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Regional strategic assets and the location strategies of Emerging Countries' Multinationals in Europe[*]

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Abstract

This paper explores the location strategies of Multinational Enterprises (MNEs) from emerging countries (EMNEs) in search for regional strategic assets. The analysis is based on a systematic comparison between EMNEs and multinationals from advanced countries (AMNEs) in order to unveil similarities and differences between these two major sources of foreign investments into the regions of the European Union.
The empirical results suggest that EMNEs follow a distinct logic in their location strategies because they are attracted by the availability of technological competences only when their subsidiaries pursue more sophisticated and technology-intensive activities. Conversely EMNEs share some behavioural similarities with AMNEs in their response to the spatial agglomeration of investments.

JEL Classification: F21, F23, O33, R12, R58

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1. INTRODUCTION

The unprecedented international expansion of firms from emerging economies is one of the most striking recent evolutions in the world Foreign Direct Investments (FDIs) landscape. Outflows of FDIs from developing economies have reached the record level of $468 billion in 2014, corresponding to 35% of global FDI outflows, up from 13% in 2007 (UNCTAD, 2015). Multinational enterprises (MNEs) from emerging countries (EMNEs) are not a new phenomenon. More than thirty years ago, the seminal contributions in this now thriving literature suggested that MNEs from developing countries possessed specific and distinctive features that distinguished them from MNEs based in developed countries (e.g. Kumar and McLeod, 1981; Lall and Chen, 1983). In the 1970s and 1980s the first 'wave' of outward FDI from developing countries (such as India, Russia, Argentina) was pioneered by MNEs - so it was argued – that differed considerably from that of 'conventional' industrialised countries MNEs, in terms of their ownership advantages, motivation, geographical orientation and mode of overseas activity. A second wave of FDI by EMNEs emerged in the 1990s and was considered as the result of an evolutionary process from the first wave (Dunning, 1998). This second surge targeted simultaneously less-developed countries - in order to exploit their comparative advantages in activities intensive in natural resources and cheap labour - and more developed countries with both market-seeking and asset-augmenting motives.[1]

Looking at the most recent waves of investments from EMNEs in the 2000s, especially towards advanced countries, there is a general agreement in the scholarly literature that one of their key motivations is the appropriation of strategic assets, i.e. technology,

[1] Asset-augmenting activities have the generation of new knowledge as their primary purpose, for augmenting existing competences, whether this is through their own (formal) R&D activities, or through other non-hierarchical means in partnership with other economic actors (Narula, 2010).

management, and strategic skills, brands, and commercial knowledge (Bertoni et al, 2013; Buckley et al, 2007; Ramamurti, 2012).

So far, scholars have looked at the reasons for the expansion of EMNEs, at their similarities and differences with advanced countries MNEs (AMNEs), and at the coherence of their behaviour with the predictions of mainstream theories about multinational firms (Ramamurti and Singh, 2009). There is not yet much empirical evidence available about the location drivers, at both the national and sub-national levels, attracting EMNE investment.

This paper aims to fill this gap by empirically investigating the importance of national and regional strategic assets to attract foreign investments and comparing the responsiveness of EMNEs and AMNEs to various localised factors in order to unveil their similarities and differences. The paper addresses a set of fundamental questions: 1) What are the characteristics of the host economies that matter the most for EMNEs strategic asset seeking investments? 2) Are EMNEs' local attraction factors and spatial behaviours different from the drivers of AMNE investments? 3) Do EMNEs primarily target countries or specific regions/sub-national units in their search for strategic assets?

The empirical analysis is based on *fDi Markets* database on greenfield investment projects, and it systematically compares the location drivers of EMNEs and AMNEs in the regions of the European Union (EU-25) over the 2003-2008 pre-crisis period. The EU is a unique case study for such a comparative analysis: it is a large recipient of FDI from both developed and emerging countries and it is an integrated economic space (single market) with substantial economic heterogeneity both at the member country level and at the regional level.

The quantitative analysis, based on a Nested Logit approach, makes it possible to explore the location determinants of a large number of investments, assessing the relative

importance of the main drivers identified in the literature. The probability of a region to be chosen as a destination of foreign investments is estimated as a function of its technological dynamism and broader socio-economic 'innovation proneness' (in order to capture the strategic asset seeking motivation) and the regional agglomeration of foreign investments (in order to capture the 'imitative' behaviour of MNEs following other multinationals in the same sector and/or activity), controlling for the size of the market and for labour market conditions. The empirical analysis also tests the nested structure of the investment decisions, shedding light on the relative importance of national vs. regional location factors for AMNEs and EMNEs (Beugelsdijk and Mudambi, 2013).

Overall, the innovative contribution of the paper is two-fold. First the paper offers a systematic comparative analysis of the similarities and differences among the location strategies of AMNEs and EMNEs when searching for localised knowledge and innovation. Second it provides an investigation of the diverse role of national vs. regional factors in these strategies. The empirical results suggest that EMNEs follow a distinct logic in their location strategies because they are attracted by the availability of technological competences (i.e. patent intensity) only when their subsidiaries pursue more sophisticated and technology-intensive activities. The structural and socio-institutional pre-conditions (i.e. soft innovation factors) for establishing fully functional regional systems of innovation are not relevant to EMNEs. Conversely EMNEs share some behavioural similarities with AMNEs in their response to the spatial agglomeration of investments: they do tend to invest in the regions where other foreign investments in the same activity or sector are already present. The results also suggest that a regional perspective is highly relevant to the comparative analysis of MNEs' behaviour: regional and national drivers are differently valued by MNEs from different origins.

The paper is organized as follows. The next section reviews the literature dealing with the location of MNEs, introducing the determinants analysed in the empirical analysis with special reference to the expected behavioural differences between AMNEs and EMNEs. Section 3 introduces the empirical strategy and the dataset. The empirical results are presented in Section 4. Section 5 concludes with some policy considerations.

2. A FRAMEWORK FOR COMPARATIVE ANALYSIS: MNEs AND THEIR LOCATION DRIVERS

There is a widespread consensus in the literature that the understanding of the location behavior of MNEs is still underdeveloped. Referring to the Ownership-Location-Internalization (OLI) paradigm developed by Dunning (1977), the literature has dealt widely with the questions related to the *why* a firm becomes a multinational (O) and *how* it carries out its international adventure (I) but so far the discussion about *where* it goes to internationalize its activities (L) has remained rather fuzzy (Iammarino and McCann, 2013; McCann and Mudambi, 2005).

Countries have been considered as the natural focus of MNEs location analysis due to the predominant role that national borders and active investment policies at the national level have traditionally played in explaining the geography of MNEs. Conversely, nowadays "*MNEs location decisions are becoming increasingly complex and dependent on the variety and quality of highly localized assets*" (Iammarino and McCann, 2013: 360). The interaction between the process of technological change – that has amplified the geographical fragmentation of the production process – and institutional evolution – resulting in a global trend towards the devolution of power and spending capabilities from national to sub-national units - has dramatically increased the importance of the local drivers of investments. In this context it is critical to extend the location analysis of

MNEs, integrating the factors explaining the within-country variation in investment drivers with those related to the between-country decision (McCann and Mudambi, 2005; Beugelsdijk and Mudambi 2013).

