, la teoría de la senda del desarrollo de la inversión ha sido complementada mediante la consideración de los dos modos de inversión (inversión Greenfield y F&A).

Como limitaciones principales de esta investigación, cabe mencionar que este estudio no ha podido medir las estrategias que han perseguido las empresas, esto es, la búsqueda de conocimiento o la búsqueda de mercado lo que justifica a su vez, la elección del modo de internacionalización. Esta limitación ha impedido realizar un análisis a nivel de empresas. Sin embargo, el uso de variables a nivel macro ha permitido capturar las condiciones del entorno que afectan al modo de internacionalización. Esta limitación también implica que los resultados no pueden ser generalizados a todas las empresas del país. Por otro lado, en este análisis tampoco se ha podido analizar el país de destino de la inversión, lo que limita el argumento de explotación o adquisición de capacidades en el extranjero. Por lo tanto, en futuras investigaciones se intentará ampliar la propuesta considerando las características a nivel de empresa en el proceso de internacionalización.

Finalmente, la tercera investigación de esta Tesis doctoral analiza los efectos de aprendizaje en el extranjero mediante la inversión en los resultados innovadores y la productividad de las empresas manufactureras españolas. Con este objetivo, los resultados han demostrado que el conocimiento internacional puede quedar reflejado en un aumento del resultado innovador y, posteriormente, en un aumento de la productividad. Además, separando por sectores, los resultados demuestran como en los sectores de contenido tecnológico alto y medio, estos efectos son más relevantes que para las empresas pertenecientes a las industrias de bajo contenido tecnológico.

Como primera limitación de esta investigación es necesario mencionar las debilidades que han tenido las variables que han sido empleadas como variables dependientes. Por un lado, el uso de patentes ha sido criticado porque solo recoge el conocimiento codificado y, por tanto, deja fuera de análisis el conocimiento no codificado. Además, la decisión de patentar es una decisión estratégica de la empresa que no siempre tiene que reflejar el conocimiento nuevo de la empresa. Por otro lado, la medida de innovación de producto puede estar sesgada, ya que puede contabilizarse como innovación de producto unidades que no son verdaderas innovaciones. Sin embargo, estas son las únicas herramientas que disponemos para medir el conocimiento. Finalmente, la medida de productividad empleada, la productividad del trabajo (Valor añadido/empleados), es la medida más común para medir productividad, aunque no necesariamente es la más precisa.

Por otro lado, debe ser reconocido que el proceso de aprendizaje es un complejo proceso y que, por tanto, el incremento del resultado innovador y posterior productividad que se ha obtenido puede venir de otra parte de la organización. Además, incluso cuando hemos introducido la perspectiva temporal en el análisis para capturar los efectos del estado de multinacional sobre los resultados innovadores, no podemos garantizar que estos efectos hayan sido causados exclusivamente por el aprendizaje en el extranjero.

Es necesario también mencionar que en este análisis se ha analizado solo una muestra de empresas manufactureras españolas, siendo no posible generalizar estos resultados para empresas de otros países. Además, esto implica que no todas las multinacionales consideradas en la muestra mostrarán los mismos efectos en términos de aprendizaje, dado que algunas podrán tener ganancias como consecuencia del proceso de internacionalización mientras que otras podrán tener pérdidas. Por todo esto, debemos tener precaución a la hora de generalizar los resultados de esta última investigación.

Como investigaciones futuras se propone tratar todo el conjunto de limitaciones expuestas en los párrafos anteriores. Por un lado, procederemos a la construcción de un índice de productividad que indique la productividad total de los factores. Por otro lado, también proponemos la división de la variable que representa las empresas multinacionales en distintas categorías, esto es, empresas que en la muestra son siempre multinacionales, o que en el periodo han abierto una subsidiaria. Esto último permitiría analizar si los efectos del aprendizaje internacional, considerando estos casos, tiene comportamientos distintos en el resultado innovador y productividad de las empresas. Además, se considerará el destino de la inversión y los motivos seguidos en el proceso de internacionalización.

Por último, esta última investigación de la Tesis tiene algunas implicaciones políticas y recomendaciones para directivos. Como se ha mostrado, las empresas que son multinacionales pueden aprender en el extranjero y este nuevo conocimiento puede quedar reflejado en un aumento del resultado innovador y de la productividad de las empresas. Por lo tanto, los gobiernos deberían promover la inversión en otros países dados los posibles efectos positivos en la competitividad empresarial. Además, los directivos deberían ser conscientes de que aunque el proceso de internacionalización requiere altos costes, también puede ofrecer un conjunto de oportunidades, tales como la adquisición de conocimiento que puede mejorar los resultados innovadores.

Resumiendo, podría decirse que este conjunto de investigaciones han cumplido satisfactoriamente los objetivos planteados en esta Tesis, añadiendo nuevo conocimiento a tres aspectos del estudio de las nuevas empresas multinacionales. Así pues, se ha confirmado que el país de origen juega un papel clave en el proceso de internacionalización de las economías en desarrollo. Por otro lado, también se ha añadido evidencia al uso de las F&A como modo preferente de internacionalización de las empresas de las economías emergentes. Estos dos primeros resultados permiten afirmar de manera general que el país de origen afecta al proceso de internacionalización de las empresas, específicamente en las economías en desarrollo, y que también determinará el modo de internacionalización, siendo las F&A el modo más usado que permite compensar las debilidades del país de origen mediante la adquisición de conocimiento en el exterior. Por último, la tercera investigación de esta Tesis ha mostrado como el conocimiento internacional adquirido mediante inversión tiene efectos en el resultado innovador y en la productividad de las empresas, proponiendo el estudio de una nueva relación: internacionalización-innovación-productividad. Todos estos resultados contribuyen a la explicación de las actuales

tendencias en los negocios internacionales y, en especial, en los estudios de nuevas empresas multinacionales.

En general, como implicaciones para las políticas cabe mencionar la necesidad de coordinar más eficientemente las políticas de innovación e internacionalización. En este sentido, la eficiencia del sistema de innovación inducirá el proceso de internacionalización empresarial y, al mismo tiempo, el conocimiento internacional adquirido puede fomentar también los resultados innovadores y el nivel de productividad de las empresas. Por lo tanto, ambas políticas deberían ser consideradas como complementarias, aún más en países con bajo nivel de desarrollo.

