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What does it matter about the home countries of emerging multinationals?

Isabel Álvarez¹ and Celia Torrecillas²

Abstract:

The recent emergence of new multinational enterprises from developing countries (EMNE) is challenging some basic pillars of the theory of the firm' internationalization and provides new insights for development studies. In this paper we test empirically what aspects at the home country level may facilitate the promotion and success of EMNE that permits the generation of firms' specific advantages in developing contexts. Their identification would complement the explanation of the EMNE phenomena from a country perspective, underlying that institutions and technology are key fields for the definition of policy implications and actions. In the empirical analysis, we use panel data for both developed and developing economies in the period 1996-2009 to capture the international differences and the dynamics in a cross-country study. From a perspective of home national systems of innovation, our contribution shows that 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.

Key Words: Emerging Multinational Enterprises, Developing Countries, Outward FDI, National Systems of Innovation

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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 a 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 & 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 EMMs 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 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 while 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 & Narula, 2004).

In this paper 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 consider 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 and Chen, 1983; Peng, 2002; Child and Rodrigues, 2005; Kumar, 2006; Godstein and Wells, 2007; Cuervo-Cazurra, 2008; Mathews, 2006; Gammeltoft et al. 2010). 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 recent work by Luo and Wang (2012) shows an analysis at the micro level of how home country conditions affect OFDI strategies in emerging markets. Finally, there are some recent contributions that establish the relationship between the development path and the national system of innovation (NSI) approach (Alvarez and Marin, 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 (Alvarez & Marin, 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 discussion of results. Finally, in section sixth some conclusions are presented.

2. LITERATURE BACKGROUND

Pioneering contributions in the theory of EMN 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 & 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, 2004).

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 and Chen (1983) 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 (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 phenomenon 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 in such a way that is can be justified 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, specially 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 1 that summarizes the idea exposed above:

Figure1: Linkage between H countries and EMNE



Source: Own 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 become 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, 2006; Alvarez and Marin, 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 Marin, 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; 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. HYPOTHESIS DEVELOPMENT

In this paper 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 firms 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 depend 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 of 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 EMNEⁱ. 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 paper 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 (Guillen and Garcia-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 branch 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).*

On the other hand, it is well known that previous inward FDI flows may positively impact in host economies because the potential spillover effects 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; Tanand 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; Alvarez and Marin, 2010; 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 find 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 1, where the expected results and signs are shown for each group of countries. Table 2 contains the definition of the variables used in the analysis.

Table1: Hypothesis and expected signs

| 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- | + | + |
| <i>Controls</i> | | | |
| Competitiveness | Gross Capital Formation | + | + |
| | Hight Tecnology Export | n.s | + |
| Labour Market | Labour Cost | + | - |

Table 2. Summary of Variables

| 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 |
| RandD (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 |

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 Bankⁱⁱ (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 Financial TNCs elaborated by UNCTADⁱⁱⁱ. The descriptive statistics of the variables used in the model are presented in Table 3; these are calculated for developed and developing countries, respectively.

Table 3.Descriptive Statistics: Average values for the period 1996-2009

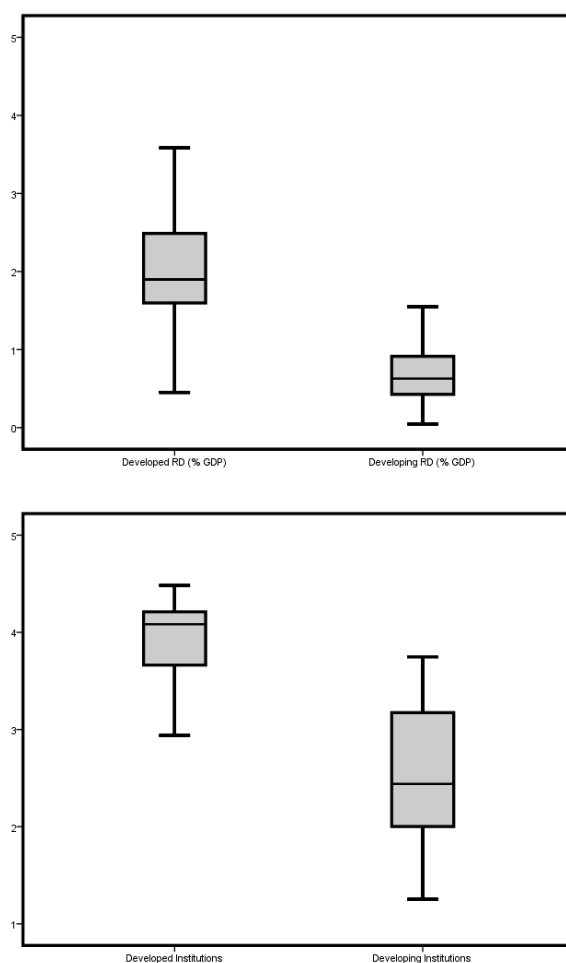
| | Developed Countries | | Developing Countries | |
|--|---------------------|----------|----------------------|----------|
| | Mean | Std. Dev | Mean | Std. Dev |
| Outward FDI (as % of the GDP) | 50.66 | 64.20 | 7.218 | 7.67 |
| Interest Rates (in %) | 7.31 | 3.78 | 16.99 | 15.82 |
| Institutions | 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 (Table A1).