Given that EMNEs are known to leverage their foreign location choices in order to access strategic resources not available domestically (Awate et al, 2015), the (comparative) analysis of their location strategies is particularly relevant in order to shed light on their role as new global actors. Nevertheless, the available literature on EMNEs has not dealt in sufficient depth with the analysis of their location choices. Existing analyses have mainly focused on the alternative between investing in advanced economies vs. other developing/emerging countries, suggesting that EMNEs direct their investments towards developed countries when they aim at accessing new strategic assets and their main motivation is market access, on the contrary they invest in other developing countries when they have labour seeking motivations (Kedia et al. 2012; Makino et al, 2002).

In order to move beyond this simple location dichotomy between South-South and South-North investments, it is useful to look at the literature on the location strategies of MNEs to identify (and operationalize) the key local factors attracting foreign investments in different locations. Given that the literature emphasizes that the likelihood for MNEs to invest in a particular location is strongly influenced by the characteristics and the capabilities of the investing company, we can expect that for their different nature EMNEs and AMNEs may attribute diverse importance to different location attractors (Cuervo-Cazurra and Ramamurti, 2014; Hyun, 2008). The comparison of the relative importance of AMNE and EMNE different drivers makes it possible to shed light on the heterogeneity (if any) of their preferences in terms of the features of the (national and regional) economies hosting their investments.

In general, when it comes to 'asset seeking' investments, MNEs search for host locations endowed with specialized knowledge-related assets that are highly localised and often linked to agglomeration economies and spatially bounded knowledge flows. The search for specific localised advantages is particularly evident when the host economies offer knowledge and intangible 'L'-type advantages like for example Silicon Valley in the US or Cambridge and London in the UK, that are usually highly localized in a few sub-national units (e.g. Cantwell and Piscitello, 1999; Dunning, 2009; Iammarino and McCann, 2013; Phelps, 2008). These localised knowledge assets can take different forms: from codified knowledge and technological intensity (often associated with patented product innovation) to 'soft' innovation factors that include innovation-prone socio-economic conditions (Crescenzi and Rodriguez-Pose, 2011) and favourable localised institutional arrangements and norms (Phelps and Fuller, 2000; Amin and Cohendet, 2004; Fuller 2005).

The literature suggests that this motivation is especially strong for EMNEs and several empirical studies conducted on large samples of firms confirm that this is a major reason for emerging multinationals to invest in developed countries (Bertoni et al. 2013; Buckley et al. 2007). Furthermore, the intention to acquire knowledge, technology and other strategic assets (such as commercial brands and networks) is also reported in case studies on well-known companies such as Haier from China and Tata from India (Duysters et al. 2009).

The expectation is that the behavior of AMNEs and EMNEs might be different because their highly diversified 'internal' knowledge assets and resources are balanced and matched with external factors in the host economies in different ways (Alcacer and Delgado 2015). With a focus on the global wind industry Awate et al (2012) provide evidence on the fact that EMNEs have progressively developed new output capabilities

but often still lag in terms of innovation capabilities. This asymmetric development explains why AMNEs are more likely to undertake competence exploitation and creation strategies while EMNEs often aim at accessing knowledge which is not available at the headquarter level. Ramamurti and Singh (2009) confirm that the effective acquisition of strategic assets is significantly mediated by the technological capabilities of the investing firms. As shown in Makino et al. (2002), if EMNEs do not possess adequate experience they are not particularly attracted towards location characterised by advanced technological assets.

The literature has also pointed out that the group of EMNEs (as well as AMNEs) is internally highly heterogeneous in terms of innovative and technological capacities with some EMNEs being 'technological leaders' and other 'technological laggards'. Companies such as Huawei and ZTE from China are ranked respectively first and third globally in terms of patent output and operate extensive global R&D networks and therefore they can be considered as technological leaders (Dang and Motohashi, 2015). As empirically shown in Cantwell and Mudambi (2011), technological leaders are more likely to become insiders in local knowledge networks and therefore be able to gain from locating in technologically advanced local contexts while laggards are more likely to be unable to develop connections with local actors and therefore will have limited capacity of local knowledge access. Therefore, the level of economic and technological development of the 'home country' can only capture part of the overall MNE heterogeneity influencing location choices.

If AMNEs and EMNEs might respond differently to the 'strategic assets' available in the host economies, they might also respond differently to established investments patterns. When facing the challenge to identify the best location for their strategic asset seeking investments, MNEs tend to follow imitative behaviours and concentrate their

investments in pre-existing agglomerations where other multinationals have previously invested, often following a sectorial or a functional logic (Alfaro and Xiaoyang Chen, 2014; Crescenzi et al. 2014). Given the diversity (and the constant evolution) of their investment motives, MNEs learn about the potential advantages of alternative locations by observing the entry choices of previous investors. According to Belderbos et al. (2011) if MNEs are uncertain about alternative locations they tend to follow other firms, and in particular companies from the same country and in the same industry.

MNEs also benefit from co-location with other multinationals due to agglomeration economies such as shared infrastructure, labour market pooling, availability of specialised and qualified input suppliers and service providers and localised knowledge flows (Basile et al, 2008; Devereux et al, 2007; Head et al, 1995 and 1999). In addition, MNEs locate in close proximity to other MNEs in order to reduce the costs of gathering information on context-specific factors: co-location is advantageous to MNEs if knowledge inflows favouring the individual firm are larger than the outflows "lost" to the benefit of their competitors (Mariotti et al., 2010).

The benefits from co-location and agglomeration can be offset by congestion, leading to price competition and higher input and labour costs. Belderbos et al., (2011) show that local agglomeration of Japanese MNEs in Chinese provinces attracts further entry until a certain threshold is reached. After this threshold the link between local agglomeration of FDI and further entry turns negative due to increased competition on the local market and decreasing profits. In addition, agglomeration might not generate benefits per se. In contrast, the way in which advantages and disadvantages from co-location are balanced depends on the sectorial or functional similarities/congruence between the new investments and the pre-existing firms/subsidiaries. Similar firms are expected to provide the strongest informational value to other similar firms with a stronger impact on

'inexperienced' firms, more likely to mimic other 'model' firms' location choices (Belderbos et al., 2011).

With regard to EMNEs in developed countries, they have limited knowledge and little previous foreign investment experience. Therefore, we can expect that EMNEs will face high uncertainty and that they will likely follow similar firms with previous experience in the same host market (Ramamurti and Singh, 2009). In other words, agglomeration and co-location are likely to play a key role in EMNEs location decisions, due to the high informational value generated by other pre-existing foreign investments.

