Strategic asset-seeking acquisitions, and home- and host- country national innovation systems:
The contingent effect of acquisition age and industry context

Stefano Elia*

Department of Management, Economics and Industrial Engineering, Politecnico di Milano
Piazza Leonardo Da Vinci, 32 - 20133 Milano (Italy)
Tel. +39 02 23992756, Fax. +39 02 23992710. E-mail: stefano.elia@polimi.it

Grazia D. Santangelo

Department of Political and Social Science, University of Catania,
Via Vittorio Emanuele 8, 95131 Catania (Italy).
Tel. +39 095 70305258, Fax: +39 095 70305246. E-mail: grsanta@unict.it

*Corresponding author

Abstract
We study the extent to which emerging market multinationals (EMNEs) engage in strategic asset-seeking acquisitions in advanced countries in relation to the strength of their home- and host-country national innovation system (NIS). We suggest that early acquisitions by EMNEs were used to compensate for the EMNEs relatively weak home NIS, and targeted weaker host NIS to limit the cognitive gap EMNEs would need to address. Instead, more recent acquisitions by EMNEs are supported by a stronger home NIS, and target firms in stronger host NIS. We also propose that acquisitions by high-tech (*versus* non-high-tech) EMNEs need a stronger home NIS due to the technological complexity of the industry, and are limited when the complexity of a stronger host NIS adds to the industry context. We find support for most of our arguments on 179 acquisitions in the Triad by Brazilian, Russian, Indian and Chinese multinationals.

Keywords: Strategic asset-seeking acquisitions; Emerging market multinational enterprises; National innovation system; Industry context.

Introduction

Emerging country multinational enterprises (EMNEs) have increasingly internationalized in the Triad (i.e. North America, Europe and Japan) since the 2000s through cross-border acquisitions mainly to access new valuable (often intangible) resources and improve their competitiveness (Mathews, 2006; Luo and Tung, 2007; Ramamurti, 2012; Rabbiosi, Elia and Bertoni, 2012; Thite, Wilkinson, Budhwar & Mathews, 2016). A number of cases illustrate this strategy. In the middle 2000s, the conglomerate Russian company Renova acquired the Italian group Kerself specialized in the photovoltaic industry, with the aim to access distinctive knowledge and skills in renewable energy, an area of strong interest for the company (Spigarelli, 2011). The Indian group Tata undertook a sequence of acquisitions of technologically advanced firms in UK (Corus Steel, Tetley Tea, Jaguar and Land Rover) over the 2000s with the explicit aim of gaining luxury brands, upgrading its managerial competences and enhancing its competitiveness. More recently, the Chinese group Geely took over the Swedish carmaker Volvo and the British Manganese Bronze (manufacturing London Taxis), in order to acquire brands and technologies, and to strengthen its position both in its home market and in the US (Meyer, 2015). The internationalization process of Brazilian companies such as Petrobras and Embraer has also been largely driven by the intention to accumulate technological assets and capabilities (Carvalho and Goldstein, 2009).

Strategic asset-seeking acquisitions, at least initially, have been dictated by the need to address the "liability of emergingness" of EMNEs willing to access abroad strategic assets not available at home (Deng, 2009; Child and Rodrigues, 2005; Rui and Yip, 2008) because of their relatively weak home-country national innovation system (NIS). At the same time, the more sophisticated markets for technology and for other intangible assets in the advanced host countries have traditionally created a disadvantage for EMNEs, which, being used to

operate in "difficult" home country conditions (Cuervo-Cazzura and Genc 2008), needed to deal with a high technological and institutional gap when investing in relatively stronger host-country NIS (Li, Li and Wang, 2016; De Beule, Elia and Piscitello, 2014).

Meanwhile, emerging country NIS and EMNEs have co-evolved in the last two decades (Gammeltoft, Pradhan and Goldstein, 2010), and this evolution is likely to reflect in the different rationale underlying the early and more recent acquisitions undertaken by these firms. In addition, EMNEs operate in different industry contexts, which is a critical factor influencing opportunities and risks associated to EMNEs' international operations (Ramamurti and Singh, 2009; Ramamurti, 2012, Wang, Hong, Kafouros, and Boateng, 2012). Yet, we still have a limited knowledge about the contingent effect of the age of the acquisitions by EMNEs and the EMNE's industry context on the relationship between the strength of EMNEs' home- and host-country NIS, and the extent to which EMNEs undertake strategic asset-seeking acquisitions in advanced countries.

To fill this gap, we draw on research on EMNEs and innovation studies (Criscuolo, Narula, and Verspagen, 2005; Cuervo-Cazurra, 2012; Ramamurti 2012; Narula, 2015) to suggest that less recent acquisitions by EMNEs in advanced economies were aimed at accessing strategic assets in order to compensate for the EMNEs' relatively weak home-country NIS. Instead, more recent strategic asset-seeking acquisitions by EMNEs are supported by a stronger home-country NIS. We also suggest that the strength of the host advanced-country NIS discouraged strategic asset seeking in less recent deals, while in more recent deals EMNEs engage in strategic asset seeking to a greater extent in relatively strong host-country NIS. In addition, we argue that the relationship between the strength of the home- and host-country NIS, and the extent to which EMNEs engage in strategic asset-seeking acquisitions is contingent on the EMNE's industry context. High-tech (*versus* non-high-tech) EMNEs require a stronger home-country NIS to substantially engage in strategic

asset-seeking acquisitions due to the technological complexity of their industry context. Instead, the double complexity of the local and industry contexts, which high-tech (*versus* non-high-tech) EMNEs have to face when acquiring targets in relatively strong host-country NIS, reduces the extent to which EMNEs engage in strategic asset-seeking acquisitions in locations with strong NIS.

By relying on a dataset recoding information at firm, home and host country-level from multiple sources, we test and find empirical support for most of our arguments on a sample of 179 acquisitions in the Triad by firms headquartered in Brazil, Russia, India and China (BRIC) between 1999 and 2014.

Our study contributes to research on the internationalization of EMNEs by offering theoretical arguments and multi-country quantitative evidence on the role of the home- and host-country NIS on strategic asset-seeking acquisitions by EMNEs and the evolution of the rational for such acquisitions. Additionally, we elaborate and empirically support the claim of the relevance of the industry context in EMNEs internationalization, which has so far been overlooked (Ramamurti and Singh, 2009; Ramamurti, 2012).

Our research also provides relevant managerial and policy implications. In particular, we warn managers that high-tech EMNEs face greater constraints than non-high-tech ones when cross-border strategic asset-seeking acquisitions are used as a means to compensate for relative weak home-country NIS. The related suggestions for policy makers in emerging countries is that substantial investments aimed at strengthening the country NIS are required to promote the internationalization of EMNEs operating in high-tech industries.

Conceptual background

Strategic resources and capabilities are often spatially determined rather than simply existing within any single firm (Enlight, 1998) and the NIS of a country plays a critical role

in this process. A country NIS mirrors the country's ability to produce new knowledge (Freeman, 1987 and 1988; Lundvall 1992; Nelson, 1993) as a result of an efficient education system (Freeman, 1987), strong interconnections among the actors (Jaffe 1986) and solid institutions and regulatory framework (Lundvall, 1992; Furman, Porter, and Stern, 2002). Hence, a country NIS captures both the technological as well as the institutional strength of the country.