Para finalizar, cabe esbozar que la elaboración de esta Tesis ya ha dado lugar a algunas publicaciones de la doctoranda y que parte de los contenidos están en proceso de publicación, a lo que hay que añadir un premio de investigación.

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Premio de investigación

V Premio José Luis San Pedro a la mejor comunicación presentada en la conferencia *Internacionalización en tiempos de crisis,* organizada por la Sociedad de Economía Mundial y celebrada en Jaén (Mayo, 2012). Factores determinantes de la emisión de inversión directa extranjera: un proceso de acumulación de capacidades. (ÁLVAREZ, I., TORRECILLAS, C., 2012)

ANEXO Marco Teórico

APÉNDICE. Cuadros resumen del marco teórico

Tabla A1. Modelos teóricos de Inversión (IDE)

	MODELOS	Principales asunciones y resultados	Autores
Modelos de comercio (Antecedentes)	Modelo H-O	Tecnología idéntica entre países. Producción de factores inmóviles.	Heckscher (1919) Ohlin (1933) Heckscher and Ohlin (1919)
Modelos pioneros de inversión	Modelo desarrollado por Mundell	Movimiento de factores y bienes internacionalmente como sustitutos.	Mundell(1957)
	Teoría del ciclo de vida del producto	Los países tienen diferentes tecnologías. Movimiento de los factores entre países.	Vernon(1966)
Modelos de inversión de equilibrio parcial	Modelos PSR	La inversión en I+D fomenta el uso de la inversión como modo de internacionalización.	Petit and Sanna-Randaccio (1998)
	Modelos de coste y beneficio	La elección entre la internacionalización vía exportaciones e inversión dependerá de las ganancias y los costes asociados al proceso de internacionalización.	Markusen (2002) Baltagi et al., (2005) Markusen and Venables (2007)
	Inversión horizontal frente a inversión vertical	La decisión entre la inversión horizontal y vertical dependerá de la estrategia de internacionalización perseguida y los costes asociados a la decisión de internacionalización.	Markusen (2002).
Modelos de equilibrio general	IDE horizontal	La decisión de IDE horizontal dependerá de los costes de transporte y las economías de escala.	Markusen (1984)
	IDE vertical	La decisión de IDE vertical dependerá de las dotaciones factoriales relativas de los países	Helpman(1984)
	Modelo de Knowledge Capital	Modelo que integra los modelos de inversión vertical y horizontal	Markusen(2002)
Modelos de equilibrio de otras formas de internacionalización	F&A vs. inversión Greenfield	F&A es la opción preferida para la internacionalización cuando los costes de instalación son elevados.	Raff et al (2007) Bjorvatn (2004).

		F&A serán utilizadas cuando las empresas quiere adquirir conocimiento en otros países. El uso de las F&A y la internacionalización vía exportaciones son complementarios	Nocke and Yeaple (2007) Neary (2009)
Modelos de heterogeneidad empresarial	Modelos que relacionan el nivel de compromiso internacional con los niveles de productividad empresarial	Las empresas multinacionales son más productivas que las empresas exportadoras, y estas últimas a su vez son más productivas que las empresas domésticas. Las empresas internacionalizadas muestran ratios mayores de productividad como resultado del aprendizaje en el extranjero	Melitz (2003) Helpman el al.,(2004)

Fuente: Elaboración propia

Tabla A2. Resumen de los modelos específicos del proceso de internacionalización

Pregunta	Modelos	Respuesta	Autores
¿Cómo se internacionalizan las empresas?	Modelo de internacionalización incremental	Proceso de internacionalización gradual empezando con el modelo que implica menor aversión al riesgo, esto es, exportaciones.	Johanson and Wiedersheim-Paul (1975) and Johanson and Vahnle (1977)
¿Cómo se selecciona entre diferentes países?	Teoría del ciclo de vida del producto Modelo de internacionalización incremental	Las empresas se internacionalizarán a países desarrollados y solo estarán presentes en países en desarrollo como resultado de la búsqueda de bajos coste laborales y una vez que el producto ha sido estandarizado. Internacionalización a países cercanos. Solo se abordarán los países más lejanos cuando las empresas han ganado experiencia en el proceso de internacionalización.	Vernon (1966) J ohanson and Wiedersheim-Paul (1975) and Johanson and Vahnle (1977)

Fuente: Elaboración propia en base a Cuervo-Cazurra, 2011

Tabla A3. Argumentos que explican la existencia de empresas multinacionales

Preguntas	**Ventajas**	**Respuesta Clave**	**Autores**
¿Cuando una empresa decide internacionalizarse?	Ventajas de propiedad	Cuando una empresa posee activos superiores que garantizan el éxito en el proceso de internacionalización	Hymer(1976) Caves(1996) Dunning(1988)
¿Por qué decide usar inversión?	Ventajas de internalización	Cuando los costes de usar otras formas de internacionalización superan a los costes de inversión	Teoría de internalización y Teoría de los costes de transacción; Buckey and Casson (1976) and Hennart, (1982) Dunning (1988)
¿Dónde decide internacionalizarse?	Ventajas de localización	En países donde las empresas consigan satisfacer los motivos perseguidos en el proceso de internacionalización	Porter(1990) Dunning(1988)

Fuente: Elaboración propia

Tabla A4. Empresas multinacionales de países emergentes o nuevas multinacionales y teorías tradicionales

Nuevos enfoques	Ideas clave	Autores
Nexos con otras empresas multinacionales , y aprendizaje (Enfoque LLL)	Generación de ventajas de propiedad en el extranjero siguiendo el motivo de aprendizaje mediante inversión. Proceso acelerado de internacionalización debido a los nexos de conocimiento existentes con las empresas multinacionales presentes en el país de origen.	Mathews (2002 and 2006)
Transformando las desventajas en ventajas	Las empresas de países en desarrollo carecen de las ventajas de propiedad tradicionales como marcas o patentes. Sin embargo, otras ventajas como: ventajas políticas o de organización, pueden observarse en las empresas procedentes de estas economías. Rápido proceso de internacionalización como resultado de la adquisición de capacidades en el extranjero.	Guillén and García-Canal (2011)
Mantenimiento de las teorías tradicionales	Revisión del enfoque de Country Specific Advantages (CSA) y Firm Specific Advantages (FSA), mediante el cual la internacionalización de las empresas procedentes de países en desarrollo se explica por las CSA más que por las FSA. Consideración de las instituciones en el paradigma OLI. Proceso rápido de internacionalización como resultado de los cambios en los motivos que guían el proceso, siendo la adquisición de conocimiento el principal objetivo que persiguen las empresas multinacionales de países desarrollados y en desarrollo	Rugman (2007); Narula and Dunning (2010)
Extensión de las teorías tradicionales	Introducción de un concepto abierto de ventajas de propiedad, considerando las características del país de origen. Uso de las F&A como resultado del contexto global y la necesidad de adquirir capacidades en el exterior debido a las debilidades encontradas en el entorno. Sin embargo, un nivel mínimo de activos superiores es necesario para el proceso de internacionalización	Ramamurti (2012); Cuervo-Cazurra (2012); Narula (2012) Luo and Wang (2012)