3. EMPIRICAL STRATEGY

3.1. The model

In line with most of the empirical literature on the location decisions of multinational enterprises the analysis of the choice between multiple alternatives is modelled by means of a Nested Logit Model (NLM) (McFadden 1984). In the NLM the alternative locations (the EU NUTS1/2 regions in this case), are organised into subgroups - the countries to which regions belong to - and the selection process is conceived as involving two simultaneous decisions: 1) the choice of a country *i* among I (1…,i,…n_i) corresponding to the set of possible countries and 2) the selection of a specific region J (1…,j,…n_i) in the chosen *i* country. Although simultaneous, these decisions are based on a heterogeneous set of characteristics because, given their dissimilar national characteristics (from tax systems to institutional conditions), regions in different countries cannot be considered – *ceteris paribus* in terms of their local conditions – perfect substitutes.

The estimated model takes the following form:

$$P_{ij} = P_{j/i} P_i = \frac{e^{\beta X_{ij}}}{e^{I_i}} \left(\frac{e^{\gamma Y_i + \sigma_i I_i}}{\sum_{m=1}^{I} e^{\gamma Y_m + \sigma_m I_m}} \right)$$

Where $P_{j/i}$ is the dependent variable, measuring the probability of a certain region *j* being chosen as a destination of a foreign investment conditioned by the choice of country *I*. This depends on the characteristics of the n_i regions belonging to country *i*. Some location characteristics vary across both countries and regions (X_{ij}), while other characteristics only vary across countries (Y_i). β and γ are the coefficients to be estimated.

In the NLM model the probability of a certain region to be chosen as a destination of a foreign investment (dependent variable) is a function of a set of two types of regional drivers: 1) regional characteristics that remain the same for all investments, such as for example the regional patent intensity and the total number of investments in the region, and 2) drivers that vary with the specific investment under analysis, such as the number of regional investments in the same sector and function as the new investment.

Moreover, with the coefficients of the inclusive value σ the model assesses the strength of the nested structure of the location process of the investments. When σ=1 regions are all equivalent options for MNEs, irrespective of the country they belong to, suggesting complete independence in the location decisions with no nested structure. If instead, σ=0 the upper nest (the country level decision) is the only relevant decision in the location choice, as all regions within the destination country are all perfect substitutes. As a consequence, by testing the nested structure of the investment decisions we are able to shed light on the relative weight the investors ascribe to national vs. regional attractors, contributing to the research agenda discussed in Beugelsdijk and Mudambi (2013) with new, original empirical evidence.

All country-level observable and unobservable characteristics (from corporate tax policies to business climate, institutional conditions and infrastructural networks) are controlled for by the national 'nested' structure of the model. Within the European Union,

the degree of national level heterogeneity that can be captured with quantitative indicators is very limited and qualitative differences in terms of national-level attractiveness are prevalent and better captured when explicitly treated – as in this paper – as unobservable factors common to all the regions belonging to the same country and conceptually equivalent to 'country' fixed effects in location choices.

3.2 The dataset

FDI data are from *fDi Markets*, a database maintained by *fDi Intelligence*, a specialist division of the *Financial Times*, which monitors cross border greenfield investments covering all sectors and countries worldwide since 2003. In the period 2003-2008, the database includes 22,065 greenfield deals undertaken by MNEs from the entire world into the EU25 countries, with no minimum investment amount required.[2] Table 1 presents the distribution of the investment projects in EU27 by country of origin. In the empirical analysis we have considered three groups of countries: EU-25, North America (NA) and emerging countries (EMC).[3]

It is worth stressing that the number of investments is a more appropriate unit of analysis than their value when looking at the location strategies of multinationals because the choice of a specific country is largely independent from the amount of capital invested (Amighini et al., 2014; Sutherland and Anderson, 2014). Moreover, the investment value varies widely across sectors, with resource-intensive sectors showing higher average

[2] The accuracy and robustness of the information reported in *fDi Markets* has been checked using different methodologies: a) comparison with UNCTAD information on FDI flows at the country level; b) comparison of regional-level distribution of investments with *Euromonitor* database, which provides information about greenfield investments in Europe based on a completely independent source. All these checks confirm the reliability of the *fDi Markets* database on the spatial distribution of greenfield investment.

[3] With regard to emerging countries, there is not an official definition, but there are several alternative classifications utilized by different research institutions. Different classifications are available at http://en.wikipedia.org/wiki/Emerging_markets (accessed June, 19rd 2013). In order to check the robustness of our definition of emerging in countries in the empirical analysis we have also tested an enlarged group including Argentina, Malaysia and Ukraine obtaining very similar results.

investment value than consumer goods sectors or services. This is the main reason why several empirical studies have chosen the number of deals (and not the investment value) as their unit of analysis (among others see Castellani and Pieri, 2013; Crescenzi et al., 2014; Ramasamy et al., 2012).[4]

The first year covered by the dataset (2003) is used as the basis for the calculation of the (lagged) cumulative number of investments and therefore is not included in the empirical analysis. The nested logit procedure only takes into account regions chosen at least once as investment destinations (Spies, 2010).

[Table 1 about here]

The regional analysis is based on a mix of NUTS1 and NUTS2 regions, selected in order to maximise their homogeneity in terms of the relevant socio-institutional structure and also considering data availability. Consequently, the analysis uses NUTS1 regions for Belgium, Germany and the United Kingdom (as customary in the literature and reflected in the OECD classification of Territorial Levels that follows a similar logic[5]) and NUTS2 for all other countries (Austria, Czech Republic, Finland, France, Greece, Hungary, Italy, the Netherlands, Poland, Portugal, Slovakia, Spain).[6]

fDi Markets provides a classification of the investments in 18 activities and following Defever (2006) we have aggregated investments in two categories: production-oriented and non-production investments, including headquarters, R&D, design, sales and marketing, logistics and distribution. Although we cannot measure directly the sophistication of these two categories, we can assume that non-production investment

[4] There is an additional reason for this choice: even if the database provides information on the value of the investment, in most of the cases this is estimated.

[5] http://stats.oecd.org/OECDStat_Metadata/ShowMetadata.ashx?Dataset=REG_LAB_TL3

[6] The Nomenclature of Units for Territorial Statistics (NUTS) is a geocode standard for referencing the EU countries for statistical purposes. The NUTS-regions are based on the existing national administrative subdivisions. Countries without equivalent sub-national regions (Cyprus, Estonia, Denmark, Ireland, Latvia, Lithuania, Luxembourg and Malta) are necessarily excluded from the econometric analysis. Sweden is also excluded due to the lack of regional data for some of its regions.

projects are more sophisticated, possibly more knowledge intensive and more likely to be focused on intangibles (which underpin a relevant share of value creation) than production investment that is generally more intensive in tangible assets (Ali-Yrkkö, 2011; Mudambi, 2008).[7]

3.3. The explanatory variables

In order to operationalise the host economy characteristics relevant to strategic asset seeking investments, we include in the econometric model two key dimensions of regional innovative dynamism: the innovation output intensity and the existence of socio-economic conditions favourable to innovation (Table A-1 in the Appendix provides detailed information about definitions and sources of all the variables included in the empirical analysis). With *Patent Intensity* we aim at capturing the extent to which MNEs expect to benefit from localised 'technological' innovative dynamism and the availability of knowledge spillovers from indigenous firms (Mariotti et al, 2010; McCann and Mudambi 2005).