In addition, "the home country plays a significant role in constraining and defining the kinds of assets an MNE possesses" (Narula, 2015). Firms of each country tend to embark on a path of technological accumulation that has certain unique characteristics and that sustains a distinct profile of national technological specialization (Cantwell, 1989). At the same time, firms invest abroad to seek new knowledge, technology and strategic assets, which are sourced from the host-country NIS (Criscuolo, Narula & Verspagen, 2005). A firm's perception of what is relevant and valuable in the host country tends to be constrained by the home-country NIS, which provides the necessary knowledge and advanced infrastructures that feed the firms' absorptive capacity and support strategic asset-seeking investments (Narula and Nguyen, 2011). Thus, the acquirer's absorptive capacity (Cohen and Levinthal 1990) is a function, among others, of the strength of the home-country NIS (Patel and Pavitt 1999, Criscuolo and Narula 2008).

The strength of the home-country NIS is critical in defining the cognitive gap the acquirer needs to deal with in order to be able to source effectively the tacit component of knowledge of the target and to benefit from spillovers arising from the pool of resources in the host country. Access to these assets is not immediate after acquisition, and additional investments are required by the acquirer to maximize sharing and absorption of the target firm and the local context's knowledge (Ranft and Lord, 2002; Graebner, Eisenhardt and Roundy, 2010). In particular, the acquirer needs to invest in local relationships by adapting to

local practices and procedures, and by understanding values, incentive structures, norms and conventions that influence the economic behavior in the host country, in order to reduce its liability of foreignness (Eden and Miller, 2004). Gaining familiarity, and developing and maintaining strong linkages in the host country are likely to be an expensive and time-consuming process (Criscuolo, Narula & Verspagen, 2005). The costs of this process become even more prohibitive if the host-country NIS is institutionally distant and technologically more advanced than the home-country NIS because of the resulting cognitive gap the acquiring firm needs to deal with (Zanfei, 2000; Criscuolo, Narula & Verspagen, 2005).

Like other firms, EMNEs require the capabilities to evaluate, acquire, and integrate knowledge and technology from external sources to secure strategic assets (Guillén and Garcia-Canal 2009, Narula and Nguyen 2011). These capabilities are influenced by their home country conditions and, hence, are a function of the strength of their home-country NIS (Narula 2015), which defines the cognitive gap EMNEs need to deal with when engaging in strategic asset-seeking acquisitions in advanced countries with notably stronger NIS. Hence, the strength of the home- and host-country NIS is a critical factor that needs to be accounted for in order to understand the extent to which EMNEs undertake strategic asset-seeking acquisitions in advanced countries. Yet, emerging country NIS and EMNEs have evolved in the past decades and this evolution bears critical implications for EMNEs acquisition strategies (Gammeltoft, Pradhan and Goldstein, 2010).

2.1 The evolution of emerging countries NIS

The notion of NIS has been traditionally developed in the context of advanced countries, and its application to developing countries is more recent (Pietrobelli and Rabellotti, 2009). Emerging country NIS have been depicted as being weaker than advanced countries NIS due to several reasons. First of all, the amount of R&D carried out by national

governments, universities and companies in emerging countries has been traditionally lower than in advanced countries. In addition, R&D activities are often more related to products (rather than processes), more oriented to imitation (rather than entrepreneurship), and more based on incremental (rather than radical) innovations (Oyelaran-Oyeyinka, 2006; Motohashi and Yun, 2007; Chaminade, Lundvall, Vang, and Joseph, 2009; Pietrobelli and Rabellotti, 2009). Second, the capacity to build competences and to create skills by the education system has been less developed and less diversified in emerging than in advanced countries, and this translates into under-qualified workers in emerging market contexts (Oyelaran-Oyeyinka and Barclay, 2003; Chaminade et al., 2009; Pietrobelli and Rabellotti, 2009; Song, 2013). Third, information networks in emerging countries have been slower and less ramified due to less developed IT infrastructures, lower access to technology, thinner clusters and scanty interlinks between the public and private innovation systems. As a result, in these countries knowledge often has remained isolated in pockets without diffusion to the rest of society (Motohashi and Yun, 2007; Freeman and Soete, 2009; Chaminade et al., 2009; Pietrobelli and Rabellotti, 2009). Finally, institutions and the regulatory framework in emerging countries have been underdeveloped and ensure neither a sufficient financial support to firms' investments nor a full protection of proprietary knowledge and technology (Khanna and Palepu, 2010; Oyelaran-Oyeyinka, 2006; Chaminade et al., 2009; Pietrobelli and Rabellotti, 2009; Song, 2013).

However, emerging countries NIS have evolved from the end of the nineties to the most recent years. These countries have gained a prominent role in the global economic and innovation landscape due to the rapid growth of their economies, to the surge of an increasing pool of skilled labor, to the availability of low-cost production factors, and to the creation of innovation infrastructures (Ramasamy, Yeung, and Laforet, 2010; Zhang and Baden-Fuller 2010; Wang and Li-Ying, 2014). This evolution, together with the recent process of

globalization of innovation, has enabled emerging economies to attract an increasing number of inward investments and, above all, of R&D and innovation activities from advanced economy MNEs (D'Agostino, Laursen, and Santangelo, 2013, D'Agostino and Santangelo 2012), which contribute to the upgrade of emerging countries NIS (Wang and Li-Ying, 2014). Additionally, EMNEs have increasingly engaged in cross-border scientific and technical collaborations (especially through strategic alliances and joint-ventures) with developed country partners, thus sourcing further knowledge and technology back to their home economies (Zanatta and Queiroz, 2007; Altenburg, Schmitz, and Stamm, 2008). As a result, in the more recent years emerging country NIS have become more embedded in, similar to, and dependent by the "global" innovation systems of the most advanced economies, affecting also the nature of EMNEs and the way they enter, perform, and compete in this arena (Wang and Li-Ying, 2014).

This evolution has influenced the acquisition strategies of EMNEs, with more and less recent acquisitions by these firms in advanced countries reflecting different strategic logics. In addition, EMNEs operating in different industry contexts perceive opportunities and risks related to the relative strength of the home- and host-country NIS differently. In the following section, we elaborate testable hypotheses on the contingent effect of acquisition age and industry context on the relationship between the strength of the home- and host-country NIS and the extent to which EMNEs engage in strategic asset-seeking acquisitions.

Hypotheses development

3.1 The contingent effect of acquisition age

Traditionally, EMNEs resorted to aggressive cross-border acquisitions in advanced countries in order to compensate for their weak home country context (Moon and Rohel, 2001; Mathews, 2006). EMNEs were eager to secure strategic assets to offset their relatively weak home-country NIS and to become global players at the technological frontiers by investing in

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advanced countries. To this end, North American, European and Japanese firms were especially appealing targets for EMNEs because the acquisition of these firms enabled EMNEs to access intangible resources lacking and/or superior to those available in the EMNEs' home country (Deng, 2009; Child and Rodrigues, 2005; Guillén and García-Canal, 2009; Rui and Yip, 2008; Luo and Tung 2007). Hence, in the early phase of EMNEs internationalization, strategic asset-seeking acquisitions were intended by EMNEs mainly to develop an ownership advantage and to compensate for their weak home-country NIS. In this phase, the ownership advantage of these firms was still related to their ability to navigate difficult institutional environments (Narula, 2012). The knowledge infrastructure (e.g. universities and public research organizations) in these countries was still little developed, and the political reforms toward greater openness and liberalization just initiated (Ramasamy et al. 2010; Zhang and Baden-Fuller 2010; Wang and Li-Ying, 2014). The Chinese "Go Global" policy and Indian economic reforms progressively opening the country to foreign investments were launched around this time. Emerging country NIS could then provide relatively little support to the early strategic asset-seeking investments by domestic firms in terms of knowledge and advanced infrastructures that feed domestic firms' absorptive capacity (Narula and Nguyen, 2011).