Fuente: Elaboración propia en base a Cuervo-Cazurra (2011)

Tabla A5. Teorías, limitaciones para las nuevas empresas multinacionales y posibles extensiones

Teorías	**Limitaciones para las nuevas empresas multinacionales**	**Posibles extensiones**
Teoría del ciclo de vida del producto	¿Cómo se explican los flujos de inversión procedentes de países en desarrollo hacía países desarrollados? ¿Cómo se explica que las empresas sigan un proceso de internacionalización acelerado?	Relajando los supuestos de similitudes entre países. Incorporando el hecho de que las innovaciones puede adquirirse. Considerando las F&A como un resultado de la globalización que permite que las empresas que se internacionalizan puedan aprender en el extranjero.
Teorías de internacionalización incremental	¿Cómo se explica que las empresas sigan un proceso de internacionalización acelerado? ¿Cómo se explican los flujos de inversión procedentes de países en desarrollo hacía países desarrollados?	Las empresas multinacionales de países en desarrollo son menos adversas al riesgo como resultado del débil entorno del país de procedencia. El concepto de distancia física debería ser completado con el concepto de atracción entre mercados.
Paradigma OLI	O= El concepto de ventajas de propiedad es limitado L=Los motivos de búsqueda de conocimiento prevalecen a los tradicionales de búsqueda de mercado I=Alta tendencia a internalizar operaciones debido a los altos costes de transacción.	Es necesario considerar el concepto de ventajas de propiedad como un concepto amplio, lo que implica la consideración de la relación entre las ventajas de localización (L) y las ventajas de propiedad (O). Es posible adquirir capacidades en el extranjero, siguiendo motivos de búsqueda de conocimiento. Sin embargo, es necesario tener un nivel mínimo de activos superiores El país de origen afectará al comportamiento que persiguen las empresas referente a los altos costes de transacción
Teoría de recursos	¿Cómo se explica que las empresas se internacionalicen para adquirir capacidades?	Introducción del concepto de que las capacidades pueden ser adquiridas usando F&A

Fuente: Elaboración propia en base a Cuervo-Cazurra, 2011.

Tabla A6.Caracteristicas de las empresas multinacionales españolas

Características de las empresas multinacionales Españolas
Carencia de una sólida base tecnológica
Rápido proceso de internacionalización
Nuevo conjunto de ventajas de propiedad basadas en las habilidades políticas y capacidades directivas
Internacionalización para aprender en el extranjero
Uso de las F&A como principal modo de internacionalización

Fuente: Elaboración propia en base a Guillén and García-Canal, 2010

Tabla A7. Aprendizaje en el extranjero en la literatura de la heterogeneidad empresarial

Literatura de heterogeneidad empresarial	**Resultados**	**Autores**
Modelos	Los altos niveles de productividad en las empresas justifican las internacionalización, primero exportando y posteriormente invirtiendo Las empresas multinacionales son más productivas que las empresas exportadoras, y estas a su vez que las empresas domésticas	Melitz (2003) Helpman (2004)
Evidencia empírica	Niveles más altos de compromiso internacional se justifican por previos niveles altos de productividad Empresas pueden aprender en el extranjero y este aprendizaje puede mostrar niveles altos de productividad Los efectos del aprendizaje en el extranjero puede observarse fácilmente en niveles más elevados de resultados innovadores	Wagner (2007) Greenaway and Kneller (2007) Bernard and Jensen (1999) Castellani and Zanfei (2007) Castellacci (2011) Monreal-Perez et al.,(2011) Cassiman and Golovko (2011) Belderbos et al., (2013)

Fuente: Elaboración propia

Tabla A8.Aprendizaje en el extranjero en la literatura de transferencia de conocimiento

Transferencia de conocimiento y aprendizaje	Resultados	Autores
Contribuciones Pioneras	Conocimiento basado en la experiencia adquirida en el proceso internacional. Estas contribuciones no consideraban la búsqueda de conocimiento como motives que justificaban el proceso de internacionalización	Johanson and Valhne (1977) Erikson et al. (1997) Forsgren (2002)
Flujos de conocimiento inverso y aprendizaje de las subsidiarias	Consideración de la empresas subsidiarias y de su entorno como fuente de conocimiento que puede volver a la casa matriz	Mudambi (2002) Mudambi and Navarra (2004) Ambos et al.,(2006)
Flujos de conocimiento internacional como inputs del proceso innovador y productividad	El hecho de ser empresa multinacional afecta positivamente al resultado innovador El hecho de ser empresa multinacional tiene efectos positivos en el nivel de productividad de las empresas	Hitt et al. (1997) Kafouros et al., (2008) Belderbos, 2003 Yeoh (2004) Coe and Helpman (1995) Griffith et al., (2006) Belderbos et al., (2013) Kafouros et al., (2012)

Fuente: Elaboración propia

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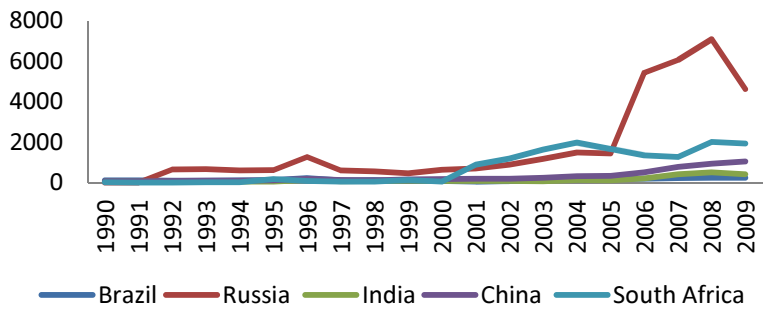
APPENDIXES