To go beyond formal technological innovation and capture 'soft' regional innovation factors, under the constraint of regional data availability we introduce the *Social Filter Index* (Crescenzi et al., 2007 and 2012; Crescenzi and Rodríguez-Pose 2011). This indicator is obtained from the combination of a broad set of regional structural socio-economic characteristics for the EU 25 regions, playing a crucial role in the definition of the profile of an innovation prone environment. The *Social Filter Index* is based on a number of characteristics of the local economy selected as measures of the structural pre-conditions for establishing fully functional regional systems of innovation and socio-institutional conditions favourable to the establishment of MNEs activities based on

[7] It would have been interesting to adopt a more fine-grained disaggregation of activities as in Crescenzi et al (2014) but the number of observations does not make this approach feasible in this paper.

strategic assets (Phelps et al., 2003; Phelps and Waley, 2004; Fuller, 2005). The *Social Filter* includes two major domains: 1) educational achievements corresponding to human capital accumulation both in the regional population and among employed people (Malecki 1997; Marrocu and Paci, 2012) and 2) productive employment of human resources measured by the percentage of the labour force employed in agriculture and the long-term component of unemployment (Fagerberg et al., 1997; Gordon 2001). These two domains, when assessed simultaneously, generate a unique socioeconomic profile that fosters (hinders) the innovative capacity of each region.[8]

We expect both *Patent Intensity* and the *Social Filter* to be positively related with the probability of a region to be chosen as a destination of greenfield investments, particularly when we consider non-production investment. According to the existing literature strategic-asset seeking is crucial for EMNEs investing in the EU and therefore we expect these drivers to play an important role in their location choices.

In order to capture the impact of the agglomeration of foreign investments in the regional economy the model includes three indicators aimed at catching the tendency of foreign investments to 'cluster' in a limited set of locations (in line with Mariotti and Piscitello 1995; Guimaraes, et al., 2000; Head and Mayer 2004; Dunning, 2009). The impact of pre-existing investments on the location of MNEs is captured by means of the *total number of pre-existing foreign investments in the region*. Moreover, the model also accounts for the 'attractiveness' of the total *number of investments in the same sector of activity as the new investment*[9] and the *number of investments pursuing the same business function/activity.*[10] Due to their little previous experience in the EU, EMNEs are expected

[8] The structural variables for each dimension (Table A-2) are combined by means of Principal Component Analysis on the basis of the scores presented in Table A-2.

[9] Investments are classified in 39 sectors by *fDi Markets*.

[10] As explained in 3.2, the dataset provides a classification of the investments in 18 activities.

to strongly rely on the informational spillovers deriving from the concentration of similar firms in both functional and sectorial terms.

The model also includes a number of standard control variables in order to take into account 'traditional' location drivers as customary in exiting empirical analyses on MNEs location choices. Demand concentration is considered a factor of attraction for foreign firms (Head and Mayer, 2004; Py and Hatem, 2009) and we expect that this will be true for both AMNEs and EMNEs. As a proxy for market size we incorporate in the econometric estimation the *Regional GDP per capit*a.

In order to account for labour market conditions, the empirical analysis comprises *Regional unemployment* to measure the excess of labour supply over demand (Py and Hatem, 2009). In the case of EMNEs investing in the EU, we expect that labour availability will not represent a significant factor of attraction. The lack of regional data about labour costs/wages precludes a direct control of the differential across regions, although in the EU a large part of these differences is represented by national differences and therefore accounted in the model by country-level effects/nests.

4. EMPIRICAL RESULTS

This section includes the results of the Nested Logit estimation: sub-section 4.1 presents the regional-level analysis (referring to the upper part of Tables 2 and 3) that assesses the significance of the location determinants described in the previous section for all investors (Column 1), for investors from within the EU (Column 2: *EU-25*), from North America (Column 3: *NA*) and from emerging economies (Column 4: *EE*). The comparison of the relative importance of the different drivers of MNEs location decisions sheds light on the differences among MNEs depending on their origin.

In the second sub-section (4.2) - which makes reference to the lower part of the Tables 2 and 3- the weight ascribed by the investors to the regional drivers with respect to the national common factors is assessed through the analysis of the Inclusive Values (IV) or dissimilarity parameters.

Furthermore, Table 3 tests how the significance of the location drivers differs across MNEs investing in production-oriented and non-production (possibly more knowledge-intensive and sophisticated) activities.

All the explanatory variables are introduced in the regressions with a one-year lag in order to minimise the impact of simultaneity between the investment decisions and local economic conditions (Spies, 2010). Besides, in order to resolve the problem of different accounting units, explanatory variables are generally expressed for each region as a percentage of the respective GDP or population. When interpreting the results it is important to bear in mind that the focus is mainly on the sign and significance of the coefficients, rather than on the size of specific point estimates. In addition the results should not be interpreted in terms of causality relations. Finally, it is worth reminding that the 'country-level' nested structure allows us to control for 'unobserved' factors that regions belonging to the same country have in common, such as the 'macro' institutional framework, rule of law, national average wages, tax rates and fiscal regimes. In a robustness check discussed in Section 4.2 we also test an alternative nest structure for the EU regions comparing the regional belonging to the EU10 vs. EU15 in order to assess the relevance of the diversity of the business environment between Central and Eastern European countries (EU10) and the EU most advanced economies (EU15), as the relevant 'nest' in the regional allocation of foreign investments. [11]

[11] EU 10 includes: Cyprus, Czech Republic, Estonia, Hungry Lithuania, Latvia, Malta Poland, Slovenia, Slovakia. EU15 includes Austria, Belgium, Denmark, Finland, France, Germany,

4.1. The location determinants of EMNEs and AMNEs in the European regions

When considering the regional innovative capacity, the empirical results unveil some behavioural heterogeneity according to the origin of the investments. In Column 1 (Table 2), regional *Patent intensity* has a positive and statistically significant impact on the probability of attracting all MNEs, confirming the importance of the availability of technological competences and resources in the location decisions of multinational companies. However, when the sample is disaggregated by the origin of the investing companies, this relationship is confirmed only for investments generated from within the EU and from North America (Table 2, Columns 2 and 3). In the case of EMNEs, patent intensity exerts a positive and significant influence only on investments in the more sophisticated (non-production) activities (Table 3, Column 4). This evidence suggests that EMNEs attach a value to the innovation performance of the regions hosting their subsidiaries only when their investment projects involve activities such as R&D, design and development (Amighini et al., 2013). This result can also be explained by the firm-level heterogeneity of EMNEs: some EMNEs are more technologically advanced and therefore able to take advantage from location in innovative local contexts. Other MNEs are technological laggards and therefore are less interested in locating in technologically advanced environments (Cantwell and Mudambi, 2011).