Instead, in the most recent years, EMNEs have increasingly been able to rely on stronger assets as a result of the co-evolution of their ownership advantage and home-country NIS, and their asset-seeking strategies are now supported by (rather than being a compensation for) the assets available at home. Wang and Li-Ying (2014) observe a convergence in the patterns of internationalization of emerging and advanced country firms. Cuervo-Cazurra (2012) also suggests that, as EMNEs become more experienced, their *modus operandi* does not greatly differ from those of MNEs from more advanced economies. More recently, Mayer (2015) has documented that EMNEs increasingly rely on cross-border

acquisitions to *augment* their technological, innovation, and managerial capabilities. Over time the development of a knowledge and institutional infrastructure in emerging countries has fostered country-specific advantage and, as a result, domestic firms' ownership advantage. Emerging economies are increasingly hosting centers conducting research in cutting-edge technologies, universities in these countries are benefitting from foreign-educated scientists and engineers returning to their home countries, and suppliers and customer relationships within global value chains (Naula, 2012; Saxenian, 2005). The knowledge and institutional infrastructure of emerging countries can then feed the absorptive capacity of domestic firms acquiring in advanced countries.

Based on these arguments, we suggest that less recent cross-border acquisitions were used by EMNEs to acquire strategic assets in advanced countries in order to compensate for the EMNEs relatively weak home-country NIS. That is, the extent to which EMNEs engage in strategic asset-seeking acquisition in advanced countries increases as the strength of the EMNEs' home-country NIS decreases and the age of the acquisition increases. Our first hypothesis proposes:

Hypothesis 1: The older the acquisition in advanced countries by an EMNE and the weaker the home-country NIS of the EMNE, the greater the extent to which the EMNE will engage in strategic asset-seeking acquisitions in advanced countries.

The extent to which a firm will engage in strategic asset-seeking acquisitions depends, in addition to the home-country NIS, on the opportunities the firm has to exploit and utilize the resources associated with the host-country NIS (Criscuolo, Narula & Verspagen, 2005, Narula 2015).

In relation to cross-border acquisition by EMNEs in advanced countries, the efforts required by EMNEs to tap into host-country knowledge and assets were much larger in the early phase of EMNEs internationalization when the host-country NIS were relatively strong, and EMNEs were less experienced and accustomed to deal with the institutional complexity of advanced countries (Cuervo-Cazurra, 2012). In this phase, the limited development of the knowledge and institutional infrastructure at home limited the ability of EMNEs to understand and absorb knowledge in relatively strong NIS (Narula 2012). To face a lower cognitive gap and more affordable investments, to gain familiarity, and to develop and maintain strong linkages in the host country context, we expect that early strategic asset-seeking acquisitions by EMNEs targeted mainly firms in advanced countries with relatively weak NIS.

Instead, we expect that, for the most recent cross-border acquisitions the extent to which EMNEs engage in strategic asset-seeking acquisition in advanced countries with stronger NIS will be greater. The pro-market reforms and rapid technological upgrading emerging countries have experienced in more recent years has favored the development of their institutional and knowledge infrastructure, and fostered their country-specific advantage in specific sectors (e.g. software) and technologies (e.g. less advanced technologies) (D'Agostino et al. 2013). As a result, the development of country-specific advantages has fostered firms' ownership advantaged (Narula 2012) thus enabling EMNEs to better understand and absorb knowledge in stronger NIS contexts. Hence, over time firms in emerging markets are becoming more and more similar to those of advanced companies (Cuervo –Cazurra, 2012, Wang and Li-Ying, 2014), and this process has eased the operations of EMNEs in more advanced countries. Based on this reasoning, we suggest:

Hypothesis 2. The older the acquisition in advanced countries by an EMNE and the weaker the host-country NIS, the greater the extent to which an EMNE will engage in strategic asset-seeking acquisitions in advanced countries.

3.2 The contingency effect of the EMNEs' industry context

In emerging countries, a modern set of high-tech and knowledge-intensive sectors highly capital- and skill-dependent have grown in parallel with sectors that traditionally rely on labor-intensive activities and natural resources (Narula, 2015). Embraer from Brazil, Huawei from China and Ranbaxy from India are well-known cases, which show that EMNEs are not relegated to low- and medium-tech industries, but are catching up and competing on world markets across the spectrum, including high-tech industries (Awate, Larsen, and Mudambi, 2012; Ramamurti and Singh 2009). The next wave of investments from emerging countries, and in particular from China and India, is also expected in high-tech industries (Narula, 2015).

Yet, the critical knowledge threshold, which emerging countries are able to supply to their firms, unequally influences firms' strategic asset-seeking acquisitions across different technology-intensive industries. In particular, non-high-tech sectors traditionally rely on codified knowledge and standardized products and processes, while high-tech sectors are characterized by a more complex and tacit underlying knowledge (Cantwell and Santangelo, 2000; D'Agostino et al. 2013; D'Agostino and Santangelo, 2012; Piscitello and Santangelo, 2010). Additionally, the costs of developing new technology is much higher in high-tech than in non-high-tech sectors, and the time to develop a new product is much longer for the former than for the latter. For instance, it can cost up to $800 million in R&D and take 12 years to get a new drug on the market in the pharmaceutical industry (Hill, 2011). At the same time, the pace of innovation is much faster in high-tech industries, thus requiring firms to be more

reactive. All these specificities of the industry context require high-tech firms to expand their technology sourcing abroad, and interact with different and geographically dispersed actors having complementary resources in order to decrease the costs, complexity and timing of their innovative activity (Narula and Zanfei, 2004, Cantwell and Santangelo 1999).

Due to the nature of the knowledge characterizing these industries, the strength of the home-country NIS that is needed to develop the capacity to evaluate, acquire, and integrate strategic assets from external sources would notably be greater for high-tech than non-high-tech EMNEs. Thus, high-tech (*versus* non-high-tech) EMNEs will engage in strategic assets-seeking acquisitions to a greater extent when the strength of their home-country NIS is higher. Hence, we propose:

Hypothesis 3: For high-tech EMNEs, the stronger the home-country NIS, the higher the extent to which these EMNEs will engage in strategic asset-seeking acquisitions in advanced countries.

The extent to which high-tech EMNEs engage in strategic asset-seeking acquisitions depends, in addition to the strength of the home-country NIS, on the extent to which the company can exploit and utilize the resources associated with the host-country NIS (Narula 2015, Criscuolo, Narula & Verspagen, 2005). A strong host-country NIS imposes complex institutional and technological conditions that require substantial investments by the EMNEs to fill the cognitive gap (Zanfei, 2000; Criscuolo, Narula & Verspagen, 2005).

We expect these difficulties to be magnified when the EMNEs operate in high-tech (*versus* non-high-tech) industries because of the complexity of the knowledge and technology involved in these sectors. By investing in host locations with relatively strong NIS, high-tech EMNEs would face a double complexity, arising both from the strength of the host advanced-

country NIS and from the industry context. In these situations, gaining familiarity with the host location in order to adopt local practices and procedures, and to establish local relationships adds to the complexity of the industry context. This double complexity challenges constrains the process of new knowledge and technology absorption by EMNEs, which would be at risk of financial losses and slowdowns of their innovation pace.

Therefore, we expect that for high- tech (*versus* non-high-tech) EMNEs, the extent to which these firms will engage in strategic asset-seeking acquisitions is lower, the greater the host-country NIS. Therefore, we postulate the following hypothesis:

Hypothesis 4: For high-tech EMNEs, the stronger the host-country NIS, the lower the extent to which these EMNEs will engage in strategic asset-seeking acquisitions in advanced countries.