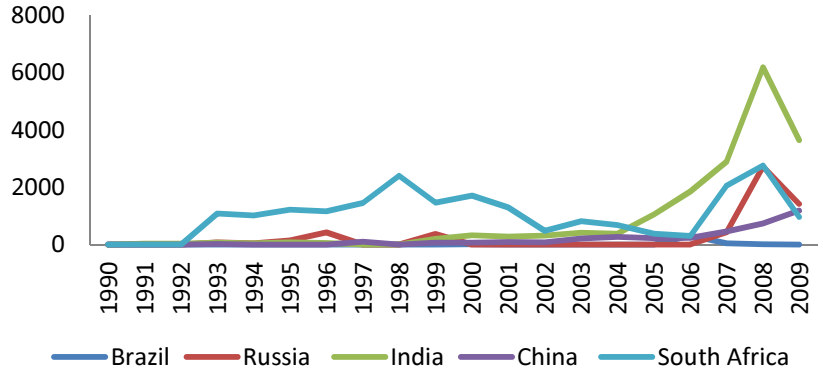
APPENDIX A. Graphs

Graph A1. South-North FDI. Foreign direct investment. Flows by partner country in US$Constant2000

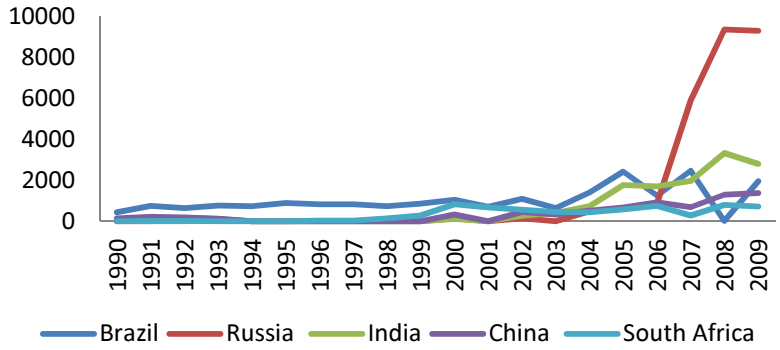
Graph A1. 1. Outward flows from BRICS to Germany



Graph A1.2. Outward flows from BRICS to UK



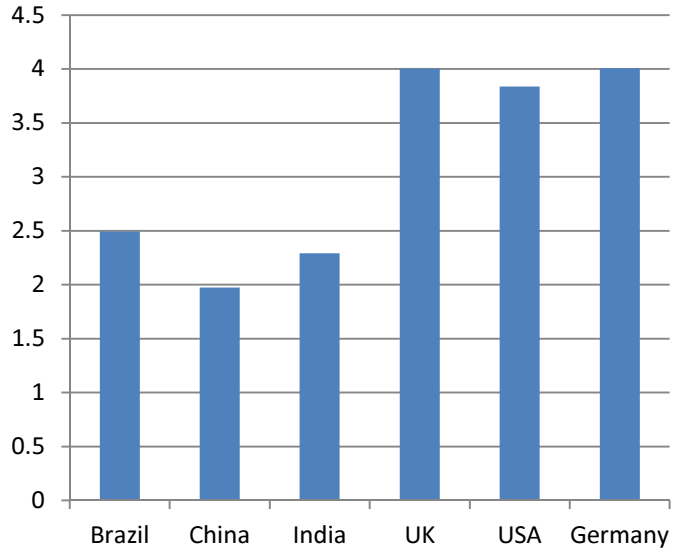
Graph A1.3. Outward flows from BRICS to USA



Source:OCDE.

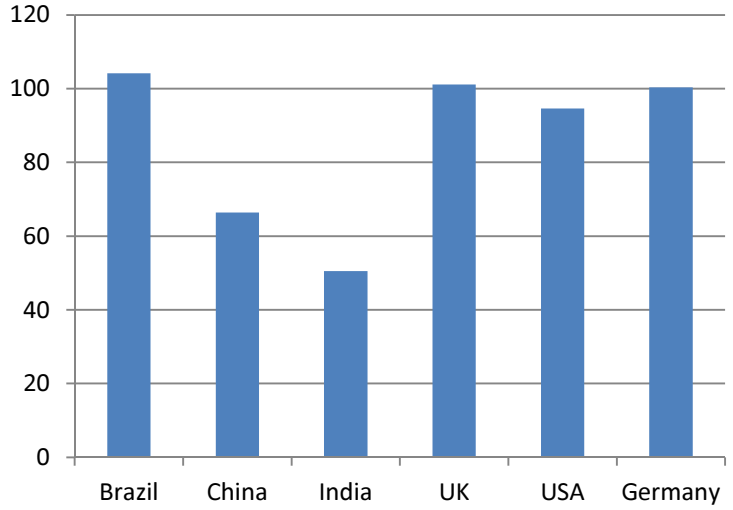
Graphs A2. Description of the economic and technological environment. A comparison between developed and developing countries

Graph A2.1: Institutions (1996-2009)



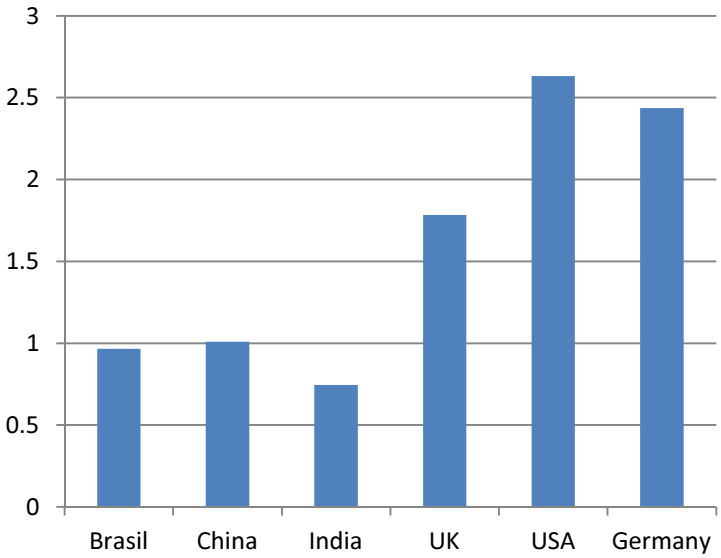
Source: Institution composed index. World Bank

Graph A2.2: Education (1996-2009)