[Tables 2 & 3 about here]

The analysis of the role of broad socio-economic factors supporting innovation sheds additional light on strategic asset seeking behaviours. In Table 2 the *Social Filter* – our proxy for 'soft' innovation factors and socio-economic innovation proneness - is positive

Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom. For the sake of brevity, these results are not included in the paper but they are available from the authors.

and significant only for intra-EU investments. Extra-EU companies are less likely to respond to regional 'soft' innovation factors given their lack of socio-cultural and cognitive proximity (Boschma, 2005) and their more limited degree of local embeddedness (Granovetter, 1985; Phelps et al., 2003; Phelps and Waley, 2004; Fuller, 2005) in Europe. Non-EU Multinationals (both from developed and emerging countries) find it difficult to de-codify the complexity of 'soft' innovation factors that prevail in the EU regions. This result is further reinforced when the sample is restricted to non-production activities as shown in Table 3. In addition, it is worth noticing that the *Social Filter* becomes positive and significant for North American companies when – in our robustness check - the two macro-aggregated groups EU10 and EU15 replace the country-level nests.[12] This suggests that for North American companies the importance of 'soft' factors is fully accounted for by the country-level characteristics: regional social-filters are not significant when common characteristics at the national level are fully controlled for (as in Table 3) and only emerge when 'broader' controls (EU15 vs. EU 10) are included.

As discussed in Section 2, the process of *agglomeration* of MNEs investments is an additional important explanation of their location behaviour. In this regard Table 2 shows a negative, although only marginally significant, coefficient for intra-EU investments (Column 2), pointing at a process of de-concentration of EU investments towards less congested regions. Then considering the two other indicators of agglomeration - the cumulative number of pre-existing investments in the same sector and in the same activity in the selected region – a completely different story emerges. Both agglomeration proxies exert a significant and positive influence on the location of all investment projects. The cumulative nature of investment location choices confirms the role of

[12] The results of this test are not included and they are available upon request.

localised spillovers of two types: Marshallian agglomeration externalities are likely to prevail when MNEs are attracted by the concentration of investment in their same sector while Jacobian externalities are likely to dominate when investors search for other investments in their same type of activity irrespective of the industrial sector (Guimaraes et al., 2000; Head and Mayer, 2004; Spies, 2010; Belderbos et al. 2011).

Location decisions are driven by two agglomeration forces: (i) the search for 'vertical' interactions when investments are attracted by the presence of other investments in the same sector but in other activities and (ii) 'horizontal' spillovers, such as labour market specialization and supply of specialized services and infrastructures, when they agglomerate on the basis of the same function across sector. It is worth noticing that the agglomeration effect for all sets of activities is consistent for all MNEs notwithstanding their origin while sectorial agglomeration becomes insignificant for EMNEs investing in non-production activities (Tables 3, Columns 4). This is a new original finding about the location behavior of EMNEs: given the high uncertainty characterizing their early explorations in the EU regions, multinationals from emerging countries choose to locate in regions characterized by the agglomeration of the same sets of activities as their new foreign investment projects. In so doing, they, search for knowledge flows and Jacobian agglomeration economies when undertaking non-production investments. The agglomeration of MNEs specialized in the same activity is a signal of accumulation of knowledge applicable across sectors, services and infrastructures, which is more easily intelligible for EMNEs than the soft innovation factors expressed by the Social Filter (De Propris and Driffield, 2005).

When looking at the control variables, regional *GDP per capita* exerts a negative and significant influence on the probability of attracting FDIs (Table 2, Column 1), confirming the de-concentration of investments away from core wealthy regions (i.e.

those with relatively higher GDP per capita), as stressed above. The negative and significant impact is further confirmed for intra-EU investments (Column 2), while non-EU investments, both from North America (Column 3) and emerging countries (Column 4) are instead attracted by regions with high per capita GDP. This difference in the behaviour of MNEs is motivated by the fact that EU companies do not need to undertake market-seeking investments within the EU: in the common market they do not face trade barriers and transaction costs are low due to the geographic and cultural proximity among countries. On the contrary, both for NA multinationals and EMNEs there is a strong motivation for being present in the largest EU markets. Regional unemployment does not seem to play a relevant role as an explanatory factor for the location of MNEs. This variable is never significant in the aggregated model (Table 2) and it turns out positive and significant in non-production-oriented activities (Table 3, Column 1) when investments are not separated by country of origin while it remains insignificant for all origins (Columns 2 to 4). An explanation could be that in the very nationally centralised EU labour markets regions might play a relatively minor role in this regard.[13]

4.2 Regional vs. national drivers

Turning our attention to the lower sections of Tables 2 and 3 the analysis of the Inclusive Values (IV) or dissimilarity parameters assesses the weight ascribed by the investors to regional level drivers vs. national common factors. This analysis contributes to undertake a much needed fine-grained understanding of the location behaviour of MNEs (Beugelsdijk and Mudambi, 2013; Iammarino and McCann, 2013). The interpretation of

[13] In our robustness check - where broader EU15 vs. EU 10 nests replace national 'controls' – intra-EU investments favour locations where the supply of labour is more abundant and potentially cheaper (i.e. those with a higher unemployment rate) while North American investments prefer 'core' low unemployment locations. In other words, if NA MNEs decide to invest in the EU, they rather seek strategic assets than higher efficiency (lower costs) locations. The same does not apply to EU MNEs that, when investing within the EU, look for 'cheaper' locations. For EMNEs this variable is never significant.

the values assumed by the dissimilarity parameters allows us to shed new light on the relative importance of subnational spatial heterogeneity against national factors.

Dissimilarity parameters measure the level of independence of the alternatives in each nest (i.e. country in Tables 2 and 3 and group of countries in our EU10 vs. EU15 robustness check) with respect to the unobserved portions of utility: the closer a parameter is to 1, the greater is the independence (lower correlation) between the alternatives (regions) in the same nest (country and group of countries). Therefore, if the IVs are close to 1 the regional drivers have a stronger role than the national common factors in attracting MNEs, while if they are close to 0 the national drivers prevail.[14] It is worth remembering that the national common factors also account for the impact of different institutional conditions, quality of infrastructure, accessibility, business climate, political factors at the country level that remain hard to capture explicitly by means of quantitative indicators.

In the econometric tests undertaken, the fitted models in general behave well and the dissimilarity parameters are mostly within the 0-1 ranges. The LR statistics confirm the validity of the nested structures presented in Tables 2 e 3 and support the robustness of our empirical model. However, significant differences emerge in the ways in which MNEs balance national and regional drivers in their investment strategies depending on their origin and on the activities undertaken.