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 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.

Graph 1: Innovations System (R&D and Institutions)



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

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 OFDI 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.

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)^{iv} 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 (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 (2). All these variables have been transformed into natural logarithms, with the exception of the Institutions Index. Two separate estimations of Eq (1) and Eq (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 Table 2.

Eq (1):

$$\log Y_{it} = \alpha \log Y_{it-1} + \beta_1 \log FIN_{it} + \beta_2 \log INS_{it} + \beta_3 \log RD_{it} + \beta_4 \log EDU_{it} + \beta_5 \log W_{it} + \beta_6 \log GCF_{it} + \beta_7 \log HEX_{it} + \eta_{si} + U_{dt} + \epsilon_{it}$$

Eq (2):

$$\log Y_{it} = \alpha \log Y_{it-1} + \beta_1 \log FIN_{it} + \beta_2 \log INS_{it} + \beta_3 \log RD_{it} + \beta_4 \log EDU_{it} + \beta_5 \log W_{it} + \beta_6 \log GCF_{it} + \beta_7 \log HEX_{it} + \beta_8 \log IFDI_{it} + \eta_{si} + U_{dt} + \epsilon_{it}$$

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 present when individual effects are considered in the regression (Castellacci, 2008) or in the case of Static Panel Data when some variables could present endogeneity problems. The presence of endogenous variables, when considering the analysis of a path dependence trajectory and a cumulative process dependent on the past trajectory of economies (Dosi, 1988) justify the use of this method.

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, according to the deep study about the results obtained by the difference and system GMM, Roodman (2006; 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 overidentification 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 more appropriate. 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 4. The correlation matrix for the variables used in the model can be found in Table A2 in the appendix while the correlation matrix of the dependent variable and Inward FDI has been also included in the appendix (Table A3).

The results of the estimation of the data panel allow us to confirm that home country factors can be enhancing the development of those firms' advantages that affect positively their internationalization process through FDI (Table 4, 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 4, columns 5-6); this finding is consistent with the importance of home countries characteristics in the study of EMN 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 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 4, 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 4, 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 A3 in the appendix). 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 4, 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 4, columns 3 and 4), results show that home ownership advantages generate a lower level effect on 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 4, 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 4, 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 sign in Table 4, column 6). In sum, from the analysis of the Institutional framework both arguments hold.

v

Table 4. Panel estimations

| | 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 (Roodman,2012)

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

Regarding the financial system, the difficulties or inefficiencies seem to be acting as a facilitator mechanism for the emergence of multinationals (Table 4, 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 frequently is the use of government support for the internationalization process. Secondly, the positive sign can reflect that firms from developing countries obtain funds in the location country.

The capacity of knowledge absorption (RD) is positively related to outward FDI for developing economies (Table 4, 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 4, 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 4, 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.

6. CONCLUSIONS

This article 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 paper 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 for a deeper understanding of the EMNE phenomena, 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.