Sample, Variables and Estimation strategy

4.1 The sample

Our analysis focuses on acquisitions undertaken by MNEs from BRICs operating in manufacturing and service industries, and investing in the Triad (i.e. Europe, North America and Japan) between 1999 and 2014. South-North investments represent a way through which EMNEs initially catch up with advanced MNEs and acquire ownership advantages (Mathews, 2006; Luo & Tung, 2007; Rui & Yip, 2008; Deng, 2009; Ramamurti, 2012; Rabbiosi, Elia, & Bertoni, 2012). Still, nowadays EMNEs continue to massively undertake strategic asset-seeking acquisitions in advanced Triad countries (Narula, 2015; Thite et al., 2016).

We chose to focus on acquisitions by firms headquartered in BRIC countries since these firms provide a great contribution to total outward FDI from emerging countries. Their share of total world outflows increased from 1% in 2002 to 9% in 2012 (UNCTAD, 2013). In

addition, despite the slowing down after the financial crisis, investments from BRIC resulted more resilient to the crisis and less volatile than the investments from other countries (Andreff, 2015).

We draw our sample of MNEs originating in BRIC from Thomson OneBanker (Thomson Financial) and Zephyr databases (Bureau Van Dijk) following a meticulous screening procedure. First, we exclude acquisitions that have been identified as being part of a round-tripping phenomenon, which typically concerns offshoring funds abroad to then repatriate them. "Round-tripping is not genuine FDI" (OECD 2015, 2) becuase these investments rely on a temporary transfer of funds motivated by tax avoidance and access to financial incentives. To detect round-tripping phenomena we carried out an in-depth analysis of the content of the investments concerning those pair of countries that are often involved in this phenomenon (e.g. Russia and Cyprus) and by checking whether, after the investment from the BRIC to the host advanced countries, any reverse investment involving the same companies and similar amounts have occurred from the advanced country to the BRIC countries within one year. Second, we excluded acquisitions undertaken by BRIC firms controlled by a non-BRIC parent firm, or vice-versa undertaken by non-BRIC firms ultimately controlled by BRIC parent firms to single out the effect of BRIC NIS on strategic asset seeking of BRIC MNEs by ruling out the involvement of other non-BRIC controlling or controlled companies, and the effect of their respective home-country NIS. Thomson and Zephyr provide information about both the direct acquirer and the ultimate owner (i.e. the parent company), which might be either the same firm or two different companies, sometimes with the same nationality and sometimes with different nationalities. We basically excluded

this last case. Finally, we excluded acquisitions undertaken by individuals because for these cases we cannot control for the acquirer intangible asset intensity.[1]

We then combined the information on the deals with secondary data on the country of the ultimate target (host country) and ultimate acquirer (home country), and with firms' balance sheets. Following previous works (Dutordoir, Strong and Ziegan, 2014; Buckley, Elia and Kafouros, 2014) we collected balance sheet data from both Thomson OneBanker (Thomson Financial) and Orbis (Bureau Van Dijk), in order to maximize the number of observations because information on the target are typically harder to find after the acquisition. As the two databases can differ in terms of collection methods, including and excluding criteria, and variable measurements, we performed a double check by comparing data that were available in both databases. In addition, we compared the data collected from the two database (regardless of whether they were provided by both databases or only by one of them) with those reported in the companies' balance sheets, when available, in order to further control on the exactness of the original data. In both cases, we did not find significant differences. Yet, as we collect information for both target and acquirer, it was not uncommon to have missing values as regards our dependent and explicative variables. Thus, we end up with a final sample of 179 deals for which we have complete information. We tested for the representativeness of our sample as regards the distribution of the deals across macro-industries, host locations and home countries of the acquiring firms. The resulting tests do not reject the null hypothesis that our sample is representative of the original entire sample.

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[1] The elimination of this last group of deals might introduce a sample selection bias. Yet, the selection criterion is based on an independent variable and, as a result, does not yield biased results (Wooldridge 2007, 299). In these situations, using techniques to correct for the sample selection "might be unnecessary for consistency and even harmful for precision" (Solon, Haider and Wooldridge, 2015, 310). We are grateful to an anonymous reviewer for suggesting us to consider this issue.

4.2. Variables

4.2.1 Dependent variable

Based on previous studies, suggesting that the essence of asset-seeking investments rely on the augmentation of knowledge assets and resources (Chung and Alcacer, 2002; Narula and Zanfei 2004; Meyer 2015), we measure the extent to which an acquisition is intended for strategic asset seeking as the intangible asset intensity of the target firm (*target intangible assets intensity*). This measure enables us to take into account both upstream capabilities that arise from R&D activity (e.g. patents) as well as downstream capabilities that arise from advertising and distribution activities (e.g. brands) of the target firms (Anand and Delios, 2002), and reflects the degree to which BRIC MNEs undertake an acquisition to expand their knowledge-intensive assets and technological resources. The larger the intangible asset-intensity of the acquired firm, the more the BRIC MNE is able to augment its assets and resources, and gain access to the knowledge and technology of the target firm.

4.2.2 Explanatory variables

To test hypotheses 1 and 2, we computed home- and host-country NIS through a factor analysis in order to capture the multidimensional nature of this construct. We run this analysis on a sample of 84 countries[2] that we observe from 1997 to 2013[3]. This large time span enables us to provide a long run perspective, given that a country NIS requires several

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[2] The countries are: Algeria, Argentina, Australia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Egypt, Arab Republic, Estonia, Ethiopia, Finland, France, Georgia, Germany, Greece, Guatemala, Hong Kong, China, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Kazakhstan, Kenya, Korea Republic, Latvia, Lithuania, Luxembourg, Macao, Macedonia, Madagascar, Malaysia, Malta, Mauritius, Mexico, Moldova, Morocco, Mozambique, Netherlands, New Zealand, Norway, Pakistan, Panama, Paraguay, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Serbia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, United Kingdom, United States, Uruguay, Vietnam, Zambia.
[3] We started from 1997 because some explicative variables were available for several countries mostly from this year.

years of radical changes and investments in order to evolve. Due to missing values, the sample employed in the factor analysis is composed of 1,222 observations.

Based on extant research (Freeman, 1987; Lundvall, 1992; Nelson, 1993; Freeman and Soete, 2009; Chaminade et al., 2009; Pietrobelli and Rabellotti, 2009), we select six variables as the main items that account for the strength of a country NIS: 1) *country patents*, measured as the per-capita patent applications, which reflects the country's capabilities to produce new knowledge; 2) *inter-firm relationship*, accounted for through the time-variant business freedom index provided by the Heritage Foundation, measuring the difficulty of starting, operating, and closing a business, based on the argument that business freedom favors inter-firm relationships (Hatak, Fink and Frank, 2015); 3) *national R&D*, calculated as the percentage of national R&D over GDP; 4) *human capital*, measured with the number of R&D researchers per millions of people; 5) *financial sector,* measuring the domestic credit provided by the financial sector as percentage of GDP; 6) *national policy environment*, whose proxy is the property rights index provided by the Heritage Foundation, which accounts for the protection of private property rights, the independence of the judiciary, the existence of corruption within the judiciary and the ability of individuals and businesses to enforce contracts. Table 1 provides a summary of the items employed in the factor analysis. For each item, the table reports the proxy, loadings and data source. All six items load into a single factor. This factor is then matched with the country from where the acquisition originated (i.e. home country) and the country to where the acquisition took place (host country) and used as a proxy of the strength of *home-country NIS* and *host-country NIS*, respectively. In particular, in relation to each deal we matched the one-year lag of the relevant NIS measure to single out the effect of these variables on the extent to which a firm undertakes strategic asset-seeking acquisitions.