In what follows, our discussion in based on the IVs in Table 3 only, given that they do not differ substantially from IVs in Table 2. The analysis of the inclusive values for intra-EU investments shows that country-level considerations still play an important role: inclusive values are all statistically significant and far from 1 (Column 2 in Table 3). The

[14] The Random Utility model restricts dissimilarity parameters to a range between 0 and 1 and values outside this range mean that while the model is mathematically correct, the fitted model is inconsistent with the random-utility theory (Cameron & Trivedi 2008).

location decisions in regions belonging to the same country are closely related and driven by stronger common national factors as opposed to investments in a different country. Investments in the UK represent an exception because they are strongly guided by subnational drivers, as shown by the relatively high inclusive values and reflecting the unique role of some specific investment hubs, such as London and the Southwest.

Investments from North America (Column 3) are also sensitive to country-level common factors (as confirmed by the LR Test and the significant inclusive values) but regional-level considerations play a more important role than for intra-EU investments because the values of all IVs are generally higher, in particular for Belgium, Germany and for the UK.

When it comes to EMNEs the picture is again different. LR Test confirms the significance of the country-level nests (Column 4). Furthermore, the analysis of the parameters associated to individual countries shows that the IVs for the UK and Germany are significant and large (close to 1) and IVs for France, Italy and The Netherlands are also significant but smaller. On the contrary, many other IVs are either marginally significant or insignificant. This suggests that EMNEs attach great importance to both the regional and national common features in those countries that have historically received the larger shares of their investments (e.g. UK and Germany) and with the closer 'cultural' proximity (these same emerging countries have often hosted investments from European countries). EMNEs do not seem to take into account any additional common factor (on top of the regional drivers discussed in the previous section) when taking their locations decisions outside the UK and Germany and to a less extent France, Italy and The Netherland. Overall, these results are in line with the existing evidence on foreign and domestic alliance capital inflows that suggest a different relevance of local vs. firm-level factors for investors from different origins (Coombs et. al 2006): in the same way

national vs. regional level factors matter differently for investors with different degrees of 'foreignness'.

As said before, we have also tested an alternative nest structure for the MNEs' investments, the EU15 vs. EU10 being most 'natural' in the EU context to take into account the differences between the most advanced countries in the EU and the most recent entrants. While the key results concerning the regional drivers are qualitatively confirmed, the LR test suggests that the EU10 vs. EU15 subdivision is not relevant for EMNEs location choices, confirming the country-level as the key node for they location decisions. Conversely, for intra-EU and NA investments the EU-10 vs. EU-15 dichotomy is relevant: investment in the 'old' Europe brings a premium in terms institutional context and skill sophistication that remains difficult to 'read' for EMNEs due to larger cultural distance.

5. CONCLUSIONS

This paper contributes to the current debate on the nature and strategies of MNEs from emerging countries. In particular the paper fills a very relevant gap in the existing literature by exploring whether EMNEs differ from AMNEs in their location decisions at the national and sub-national levels. Table 4 summarizes the main empirical findings of the paper.

[Table 4 about here]

The first key result is that MNEs from countries at different technological and developmental stages do follow a diverse set of sub-national investment motives and that strategic asset seeking motives are central to the understanding of the specificities of EMNEs' spatial behavior in comparison to all other MNEs. Still lagging in innovation capabilities with respect to AMNEs (Awate et al, 2012), EMNEs seek technological

competences (i.e. patent intensity) only when they invest in higher value added activities. However, 'soft' regional innovation conditions (i.e. the Social Filter) are never significant attraction factors for EMNEs. A large innovation and technological gap still prevents EMNEs from fully taking advantage of innovation-prone regional contexts. This implies that EMNEs prove still rather inexperienced when undertaking strategic asset seeking investments due to the lack of adequate absorptive capacity (Cohen and Levinthal, 1990).

Second, for EMNEs functional agglomeration is a particularly significant location factor because it represents a clear and easily detectable indication of the availability of specialized externalities, Cultural and cognitive distance makes it too difficult for EMNEs to directly capture the potential asset seeking advantages generated by innovation prone regional environments: the imitation of the location choices of other 'selected' (in functional and sectoral terms) foreign investments offers a viable alternative to overcome this distance.

Third, the paper contributes to the debate on the relative importance of regional drivers as opposed to national location factors (Beugelsdijk and Mudambi, 2013; Iammarino and McCann, 2013). The analysis shows that EMNEs attach great importance to both regional and national location factors (Maza and Villaverde, 2015). In the UK, France, Germany, The Netherlands and Italy regional factors are prevalent while their location choices in all other EU countries are driven more by national common factors.

The paper has a number of limitations. Even if regional characteristics are introduced in the empirical analysis with a one-year-lag to minimize the impact of the potential simultaneity between local conditions and foreign investments, the results should be interpreted as descriptive without any presumption of causality. In addition, the investment dataset—although robust relative to other similar datasets—is limited to greenfield investments with no information on other typologies of FDI such as mergers

and acquisitions. It has been stressed in the literature that the acquisition of companies in advanced economies is often the most effective way for accessing strategic assets and key capabilities (Chung and Alcacer 2002; Piscitello et al, 2015). Therefore, the inclusion of M&As in the empirical analysis would provide more precise evidence about the location determinants of knowledge seeking investments. Moreover, the dataset does not allow including any 'parent company' controls for repeated investments by the same firm in different locations, making it impossible to capture the importance of firm-level heterogeneity. Some of these limitations will be addressed in our future research by extending the existing FDI database to include mergers and acquisitions as well as undertaking an empirical analysis at the level of the investing firm.

However, having acknowledged the limitations mentioned above, our results could still provide some relevant insights for national and regional policy-makers. In a context of limited capital availability in the aftermath of a major economic crisis the attraction of foreign investment is crucially important to re-launch national and regional economic growth. In this context, EMNEs can play a key role: the relatively more solid performance of their domestic markets and their strong average capitalization make them ideal investors to be targeted by national and regional attraction policies and incentive packages. As a consequence, understanding the specificities of their location strategies remains of paramount importance. From our empirical analysis it clearly appears that different drivers from other MNEs move these new actors when it comes to the most sophisticated knowledge intensive activities that also display the strongest potential for spillovers and growth in recipient economies.