APPENDIX (TABLES A1, A2, A3 BY HERE)

Table A1. 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

Table A2: 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 A3: 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

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Notes

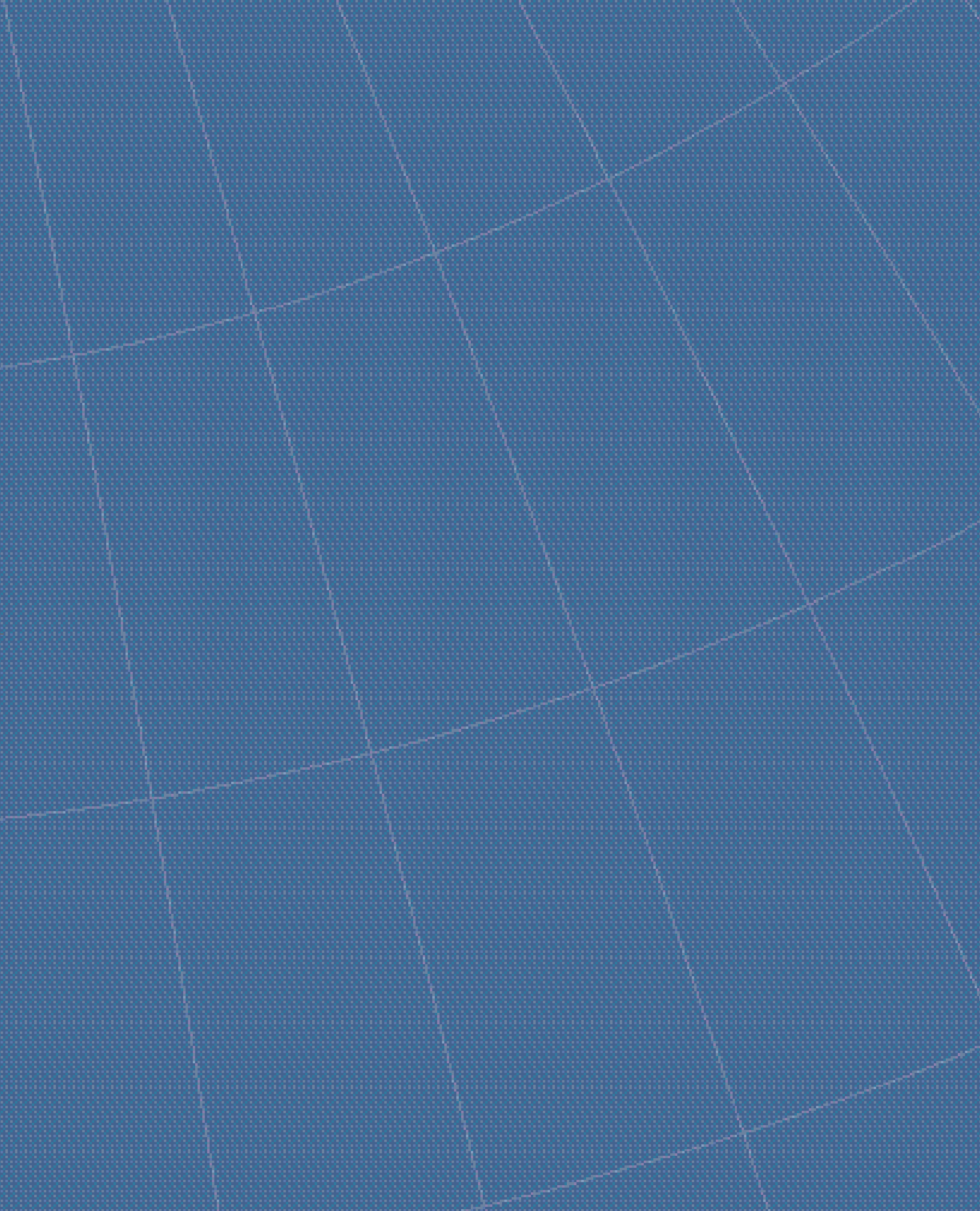
ⁱ It should be emphasized that we are focusing here only with home country characteristics and the possibilities they show for the generation of ownership advantages. Factors related with host country characteristics and the differences between host and home countries are not considered in this analysis.

ⁱⁱ List of countries and the country groups can be found in the Appendix (Table A1).

ⁱⁱⁱ UNCTAD database: www.unctad.org.

^{iv} 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).

^v



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