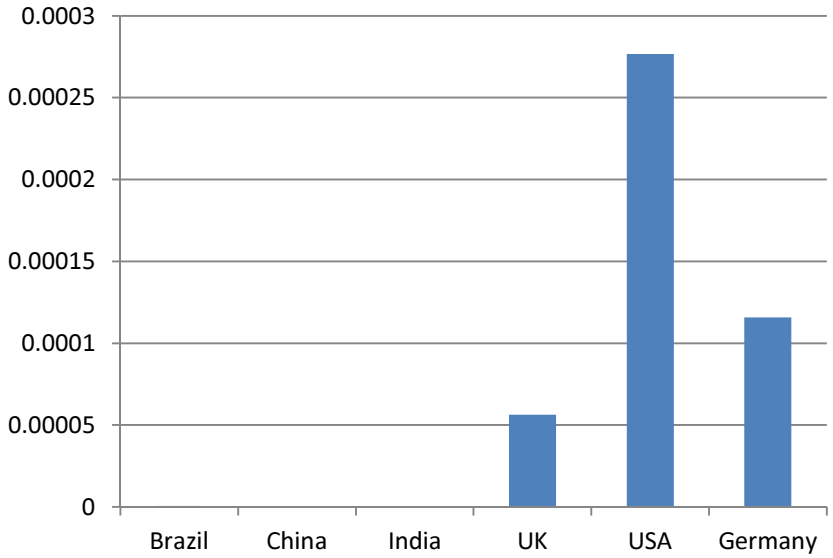
Source: Enrollment in secondary education (%Enrollment)

Graph A2.3: R&D (1996-2009)



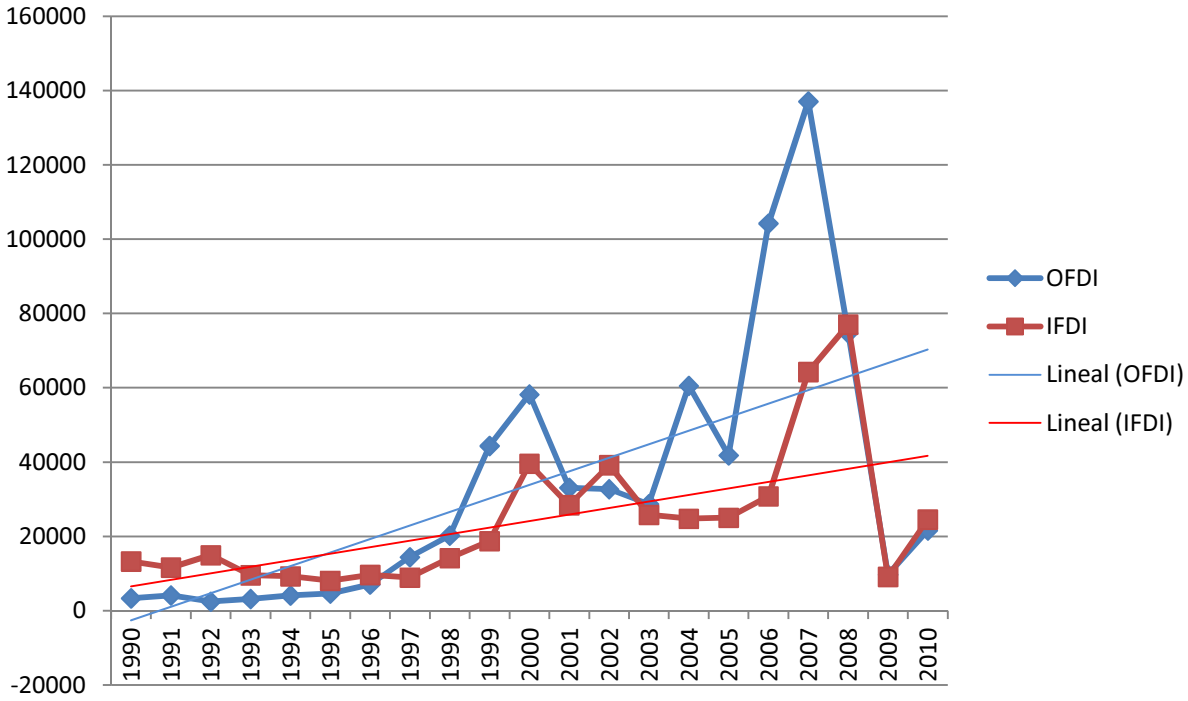
Source: Expenditure in R&D (%GDP) World Bank

Graph A2. 4: Number of Patent by origin (1996-2009)



Source: USPO-Patent/Population

Graph A3 Inward and Outward FDI in Spain



Source: Unctad (US$2000 constant Millions)

APPENDIX B. Summaries of the literature background

Table B1. FDI MODELS

MODEL OF FDI	MODELS	MAIN ASSUMPTIONS/FINDINGS	AUTHORS
Origins. Trade models	H-O Model	Identical technology between countries Production factors are immobile	Heckscher (1919) Ohlin (1933) Heckscher and Ohlin (1919)
Pioneer FDI Model	Mundell Model	The movement of goods and factor internationally are substitutes	Mundell(1957)
	Product cycle model	Countries have different technologies Movement of factors between countries	Vernon(1966)
Partial FDI equilibrium	PSR Models	The investment in R&D enhance the use of FDI as foreign expansion model	Petit and Sanna-Randaccio (1998)
	Cost-Benefit decision models	The choice between Exports and FDI will depend on the expected gain and the cost associated to the internationalization process	Markusen (2002) Blonigen et al.(2002) Baltagi et al., (2005) Markusen and Venables (2007)
	Horizontal vs. Vertical FDI	The decision between horizontal or vertical FDI will depend on the international strategy and the associated costs of the internationalization decision	Markusen (2002).
General FDI equilibrium	Horizontal FDI	The decision of horizontal FDI will depend on the transport cost and economies of scale	Markusen (1984)
	Vertical FDI	The decision of vertical FDI will depend on the factor endowment of countries	Helpman(1984)
	KC Model	Model that integrate the horizontal and vertical FDI decision	Markusen(2002)

Equilibrium of other foreign expansion mode	M&A vs. Greenfield Models	M&A will be the option when there are high installations costs M&A will be used when firms want to obtain new capabilities M&A and exports flows are complementary	Raff et al (2007) Bjorvatn (2004). Nocke and Yeaple (2007) Neary (2009)
Firm Heterogeneity Models	Productivity and chosen mode of internationalization	Investors firms will be more productive than exporters firms and these latter will be more productive than domestic firms Internationalized (investors and exporters)firms will show higher rate of productivity than domestic firms due to the learning abroad	Melitz (2003) Helpman el al.,(2004)