Policy makers can play a multiple and diversified role. In order to leverage strategic asset seeking motives policy makers should not only reinforce national and regional technological capabilities but also support the development of 'institutional bridges' able

to facilitate EMNEs in their understanding of 'soft' innovation drivers. In a recent paper on the case of Ireland, Monaghan et al (2014) have shown that subnational institutions can play a key role in enabling and accelerating the 'insidership' of FDI, in particular communicating tangible and intangible local resources and facilitating the access to codified and tacit knowledge. Helping EMNEs to capture the advantages of the rich national and regional innovation system landscape in the EU might be the key to attract their investments in the most 'valuable' activities. In this regard the support of connections with local firms (e.g. joint ventures but also non-equity alliances) and universities might be a possible policy tool to facilitate connectivity into local innovation systems. This would also generate opportunities for advanced host countries' managers and entrepreneurs to learn from new investors, bridging the cultural and market distance with emerging economies. The establishment of networking opportunities involving both new investors and host countries' local actors is key in order to reduce the risk of a "take and leave" attitude of EMNEs (Giuliani et al., 2014) as and as well as the opportunistic acquisition of cheap assets with respect to technology and other strategic assets, which is diffusely feared in European countries.[15] Policy makers would benefit from a better understanding of EMNE behaviour in Europe in order to minimize predatory investment and attract investments contributing to the local economy.

In addition, as already stressed in Phelps (2008) our results highlight that both national and regional governments and policy makers are relevant to EMNEs, suggesting that coordination and joint action among different government levels is of primary importance Finally, the possibility to leverage functional and sectorial agglomerations is premised on a careful diagnosis of the national and regional economy, in order to make these

[15] See for instance a recent article in the Financial Times http://www.ft.com/cms/s/2/53b7a268-44a6-11e4-ab0c-00144feabdc0.html, accessed 17 February 2015.

agglomeration benefits apparent to EMNEs (and other investors as well). In this regard, policy makers should facilitate the development of functional and sectorial integrated systems comprising both domestic and foreign firms.

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Table 1 – Number of new investments in EU27: Countries of origin

Country Group	Country of origin	# of new investments	% of total
EU 25		**13100**	**59.55**
	Germany	*3090*	*14.05*
	UK	*1934*	*8.79*
	France	*1510*	*6.86*
	Austria	*882*	*4.01*
	Netherlands	*865*	*3.93*
	Sweden	*779*	*3.54*
	Italy	*764*	*3.47*
	Spain	*691*	*3.14*
	Belgium	*427*	*1.94*
	Finland	*425*	*1.93*
	Denmark	*390*	*1.77*
	Ireland	*253*	*1.15*
	Greece	*231*	*1.05*
	Lithuania	*126*	*0.57*
	Estonia	*109*	*0.50*
	Luxembourg	*97*	*0.44*
	Czech Republic	*93*	*0.42*
	Slovenia	*93*	*0.42*
	Hungary	*85*	*0.39*
	Portugal	*83*	*0.38*
	Poland	*78*	*0.35*
	Latvia	*49*	*0,22*
	Cyprus	*29*	*0.13*
	Slovakia	12	*0.05*
	Malta	*5*	*0.02*
EU 27		**13154**	**59.80**
	Romania	*32*	*0.15*
	Bulgaria	*22*	*0.10*
EU27 + 2		**13943**	**63,19**
	Switzerland	*585*	*2.66*
	Norway	*204*	*0.93*
North America (NA)		**5367**	**24.32**
	USA	*4990*	*22.68*
	Canada	*377*	*1.71*
Emerging Economies (EE)		**1064**	**4.81**
	India	*237*	*1.08*
	China	*211*	*0.96*
	Russia	*195*	*0.89*
	Turkey	*127*	*0.58*
	Hong Kong	*109*	*0.50*
	Brazil	*44*	*0.20*
	Mexico	*27*	*0.12*
	South Africa	*34*	*0.15*
	Thailand	*6*	*0.03*
	Chile	*6*	*0.03*
		978	***4.43***
Others	*Japan*	*771*	*3.51*
	Australia	*207*	*0.94*
Rest of the World		**713**	**3.23**
Total		**22065**	**100.00**

Source: Authors' elaboration on *fDi Markets* - 2003-2008

Table 2 - Location of MNEs in the EU-25 regions

VARIABLES	ALL (1)		EU-25 (2)		NA (3)		EE (4)	
Patents per capita	0.000208***		9.52e-05***		0.000408***		0.000811	
	(3.47e-05)		(3.40e-05)		(9.64e-05)		(0.000659)	
Social filter	0.00800		0.0143***		0.0211		0.0163	
	(0.00503)		(0.00509)		(0.0179)		(0.0816)	
Total # of investments same FUNCTION	0.00537***		0.00484***		0.00817***		0.00751***	
	(0.000381)		(0.000385)		(0.000770)		(0.00189)	
Total # of investments same SECTOR	0.0142***		0.0140***		0.0117***		0.00764**	
	(0.000574)		(0.000813)		(0.00106)		(0.00326)	
Total # of existing investments	-0.000113		-0.000328*		0.000254		0.00205	
	(0.000182)		(0.000198)		(0.000478)		(0.00131)	
Regional GDP per capita	-1.24e-06*		-2.81e-06***		6.44e-06***		1.73e-05**	
	(7.12e-07)		(7.47e-07)		(2.40e-06)		(8.43e-06)	
Regional unemployment	0.000646		0.000976		-0.00340		-0.00404	
	(0.000976)		(0.00104)		(0.00314)		(0.0192)	
IV Parameters								
Austria	0.0674***	(0.0080)	0.0592***	(0.0088)	0.0851***	(0.0187)	0.133**	(0.0667)
Belgium	0.132***	(0.0178)	0.101***	(0.0154)	0.311***	(0.0895)	0.358	(0.243)
CzechRep	0.122***	(0.0144)	0.104***	(0.0131)	0.216***	(0.0518)	0.470	(0.344)
Germany	0.225***	(0.0273)	0.135***	(0.0165)	0.498***	(0.0460)	0.717***	(0.129)
Spain	0.150***	(0.0109)	0.131***	(0.0117)	0.283***	(0.0420)	0.245**	(0.0971)
Finland	0.0431***	(0.0086)	0.0313***	(0.0075)	-0.547***	(0.176)	-0.586	(0.359)
France	0.382***	(0.0180)	0.351***	(0.0202)	0.505***	(0.0347)	0.269***	(0.0735)
Greece	0.0599***	(0.0095)	0.0582***	(0.0105)	0.0619***	(0.0201)	0.00211	(104.7)
Hungary	0.197***	(0.0192)	0.184***	(0.0200)	0.152***	(0.0278)	0.264	(0.167)
Italy	0.163***	(0.0127)	0.146***	(0.0139)	0.253***	(0.0351)	0.330*	(0.187)
Netherlands	0.113***	(0.0115)	0.0800***	(0.0109)	0.171***	(0.0313)	0.319	(0.258)
Poland	0.146***	(0.0172)	0.222	(0)	0.177***	(0.0402)	0.188	(0.122)
Portugal	0.0864***	(0.0134)	0.0927***	(0.0176)	0.116***	(0.0318)	0.747*	(0.420)
Slovakia	0.138***	(0.0217)	0.136***	(0.0263)	0.183***	(0.0635)	0.376	(0.581)
UK	0.666***	(0.0154)	0.516***	(0.0189)	0.902***	(0.0267)	0.791***	(0.0932)
Log likelihood	-18413,131		-11657,179		-5777,207		802,53648	
LR Test (IIA)	1057.17***		566.12***		441.48***		76.08***	
Observations	571,740		349,085		195,249		27,406	