Table 1. Summary of the items employed in the factor analysis to compute the *home-country* and *host-country NIS*

Item	Proxy	Loading
Country patents	Patent application/population[§]	0.602
Inter-firm relationships	Business freedom index[†]	0.765
National R&D	National R&D as % of GDP[§]	0.893
Human capital	R&D per millions of people [§]	0.893
Financial sector	Domestic credit provided by financial sector as % of GDP [§]	0.752
National policy environment	Property rights index[†]	0.828

[§] Source: World Bank Database (http://data.worldbank.org/)
[†] Source: Heritage Foundation (http://www.heritage.org/index/)

We also compute *acquisition age* as the difference between 2014, which is the last available year in our sample, and the year of acquisition. Hence, the value of the variable ranges from zero, for the most recent investments, to 15, for the less recent acquisitions (occurred in 1999).

To test *Hypothesis* 3 and 4, we follow Wang et al. (2012) and classify the acquirer's industry according to the 2-digt Eurostat-OECD (2007) classification of manufacturing and services to single out high-tech from non-high-tech firms. *High-tech industry* takes value 1 if the acquiring firm operates in high technology-intensive manufacturing or knowledge-intensive services sectors, 0 otherwise. When acquisitions have been undertaken by a subsidiary operating in an industry different than the industry of the parent company's operations, we classified the acquirer as high-tech if either the parent company or the subsidiary directly involved in the deal operates in a high technology-intensive manufacturing or knowledge-intensive high-tech service sector. This choice is consistent with the knowledge management literature documenting a continuous process of knowledge transfer within MNEs from parent to subsidiary, and from subsidiary to parent (Gupta and Govindarajan, 1991). For 81 deals EMNEs have been classified as high-tech, while for 98 deals EMNEs have been classified as non-high-tech.

4.2.3 Control variables

As a first control, we employ the variable *EMNE intangible assets intensity,* which is computed as the ratio between intangible assets and total assets of the EMNEs and lagged one year with respect to the year of the deal. This variable reflects the extent to which the EMNE can rely on an ownership-advantage based on intangible assets. While some authors suggest that EMNEs can still count on an (although weak) firm-specific ownership advantage (e.g. Rugman, 2008) to support their internationalization, some others suggest that the lack, rather than the presence of a firm-specific ownership advantage, is the main drivers of the EMNEs' cross-border acquisitions (e.g. Mathews, 2006). We also control for EMNEs' previous experience in cross-border acquisitions, which may affect both the learning and development of absorptive capacity of the acquiring firm (Barkema and Vermeulen, 1998), through the variable *EMNE acquisitions experience,* which is measured with the number of previous deals undertaken by each EMNE until the year of the deal. The effect of experience on the likelihood of undertaking strategic asset-seeking acquisitions might be twofold. On the one hand, a great acquisition experience promotes learning curve effects, which materialize in better capability to identify valuable targets and eventually absorb their knowledge (Vermeulen and Barkema, 2001). On the other hand, great acquisition experience may resolve in competency traps constraining the firm's exploration strategies (Hayward, 2002).

To account for the fact that greatly diversified target firms tend to provide the acquirer with a wider range of assets and capabilities and at the same require more resources (Simmonds, 1990), we measure *target industrial diversification* with the number of 3-digit SIC industry codes where the target firm operates (source: Thomson OneBanker). We also control for the diversification of the acquiring company because, more diversified firms tend to undertake less asset-seeking acquisitions than non-diversified firms (Hoskisson and Hitt,

2006) and, at the same time the larger size of diversified EMNCs may create opportunities for asset-seeking acquisitions (Simmonds, 1990).

Cross-border acquisitions may be driven by motives different than strategic asset-seeking (Dunning, 1993). Following Buckley et al. (2007), we introduce host country-specific variables to control for host country characteristics that may promote acquisitions by BRIC firms for non-asset-seeking motives. All these variables are one-year lagged with respect to the year of the deal. Thus, to account for host countries characteristics that may drive market-seeking deals, we include in the model *host country GDP*, measured with the logarithm of the GDP of the host economy. To account for factors in the host country that may attract natural resource-seeking deals, we employ *host country ore and metal export*, measuring the ratio of ore and metal exports to merchandise exports of the host countries. Finally, host country factors attracting efficiency-seeking FDI have been accounted for by *host country unit labor cost growth*, which is the annual growth rate of unit labor cost (i.e. the quotient between total labor costs and real output) of the host countries. A low value of this variable is associated to a higher productivity (Artige and Nicolini, 2010) and, hence, to a higher efficiency.

A final control variable that we introduce in our analysis is *geographic distance,* which accounts for the bilateral distances between the home and the host countries in kilometers. Geographic distance has been shown to have a persistent effect in acquisition target selection, being the search for new resources more difficult when distance increases (Chakrabarti and Mitchell, 2013).

Table 2 provides a summary of the variables employed in the analysis together with the proxies and data sources. Table 3 reports the correlation matrix and descriptive statistics of all variables entering the main estimations. Since some pairs of variables exhibit a high correlation (i.e. *host-country NIS* and *host-country GDP*, and *geographic distance* and *host*

country GDP), we checked for potential collinearity problems by computing the variance

inflation factor (VIF). None of the VIF values are above the threshold of 10, thus collinearity

seems not to be a problem (O'Brien 2007).

Table 2: Summary of the variables employed in the regression analysis

Variable	Proxy
Target intangible asset-intensity	Intangible over total asset of the target firms[a]
Home-country NIS	Factor analysis[b]
Host-country NIS	Factor analysis[b]
Acquisition age	Difference between 2014 and the year of the deal[a]
High-tech industry	Dummy variable for high-tech and knowledge intensive industries[c]
EMNE intangible assets intensity	Intangible over total asset of the EMNE[a]
Acquisition experience	Number of previous investments until the year of acquisition[a]
Target industrial diversification	Number of different 3-digit industries of the target firms[a]
EMNE industrial diversification	Number of different 3-digit industries of the EMNE[a]
Host-country GDP	Host-country GDP[d]
Host-country ore and metal export	Host-country ore and metal export[d]
Host-country unit labor cost growth	Host-country unit labor cost growth[e]
Geographic distance	Distance between home and host countries in kilometers[f]

[a] source: Thomson One Banker (http://banker.thomsonib.com/) and Orbis (https://zephyr.bvdinfo.com/version-201663/Home.serv?product=zephyrneo).
[b] see Table 1.
[c] source: Eurostat-OECD (2007).
[d] source: WBD (http://data.worldbank.org/).
[e] source: OECD database (http://stats.oecd.org/).
[f] source: CEPII database (http://www.cepii.fr/CEPII/en/welcome.asp)

Table 3 Correlation matrix and descriptive statistics (obs. 179)