Source: Author's elaboration based

Table B2. Summary of the traditional models of the firm internationalization process

Questions	Models	Key Answer	Main Authors
How to enter to a country?	Incremental internationalization-model	Gradual and slow process, starting with the model that implies less risk aversion (exports)	Johanson and Wiedersheim-Paul (1975) and Johanson and Vahnle (1977)
How to select between different countries?	Product Cycle	Developed countries and only developing countries as result of the lower labor cost and once the product have been standardized	Vernaon(1956)
	Incremental internationalization theories	Closed countries with lower physical distance. Only more distant countries when firms have gained experiences by the internationalization in the closed ones	Johanson and Wiedersheim-Paul (1975) and Johanson and Vahnle (1977)

Source: Author's elaboration based on Cuervo-Cazurra, 2011

Table B3. Arguments and theories that explain the internationalization process of a firm

Questions	Advantages	Key Answer	Traditional Authors
When does a firm decide to go abroad?	Ownership advantages	When firms have the possession of superior assets.	Hymer(1976) Caves(1996)
Why does a firm decide to use FDI?	Internalization advantages	When the cost of using contracts exceed the cost of internalizing the transaction.	Internalization theory and transaction cost theory; Buckey and Casson (1976) and Hennart, (1982)
Where does a firm decide to locate?	Location Advantages	Countries where firms can satisfy their pursued internationalization motives.	Porter(1990)

Source: Author's elaboration

Table B4. EMNEs and theories

New approaches	Key Ideas	Main Authors
Linkage-Leverage and Learning approach (LLL approach)	Generation of ownership advantages abroad following learning. Internationalization process guided by pull factors. Accelerated internationalization process due to the linkages and the globalization phenomenon.	Mathews (2002 and 2006)
A springboard perspective	Generation of ownership advantages abroad though learning. Firms internationalized try to avoid country institutional and market deficiencies, compensating competitive disadvantages. Accelerated internationalization process explained by the presence of MNE in the home country and the emergence of competence	Luo and Tung (2007)
Transforming disadvantages into advantages	Firms from developing countries lack the traditional ownership advantages. However, other advantages such as political or organizational advantages can be observed in firms from those economies. The rapid internationalization process as result of the acquisition of needed capabilities abroad.	Guillén and García-Canal (2011)
The maintenance of the traditional theories	Review of the CSA and FSA framework, by which the internationalization of firms from developing economies is explained by more CSA rather than FSA Consideration of the institutional based view in the OLI paradigm. The rapid internationalization process is due to	Rugman (2007); Narula and Dunning

	the changes in the internationalization motives, being the asset augmenting the main motive pursuit by firms in developed and in developing countries.	(2010)
The spread of the traditional theories	Open view of the concept of ownership advantages, considering the special characteristics of the home country. Use of M&A as a result of the global context and the necessity of capabilities given the weak environment. However a minimum level of superior asset is necessary.	Ramamurti (2012); Cuervo-Cazurra (2012); Narula (2012) Luo and Wang (2012)

Source: Authors elaboration

Table B5. Theories, limitation for EMNE and possible extensions

Theories	**Limitation for EMNE**	**Possible extensions**
Product life cycle model	Flows between developing and developed countries. Accelerated internationalization process	Relaxing the constraints of similarities between countries Incorporating the fact that innovation can be acquired M&A as a result of the globalization and the need of learning abroad.
Incremental internationalization model	Accelerated internationalization process	MNE from developing countries are less risk adverse given the weak economic environment where firms are embedded. The concept of physical distance

	New direction of the investment flows: South-North	should be complemented by the concept of market attraction by countries
OLI	O=The concept of Ownership advantages L=Knowledge seeking motives are higher than market seeking motives I=Higher tendency of internalize operation because of higher transaction cost.	Consideration of Ownership advantages as an open concept which means that the relationship between O and L will determine the internationalization process It is possible to acquire capabilities, following knowledge seeking motives, however it is necessary a minimum level of superior assets. Home country will affect to the behavior related to the higher transaction cost
Resources-based view	How to explain that companies go abroad for acquiring capacities	Introducing the concept of that advantages can be acquired abroad using M&As.

Source: Authors elaboration based on Cuervo-Cazurra, 2011.

Table B6. Special characteristics of Spanish MNE

Spanish MNE characteristics
Lack of a technological solid base in the country of origin
Rapid internationalization process
New set of Ownership advantages composed by political and directive capabilities
Learning abroad proposal
Use the M&A as a main mode of internationalization

*The characteristics of the Spanish MNE can be also extended to the new multinationals or EMNE

Source: Own elaboration based on Guillén and García-Canal, 2010

Table B7. Learning abroad in the literature of firm heterogeneity

Firm Heterogeneity literature	Findings	Main Authors
Models	Higher levels of firm productivity justify the entrance of a firm in the export market	Melitz (2003)
	Investor firms will be more productive than exporter and domestic firms	Helpman (2004)
Empirical Evidence	Higher level of international commitment may be justified by previous higher level of productivity	Wagner (2007)
	Firms may learn abroad and this learning can be showed in an increase of productivity	Greenaway and Kneller (2007) Bernard and Jensen (1999)
	The effects of learning abroad can be easily observed analyzing the innovative outputs	Castellani and Zanfei (2007) Castellacci (2011) Monreal-Perez et al.,(2011) Cassiman and Golovko (2011) Belderbos et al., (2013)

Source: Own elaboration

Table B8. Learning abroad in the literature of knowledge transfer

Knowledge Transfer and learning	Findings	Authors
Pioneers contributions	Experiential learning in the internationalization process No consideration of the knowledge seeking motives as a firm strategy in this model	Johanson and Valhne (1977) Erikson et al. (1997) Forsgren (2002)
Reverse Knowledge flows and subsidiary learning	Consideration of the subsidiary as a source of knowledge	Mudambi (2002) Mudambi and Navarra (2004) Ambos et al.,(2006)
International knowledge as a inputs of the innovative process and productivity	The MNE status have a positive effect on the innovation process The MNE status have a positive effect on the productivity level of firms	Hitt et al. (1997) Kafouros et al., (2008) Belderbos, 2003 Yeoh (2004) Coe and Helpman (1995) Griffith et al., (2006) Belderbos et al., (2013) Kafouros et al., (2012)

Source: Own elaboration

APPENDIX C Home country analysis

Table C1. Countries included in the analysis, classified by their level of GDP per capita.