Standard errors in parentheses *** p<0.01, ** p<0.05,* p<0.1

Table 3 - Location of MNEs in the EU regions: non-production activities **(HQ/R&D/DESIGN/SALES/LOGISTICS)**

VARIABLES	**ALL (1)**		**EU-25 (2)**		**NA (3)**		**EE (4)**	
Patents per capita	0.000401***		0.000217***		0.000639**		0.00105**	
	(6.02e-05)		(6.73e-05)		(0.000307)		(0.000531)	
Social filter	0.0326***		0.0104*		0.00452		-0.0183	
	(0.00972)		(0.00584)		(0.0168)		(0.0676)	
Total # investments same FUNCTION	0.00520***		0.00390***		0.00817***		0.00862***	
	(0.000365)		(0.000408)		(0.000713)		(0.00224)	
Total # investments same SECTOR	0.00981***		0.0108***		0.00935***		0.00421	
	(0.000658)		(0.000858)		(0.00106)		(0.00332)	
Total # of existing investments	0.00155***		0.000268		0.000627		0.00225	
	(0.000348)		(0.000320)		(0.000514)		(0.00178)	
Regional GDP per capita	4.92e-06***		-1.17e-06		8.92e-06***		1.94e-05	
	(1.27e-06)		(8.97e-07)		(2.58e-06)		(1.63e-05)	
Regional unemployment	0.00712***		0.000307		0.00170		0.00360	
	(0.00138)		(0.00107)		(0.00318)		(0.0171)	
IV Parameters								
Austria	0.138***	(0.0154)	0.0849***	(0.0212)	0.0923***	(0.0226	0.242	(0.219)
Belgium	0.453***	(0.0723)	0.105***	(0.0315)	0.401***	(0.107)	0.459	(0.465)
CzechRep	0.117***	(0.0137)	0.0676***	(0.0097)	0.144***	(0.035)	0.179*	(0.104)
Germany	0.271***	(0.0372)	0.168***	(0.0257)	0.416***	(0.058)	0.847***	(0.102)
Spain	0.165***	(0.0122)	0.131***	(0.0156)	0.201***	(0.025)	0.344*	(0.177)
Finland	0.0437***	(0.0061)	0.0404***	(0.0098)	-0.362***	(0.129)	-1.341	(0.900)
France	0.456***	(0.0247)	0.366***	(0.0283)	0.481***	(0.037)	0.346***	(0.094)
Greece	0.245	(0.176)	0.0596***	(0.0120)	0.0689***	(0.023)	0.00336	(0)
Hungary	0.0803***	(0.0131)	0.0696***	(0.0245)	0.0527*	(0.028)	-1.484	(1.559)
Italy	0.206***	(0.0174)	0.158***	(0.0187)	0.239***	(0.033)	0.318**	(0.124)
Netherlands	0.135***	(0.0146)	0.133***	(0.0300)	0.274**	(0.138)	0.461**	(0.207)
Poland	0.0898***	(0.0104)	0.0623***	(0.0108)	0.0731***	(0.012)	0.136**	(0.054)
Portugal	0.0741***	(0.0103)	0.0904***	(0.0264)	0.0834***	(0.027)	0.0547	(0.110)
Slovakia	0.0786***	(0.0137)	0.0683***	(0.0173)	0.0807*	(0.0426	0.0905	(0)
UK	0.811***	(0.0203)	0.588***	(0.0245)	0.930***	(0.035)	0.921***	(0.114)
Log likelihood	-11779,971		-6770,0524		-4189,4893		-624,6365	
LR Test (IIA)	701.61***		484.31***		370.45***		61.95***	
Observations	379,377		207,789		149,303		22,285	

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4 – The location determinants of MNEs in the EU regions: A summary

		Source of foreign investment		
Determinants of foreign investments		**EU-25**	**NA**	**EE**
Strategic asset-seeking*				
	• Hard drivers (patents)	(+)	(+)	(+) Only for NON-PRODUCTION FDI
	• Soft drivers (Social Filter)	(+)	(+) Only without full country controls)	Never significant
Agglomeration*				
	• # of FDI	(-)	Not significant.	Not significant
	• Same Function	(+)	(+)	(+)
	• Same Sector	(+)	(+)	(+) Only for PRODUCTION FDI
Dissimilarity parameters**				
	• Sub-national drivers	UK, FR	UK, FR, D, BE	UK, D, NL FR, I
	• National drivers	All remaining countries	All remaining countries	Most of remaining countries are not significant

Source: Authors' estimates in Tables 2 and 3.

* (+) and (-) reflect respectively positive and negative significant coefficients

** >0.3 in Table 3

APPENDIX

Table A-1 – Variables definitions and sources

Dependent Variable		**Source(s)**
Location decisions of greenfield investments in the regions		FDi Markets
Explanatory variables		
Patents per capita	EPO patent applications per capita	EUROSTAT
Social Filter • Skilled Employed People • Education of Population • Agricultural Labour Force • Long Term Unemployment	The index combines, by means of Principal Component Analysis (Table A-2), the variables describing the socio-economic realm of the region (listed below) % Employed People with Tertiary Education Level (Isced 79 79 levels 5-7) % Population with Tertiary Education Level (Isced 79 levels 5-7) Agricultural employment as % of total employment Long term unemployed as % of total unemployment.	EUROSTAT EUROSTAT EUROSTAT EUROSTAT EUROSTAT
Total # of Investments	Cumulative #of total FDI in the region (all sectors, all activities)	fDi Markets
Total # of investments same ACTIVITY	Cumulative # of FDI in the region in the same ACTIVITY as the investment under analysis	fDi Markets
Total # of investments same SECTOR	Cumulative # of FDI in the region in the same sector as the investment under analysis	fDi Markets
Control Variables		
Regional GDP per capita		EUROSTAT
Regional Unemployment Rate		EUROSTAT

Table A-2 – 'Social Filter' Index – Results of the Principal Components Analysis (PCA)

Table A-2.1- PCA Eigen Analysis of the Correlation Matrix

EU 25				
Comp1	2,30323	1,3384	0,5758	0,5758
Comp2	0,964829	0,250263	0,2412	0,817
Comp3	0,714565	0,697188	0,1786	0,9957
Comp4	0,0173775	.	0,0043	1

Table A-2.2 - PCA: Principal Components' Coefficients

EU 25				
Agricultural Labor Force	-0,4009	0,3471	0,8478	0,0046
Long Term Unemployment	-0,2662	0,8389	-0,4697	0,0686
Education Population	0,6271	0,2478	0,1912	0,7133
Skilled Employed People	0,6125	0,3381	0,1549	-0,6975