	Variables	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)	13)
1)	Target intangible asset-intensity	1.000												
2)	Home-country NIS	-0.091	1.000											
3)	Host-country NIS	-0.091	0.091	1.000										
4)	Acquisition age	0.396***	-0.270***	0.033	1.000									
5)	High-tech industry	0.177*	-0.231**	0.068	0.208**	1.000								
6)	EMNE intangible asset-intensity	0.072	-0.045	0.099	-0.100	0.194**	1.000							
7)	Acquisition experience	0.057	0.014	-0.048	0.029	-0.042	0.113	1.000						
8)	Target industrial diversification	0.114	0.005	0.045	0.005	-0.173*	0.014	-0.061	1.000					
9)	EMNE industrial diversification	0.196**	0.061	-0.011	0.269***	-0.085	0.092	0.223**	0.165*	1.000				
10)	Host-country GDP	0.096	-0.084	0.629***	0.235**	0.094	0.162*	0.024	0.023	0.097	1.000			
11)	Host-country ore and metal export	-0.072	0.080	0.126†	-0.306***	-0.050	0.139†	0.124†	0.045	0.031	-0.110	1.000		
12)	Host-country unit labor cost growth	0.011	0.012	0.144†	-0.070	-0.030	0.112	0.091	-0.010	0.041	0.254***	0.191*	1.000	
13)	Geographic distance	0.133†	-0.118	0.359***	0.208**	0.200**	0.175*	0.001	0.003	0.096	0.523***	0.077	0.249***	1.000
	Mean	0.101	-0.134	0.183	6.223	0.453	0.049	0.225	1.693	2.436	28.584	0.054	-0.100	0.000
	Standard deviation	0.144	0.807	0.780	3.623	0.499	0.087	1.424	0.983	2.559	1.320	1.035	0.892	1.000
	Min	0.000	-1.505	-2.060	0.000	0.000	0.000	-0.412	1.000	1.000	23.940	-1.413	-2.871	-2.428
	Max	0.559	1.626	2.348	15.000	1.000	0.575	14.845	6.000	17.000	30.337	7.842	2.360	3.752

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.4 Estimation strategy

Given the nature of our dependent variable, which is right-censored with a maximum value equal to 100%, we applied a Tobit model to test our hypotheses. Our baseline model is the following:

$$Target\ intangible\ asset-intensity_{i,t} = \alpha_i + \beta_1 home\ country\ NIS_{i,t-1} + \beta_2 host\ country\ NIS_{i,t-1} +$$
$$\beta_3\ age\ acquisition_i\ +\ \beta_4\ high-tech\ industry_i\ +\ \beta_5\ Controls_{i,t-1} + \varepsilon_{i,t} \qquad (1)$$

where i indicates the deal, and t and t-1 indicate the years of the deal and the year immediately before, respectively. We lagged all explicative variables in order to better identify the relationship between these and the dependent variable. The acquisition process can take a long time (up to 9 months) (Harroch, 2013). Therefore, it is likely that a deal occurred in time t is based on an assessment of the explicative variables occurred in time t-1. We also standardized *home-country NIS*, *host-country NIS*, *acquisition experience*, *host-country ore and metal export, host-country unit labor cost growth* and *geographic distance* due to their different scales and to allow a more straightforward interpretation of the coefficients. In addition, we clustered the standard errors by host country to account for within-country correlation.

To test our, we augment equation (1) with the interactions *home-country NIS*Acquisition age*, *host-country NIS*Acquisition age*, *home-country NIS*high-tech industry,* and *host-country NIS*high-tech industry*.

Results

Table 4 reports the results of our Tobit regression analysis. Model 1 shows the results of the baseline model reported in equation (1). To test hypotheses 1 and 2, we introduce the interaction *home-country NIS*Acquisition age* in Model 2, and the interaction *host-country NIS*Acquisition age* in Model 3. To test hypotheses 3 and 4, we introduce the interaction

home-country NIS* High-tech industry in Model 4, and the interaction *host-country NIS* High-tech industry* in Model 5.[4]

In Model 1, the coefficient of *home-country NIS* is positive and marginally significant ($p < 0.10$). Thus, on average EMNEs are more likely to acquire target firms with a higher intangible asset-intensity, that is to undertake strategic asset-seeking investments to a greater extent, when they are supported by a stronger *home-country* NIS. Instead, the coefficient of *host-country NIS* is negative and statistically significant ($p<0.01$) suggesting that EMNEs prefer to undertake strategic asset-seeking investments in countries with weaker NIS. Model 1 also shows a positive and statistically significant coefficient of *acquisition age* ($p<0.001$) indicating that EMNEs used to undertake strategic asset-seeking acquisitions to a greater extent in early than in more recent deals, as suggested also by a recent report by McKinsey (Cogman, Jaslowitzer and Rapp, 2015). Finally, high-tech (*versus* non-high-tech) EMNEs undertake strategic asset-seeking acquisitions to a greater extent, (the coefficient of *high-tech industry* is positive and statistically significant ($p<0.05$)). The other control variables do not seem to show a significant effect on the extent to which EMNEs undertake strategic asset-seeking acquisitions.

In Model 2, the coefficient of the interaction term between *home-country NIS* and *acquisition age* is negative and statistically significant ($p<0.05$). Less (*versus* more) recent acquisitions by EMNEs originating from weaker home-country NIS targeted firms with higher intangible assets intensity. Thus, this result seems to support *hypothesis 1*, suggesting that home-country NIS and the extent to which EMNEs undertake strategic asset-seeking investments has evolved from a substitution to a complementarity relationship.

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[4] We cannot test a model that includes all interaction terns because the high correlation among linear and interaction effects would raise serious collinearity problems and prevent the identification of the different effects.

In Model 3, the coefficient of the interaction term between *host-country NIS* and *acquisition age* is negative and statistically significant ($p<0.05$). Less (*versus* more) recent acquisitions by EMNEs target firms with higher intangible assets intensity when these are located in countries with weaker NIS. This result seems to support *hypothesis 2*, suggesting that MNEs used to invest in host countries with weaker NIS in the past and nowadays seem to be more confident to undertake strategic asset-seeking investments to a greater extent in countries with stronger NIS.

In Model 4, the coefficient of the interaction term between *home-country NIS* and *high-tech industry* is non-significant. Thus, *hypothesis 3* is not confirmed.

In Model 5 the coefficient of the interaction term between *host-country NIS* and *high-tech industry* turns out to be negative and statistically significant ($p<0.01$). This result confirms *hypothesis 4* suggesting that high-tech (*versus* non-high-tech) EMNEs undertake strategic asset-seeking acquisitions to a greater extent in host countries with weaker NIS.

To gain more insights on our results, we plotted the interaction terms by using the coefficient estimates (Zelner, 2009). Figures 1, 2 and 3 plot the interactions between *home-country NIS* and *acquisition age*, between *host-country NIS* and *acquisition age*, and between *host-country NIS* and *high-tech industry*, respectively, and provide evidence of a full support to our results and to hypotheses 1, 2 and 4.

Table 4 Results of the Tobit regression analyses (t-statistics in brackets) – obs.179.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Home-country NIS	0.012†	0.037*	0.013†	0.023	0.011†
	(1.75)	(2.51)	(1.91)	(1.64)	(1.70)
Host-country NIS	-0.039**	-0.038**	-0.000	-0.038**	-0.013†
	(-2.92)	(-2.98)	(-0.02)	(-3.03)	(-1.73)
Acquisition age	0.015***	0.013***	0.016***	0.014***	0.014***
	(5.51)	(5.43)	(5.10)	(5.57)	(5.42)
High-tech industry	0.038*	0.032*	0.035*	0.032*	0.045*
	(2.57)	(2.42)	(2.48)	(2.57)	(2.58)
EMNE intangible asset intensity	0.110	0.123	0.111	0.097	0.129
	(1.28)	(1.41)	(1.40)	(1.10)	(1.45)
Acquisition experience	0.002	0.003	0.002	0.002	0.001
	(0.33)	(0.47)	(0.32)	(0.37)	(0.16)
Target industrial diversification	0.019	0.019†	0.022†	0.019†	0.018
	(1.64)	(1.66)	(1.93)	(1.72)	(1.57)
EMNE industrial diversification	0.003	0.004	0.002	0.004	0.003
	(0.42)	(0.52)	(0.21)	(0.51)	(0.36)
Host-country GDP	0.011	0.014	0.012†	0.010	0.008
	(1.36)	(1.64)	(1.75)	(1.29)	(1.09)
Host-country ore and metal export	0.008	0.008	0.008	0.005	0.006
	(1.05)	(1.13)	(1.23)	(0.70)	(0.91)
Host-country unit labor cost growth	0.003	0.002	0.001	0.002	0.003
	(0.23)	(0.23)	(0.12)	(0.21)	(0.30)
Geographic distance	0.005	0.003	0.006	0.006	0.006
	(0.77)	(0.40)	(0.89)	(0.94)	(1.01)
Home-country NIS* Acquisition age		-0.007*			
		(-2.47)			
Host-country NIS*Acquisition age			-0.006*		
			(-2.03)		
Home-country NIS*High-tech industry				-0.034	
				(-1.25)	
Host-country NIS*High-tech industry					-0.047**
					(-2.69)
Constant	-0.358	-0.435†	-0.391*	-0.338	-0.284
	(-1.60)	(-1.84)	(-2.04)	(-1.53)	(-1.33)
Sigma Constant	0.126***	0.125***	0.125***	0.125***	0.125***
	(19.33)	(19.45)	(18.13)	(17.98)	(18.49)
F-test	29.378***	34.613***	80.306***	32.450***	48.415***