DEVELOPED COUNTRIES (*)	DEVELOPING COUNTRIES (**)
Australia	Argentina
Austria	Brazil
Belgium	Chile
Canada	China
Denmark	Colombia
Finland	Czech Republic
France	Egypt
Germany	Estonia
Greece	Hungary
Hong Kong	India
Iceland	Indonesia
Ireland	Malaysia
Israel	Mexico
Italy	Poland
Japan	Russia
Korea, South	Slovak Republic
Kuwait	South Africa
Luxembourg	Turkey
Netherland	Venezuela
New Zealand	
Norway	
Portugal	
Singapore	
Slovenia	
Spain	
Sweden	
Switzerland	
United Kingdom	
United States	

*The group of developed countries is composed by high-income economies.

** The group of developing countries is composed by middle-income economies.

***The group of developing countries is divided by upper-middle and lower-middle income economies

Source: Own elaboration

Table C2. Summary of Variables in the analysis of home country effects

Variable	Definition	Source
Outward FDI (Y)	Outward FDI (Stock, % GDP) measured in natural logarithms	Unctad, FDI database
Interes Rates (FIN)	Interest. % Charged by Banks on loan to customer, measured in natural logarithms	World Bank, WDI 2011
Institutions (INS)	Quality and Stability Institutions Indicator	World Bank, WDI 2011
Ra&D (RD)	Expenditure in RandD (as % of the GDP) measured in natural logarithms	World Bank, WDI 2011
Education (EDU)	School enrolment in secondary education (% Total), measured in natural logarithms	World Bank, WDI 2011
Wages (W)	Compensation of employees ($US dollars), measured in natural logarithms	World Bank, WDI 2011
Gross Fixed Capital Formation (GCF)	Physical capital accumulation and improvement, measured in natural logarithms	World Bank, WDI 2011
High Export Technology (HX)	Export of high tech product(% manufactured exports).Measured in natural logarithms	World Bank, WDI 2011
Inward FDI (IFDI)	Inward FDI (Stock,% GDP), measured in natural logarithms	Unctad, FDI, 2011

Source: Own elaboration

Table C3: Correlation Matrix

	All Countries								Developed Countries								Developing Countries							
	FIN	INST	RD	EDU	W	GCF	HEX	IFDI	FIN	INST	RD	EDU	W	GCF	HEX	IFDI	FIN	INST	RD	EDU	W	GCF	HEX	IFDI
FIN	1								1								1							
INST	-0.616	1							-0.2953	1							-0.528	1						
RD	-0.415	0.7239	1						-0.150	0.5029	1						-0.087	0.5342	1					
EDU	-0.318	0.6943	0.5872	1					-0.029	0.4462	0.2691	1					0.0724	0.482	0.4458	1				
W	0.2955	-0.395	-0.228	-0.3335	1				0.078	-0.126	0.3942	-0.027	1				0.1923	-0.333	-0.487	-0.314	1			
GFC	-0.093	0.0567	-0.012	-0.114	0.0673	1			0.1461	-0.047	0.0357	0.0027	0.2111	1			-0.433	0.3813	0.0589	-0.161	-0.107	1		
HEX	-0.245	0.3326	0.5076	0.1656	0.1898	0.0762	1		-0.197	0.3345	0.6576	0.0712	0.4139	0.0937	1		-0.082	0.1281	0.1729	-0.023	0.1431	0.1111	1	
IFDI	-0.344	0.4317	0.2565	0.2654	0.1427	0.1427	0.3242	1	-0.287	0.546	0.2852	0.1173	-0.069	0.1768	0.3917	1	-0.528	0.6181	0.2081	0.5615	-0.239	0.1266	0.102	1

Table C4: Correlations Outward FDI - Inward FDI

	Inward FDI (All)	Inward FDI (DC)	Inward FDI (DgC)
Outward FDI (All)	0.6026		
Outward FDI (DC)		0.8079	
Outward FDI (DgC)			0.5636

* N= entire sample / DC= developed countries / DgC= developing countries

Source: Own elaboration

APPENDIX D Chosen mode of FDI analysis

Table D1. Countries included in the analysis, classified in developed and developing countries (***).

Developed Countries (*)	Developing Countries (**)
Australia	Argentina
Austria	Brazil
Belgium	Bulgaria
Canada	Chile
Croatia	China
Cyprus	Colombia
Czech Republic	Costa Rica
Denmark	Egypt
Estonia	Guatemala
Finland	India
France	Indonesia
Germany	Jamaica
Greece	Jordan
Hong Kong	Kazakhstan
Hungary	Latvia
Iceland	Lithuania
Ireland	Malaysia
Israel	Mauritius
Italy	Mexico
Japan	Morocco
Korea, Rep.	Pakistan
Kuwait	Panama
Luxembourg	Peru
Macao	Philippines
Malta	Romania
Netherlands	Russian Federation
New Zealand	Serbia
Norway	South Africa
Poland	Sri Lanka
Portugal	Thailand
Saudi Arabia	Tunisia
Singapore	Turkey
Slovak Republic	Ukraine
Slovenia	Uruguay
Spain	Venezuela
Sweden	Zambia
Switzerland	Zimbabwe
Trinidad and Tobago	
United Kingdom	
United States	

* The group of developed countries is composed by the high income economies
**The group of developing countries is composed by the middle income economies
***Classification according to the income level criteria (GDP per capita used by the World Bank)
Source: Own elaboration

Table D2. Definition of variables and sources of information

Variable	Definition	Source
Outward FDI (Y)	Outward FDIstock (%GDP) measured in natural logarithms	Unctad, FDI database
M&A(Y)	Value of M&A by region of purchaser (%GDP) measured in natural logarithms	Unctad, FDI database
Inward FDI	Inward FDI stock(% GDP) measured in natural logarithms	Unctad, FDI database
Institutions (INS)	Quality and Stability Institutions Indicator	World Bank, WDI 2013
R&D (RD)	Expenditure in R&D (% GDP) measured in natural logarithms	World Bank, WDI 2013
Patent (PT)	Number of patent application by resident, per capita	World Bank, WDI 2013
Scientific and technical journal articles (SC)	Number of articles published per capita	World Bank, WDI 2013
Education (EDU)	School enrolment in secondary education (% Total) measured in natural logarithms	World Bank, WDI 2013
Wages (W)	Compensation of employees ($US dollars) measured in natural logarithms	World Bank, WDI 2013
GDP Growth	Annual percentage growth rate of GDP (%)	World Bank, WDI 2013