† $p<0.1$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Figure 1 Interaction plot *home-country NIS*acquisition age*
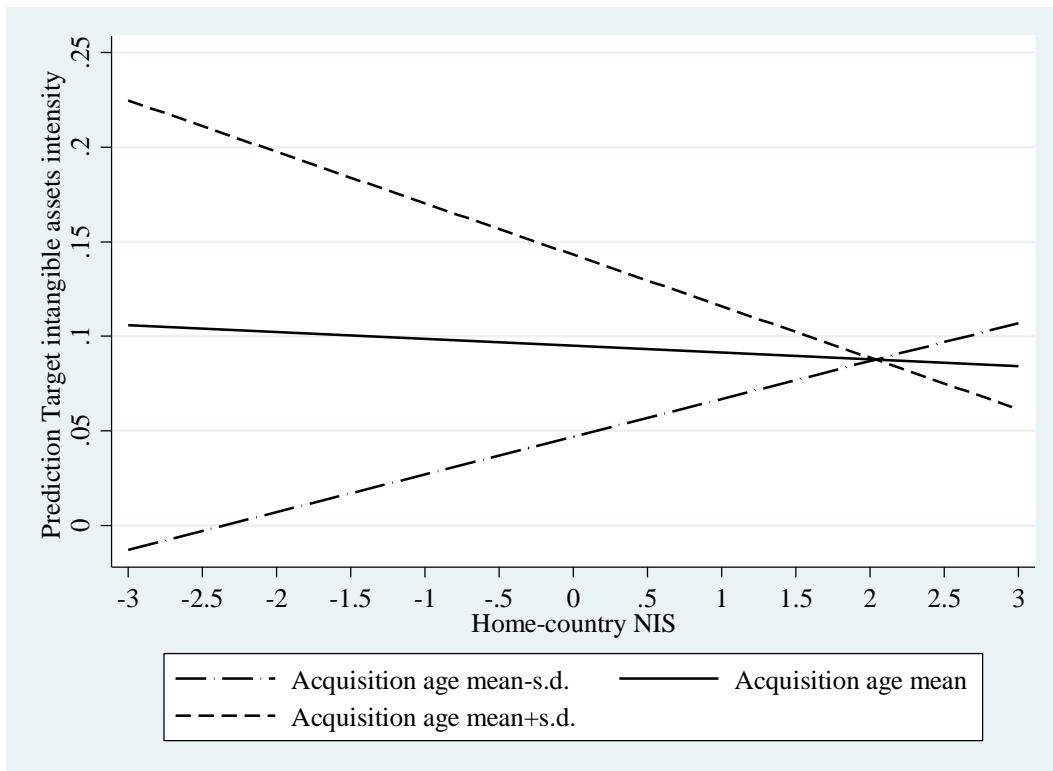

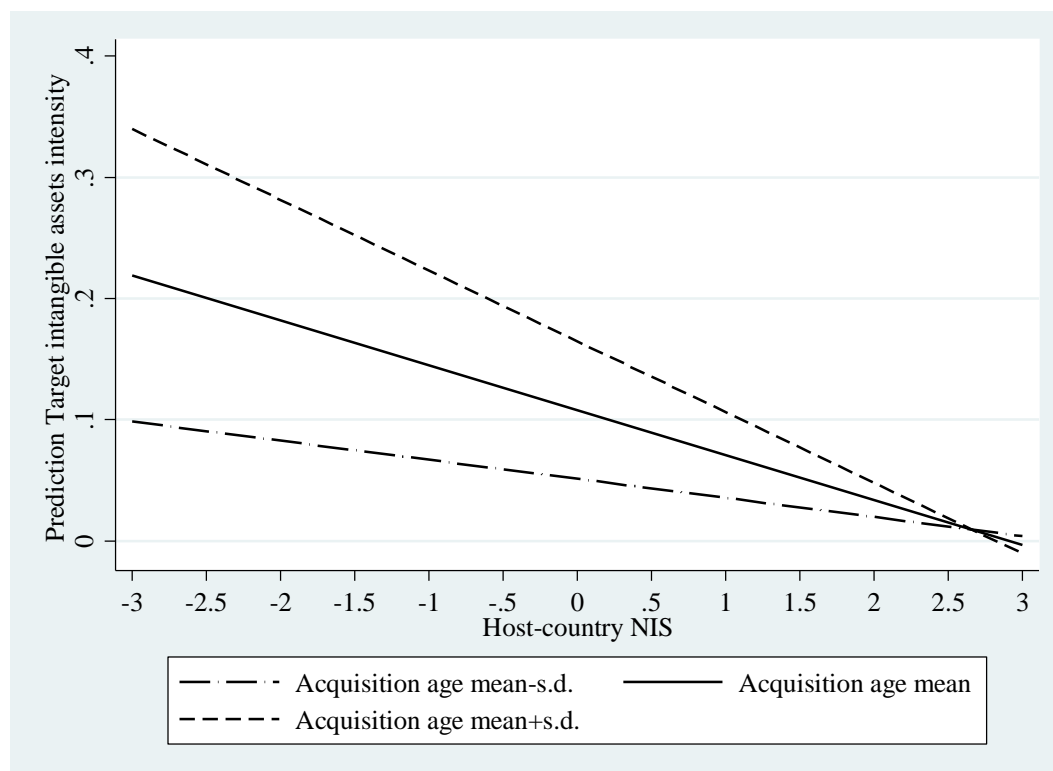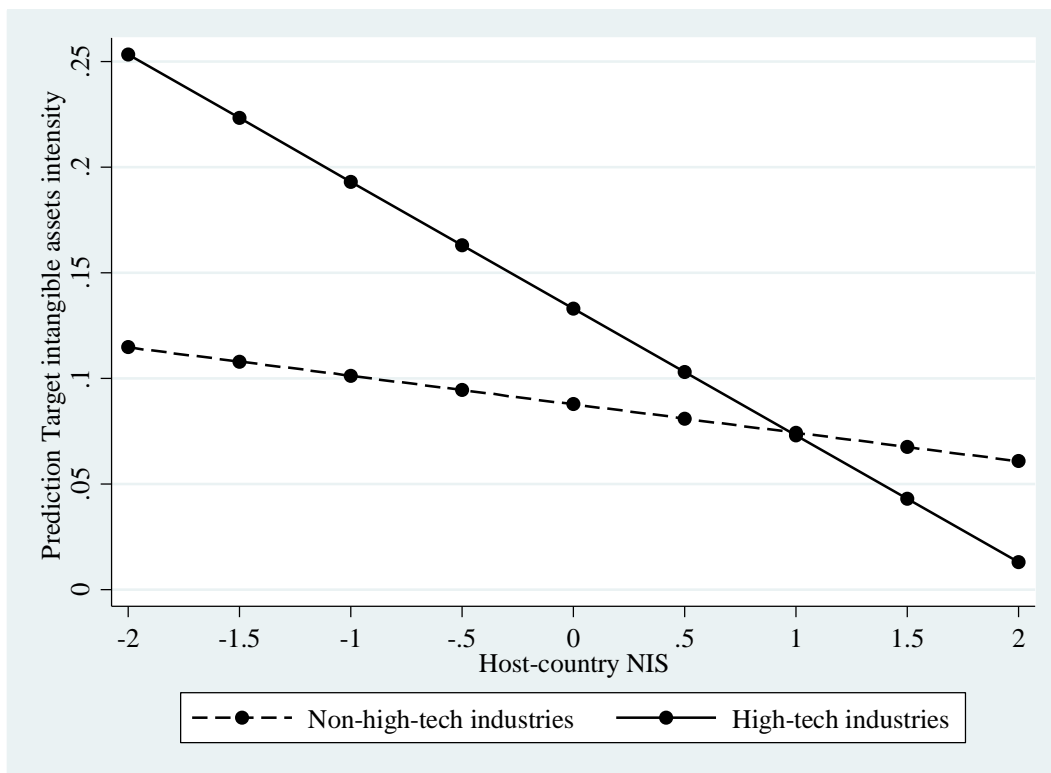**Figure 2** Interaction plot *host-country NIS*acquisition age*