Source: Own elaboration

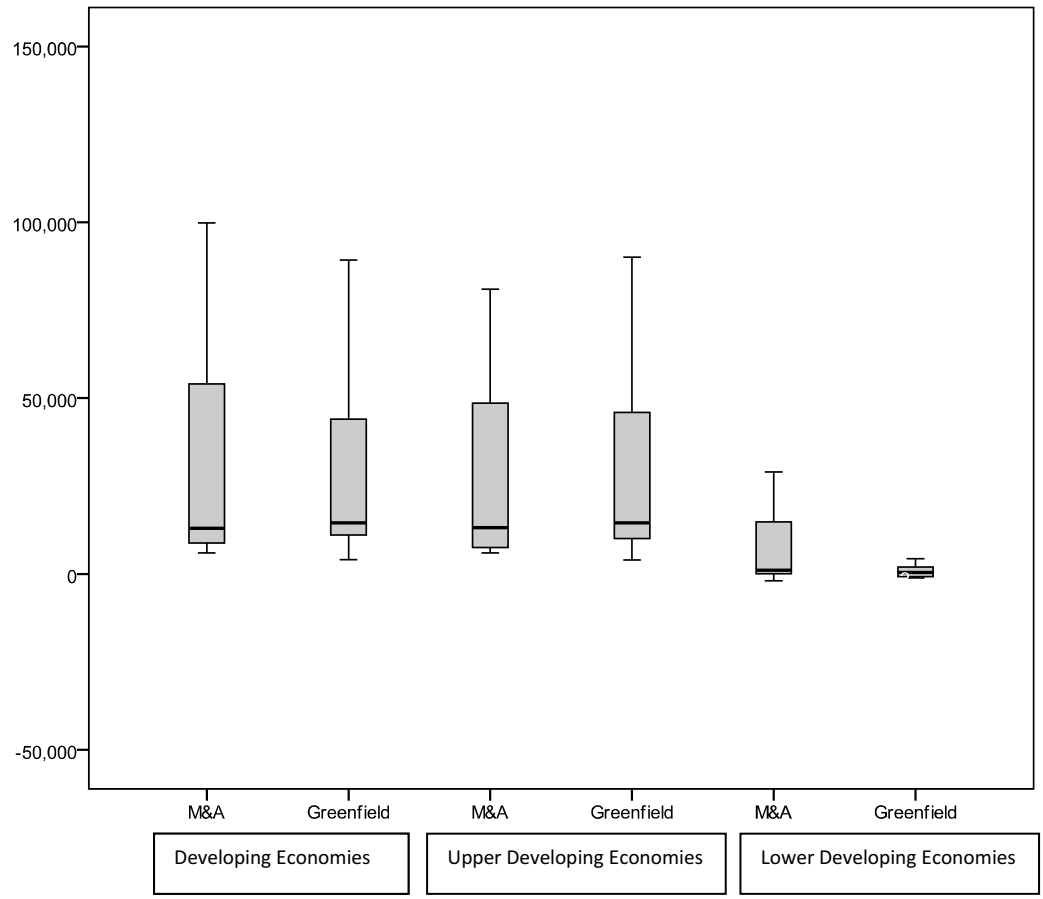
Table D3. Correlation matrix: Developed countries and Developing countries

DEVELOPING				
	HNSI	IFDI	W	ΔGDP
HNSI	1			
IFDI	0.3581	1		
W	-0.1232	-0.171	1	
ΔGDP	-0.0813	-0.0413	0.0643	1

DEVELOPED				
	HNSI	IFDI	W	ΔGDP
HNSI	1			
IFDI	-0.0013	1		
W	0.3247	-0.1797	1	
ΔGDP	-0.1508	-0.028	-0.105	1

Source:Own elaboration

Graph D1: Analysis of M&A and Greenfield FDI in Developing Economies (Upper and Lower)



Source: Own elaboration

APPENDIX E Learning by FDI analysis

Table E1. Technological classification according to the ESEE data

High Tech Content
N9. Chemical and Chemical products
N15. Computing Machinery, Electrical machinery, Precision and optical instruments
Medium tech content
Medium high tech content
N.16. Machinery, equipment and electrical machinery and apparatus, n.e.c
N.17.Motor vehicles, trailers and Semi-trailers
N.18. Other transport equipment
N. 14. Agricultural Machinery
Medium low technolgoy content
N.20. Other manufacturing industries
N.10.Rubber and plastic product
N.11. Other non- metalic mineral products
N.12. Basic Metal
N.13. Fabricated metal products
Low tech content
N.1. Meat Industry
N.2. Food and Tobacco
N.3. Beverages
N.4.Textiles
N.5. Leather and footwear
N.6. Wood
N.7. Paper, paper products, publishing and printing
N.19. Furniture

*. Classification based on ISIC Rev.3 Technology Intensity Definition (OCDE)

Source: Own elaboration

Table E2. Correlations Matrix

Correlation Matrix			
MNE	1		
Rd	0.0108	1	
Size	0.3483	-0.1322	1

Source: Own elaboration

Table E3. Correlation matrix between lags structure and dependent variables

	INNO	Pt	Pd
MNE_{t-1}	0.0393	0.1255	0.2397
MNE_{t-2}	0.0404	0.1211	0.235

Source: Own elaboration

APPENDIX F Acronyms

FDI: Foreign Direct Investment

MNE: Multinational Enterprise/s

EMNE: Emerging Multinational/s or multinational from developing economies

M&A: Mergers and Acquisitions

OFDI: Outward Foreign Direct Investment

IFDI: Inward Foreign Direct Investment

TNC: Transnational Corporations

NSI: National System of Innovation

HNSI: Home National System of Innovation

CSA: Country Specific Advantages

FSA: Firm Specific Advantages

Oa: Ownership Advantages

La: Location Advantages

Ia: Internationalization Advantages

BRICS: These acronyms refer to a group of countries: Brazil, Russa, China and South Africa

ESEE: Spanish Manufacturing Survey "Encuesta de Estrategias Empresariales"

GMM: Generalized method of Moment (Method of the panel analysis)

EC: Europeam Comunity

HMY: Helpman, Melitz and Yeaple Model of firm heterogeneity developed in 2004.

HQ: headquarters

F&A: Fusiones y adquisiciones