Figure 3 Interaction plot *host-country NIS*high-tech industry*

Robustness check.

In our analysis, we employ the 2-digit level Eurostat-OECD (2007) industry classification, and we identify as high-tech industries those sectors belonging to the categories "high-tech manufacturing" or "knowledge intensive services". However, one may object that a more fine-grained industrial classification would be more appropriate as there may be differences within the high-tech industry group in relation to strategic asset-seeking acquisitions that our analysis may downplay. To address this concern we performed a one-way analysis of variance (Anova) to test for significant differences in the means of the dependent variable broken down by the 2-digit sectors within the high-tech industry group. Since we classified an acquirer as high-tech if either the parent company or its subsidiary directly involved in the deal operates in a high technology-intensive manufacturing or knowledge-intensive services sector, we performed two different tests. First, we use the sector of the parent company and then the sector of the direct subsidiary involved in the deal.

In both cases, results indicate that our dependent variable is not significantly different across the industries classified as high-tech (F-test=1.20 (p=0.29) and F-test=1.00 (p=0.46) when using the sector of the parent company and the subsidiary involved in the deal, respectively). Thus, the level of industry classification adopted does not seem to bias our results.

Discussion and conclusions

The study investigates the contingent effect of acquisition age and industry context on the influence of the home- and host-country NIS on the extent to which EMNEs engage in strategic asset-seeking acquisitions, based on a dataset covering the most recent decades. Our focus on EMNEs from BRIC enables us to offer a multi-country analysis of the phenomenon and contribute to research on EMNEs internationalization, which has mainly provided conceptual arguments and empirical evidence based upon EMNEs single-country case studies (Deng, 2009; Child and Rodrigues, 2005; Guillén and Garcia Canal, 2009; Rui and Yip, 2008; Buckley, Forsans & Munjal, 2012).

By drawing on research on EMNEs and innovation studies, we suggest that EMNEs used strategic asset-seeking acquisitions as a compensation strategy for their relatively weak home-country NIS in the early phase of their internationalization, and that more recent strategic asset-seeking acquisitions by EMNEs are supported by relatively stronger home-country NIS. At the same time, we propose that in the early phase of their internationalization the extent to which EMNEs engage in strategic asset-seeking acquisitions in advanced countries was greater, the weaker the host-country NIS. Instead, in more recent acquisitions in these countries EMNEs seems to acquire strategic assets to a greater extent, the stronger the host-country NIS. These arguments and the supporting empirical evidence provide an insightful contribution to the on-going debate on whether strategic asset-seeking acquisitions by EMNEs are driven by the lack (as suggested by the imbalance theory of Moon and Roehl,

2001) or by the presence (as suggested by Rugman, 2008) of country-specific advantages. Our study suggests that the imbalance theory model seems to apply to the less recent acquisitions, while the model proposed by Rugman better reflects the dynamics of the more recent acquisitions.

Our analysis also sheds light on the role of the EMNEs industrial contexts by substantiating the relevance of this factor in EMNEs internationalization (Ramamurti and Singh 2009; Ramamurti 2012; Wang et al., 2012). In particular, we speculate that the extent to which high-tech EMNEs undertake strategic asset-seeking acquisitions is greater when supported by stronger home country NIS, which provides the absorptive capacity required to understand and internalize the more complex and tacit knowledge involved in these sectors. We also propose that high-tech EMNEs substantially engage in strategic asset-seeking acquisitions in weaker host-country NIS due to the double complexity of their industry context and host country NIS. However, while we find support for the latter argument, our empirical analysis fails to support the former. A possible explanation for the lack of support might be that, having emerging countries evolved from weaker to stronger NIS, high-tech EMNEs have increased not only the absorptive capacities but also the opportunity to develop knowledge and technology at home, thus decreasing the need to undertake strategic asset-seeking cross-border acquisitions[5].

The study has practical implications for managers and policy-makers in emerging countries. In particular, we alert high-tech EMNEs' managers interested in investing in advanced countries with relatively strong NIS that corporate resources would be required to face the double complexity arising from the industrial context and from the host location. In particular, the adoption of in-house training programs may be an effective investment to balance the deficiencies of the home-country NIS. In relation to policy implications, we alert

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[5] We are grateful to an anonymous reviewer for suggesting us this possible explanation.

policy-makers in emerging countries that investments in these countries are required to further narrow the cognitive gap domestic firms need to face when investing in advanced countries. Such investments would enable to ease the internationalization of especially domestic high-tech firms, as suggested by Motohashi and Yun (2007) for the specific context of China.

Our study exhibits some limits that set the avenue for future research. First, the analysis of the industry dimension could be more effectively disentangled by considering more fine-grained industry contexts. Despite the growing trend of strategic asset-seeking acquisitions by BRIC multinationals, in the current phase the size of the phenomenon constrains the adoption of a more detailed sectoral composition, which would require a larger dataset to ensure enough variability. However, our robustness tests reveal that the industrial classification adopted in our paper, although it is rather broad, is able to capture two clear distinct categories of firms and to provide some first insights on the industrial contingency of EMNEs' asset-seeking investments. Second, the study focuses on acquisitions by firms headquartered in BRIC, which are the top investing emerging countries. The analysis could be extended to firms from other emerging economies. However, for the time being the contribution of non-BRIC firms to total outward FDI is estimated as residual (UNCTAD, 2013). In addition, industry-related factors can be further investigated in connection to EMNEs strategic asset-seeking acquisitions by analyzing, for instance, the role of the industrial diversification of the acquiring and target firm. Finally, our data do not allow disentangling within-countries specificities as regards the host- and home-country NIS, which extant research has identified as an aspect worth investigating (Hervas-Oliver and Boix, 2013). Future research efforts may be devoted to dig deeper into this aspect. Despite all, we are confident that our analysis advances existing knowledge on EMNEs internationalization.

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